

PROCEEDINGS
OF THE
SIXTEENTH ANNUAL MEETING
OF THE
IOWA STATE
Improved Stock-Breeders' Association

HELD AT
HAMPTON, DECEMBER 4, 5, 6, 1889.

OFFICERS:

President—HENRY WALLACE, Des Moines. Vice Presidents—H. B. DAGGETT, Hampton;
O. F. DESIBOS, Mason City; A. K. EMERSON, Newton; C. S. BARCLAY, West Liberty;
Hon. D. M. MOSINGER, Galvin; Hon. C. C. CARPENTER, Ft. Dodge;
Hon. H. C. WHEELER, Odebolt; Hon. B. F. ELBERT, Des Moines; JOSEPH BEARDSLEY, Shenandoah;
F. M. BYRITT, Red Oak.
Secretary and Treasurer—GEORGE W. FRANKLIN, Atlantic.
[Reported by C. L. DARLBERG, Des Moines.]

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OFFICERS FOR 1890.

President—HON. H. C. WHEELER, Odebolt.

Vice-Presidents—HON. D. M. MONINGER, Galvin; DAN'L SHEEHAN, Osage;
RICHARD BAKER, JR., Farley; Maj. 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.
McCLUNG, Waterloo.

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

Membership fee, \$1.00 per annum.

The seventeenth annual meeting will be held in Oskaloosa, beginning
Wednesday, December 3, 1890, at 1 p. m.

PROGRAMME.

WEDNESDAY AFTERNOON, DECEMBER 4.

1 O'CLOCK.

Welcome. By Mr. W. D. Evans.

Response.

President's address.

Appointment of committees.

Unfinished business.

"Dairying." By C. A. Huston, Waubeek.

"Profits in Dairying." By Hon. H. D. Sherman, Monticello.

WEDNESDAY EVENING.

7 O'CLOCK.

Opening.

"Trusts." By Hon. James Wilson, Traer.

"Legislation Most Needed Now." By Prof. W. I. Chamberlain, Ames.

"The Big Four." By Hon. John McHugh, Cresco.

THURSDAY MORNING, DECEMBER 5.

9 O'CLOCK.

"Clover." By H. C. Wallace, Orient.

"Pastures." By Hon. J. B. Harsh, Creston.

"Diseases of the Cultivated Grasses." By Prof. L. H. Pammel, Ames.

Discussion.

"The American Trotting Horse." By M. J. Pendleton, Iowa City.

"The Draft Horse." By C. E. Stubbs, Fairfield.

Discussion.

THURSDAY AFTERNOON.

1 O'CLOCK.

"Relations Existing between the State Agricultural Society and the Improved Stock-Breeders' Association." By Hon. J. R. Shaffer, Des Moines.

"Exhibitors and Breeders." By Hon. C. C. Carpenter, Fort Dodge.

Discussion.

"Veterinary." By Prof. M. Stalker, Ames.

"Swine." By H. E. Pendleton, Russell.

PROGRAMME.

- "Sheep for Wool." By A. J. Blakely, Grinnell.
 "Sheep for Mutton." By George T. Underhill, Knoxville.
 Discussion.
 "Poultry." By W. K. Laughlin, Fort Dodge.
 Discussion.
 Roll call.

FRIDAY MORNING.

- 9 O'CLOCK.
 Treasurer's report.
 Report of committees.
 Closing business.
 Adjourn.

INTRODUCTION.

The sixteenth annual convention of the Iowa Improved Stock Breeders, held at Hampton, Franklin county, December 4, 5, and 6, 1889, was one of the best meetings ever held by the association. The weather was all that could have been desired, and the attendance was up to, if not rather above, the general attendance. Railroad connections were not the best, which probably kept some members from a distance away, but the sessions were largely attended. The citizens of the town were untiring in their efforts to make us comfortable and to entertain us. They furnished us a pleasant place for the sessions—being the Harriman Opera hall. They vied with each other and with neighboring farmers in extending hospitality to visitors, and were interested members of respectable audiences. No small interest was taken by the visitors to the Home Stock Farm, near this place. Quite a display of stock was shown upon the streets.

The papers were very good, and the discussions very lively and interesting. President Wallace's address dealt trenchantly with prices, tendencies and grievances, which elicited much discussion. The very core of current thought regarding the farm and its development is the ultimatum of this gathering of breeders and farmers. The trusts received a deserving black eye.

One writer tacitly puts it this way:

It is probably safe to assert that Iowa enjoys the enviable reputation of having the most prosperous State associations of improved stock breeders in this country, if not the world. The published stenographic reports of proceedings at their annual meetings are eagerly sought after, and even used as text books on the subject of stock breeding in foreign lands. So that when the different clans, including the Short-horn, Holstein, Jersey, draft horse,

sheep and swine breeders meet in friendly rivalry as the Iowa State Improved Stock-Breeders' Association, there is gathered together more intelligence than is found in the average State legislature.

The session closed with a sumptuous banquet to the members of the association, given by the enterprising and hospitable citizens of Hampton. The viands served by the ladies, the music—instrumental and vocal—by the choir, and the responses to toasts by the citizens of Hampton and the members of the association were all of a high order and formed a fitting close of one of the most interesting meetings ever held in Iowa.

SIXTEENTH ANNUAL MEETING.

AFTERNOON SESSION—DECEMBER 4TH.

The meeting of the Improved Stock-Breeders' Association of Iowa was called to order by the President, Honorable Henry Wallace.

Prayer by Rev. John W. Clinton:

"Our Father in Heaven, we thank Thee for the country in which we live and for its grand possibilities. We thank Thee for this beautiful city which Thou hast called us to occupy, and in which we are now engaged in the various industries that stand connected with its prosperity. We learn in Thy Word that in ancient times Thou didst call a man to be at the head of a great nation and that one important branch of his industry was that he was a possessor of flocks and herds, and that in that matter he distinguished himself among the people. Here is a class of men that are engaged in this industry in our State, and we thank Thee for the latent resources that are here found in the soil of this country with which to develop it. We ask Thy blessing to rest upon us, and as Thou didst bless Thy servant Abraham as the one faith and prosperity among the nations, so may God's blessing bless these men and all the men engaged in developing this industry in this our country. Grant, we pray Thee, that we may never be forgetful of Thy hand and Thy blessings, which we ask Thee to impart to us this day and grant us that favor. May we look to Thee for help; may Thy Holy Spirit be present with us, guiding us in all actions and conclusions at which we may arrive. We ask it in the name of our Redeemer. Amen."

E. S. Patterson: Gentlemen of the association: I now have the pleasure of introducing to you one of our citizens, who will welcome you to our little city and to our county, of which we are proud. There is only one objection on the part of the local committee to the selection of this gentleman for this duty, and that is, because of his extreme modesty—he is an attorney. I now have the pleasure of introducing to you Reverend Mr. W. D. Evans.

ADDRESS OF WELCOME.

BY W. D. EVANS.

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

I deem it hardly fair to me, in my friend, Mr. Patterson, to say that I was a modest attorney, and then to introduce me as a reverend. As it does not become me to speak of myself, I cannot tell you who I am. I take a great deal of pleasure in performing the duties that have been imposed upon me by our local committee at this moment.

Something more than ten years ago I was looking for a place where to pitch my tent, and after careful consideration and study of the map of the world, I came to the conclusion that there was not a spot on the face of the earth more desirable for a man to live in than Franklin county, and so I came here. When I came, the good citizens of this county extended to me the warm hand of welcome. Since that time scores of others have come into this county; and I want to say to you that no worthy man, or any body of men, who have been prompted to come to Franklin county who have not felt the hospitality of the citizens. I want to say that much on my own account, without charging the citizens for it. I take pleasure in addressing the words of welcome on the part of the citizens of this city and county, because I know the words of welcome will be backed by acts of hospitality in fact. Our citizens welcome this body of men not only because the class of men you represent seems to contain a large number of distinguished men of the State of

Iowa; not only because they are all impressed with the fact that you are a body of earnest, brainy men, but because you represent the greatest industrial interests of the west, if not of this country; and, I may even say, the greatest industrial interests of the world.

I asked a lady this morning what ought to be said in the address of welcome on an occasion of this kind, and she told me to say to you—she never thought I would say it—she told me to say to you that “the cow was the bulwark of present prosperity and one of the strong props of our institution.” That statement seems homely, but it is true. Whether corn or cotton be king, one thing is true, that the cow is queen of our country. I do not want the horsemen to take exception to this remark, because they do their share in furnishing the horses to draw our carriages.

The citizens of our city and county welcome you in our midst. They desire that you shall have the fullest success in your association, and that your stay with us shall be as pleasant as possible; and they desire me to say that during your stay this little city is yours; her doors are open and she extends to you a warm hand of greeting, and a hearty welcome. [Applause.]

Hon. Henry Wallace: Gentlemen of the Association: It is eminently fitting that some one should reply to this cordial welcome that has been extended to us by this city. The place for the response on the programme has, unfortunately, been left blank. There are quite a number of gentlemen here whom I might call upon to make this response, but I know of no one that I could feel more readily disposed to call upon than our friend, Hon. John McHugh. Mr. McHugh will be kind enough to respond to the address of welcome on behalf of our association. [Applause.]

Gentlemen of the Association: I take pleasure in introducing to you the Hon. John McHugh, who will now be our spokesman in response to the address of welcome.

RESPONSE.

BY HON. JOHN M'HUGH.

Mr. President and Members of the Improved Stock-Breeders' Association:

GENTLEMEN: If my attempt at a response should fail in coming up to your ideal, it will not be chargeable to the good will or the hearty send-off that I have received from the chair. I judge, from what I heard of the remarks as I sat back there, that he had some one else in view, and if so, I can only congratulate that other fellow on his failure to materialize. I think that our worthy President has lately been reading about the man who, it is said, was as full of language as a female debating society, and he has taken me for that individual. If so, I plead not guilty, and would supplement that plea with the statement that I had not the remotest idea of engaging in so wonderful a contest. I can acquit him, however, if he entertains that opinion, on the ground that he says that it is about as easy for the average Irishman to talk as it is for some men to avoid finding employment if they do not want to work. But, gentlemen, we have just listened to an admirable address of welcome, delivered by our friend, Mr. Evans, I believe; one alike creditable to him and to those for whom he has spoken; and, on behalf of the Improved Stock-Breeders Association, I thank him and them for it, and thank him for the beautiful picture he has drawn of our homes and of our Association, and the high compliments he has paid the business which we are here to represent. I thank him, also, for the very cheerful welcome he has extended to us on behalf of the citizens of Hampton, and of Franklin county. I noticed from my place in the audience, back there, his very modest allusion to the feast in store for us, and that the tables were set. I noticed that it aroused very tender emotions among some of the older members who sat nearest me, those who have learned to sit at the banquet table year after year with unerring accuracy. I imagined I

saw a tear—not of misery or distress, but of joy and satisfaction—slowly stealing down the cheek of my friend Scott, there, and the convivial eye of my friend Wilson, seemed to be moistening about that time. (Laughter.)

Speaking of that, reminds me that they are two of the men that were the pioneers in this institution, who were present at its birth, and who hardly predicted for the youngster the growth it has since made. They, with a few others—I believe Mr. Lathrop is here—during its boyhood, were unremitting in their attentions, now come in its manhood to witness its prosperity and rejoice in its success. These old pioneers met some sixteen years ago to organize this association, and they have since been kind and assiduous in their endeavors to make it what it is, the foremost organization of agriculture in the country to-day. We, to-day, are enjoying the benefit of the advanced thought of those men in improved stock, whose lives serve as reminders that the scrub is a thing of the past. I say, this younger generation will owe the older members a debt of gratitude they can never repay. Let us welcome those old charter members; welcome thus the old companionship, that congenial companionship that is ever free from that deceit and degradation so common in practical politics.

The object of the association is suggested by its name, and means the improvement of stock in its best possible way. There is another feature—a social feature—men come together and compare notes and discuss topics, besides taking part in the general meeting. There are no people in the State who are more honestly entitled to lead than our stock breeders. There is also another thought connected with the work which it is designed to perform; that is the missionary feature. We desire to grow fine stock in the section of country where our annual meetings are held. If anything in this line is accomplished we shall feel we have not come in vain. It is the first visit of many of us to your town and county, and I hope we shall carry home very pleasant recollections from here as we have from many others where we have met.

I feel glad, after learning from the reports on Short-horns, and long horns, and many others that I listened to this morning, that the people are gradually becoming conversant with this subject. Numbers have joined the ranks of our organization whose thoughts go beyond the confines of the State and come back to us laden with honor for our association and respect for our occupation. I thank you for your attention. [Applause.]

Mr. Wallace: Whatever fault may be found with the Irishmen at home they are always sure to do well away from home, and hence, it is always safe to call upon one of them upon an occasion of this kind.

Before proceeding further, I am requested to call together the Vice-Presidents, for the purpose of a meeting of the committee composed of the Vice-Presidents. They will please meet.

PRESIDENT'S ANNUAL ADDRESS.

BY HENRY WALLACE.

Mr. Chairman and Gentlemen of the Improved Stock-Breeders' Association:

When I say that I have looked forward for weeks to this meeting in the full confidence that it would prove exceedingly pleasant and profitable, I am sure that I but voice a feeling in which each one of you, and especially the older members, share. Comprising, as this Association does, leading men in every branch of agriculture, breeders of every kind of live stock and of every breed, it is but natural that its annual meeting should be regarded as one of the great agricultural events of the year. The courtesy which has uniformly distinguished the bearing of its members during the most earnest discussions in past meetings when their views were most divergent, their manifest integrity of purpose and unwavering fidelity to the interests of agriculture, show that you do not forget that good breeding, in the full meaning of the word, is just as essential in the breeder as in the stock. It is a happy thing for the agricultural interests of the State that at the close of the year we have in this meeting a sort of agricultural round-up, where men who represent the diversified agricultural interests compare views, discuss prominent questions, compare experiences, and, while greatly aiding and benefiting each other, make an important contribution to the agricultural literature of the West. In fact, I do not know where can be found in the same compass as much of real

value to the prairie farmer as can be found in the published proceedings of this Association. In saying this I do not indulge in boasting on your behalf, but merely state what I think is generally conceded by good judges outside the State.

The pleasure of this, and of almost every meeting, is to some extent modified by the fact that the infirmities of advancing years withdraw gradually some of our members most richly endowed with experience, and that death sometimes lays his hand on others who are but in the first beginning of their usefulness. The untimely death of one of the ablest of our younger members, Mr. Oakley G. Norton, of Durant, is a most vivid and painful reminder that each one of us holds his life by a very uncertain tenure. It would be but natural that the sons of this association should weep over the graves of their fathers; it is inexpressibly painful that the fathers should weep over those of their sons.

The year just closed has been in some respects, one of the most remarkable in the history of our association. While in the lavish abundance of its crops in Iowa it has seldom, if ever, been surpassed, it has been marked by unusual activity of the forces which tend to render unavailing to the recipient on the farm the excess of the bounties of Providence, and even to rob him of the fruits of his ordinary labor. When we met last year there were apparently solid grounds for the hope that the long period of agricultural depression was past, and that the future would be clear sailing, a hope and belief shared by all the other industries and occupations. It became apparent during the latter part of December, that there were breakers ahead, and about the middle of January the prices of cattle on the Chicago market went down with a sudden thud to the bed-rock of primordial granite, and left the feeder but one consolation, that if they should fall much lower the world would in time have to do without beef. Amid all the grief and disappointment that followed, there was this consolation: that prices were down to the bare cost of production on the best managed farms, that the death knell of the scrub had at last been sounded, if the scrub be not immortal, and that any change in prices must be for the better. Through all the weary winter months the farmer watched and waited, only to see the dead level of unprofitableness maintained, as if an iron hand, guided by an intellect without conscience, were grinding the stockman between the upper and the nether millstone. That dead level has been maintained except for the very best, and there is little hope that so long as the market both for cattle and cattle products is in the hands of four firms there will be any marked

improvement short of a reduction of the cattle stock of the nation to a point that will prove a national calamity. The effect upon the breeding interest, although not so marked as on the producer of the ordinary class of cattle, has been disastrous. Intimately and vitally connected as our interests as breeders are with the farmer, who is dependent on us for improved blood for his herds to be fed for the shambles, we are equally dependent on him as our most reliable customer; his prosperity is our prosperity, and his calamity hangs crape on the door of every breeder. It matters not what class of improved stock we may breed, whether horses, cattle, swine, sheep, or poultry; it matters not what the breed, or how blue the blood, or how ancient the lineage, or how great the individual merit; it is not to be expected that the farmer who passes sleepless nights trying to figure out some way of paying the most moderate living expenses, and still provide interest and taxes that must be paid if he continue to own his farm, will appreciate our stock at its value or pay us prices that will yield even a moderate profit. The breeder has, therefore, been compelled, not only by his sense of justice and right, but by his own personal interests, to espouse the cause of the farmer, whether stockman, dairyman, or grain grower.

With the opening of spring hope revived, as it always does with the first springing of the grass. The promise had long been held out to the Iowa farmer that if he could but have one of the good old-fashioned seasons and good old-fashioned crops he would soon have the good old-fashioned times of prosperity. The old-fashioned season came in this good year 1889. All summer long Providence was kind. Over almost the entire State the rains came just when they were needed and ceased when they had done their work, always hanging the rainbow of promise on every vanishing cloud. For the first time in many years October has fulfilled the promise of June. While other States have been short on grains and grasses, parched with drought or deluged with floods, Iowa has enjoyed the great abundance which marks the fruitful season. But prosperity has not come, either to the farmer or stockman. The sales of the year closed at their lowest; and not only that, but with indications suggesting that the farmer was not only discouraged, but demoralized, so far as cattle were concerned. He evidently felt that the stock markets were controlled by an iron hand, as powerful as it was cruel, the steadiness and immobility of prices, and their failure to respond to even short supplies, when such occurred, showing most conclusively the completeness of the mastery in which they were held.

This is the situation at this hour, and it is for you, as breeders, as men who are known to be students of the great questions that affect the agricultural interests, to take note of the present tendencies, to take soundings, as it were, and conclude for yourselves whether we are merely passing over one of the common shoals of agricultural depression, or whether we are drifting into an unknown sea. Is this depression, so long continued, the result of the legitimate causes which have always affected agriculture in connection with other industries, or is it the baleful result of new and malign causes which, operating in some measure in the past, have attained their full potency for evil only during the past season?

It is a most startling and significant fact that outside of the agricultural interests, and I use the term agricultural interests in its broadest sense, the nation is enjoying a period of almost unwonted prosperity. Never in my reading of commercial reports has there been more quiet and assured confidence in the business future. Never has there been a clearer financial sky. Even capital seems to have overcome its constitutional timidity with reference to everything except farms and farm products. It is not even afraid of breweries. It does not quail before trust laws, even when sustained by the decisions of the courts. There has been, during this year of financial cloud on the farm, a large increase of business, as marked by the augmented volume of exchanges, a notable increase in the gross earnings of railroads, even those that it was loudly proclaimed were being confiscated by Governor Larrabee and the Iowa Railroad Commission, a still more marked increase during the fall months in their net earnings over the corresponding months of 1888; iron, the barometer of the manufacturing interests, has made a marked advance both in America and Europe, showing a great consumptive power which is possible only when great interests are prosperous, and there has been a remarkable absence of strikes and lockouts among laborers and operatives. Coincident with these advances in other products there has been a marked decline in the products of agriculture. That you may realize how great this decline has been, I quote from the Chicago Inter Ocean a comparison of prices on November 25, 1889, and November 25, 1888, as follows:

1889.		1888.	
Wheat	\$.79½	Wheat	\$ 1.05
Corn32½	Corn36
Oats20	Oats36
Pork	9.80	Pork	14.43
Lard	6.07½	Lard	8.47
Short ribs	5.37½	Short ribs	7.50

The ready reply to this array of facts is that agriculture is afflicted with the disease of too-muchness—that there has been great over-production; that Providence in his kindness to his children has overdone the business. If this be so, we should change somewhat the line of our prayers and endeavor to correct a serious evil in the government of the universe. Is it, however, true? The latest reports of the agricultural department show that we have produced about 480,000,000 bushels of wheat. In 1880 we produced, according to the same authority, 504,000,000, and in 1884 we produced 512,000,000. The crop this year has been only an average, and amounting in bushels to very little over the average of ten years, and is not in excess of the average yield per capita. And yet, in the face of all this, and a short crop in Europe, it requires three bushels to bring the price of two on the corresponding date last year.

The corn crop, according to the same report, is barely an average per acre, and certainly not an increased crop per capita as compared with last year, and yet on the same market there is a drop of seven cents per bushel, or nearly 20 per cent. The oats market probably suffers from a surplus carried over from the two last years, and it sells at 25 per cent less than last year. Pork produce, with an increase of about 5 per cent in the supply of hogs, suffers a reduction of about 33 per cent. A comparison of the Chicago live-stock market as telegraphed to the papers of November 28, 1888, and November 28, 1889, gives the following results:

YEAR.	FAT CATTLE.	HOGS.
1888.	\$ 3.25@5.85	\$ 5.20@5.40
1889.	2.80@5.25	3.45@3.70

The unparalleled production of cattle, of which we hear so much, is assigned as the reason for this decrease in prices. And yet, when we turn to the government statistics we find that in proportion to

population, there has been a decrease for the past four years. The following statement of this decrease is from the last government report, November 10, 1889.

YEARS.	Number of cattle, including milk cows, per 1,000 of population.
1880.	490
1881.	502
1882.	422
1883.	536
1884.	550
1885.	562
1886.	556
1887.	548
1888.	537

When it is considered that the range cattle were estimated in 1880 at 1,070,000 and in 1888 at 7,650,000, it will be seen that the cattle on farms have at no time in these eight years kept pace with the population. Few men at all conversant with the cattle business of 1889 doubt that there is not only a rapid decrease this year in the ratio of cattle to population, but an absolute decrease in numbers. And yet, under these circumstances, the main industry of the west has been brought for the time being to the verge of ruin. If this depression in prices were coincident with great depression in other industries, and if strikes and lockouts were the order of the day, the low prices of farm products would not be surprising. When, however, this long continued depression is coincident with advancing prices in iron, the barometer of the manufacturing world, sugar, coal, railroad earnings and manufacturing enterprises of almost every character, it shows that agriculture in all its departments is suffering from artificial restrictions which the farmer must remove at any cost if he is to maintain his position and influence in the nation. It is not a theory which confronts us, but a condition—a condition not peculiar to the west, or the south, or the east, nor to America, nor to Europe. It is the same everywhere, the difference being only of degree. The western farmer is even better off than the eastern or the southern, and certainly far better off than the European farmer. You have all heard of the abandoned farms of New England, within the sound of the spindles of the great factories and with railroads at

the door. If it be said that the Creator never intended these lands to be tilled, which, by the way, have, for several years past, had a higher average of corn per acre than Iowa, pass over to Pennsylvania and into the best counties, such as Lancaster and York, and note the foreclosures and sheriff's sales. Note this fact particularly, that lands are selling at about \$80 less per acre, or about thirty-three per cent, than in 1884. Read the foreign agricultural papers and note the frequent demands of the British farmer for the redress of his wrongs.

The most notable feature, however, in the discussion of agricultural problems on that side of the Atlantic is the reply on the part of the British secular press that the sacrifice of the agricultural interest is a national necessity if England is to retain her supremacy in commerce and manufacturing.

All this reminds us forcibly of the speech of that ancient scoundrel, Caiaphas, in the Jewish Sanhedrim, when justifying the crucifixion of Christ: "Ye know nothing at all, nor consider that it is expedient for us that one man should die for the people and that the whole nation perish not." The American confiscators of farm property are not so bold in word, but no less so in deed. There is a manifest disposition to give the farmer the short end of the double-tree and to say, with the Egyptian taskmaster, "ye are idle, get ye to your burdens." If there is an advance in the price of any article he purchases, the full burden of that advance is paid, not by the dealer, but by the farmer; if there is a decline in what he sells, freight and commission do not bear the burden of that decline. If there is a threatened decline in manufactured or imported goods, a combination or trust is formed for the purpose of maintaining prices and profits, and compelling the consumer to pay them. In such circumstances it is, perhaps, inevitable that there should be quacks and charlatans who gravely inform us that the prevalent depression grows out of the fact that capital is timid and has no confidence in the administration, or that the rascals are in power and must be turned out. These always remind us of that famous reformer, Shakespeare's Jack Cade, who, haranguing his fellow conspirators, said: "Be brave, then, for your captain is brave and vows reformation. There shall be in England seven half-penny loaves sold for a penny, the three-hooped pot shall have ten hoops, and I will make it a felony to drink small beer, and when I am king there shall be no money; all shall eat and drink on my score and I will apparel them all in one livery," which, being interpreted into modern English, reads: "Vote for our ticket, for our party has a monopoly

of statesmanship; the mug of beer shall become a schooner, the ten dollar cow shall sell for twenty dollars, and thirteen cent oats for a quarter, and we will look after our friends in the way of post-offices." The time has gone by when the farmer can afford to amuse himself in the interval between harvest and corn husking by listening to this kind of blather. His business is undergoing a slow strangulation and has been, "with a brief interval between 1880-84, ever since the demonetization of silver in 1873. The prices of his products in New York, November 1, 1889, were twenty per cent below the prices in November, 1860. If as breeders we are to have a profitable market for our stock we must have customers who can pay profitable prices, and if they are suffering from artificial restrictions, or bearing undue burdens, or suffering injustice, duty and patriotism and self-interest all require that we should aid and lead in fighting their battles. It is eminently fitting that this association, which is regarded as the best exponent of the agricultural thought of the west, should point out clearly and distinctly the grievances under which the western farmer labors, and demand their redress. The voice of no body of agriculturists will be more potent at the present time, and in the light of recent events in shaping the national policy. But that voice will be unheard, and indeed is not entitled to be heard, unless we rise above partisanship and view all public questions from the standpoint of the patriot and with the comprehension of the statesman.

The evils that affect us lie deeper than the investigations of the builders of the platforms of parties. The farmers' account of sales on the Chicago market and purchases at the country store throw more light on the nature of the evils than entire volumes of the Congressional Globe. One thing is plain, that the contraction of the circulating medium, which this year amounted to \$33,000,000, must be stopped, and I know no way of stopping it at once so effectual, so patriotic and so easy as by the deposit, in the treasury, of the silver of the American mines and making it the basis of a currency issue that shall be legal tender for all debts and dues, public and private. When the nations understand that the United States will protect a product of which she is the chief producer, silver will no longer be a foot-ball in the world's markets and the contraction in prices the world over which has followed the demonetization of silver in 1872 in Germany, and in 1873 in America, will be stopped. Is it not enough that since this demonetization, and largely as its result, values of property have decreased thirty-three per cent? If this world-wide shrinkage in prices and increase in

the value of every note and mortgage were once arrested, half the inducement to the formation of trusts would be removed. For the trust is in its first inception a device to break the fall of prices, and in its full development a crime against society, a conspiracy to subvert the laws of supply and demand. The farmers cannot afford to tolerate any such iniquity, nor countenance or support any public man in any office who is either connected with this form of public robbery, or aids or abets it, or lacks the courage to oppose it. Do you not know that the most radical utterances for the suppression of trusts that have come from any farmer or farm paper, are not more advanced than the decisions of our courts? Have we not suffered enough in the last twelve months from the beef combination, the sugar trust, the lead trust, the oat-meal trust and the packing-house combines to give an utterance at this convention that will be heard far and wide, and compel statesmen to lay aside their schemes for promotion and quarrels over the distribution of the spoils, and study political questions from the standpoint of the farmer's home and feed-lot? One thing more. There can be no abiding prosperity without cheap transportation. The farmers cannot afford to advocate confiscation of any property, nor on the other hand, can they afford to have their farms and herds confiscated by the payment of rates based on the first cost of the railroad as represented by its bonds, and a second and often wholly fictitious cost measured by its watered stocks. There is not the slightest danger of the confiscation of railroad property by isolated farmers, living half a mile apart on the average, and without organization, but there has been continuous confiscation of farm property by railroad combinations.

We sometimes complain bitterly that our public servants do not study these questions from the standpoint of the farm. Whose fault is it? Have we, after the manner of other professions, organized ourselves, formed public opinion and demanded, at the point of a sharp lead pencil, the preservation of our rights? Can a stream rise higher than its source? Can a statesman be far in advance of his constituents? Can a representative of bitter partisans be anything else than a narrow-minded partisan? If the political ideas of farmers rise no higher than the distribution of the offices, if there be no clear, incisive statement of their own rights, how can they expect their representatives and senators to be anything more than peddlers of patronage!

I am not unmindful of the fact that before we can expect to see agriculture restored to its rightful position of power in the nation,

there is a vast amount of educational work to be done among the farmers, not merely in the line of a statesmanship that shall rise above party lines, but also in the direction of improved farming. It is the high privilege of this association to take a leading part in this educational work, not merely by its own teaching, but in the encouragement of any and every movement that will stimulate inquiry and research. We know of nothing which at this time is more worthy of your indorsement and encouragement than the Farmers' Institutes that are asking the recognition and bounty of the State. Private enterprise and the aid of different agricultural organizations in the State have done enough during the past year to demonstrate the benefits of these institutes and the lively interest taken in them by the better class of farmers. This interest un-failingly leads to better methods of farming, better stock and better care of it. Anything that produces such results is worthy of the support of every breeder.

The indorsement of this association will go far to secure that State aid which will put Iowa abreast of other States in her institute work. The legislature of Iowa has never turned a deaf ear to this association, for the simple reason that it has always asked unselfishly and for the promotion of the welfare of the farmer. It has never allowed partisan feeling to bias its judgment. By its devotion to the agricultural interests it has won the confidence of all parties.

It is a pleasure, gentlemen, to preside over the meetings of an association with these high aims. Allow me to express the hope that this session will be as replete with pleasure and profit, both to ourselves and the people of the State, as any that have preceded it.

DISCUSSION.

Hon. James Wilson: Mr. President, that paper is above all carping of the grievances of the Iowa producer, and is as keen an insight, perhaps, into the remedies necessary as I have ever heard; and I doubt whether we have in the records of this association very many papers equal to it. I merely want to say a few words to get the discussion started here, because I want this discussed, if we have to make this session go far into the night, because, while the different duties of the farm ought to be attended to and discussed by us, yet it is quite a question whether we have given these matters such notice as we have some other things. We have more hay, grass, grain and other things than we know what to do with. Some

of us, at least, can take up this question presented by the president and discuss it. I am delighted that this association has come up to a point where it recognizes the existence of trusts. The practice has been that a class of men come here every year and go on in that way, closing their eyes to the truth. A year ago you would have been laughed at if you had read such a paper as that. Lots of papers that call themselves farm papers were gravely saying that there was no such trusts as that which consists in cattle, and sitting in our midst telling us farmers of Iowa that there is nothing like trusts. Now the United States is alarmed at the trust interest of cattle in the hands of four men who are put in a position to buy cattle, and by their influence controlling the entire cattle market in a short time. A million of us are engaged in building up the country, and shall we passively submit and endow these features, these corporations without souls, with the profits that should go to clothe your children and mine, sir? That is one advance we have made in the last year, when we have come to realize that there is a trust. Now, there are two things paramount: One is that everything that *can be* put in trusts *have been* put in trusts. The speculation we have been in the habit of hearing about in the papers, in government bonds and public lands, is measurably stopped, and they are turning their attention to cornering all that you and I raise. That is a pretty nice question; what are we to do with them? As the president says, we must reap the things sowed, and tares are being sowed about them in the land. If such things had been suggested at the last session, a year ago, the advocate of such doctrine would have been declared ready for the mad-house. However, as I have to read a paper on trusts, I will now speak on another feature of the agricultural situation.

We are all aware that in the last ten or fifteen years a limit has been found in the fertile valleys of the Nile. The fertility of the grass of the United States of America—every blade of grass is producing beef. Production has gone in that direction as fast as it is possible to send it with the present population and the present methods of farming. I won't say we cannot increase the production, because the State of Iowa can produce as much as is produced in the East under profitable agriculture. Iowa is doing its best, and so is the whole Mississippi valley. All over the great West, between the great range of mountains and the great Pacific coast, we find the whole United States taken up; but not only so, but settlements have gone down south to try latitudes where they can scarcely make a living, and west to the American desert, and

to the north, where wheat freezes in July. Not only that, but it has been discovered that the simple power of the American people has made such a market. There is more corn in ten counties of Iowa than is used in the whole United States. The whole western hemisphere is dumping into this market. Over ten million dollars a month for farm products are coming into this market. Commerce has been pushed as far and fast as it can be obtained. It has become one of the greatest dominating influences. Steers grazing on every hill brings prices down, and that, operating in connection with the beef trusts, has brought things down to where we find them to-day.

I merely wanted to open this ball and have the minds of thinking men turned upon it, and I will now take my seat.

Col. John Scott: Mr. President, I trust you will pardon me for just a word. I am very strongly impressed, as was said by Mr. Wilson, with the strength of the paper, the fortunate points you have chosen to present to us to-day, and the thoughtful care with which you have presented the facts and your views and the deductions you make from them. At the same time I would like to say, if you will allow me to criticize it at all in any way, that the view is hardly as cheerful as I would like. That is what is the matter, is it not? But is it not as cheerful, really, as the circumstances will justify? We are too much accustomed, Mr. President, to look upon the present as everything. Now, I know as well as any man, that to-day is the only day we have. I know that yesterday is gone and that to-morrow may never come, and to-day is all the time we have. But the world has gone on for thousands and thousands of ages and there is coming a to-morrow. The present has only been a day of the foundation for the future, and if we have not in this year of grace, 1889, talked with the temple and sang glory, glory, to the cap-stone of the temple that is finished, we have laid, with the magnificent gifts of providence during the past two years, foundations broad and deep, not only of which the world may be glad, but of which we, who are feeding and furnishing the world with its resources, may also rejoice. Therefore, I almost would have preferred you had not said that prosperity has not come. The fulfillment is not here, but the day is not here, and the to-morrow and the next year and the years to come will build up this great temple of prosperity of which we to-day are the pioneers in this great country of our adoption. Upon this land of our adoption, I say, we will feel this prosperity that we ourselves shall live to see and which our sons and daughters shall

glorify. I believe in this, and though I did not come here to criticize, I do not feel satisfied to have this opening meeting of this old association opened with these gloomy views. I feel that it is no time for us to lose our courage. Let us take part and go on and do that which our hands find to do, and do it with our might. While Iowa feeds scarcely anything than its own people, it cannot feed the world. But, while it cannot do that, its capabilities have not yet gone far in the way of development.

Now, a suggestion in regard to the cattle. Where do we stand to-day? A few years ago what was our complaint? Some of you said—Mr. Wilson said something about what a man could not have said last year. What did men say three or four years ago? What we said in regard to this cattle business, we may say, is now almost at an end. I think most of the signs are cheering and looking up. Where do we stand now? A few years ago we were complaining that we had to raise cattle upon land we had to pay cash for, and again, we had to pay interest and taxes upon that, in order to raise our cattle. While we were doing that we were complaining of the other men farther west, who were doing the same thing on lands they had not invested a dollar in, nor paid a penny taxes upon. But their evil day has come. They have lost their profitable business. I do not know, Mr. Chairman, that I ought to trust myself to speak of the misfortunes of these grand and excellent men, many of whom we have associated with in the past, the cattle barons of the West. They were engaged in doing what we would have liked to have done, if we could, but their day of prosperity is a thing of the past, and the day of reckoning has come; and not only them, but the very banks they did business with have themselves gone to the wall. While they are going through with their misfortunes we are putting our cattle on the market in connection with their cheap cattle which they are rushing onto the market in order to save themselves as much as possible; we are submitting to that state of things, and as soon as that has gone by and the great surplus of the cattle, which we cannot much longer carry, has gone into the barrel, then comes our time, because the time has come that the cattle the world requires must not be the scrub of the range. We must breed them, and rear them, and care for them in the long winters, and we must put them on the market of grain in quality, which we all know is required for paying purposes. We shall soon be through with this ruinous competition.

Mr. President: I did not purpose to discuss these matters now,

nor at any time. Something has been said in regard to the pioneers of this association. I call your attention, Mr. President, to the fact that the old men with which you and I and others have been associated for nearly twenty years, are dropping by the way. But few are here now—mostly the younger men—but where are those other men who united with us in the organization of this association nearly twenty years ago on the Cedar river, away below us. Some have left this State; notably, Knapp and Stacy have gone—cautious, earnest workers, but they have sought pastures new. Others again, I might mention, are at their homes enjoying the fruits of their labors. There is Mr. Luce, of Iowa City, Hon. J. B. Grinnell, Mr. Smith—those men who have occupied the chair which you, Mr. President, honor to-day, and last, but not least, among these men, let us drop a tear on the handful of earth that covers the remains of A. S. Welch, who for many years was at the head of our association. I might have mentioned our aged friend, Mr. Clarkson, who has been mentioned before, but I take this privilege of mentioning the names of those who, in early times, took up the standard and carried it along when the publication of our work was done by the public spirit of these men. [Applause].

John McHugh: One year ago I had the honor of presiding over this association. It was suggested to me by some person interested that he who succeeded me was a sort of free lance, and for that reason it would be a good thing to keep him from occupying the position in this association which, by virtue of his intellect and ability, he was so fairly entitled to occupy. I had the privilege of naming the committee, and could have so shaped it that it would have been impossible for him to have occupied that position to-day, perhaps. But I selected the committee myself which selected our distinguished president, and now since I have listened to the address he has given us, the far reaching remedy for the evil he speaks of and which he probed so well, I feel that I can congratulate myself on the appointment of that committee, and congratulate the committee in making the selection they did. [Applause]. I am reminded as I listened to the address of our president, of a remarkable letter once written by Lord Macaulay in reply to a request by Randall asking him what he thought of democracy and Thomas Jefferson. It says: "He presided upon principle, high, low, rich or poor, wise or unwise, virtuous or vicious; all were clothed with equal power and authority." He says: "This is mostly, in my judgment, the democracy of Jefferson." So long as we have a great

west we need not fear a surplus population, but the day will come when America will be as thickly populated as old England, and the old country will be overrun as was the Roman Empire by the vandals of the north. Men will cry out that there is no justice in hearing poor people beg for bread while the rich ride by in their carriages. I hope this is not in store for you and me; but if we do not, theirs, in my judgment, are in conflict. The thought that inspired that remarkable letter I account for from the fact that Lord Macaulay lived among different surroundings and in a country composed of thirty-five million people, while thirty-three thousand of people owned the land. There was no sympathy between the working people and the land owner. Here we have nine million men standing between the rapidly increasing capital and the throes of the country. That never can happen, and I cannot but think that not only can the farmers prevent the ruin of our country from the rising of mobs, but they can also right the wrongs that arise.

I am a good deal of a partisan, and I am zealous, but if I had to choose between party lines and the interest of the farming community—if it takes that shape—I will step forward and take my place with the farmer. [Applause]. I shall be glad to hear from others.

Mr. Lathrop: Mr. President and gentlemen of the association: In the rightings of these wrongs that have been brought up and spoken of here to-day, there is something that lies at the basis of it—I mean the power to right them. I think it is knowledge, education. You have alluded in your address to educational institutions gotten up on purpose for the farmer, to train them in a particular trade. I look upon that feature of your address as one of the most important. I refer to that part which refers to the farmers' institutes. I know of no institution in this country that is so important, and where such an education can be gotten as can in that institute. I live in the Athens of Iowa, where educational institutes are piled all around me. You are sending your sons and daughters there, not by thousands, but by the hundreds. But those schools all combined are not as important as the one to which you have alluded. We want that measure brought before the legislature, and I suggest—I will not suggest it, because you will put me where I do not want to be, perhaps—but that question could be brought up here and put in such shape as to bring it before our legislature, in order to get from them what we want, to support this educational institution. [Applause].

Mr. Sheehan, of Osage: Mr. President and gentlemen: I have

heard this discussion and have been very much interested. There is nothing that interests the farmer as much as when you touch his pocket book? I have heard the dark side of the discussion and have also heard my friend Scott and his side of it. Now, I have heard this for the last five years; that this competition we have had—and I presume you all have heard it for the last four or five years—that they were about in the last ditch, as they call it; but yet, when you will see the receipt of these cattle, month after month and year after year, how much are they diminishing? Are not they increasing? Are not there more of these cattle in the year 1889 than there were in 1888? We get up here and talk at meeting after meeting, and talk about what those men are doing out on the plains. Colonel Scott says that we would like to do it if we had the means, but, Mr. President, what right or justice is there in this government of these United States, allowing men composing foreign syndicates to pile up lots of money and come to this country, and out on the public domain, aliens of our country, who do not pay one cent of taxes and who are not subject to the laws of the country, to come here in competition with you and me and every other farmer of Iowa and the west? If we wait, or if the congress of the United States will keep us waiting until those parties on the plains are run out, when they are run out you and me will be run out and all the farmers of the northwest will be run out. What have we done in our meeting? Have you appealed to your senators and congressmen, at Washington? Would it not be right and just to ask that these syndicates, even if they have the privilege of pasturing those lands, that they should pay so much per head for these cattle. Have you asked it of your senators? We ought not to find fault with them for doing what they are permitted to do. Then, as the paper says, if the farmers will rise in their might and let their wants be known they will, in all probability, accomplish something.

By motion of Mr. Smith the address of the president was referred to the committee on resolutions.

Mr. Wallace: The next on the programme is the appointment of committees. I will appoint as the committee on resolutions, H. C. Wheeler, Hon. James Wilson, Hon. J. B. Harsh, Martin Flynn and C. E. Stubbs.

President: We will now listen to the report of the committee on membership fee, appointed at the last meeting, and which was instructed to report at this meeting, consisting of the president and vice-presidents.

Resolution read by the secretary, as follows:

Resolved, That the constitution be so amended that the membership fee for new members shall be one dollar and the annual dues one dollar.

Signed by the vice-presidents.

President: The subject is now open for discussion. Heretofore, you will remember, all new members were required to pay two dollars and after that one dollar annually. The resolution now is, for the payment of one dollar fee for the new member and one dollar annual dues. The question is now open for discussion.

Article six of the constitution, which provides for a two-thirds vote, on change of constitution, was read by the secretary.

By motion of Hon. James Wilson, the rules were suspended, and the resolution was adopted.

President: Is there any further unfinished business?

Mr. Franklin: Mr. President—One matter in regard to our annual proceedings. Last year we failed to have funds sufficient to get them bound; and I suggest, in order to get our volumes bound for the members, that a local committee be appointed to solicit members at this place—to solicit membership. I make a motion to that effect.

Motion carried.

President: I appoint, as that committee, Messrs. Daggett, Barney, Patterson, Harriman, Vale and Church.

Mr. Blakeley: I would suggest that another committee be appointed. At the meeting of the Wool Growers' Association, and also, at the meeting of the Swine-Breeders' Association, committees were appointed to confer with each other, or to act with them in connection with a committee by this association, to ask our legislature to provide a bounty for wolf scalps, with a view to their speedy extermination. Let me say a word on that subject. It is a fact that wolves, good, big, stout timber wolves, that are more than a match for any dog, are on the increase in the State. They are found not only along the streams and in the brushy lands, making it impossible to raise sheep and unprofitable to raise pigs; but they are on the increase in the better portion of the State; and the county bounties, ranging from one to five dollars are inadequate to bring about their extermination. They are driven from counties where there is a bounty of five dollars into an adjacent county where there is only a bounty of one dollar, or they are not captured at all. This is a crying evil. Our lands along the streams, which are best adapted for sheep, cannot now be used for that purpose on that account. Sheep cannot live on account of the wolves. It will

not only be a benefit to our land-owners, but it will be a benefit to the surrounding towns, and to the tax-payers of the State, if these rough lands could be covered with hundreds and thousands of sheep, which it is now impossible to do. I ask that a committee of one be appointed in connection with the committee from the Swine-Breeders' and Wool Growers' Associations, to act in connection with them, in order, if possible, to induce our next legislature to take action in the matter.

Mr. George Franklin was appointed as that committee.

Mr. C. A. Huston, it was announced, would be unable to attend the association, because of a session of district court, at Dubuque.

President: The next paper, "Profits in Dairying," by Hon. H. D. Sherman.

H. D. Sherman: Mr. President and gentlemen: Knowing Mr. C. A. Huston was to read a paper on "Dairying," I knew it would be an able paper, and I only prepared a few thoughts, knowing that my paper should follow his, and discussion to follow both. My paper, therefore, is necessarily short upon this topic, not because the dairy interests are of a limited moment in the State of Iowa, for we claim to-day that Iowa is the first butter State in the union. We claim that we make more butter than any other State, and my paper on this subject is only short because I expected Mr. Huston to precede me.

HOW CAN WE MAKE THE DAIRY MORE PROFITABLE?

BY H. D. SHERMAN.

It has been said that farmers as a class follow in the ways of their ancestors, and that they are slow to make changes in their methods until compelled to by force of circumstances. Continued failing in any pursuit forces men to seek other employment or adopt other methods. Shrinkage of values of all agricultural products, and especially of dairy products the past season, has been so great that dairymen are beginning to inquire: "How can we make dairying more profitable?" I would reply that it can be made more profitable by reducing the cost of production. Until we have a revolution that shall change the basis of values of all agricultural products, we must make up our minds that the day of profit for loose slipshod dairying

is a thing of the past. The days of moderate prices have come, and judging from all the conditions that surround the dairy world, no doubt they have come to stay. And if it be true as is maintained by many of our most practical and intelligent dairymen, that milk in this country can be produced at one-half its present cost; is it not better that we study the economy that reduces the cost of production and thereby make a profitable business of producing milk at such figures that the whole world can afford to eat good butter. This would be death to oleomargarine.

Seeking to make dairying more profitable, we can to a great extent control the cost of production, but we cannot control the markets.

We can make dairying more profitable by weeding out of the dairy all cows that do not produce more than 4,000 pounds of milk a year, or whose milk will not make at least 150 pounds of butter. This sifting, no doubt, will throw out at least one-third of the cows that are now kept for dairy purposes in this State, all of which are kept at a loss. In order to make this selection properly, the dairymen must be better acquainted with each individual cow of his herd. He must know by weight and measure the amount of milk each cow produces, and also the value of that milk per hundred pounds. He should also know how many days of the year the cow will give milk. It is not sufficient to merely know the amount of product of the whole dairy. This is no justice to each member of the herd. One cow may be eating the profits of another; and, if so, the unprofitable one should be sent to the butcher's block without delay.

We can make dairying more profitable by taking better care of the cows. An important sequel of success in dairying is "comfort for the cows." This not only implies a bountiful supply of appetizing milk-producing food both summer and winter, but it requires that the cows be protected from the inclemencies of the weather at all seasons. If cows are exposed to cold storms at any season of the year we immediately find a shrinkage of at least twenty per cent in the flow of milk.

For comfort the stables should be warm, yet well ventilated, the cows well bedded and their droppings regularly and promptly removed. The use of absorbents to take up the liquid droppings in the stable will not only render the atmosphere more pure and healthy for the cows, but when returned to the land will add profit to dairying by increasing the fertility of the soil.

We are frequently asked which is the best and most profitable breed of dairy cows? The answer depends very largely upon the environments of the dairyman. In general terms it may be answered that the best dairy cow is the one whose entire annual product, including milk and calf, gives the largest per cent of profit over and above the cost of her care and the food she consumes.

At this point we would remark that the man who can demonstrate by actual figures the answer to the above question, is on the high road to success in dairying. It is evident that the most profitable cow that it is practicable for the average Iowa dairyman to keep is a grade of whatever breed it is decided to propagate.

The fawn-like Jersey, that has been pent up in her island home and bred for quality of milk for generations will, without doubt, by intelligent breeding and care, together with a bountiful supply of Iowa provender, grade up, broaden out and develop into a most valuable dairy animal for the western

farmer. When we take into account the cash value of the amount of product derived from a given quantity of food consumed, the Jersey is entitled to the studious consideration of the intelligent dairyman.

It may be remarked that feed is so cheap in Iowa that the difference in the amount of food consumed by different cows is of little account, but we must concede that provender is the cost of production, and until we get down to the economy that takes into account the whole problem of the cost of production, we shall not obtain best profits in dairying.

The Holstein has been designated as the skim-milk cow. The quality of her milk as a rule when she first came to this country was the result of her treatment. Fed on the coarse, sour grasses of the low lands of Holland, the country that has been rescued from the sea by its stolid, plodding, patient, diligent, persevering inhabitants, and bred for generations for quantity of milk, without ever even having the smell of corn, no wonder she earned the appellation of skim-milk. But by intelligent breeding, care and feeding with a bountiful supply of Iowa corn, the Holstein in this country has demonstrated the fact that she can be made not only a dairy but a winning prize butter cow as well.

The Short-horn full-blood cattle in this country are just what we have made them. The Short-horn breeders have vied one with another to breed out of their herds every vestige of a milking strain, and to-day it is a difficult matter to select a male animal from a herd of Short-horns that can be depended upon as a productive dairy animal. The Short-horn was no doubt once a dairy animal, and we now have many grade Short-horns that are good milk and butter cows. But they are very largely from the descendants of the cast-off herds that were not miserly enough in their make-up for beef purposes. We may set it down as a fixed fact that our domestic animals are to-day just what we have made them by care and breeding. In these days among the breeders many anathemas are hurled at the scrub, but if the finest bred Short-horn herd in Iowa should be turned upon range country to shirk for themselves, exposed to all the rigors of the climate, within a few years what would be the result? I answer, scrub.

We can increase the profits of the dairy by intelligent care in educating the cow to give milk more days in the year. A large per cent of the cows drop their calves in the spring and stop giving milk in November, going dry at least four to four and one-half months.

In cold, stormy weather, in the month of November, when the cows are out in the field hunting that other spear of frost-bitten grass, the dairyman is sometimes heard to say: "My cows are drying up." It would be fully as appropriate to say, they are freezing up.

The dairy can be made more profitable by the exercise of better intelligence in the cultivation, gathering and curing of special milk-producing foods, such as early cut clover hay, early cut oats fed without threshing. The cows will eat it all and the straw makes the best of stover. When oats sell at sixteen to eighteen cents a bushel it is poor economy to pay six cents a bushel for threshing what you want to feed to milk cows.

The greatest economy of all milk-producing food is the corn crop, cultivated, gathered and cured with special reference to the production of milk. The different plans and methods of handling the corn crop I have not time to discuss in this paper.

With regard to the cow, we may set it down as a rule that if she can not by proper care and feed be made to give milk more than seven and one-half months in the year, she is unprofitable for the dairy.

A better profit can be obtained in dairying by the exercise of greater care and cleanliness in handling the milk, and especially the milk and cream that is intended for the creamery. Too often the language of action says: "It will do for the creamery." This is all wrong, for if salvation comes to dairying in Iowa and renders it profitable, be assured it will be through an intelligent and economical creamery system.

Twenty-five years ago the consumers of butter in the great markets were largely supplied during the winter with butter that had been made in summer and held in cold storage. There was but a limited amount of butter made in winter, and that was of very uneven quality and color. The dairyman who made good butter and held it till winter, expected to get from twenty-eight to thirty cents a pound, and sometimes higher figures were obtained. But those days of high prices for held butter are past. Shrinkage of values of all agricultural products, as well as that of manufactured goods, has established another basis of values. The demands of our markets for butter have undergone a change in that a large portion of consumers now require fresh-made butter in winter. This change in the condition of the market requiring fresh-made goods has been gradual, and each succeeding year the demand has been more general. The failure of the dairymen to respond to the wants of the markets and supply a good article of fresh-made butter in winter, at figures that could have been made remunerative by intelligent and economical dairying, has been an incentive to the oleomargarine manufacturers to supply that want with a counterfeit article.

There now exists a mistaken idea among farmers with regard to the relative cost of producing milk in summer or in winter. The opinion very generally prevails that it costs more than double to produce milk in winter to that in summer; and acting upon this conclusion a very large per cent of the milk product of the country has been produced on grass in summer months. It is estimated that 85 per cent of the whole milk product of the United States that is made into butter is produced in the summer months, making an over-supply of butter in one part of the year and a corresponding shortage the balance of the year. It is claimed by some that we produce so large an amount more than we consume in this country that it must be made exclusively on grass in order to meet competition. This is again a false position. Last year we exported about 20,000,000 pounds of butter, and when we consider the fact that there was 40,000,000 pounds of oleomargarine consumed in this country as butter, or its substitute, it requires no great amount of figuring to show that there is room for a large amount more of fresh-made butter of good quality. If it is furnished at figures and at a season when there is a demand for it, fine fresh-made butter finds but little competition in oleomargarine at any season of the year. Oleomargarine takes the place of held butter and butter of medium and lower grades.

As a conclusion, it is evident the thing for the dairyman to do is to consider the economical production of more butter in winter. Many of our most intelligent and practical dairymen claim that it costs but little more to produce milk in winter than in summer. State Dairy Commissioner J. R. Brown, of the State of New York, is one reckoned as saying that he can

make butter in that State the year round at a cost of sixteen cents per pound. The Hon. Hiram Smith, of Wisconsin, says that he can make dairying profitable in that State and sell his butter at sixteen cents a pound. The subject of winter dairying is beginning to engage the attention of dairymen in the middle and eastern States as the only possible plan by which they can make dairying profitable. Shall the dairymen of Iowa stand idly by and say it won't pay, while those in eastern States pay double for the feed out of which to produce milk and butter, and supply the same market that is open to the western dairyman? Here is a problem that the economical, enterprising, intelligent dairymen of Iowa will soon give more thought and consideration.

DISCUSSION.

President: Gentlemen of the convention: You now have one of our State officers before you, and I wish you would turn yourselves into interrogation points and ask all the questions you can; ask him all the questions you wish to.

Mr. Sheehan: Mr. Chairman I would like to ask Mr. Sherman if he knows what the average creamery of this State pays this year for cream.

Mr. Sherman: Not this year. I will state that the estimates I have made were on butter of last year. We cannot get the summary until the end of the year. I will say that the average net price received by manufacturers of creamery butter last year, according to my reports from the State, was twenty-one cents a pound. That is, according to the reports I have, given me by the creamery men. That I understand to be what the butter netted to the creamery. The creamery sent the butter to the market, taking the commission out. It is lower than that this year, though, two or three cents. You asked the question, what was paid for cream, and I have to answer it by saying that I have not gathered the statistics for this year.

Mr. Richard Baker, Jr.: Mr. President, the gentleman in his paper seemed to lay his chief stress on the production of milk and butter. How will he solve the question of making a cheaper product and give us the remedy? By what method, with such means as we have, can we feed them cheaper and have more butter?

Mr. Sherman: Mr. President, if I had time I could talk from now until twelve o'clock, in answer to that question.

President: Answer it as briefly as possible.

Mr. Sherman: In the first place I would get the better machinery, and when I got it I would have every dairyman get a better

quantity of milk, and know how to handle it. I would take it in a better condition than is usually done. I take it for granted that Mr. Baker has an engine on his farm with which to cut up feed, corn fodder, to feed the fat steers; that he keeps the engine well oiled and in good condition. In the butter business the cow should be kept in better condition, and the machinery with which to make the butter in better condition. The care of the cow is the first consideration, and that of the machinery is the next. J. K. Brown of New York gathers in the product of each cow in that State, and we frequently hear New York quoted as the great butter State—that they have gone in advance of us. From his statistics, gathered here and there all over the State, the better cows in that State, he says, do not average over three thousand pounds of milk a year. He makes that report. Now, if we are keeping cows that do not yield over three thousand pounds of milk, we are feeding those cows at a loss; and there is the first cost of production. Go down into the dairy districts of this State and you will find from twenty to thirty cows, averaging all the way from five to six thousand pounds per year; and those are not extraordinary dairies. They are not kept as special dairies. They are kept by farmers who raise oats, corn, potatoes, etc., and yet, at the same time, if they have a cow that does not give good milk they do not keep her. There is quite a difference between keeping cows that yield three thousand pounds of milk a year and cows that yield at least five thousand five hundred pounds on an average. Can you see any way to reduce the cost of production?

The method of treating it: We have the conditions so differently. Not in every case, but in many, they do not get all the cream; they do not have the cold water; do not reduce the temperature; no ice; and you know if you let the cream thicken before you get the cream you do not get it; and, in the next place, you lose more than half of the feeding value of the skim milk. Here, again, you lose on the cost of production. I might speak of a thousand points where we might improve on the production in Iowa to reduce the cost of it. We are bringing in new methods and using the centrifugal machine; and we might say we are getting all cream out of the milk, and that, too, is sometimes badly managed. I was at a creamery one morning this year, and two loads of cream stood there. We spoke to them, saying "good morning, sir; you have a large load of milk here?" "Yes, sir." "Taking it to the centrifugal machine?" "Yes, sir." "How far have you traveled with your milk?" "I have traveled twenty-four miles to make my

round trip." If there is any gentleman who has been criticising the separators, or the skim milk, well he may. Mr. Bennett criticises the skim milk. No wonder. The other man said "I traveled only twenty miles to make my round trip." I have not introduced the centrifugal machine into a neighborhood where you have to travel one half that distance, and think that the results will not be entirely unsatisfactory. In other words, if you make dairying a profitable and paying business, Iowa cannot afford to lose the feeding value of the skim milk.

Mr. Sheehan: Mr. President, I would like to know in what way the people of New York are so far in advance of Iowa dairying? I am an Iowa man, and would like to know now how far ahead of Iowa the people of New York are, in any shape or form?

President: Let me suggest that the answers be brief and pointed.

Mr. Sherman: One thing is, that the butter and dairy interests in New York have been kept up much longer than ours, and there is no doubt but that, to some extent, especially in the making of cheese, they are in advance of us. I do not know but it is generally conceded, but I do not say that New York is ahead of us. I claim that we can make as good butter as New York can; and in fact I have the honor of having put my butter beside that of New York and taking away the ribbon from it years ago.

C. W. Norton: Mr. Chairman: A gentleman by the name of Mr. Kelley runs a creamery, who says that three-fourths of his cows are grade Short-horns. He is a Short-horn breeder, and has been for fifteen years. He says they furnish a large quantity of milk, and have raised nice, large calves, which he thinks is worth more than all the rest. I understood you to say that out on the plains our Short-horn cattle will be scrubs, knowing how these Jerseys, Holsteins, etc., have been improved. Will not other cattle become scrubs as well as the Short-horns?

Mr. Sherman: In the first place, I do not think my paper commits me to the Jersey or the Holstein. I am only pleading for the dairy cow. I say that they are good; and probably to-day the majority of good dairy cows, that are paying a profit in Iowa, are grade Short-horns. I spoke of putting the Short-horn out on the plains, using them for my illustration, because I believe that we all acknowledge the Short-horns as the finest. Now, does that give you any comfort?

Mr. Baker: There are two policies pursued in this State: the making plan and the saving plan. Now, in order to reduce the

cost and enlarge the profit, some men claim that the making plan is the one to be pursued. The making plan is not the saving plan, because they are exactly opposite to each other. If we increase the quantity and quality of the milk, it is done by an increase of feed and attention. If we save the feed and the attention necessary, we lose in the amount and quality of the milk. The operation that we want to know how to perform is, to make some money out of it.

President: Are you asking him a question, or not?

Mr. Baker: Yes sir; I just giving my reasons for asking the questions.

Mr. President: Ask the question first, and give your reasons afterwards.

Mr. Baker: Is the policy you would pursue to cheapen the cost the making plan or the saving plan?

Mr. Sherman: Both.

Mr. Baker: Please give us the making plan. (Laughter.)

J. W. Myers: The question I wish to ask you may need, perhaps, three minutes' illustration. For instance, half a dozen farmers are interested in a separator machine creamery, and we are running quite a large system—on the gathering system, about which you have remarked that it is hard to put a substitute in the place of it. Since we have been running we are doing as others, getting our cream here and there, and not using ice-water. If we could substitute the cooling system and run on the cream gathering system, in its perfect state, and again, if we could have a separator system beside us, where there are not, perhaps, even as many as a quarter of the cows that the country could maintain, and the cows are scattered, requiring large circuits in the gathering system, and we are questioning whether we will continue with the cream gathering system, or whether we will throw that system away and go into the cream separator business in that community, or, shall we go on under the old system and improve it by adopting the cooling system, and in regard to the cooling system, is the system of cooling with ice-water so much superior to the separator system, or, will the separator system force its own way, and should we direct our attention to the separator system and go on with the cream gathering? I think, perhaps, that is the question, if put in proper shape, which the farmers of our section would be glad to be informed on.

Mr. Sherman: The question is a broad one, and is a question which requires a great deal of wisdom to answer. I take the position

that no one is competent to answer it, unless he knows all of your environments. I take the position that there is no advantage in any system of creamery, that I know of, if you take economy from the gathering of cream. Each individual dairyman surrounds himself with the best conditions, to get the cream in the best way possible; and I will say that, in my judgment, for the use of patrons who set their milk at home, that there are advantages in the submerged system, that I know of.

Mr. —: Is there any advantage in the submerged system over the gathering system?

Mr. Sherman: I cannot advise you. In all localities we find some patrons of creameries that do not furnish a good quality of cream. Is not that a fact?

Mr. —: Yes sir.

Mr. Sherman: They do not give you a fine quality, and the result is, you cannot make a fine quality of butter, and the credit is given to the temperature system. You have to suffer in price, because you cannot get the water for cooling. If you are in a community like Sibley, of State Center, who has no one to come in and take his patronage—where there are no black sheep among them—I mean men who do not make good cream, it would be different. If a man does not make good cream, he sends it back, or refuses it. But the facts are, the fools are not all dead in this State; and the creamery men are among them. A man says, "If you don't take my cream the other man will take it." And that has been the trouble; that individual creamery will be anxious to get more cream; and so, takes an inferior quality when he should not. This condition of things exists. And why? Because there is competition. When there are two sets of teams running over the road the butter-maker pays for it in the cost of the cream. They pay a discount by taking a poor quality of cream.

Mr. —: Will you please give us your opinion as to the comparative value of the cooling and separator systems?

Mr. Sherman: I think you can make no better butter by any process than by the submerged system. I will refer you to P. G. Anderson, in Linn county, one of the most intelligent dairymen we have, who has, also, the largest individual creamery in the State. He has been driven out of the cooling system and forced to take the separator system, by force of circumstances. The cooling system has been driven out in the hands of one of the most intelligent dairymen in the State.

Mr. Gabrielson: Alongside of me is a separator, whose work I

know of. I have found by use of the Cooley system and abundance of cold water, at a temperature of 46° to 48°, I have found by trying that we can get a pound of butter from twenty-two pounds of milk. These are Short-horn cows, with one or two Jerseys among them. I am a friend of the Short-horn cow, although I am working toward the Jersey cow; but I am not as yet satisfied with my experiments.

Mr. Daggett: I would like to ask Mr. Gabrielson if he ever sent any milk to a separator to see how much he could get there.

Mr. Gabrielson: I have succeeded in getting good butter from the separator.

Mr. Sherman: I want to say one word to these gentlemen here. I do not think there is advantage enough in the separator system, in handling the milk over the cooling system. There exists a demand for the adoption of some system by which milk can be delivered once a day. The farmers are rebelling against the delivery of milk twice a day, saying that it is too much. I saw seventy-five creameries during the last twelve months, and a large per cent of them are co-operative.

Mr. Blakeley: I would like to ask what you think of gathering the cream from the milk, testing it, and making the returns according to the test.

Mr. Sherman: In the early stages of the gathering cream system we commenced to gather cream, paying for it per inch, of quart measure. It was a failure, and demonstrated to every intelligent mind that there was no justice in it; that there was a very great variation, and the result of it was the introduction, or the discovery of a method of testing that milk. One way was to take a quart of it and find the average by churning and measuring the butter and paying for the cream according to the value of the butter. Another test was the oil test, churning it and reducing it to oil. Those are the two methods used in Iowa to-day by the creameries to pay for the cream, and I believe it is the only just way. There is no justice in any other system. I do not say it has always been justly, economically and carefully managed, from the fact that the man who is gathering the cream has been the cheapest man that could be hired. We have these cream gatherers who are good for nothing else than to gather cream. I will say that it is better for you to pay for their board at the county house than to allow them to gather your cream; and you will find it will pay you much better to employ intelligent and trusty men.

President: I would like to ask Mr. Sherman a question on this

point. Do you consider the amount of butter as shown by the test a fair test of the butter value of the cream?

Mr. Sherman: I believe it is the best thing we have discovered.

President: How near correct?

Mr. Sherman: Within a small per cent. It will show more butter than you can ordinarily churn out of it.

President: Another question: Do dairymen in the dairy districts in this State raise their calves?

Mr. Sherman: They mostly raise them, as far as I know.

President: Are there more calves raised since the separator system came in than before, or not? Are there more or less raised?

Mr. Sherman: There are less calves raised than five years ago, and I suppose you know the reason.

President: Has the separator system anything to do with the reason?

Mr. Sherman: I think it has in certain localities.

President: Do you know of calves being killed in this State from an hour to a week old and shipped to the Chicago market for veal?

Mr. Sherman: I do not, sir.

President: I put the question for the reason that it was put plainly and directly to me, and the assertion was made that that practice was carried on in one or two counties in this State.

Mr. Sherman: As to the reduction of calves and injury to them where the separator system is used, I will say that I think it is not the fault of the system, but the improper manner of conducting it.

President: Now, you speak about the common purpose cow. I do not know that I got your remark, exactly. But it was at that point where you threw in something for criticism. I want to know what minimum amount of milk a year you require as consistent with profit. In other words, if you were going to weed out the poor cows, what line would you mark out?

Mr. Sherman: I would like to weed them out for five thousand pound cows, but I do not know that I can. If we have four thousand pound cows, that would be an advance in this State, but I do not think there is any dairy in the State that don't have five thousand pound cows that is satisfied with their dairying.

Mr. —: Do you think it is possible to combine milk and beef in the same animal with profit to both points?

Mr. Sherman: I will answer that by saying to you that I do know of herds of grade Short-horns that are paying good profits in Iowa.

President: How much do they weigh?

Mr. Sherman: I have not weighed the cows, but they are good grade.

President: Twelve hundred pounds?

Mr. Sherman: Some of them from eleven to twelve and thirteen hundred pounds. Their product runs from five to six thousand pounds annually.

Hon. James Wilson: One matter of interest in this paper read by the commissioner I do not want to be lost sight of. You admitted our right to criticize, as well as to ask questions. I am not much of a dairyman, but I have endeavored to keep close watch of the growth of the dairy interests of this State. Mr. Sherman has been telling the dairy people of Iowa for years how most profitably to improve their herds and how best to make the butter. That was a grand work he read. He has taken a step further this year, and emphasizes the necessity of making use of skim milk, and emphasizes the fact that any system of dairying that affects the use of the calf is a losing business, and not a good system, and admits it. If we had a little light on this point, as to what we are to do, it would be well. What are you going to do with the skim milk? The question comes at once; you have got to start the calf in the feed yard with that milk. We have in Iowa this year three hundred and thirty million bushels of grain. Part of the surplus of last year is in the cribs along the railroad, and more surplus is going in there this year. The dairy interest in Iowa has had its attention almost exclusively confined to the one question of making butter; and in nine cases out of ten we have been spoiling our cattle while we were at it. There has not been in all the years that I have bred Short-horn cattle for sale, a large demand from single dairymen wanting good blood. The question is, whether we Short-horn men have cows that will give good milk; whether she comes up to what a dairy cow ought to be, has never been called to our attention. Dairymen have not come up to that point, but Dairy Commissioner Sherman is bringing them to it. He has called their attention to the fact that in order to dairy profitably in Iowa, you must do something with the skim milk; you must leave the calf with its dam, so as to utilize more than the thirty million bushels of grain we have stored up; chop the feed and chop the hay. Now, there is no question in my mind but what a successful, profitable system of farming in Iowa must have cows, milk cows—must have at some time skim milk; and so, for that very purpose, the steer must as certainly be in the feed yard of the self-sustaining dairy farmer as the cow must be in

the stable. I believe Mr. Sherman is on record as telling us of the best ways to gather cream and make the butter; but I want to say to you that there is nothing that goes ahead of the old farmer's wife who knows how to make butter—none can beat her. I want to say, the State of Iowa should come to this point; to have the milk kept at home, butter at home, made by the family, and the calves carried along from the moment they drop. These are questions for us to consider, and I am delighted that Mr. Sherman has taken one step in that direction, because there is no class of farmers that need as much attention as these dairymen. I will repeat it, that they have been *spoiling* our cattle. I do not take the stand that the Jersey or the Holstein, or any of the other cattle, won't make good butter and good feed cattle. I take the position that whenever farmers get a cow that will feed well, they will find that she will milk well. Mr. Daggett may say, "I have a cow that will do that for me," and I rejoice if he has. I say I have cows that will do that for me, and I ask him to rejoice with me. That is the point I want to call attention to.

Mr. Barney: Why don't you bring one of those Short-horns down to the State fair?

Mr. Wilson: I was too busy.

Mr. Donnan: Mr. Wilson says he has never had an inquiry for one of his bulls from a single dairyman of Iowa. Don't you know that all of these dairymen don't know that you have Short-horn cattle?

Mr. Wilson: Yes, sir; it is not because they never heard of me; it is because they would rather give ten dollars for scrub cows.

Mr. Donnan: Mr. Sherman said: "Run \$250 for butter," etc., and that they do not have anything but Short-horn cows. That is a good thing for you to show. You tell the farmers they do make so and so. Why don't you go down where there is no competition, take in your \$250 cash, and show the people it is true! Don't stand up and tell them; get up and show them. Show me where there is a Short-horn cow, in the last ten years, where she has been brought up to the standard spoken of.

Mr. Daggett: I am perfectly willing to admit that the Short-horns have not got half the attention that they should have. They are like the people spoken of of old: "Resting in perfect security." I think you will not be much grayer before some of them will be down in Des Moines.

Mr. Donnan: I am perfectly willing to admit that you have good cattle, and you should go to the front and show them.

Mr. Smith: Mr. Sherman's paper hints that the Short-horns are not good for butter. I think within the last six weeks dairymen have come out from St. Charles, Illinois, to buy a car load of cattle in our town. And if any of you know where St. Charles is—it is about twenty-five miles from Elgin. He said he was a partner with Oatman Brothers. He came out to buy a car load of fresh cows—springers and fresh milkers. I used to live in Kane county, Illinois, and he heard I was there, and came to see me. After talking with him I told him I did not think it worth while, but as he was a Kane county man, I would go over with him. We found a man herding the cattle in the stalks, some seventy-five head of pure bred Short-horns, the balance mostly a well graded Short-horn. Two were three-fourths Holstein and two three-fourths Jersey, that I had traded for. We had no trouble in picking out the thorough-breeds. He culled them out to about twenty, and then commenced feeling of them to see whether they were springers. The first cow he picked out for a dairy cow was fifteen-sixteenths Short-horn. He picked out the best high grade Short-horns I had in the lot—would not look at Holsteins or Jerseys. The first cow he picked out, I said: "You don't want her." She was a big, fat cow, and I said: "She will kick the hat off of you." He says: "I will take her." He says: "If they don't make dairy cows, I will feed them. They will make good butcher's stock." He then told me he had a farm three miles from St. Charles, and he kept twenty-five cows, and his average, take it merely for a month, was \$550; that he came out there to replenish his stock.

Hon. James Wilson: I want to say one word to Mr. Daggett, so as to emphasize the point I tried to make when congratulating Mr. Sherman on the progress he was making in getting the farmer's cow. I believe we have, generally, the best beef steer in America, and the finest and best cows at the State fair. I did not make the point in favor of either one or the other. Mr. Daggett says why don't I, if I have cows that milk well, take them down to Des Moines and exhibit them? There is no test for that kind of a cow at the State fair. It is the butter cow, the farmer's cow, which has a calf each year, and will feed well. I have not been holding up the ideal, but am speaking of the cow, and I want to emphasize it again, that it will be profitable to the farmer for these two uses; and I think I said if the gentleman has a Holstein herd that fills the bill I congratulate him. As for myself, I would rather take the Short-horn.

S. N. Wright, of Elgin, Ill.: Mr. Chairman and gentlemen, I have been in the town of St. Charles. It is not two weeks ago since I was there, where there were Holsteins put up for sale. He had ordered a car load to go to Colorado. Mr. Pendleton was the strongest bidder I had in bidding for these Holstein cows.

President: I do not want to get this association into a discussion as to the comparative breeds of cattle. The question is, the possibility of combining milk and beef.

Mr. Rockwell: I came from Kane county, Illinois, and I am a frequent visitor there. I have been back there a great many times since I resided here. I am acquainted with the sentiment of the dairymen there. I am informed by my friends there that the grade Short-horn is a favorite of those dairy people to-day. I have asked myself this question: whence this popularity? I believe it comes from the fact that the Short-horn blood with the strong native cow gives the gradeage, or combination of making, as we say. It develops the most general purpose animal we have. The breeds will make a fine steer, and also a fine breeder, which I believe is the reason of their popularity. Mr. Sheehan can tell what he has in that line.

Mr. Donnan: I believe Mr. Wilson and our friends of the Short-horns are standing to-day on the ground where the friends of the black and white were two or three years ago. When the Holstein cows came to this country it was said everywhere, "they were general purpose cows." No man got a Holstein but said it was the general purpose cow, because we have a big carcass and a cow that gives lots of milk and raises nice calves. They came just exactly to the point that there was only one thing they wanted to do, and that was to take a general purpose cow and not the special purpose cow—the dairy cow—just as near as we can, and they stand to-day one of the best butter producers in this country. We have the Red Polls, for which large prices have been paid for several years. They think they are the general purpose cows. Murray, Gilfillan and McAtee stand side by side and claim that they have found the cow we want. On the other hand, I can go unto the Short-horns to-day, where they claim they get more milk than they want. I know of acres of their Short-horn herds, where there is abundance of milk, and good milk. I will tell you that a Short-horn cow can be made what we want her, but you can never do that by combining with other breeds. In one herd you can get butter and in another you can get beef.

Mr. Barelay: The Holstein men are rather bantering the Short-horn men to make an exhibit at the State fair. I just want to suggest, I believe it is barely possible that they may see in a short time where the Short-horn men will come and not only compete for the best honors for dairy cows but will see that they will yet capture the first premium from the dairy classes.

Mr. Sherman: Having provoked this discussion, I am not sorry about it at all. Please do not misunderstand me. I do not think I committed myself to any particular breed, except the milk and butter cow. That is what I am after; the granger's cow. I believe the most profitable cow for the average Iowa farmer to keep, is the cow whose product will give the largest per cent in profit, in killing, milk and calves, over and above the food she consumes. I used to live down at Elgin, and I am ashamed of it, because I did not have confidence in the dairy business. I do not think they do things straight when they shove their butter up to forty cents and let us suffer for it up here. I think I can tell whether people like large prices for good milkers. They buy them down there and milk them until they are dry, and when they are dry they are ready to go to Chicago. They do not keep them to rear them up. That is one reason they prefer Short-horns. I do not want to be understood as discriminating against Short-horns, but only want to tell you Short-horn men of this, since you have been doing what I have been telling you, and I am glad to hear you say that you are going to produce milk. I believe the Short-horn men have been breeding most miserly. This discussion, I think, has set us to thinking that we must combine the making of beef and carrying with it the dairy interests of the State.

Mr. Sheehan: I have been pleased to hear my friend Wilson and Commissioner Sherman. I think I never saw a man in my life that a little taffy did do more good than it did Mr. Sherman. He asked me if I knew where there was a good herd of Short-horns in this State, for milk, saying that he did not know, but if there was any such he would send them a customer. Friend Wilson talked much of it, and told what nice milk cows he had. We have a co-operative creamery. It is what we call the Rock Creek Creamery. Mr. Weinberg, post-office, Osage, is president of the creamery. We have paid over thirteen cents from the first day of April until the middle of November—the second Friday in November. We have paid from thirteen to twenty-one cents. I understood friend Sherman to say a little while ago—now, I am going to speak a word of encouragement to the people of this country on dairy

business—I understood him in his paper to say that the dairy commissioners of the State of New York, on those high-priced lands, can make butter, and make it at a profit, for sixteen cents. He also referred to those little dry knolls in Wisconsin, and to a man by the name of Hiram Smith, as authority for saying he can make butter at a profit for sixteen cents per pound. In this co-operative creamery, in Mitchell county, they have paid from April, until November last, thirteen cents, and the highest was twenty-one cents. At that time of year there is not a great deal of feed; and I would like to know why that is not encouraging. Do you know of any other business that will pay better? A year ago, in that county, a man went to one of these creameries and sent word out with the skimmers to get an account of every cow, from the patron, and have it brought into the creamery—the average each cow produced, and then sum up what the average of the cows from which they sold cream was, and we found that it was one hundred and sixty-eight inches of cream. I suppose you know that an inch of cream is one pound. The average of all the cows is one hundred and sixty-eight inches. That was the average for the year. There was one or two pretty well cared for, pretty well stabled, and they averaged two hundred and sixty-six pounds. There was another herd that made two hundred and twenty-eight pounds. Those herds were pretty well cared for. Leaving the two hundred and sixty pound herd out and the two hundred and twenty-eight pounds out, and the average cows—there were some fifteen hundred cows in the herd from which they got the average of one hundred and sixty-eight pounds of butter. Now, I would like to know what better business a man can do than to milk cows, when the average of those cows to that creamery, and if I remember right, that year—it was three years ago—I think it was an average of nineteen and three-fourths per cent.

Question: Where did they sell the butter?

Mr. Sheehan: At that time they sold it in New York. This was a co-operative creamery, of which Mr. Wymberg is president. Half of their butter they sent to New York and half to Seattle, for Washington Territory.

Question: What is the least they paid this summer?

Mr. Sheehan: Thirteen cents.

Question: Where did they sell this summer?

Mr. Sheehan: New York and Seattle. At this creamery I speak of, they have gathered as high as sixteen hundred inches of cream, sixteen hundred pounds of butter in the day. They do not run all

over the whole of God's creation. They are only running six teams over the whole road. They figure up the amount and pay every man. They gather with these teams. They have to discard their cans and go and get large tanks, made on purpose, and they send their six teams about and expect them to bring in the cream under this system. I was there two weeks ago and took dinner with Mr. Wymberg, and he showed me where they brought in as high as sixteen hundred pounds in a day.

Question: Do they set it in a common tank?

Mr. Sheehan: They submerge their cream. They have what we call a common Stockwell can. Most of them submerge the cream.

Mr. Sherman: You are showing us a better oasis than I thought there was in Iowa.

Question: Is this a co-operative creamery?

Mr. Sheehan: Yes sir, it is.

Question: And the figures you give are after paying expenses of gathering month by month?

Mr. Sheehan: Yes sir. I am not talking about any creamery. I am explaining what they have done. You settled it in your paper last year. I asked you, if you remember, you said twenty-one cents was net; you said; "Yes; it would not be as good within three cents." If it is not as good, certainly, it is because it costs more to gather it. Do you not know that butter last June a year ago, went to sixteen cents, and it did not go below that this year in New York. I know I was unable to pay thirteen cents in June, and this year I had to pay ten cents.

Mr. Sherman: It seems to me it was lower this year than any year I know of.

Mr. Sheehan: Now, I will answer the question as to what the herd of cows were that made the two hundred and sixty-eight pounds. Ten of them were thoroughbred Jerseys, five of them grades. The herd that made the two hundred and twenty-eight inches of butter was four thoroughbred Jerseys and the rest were high grades; twelve belonged to another man that sold to that creamery at that time. Those cows were fed and well cared for, and were high grade Jerseys, and that man's name was Richmond. He generally milked single, too, in the winter. He generally raised grade. He fed and cared for them, and took in for the eighteen cows for the summer season, without any grain or extra feed, but what they could get on the grass, \$600.

Question: How many had he?

Mr. Sheehan: Eighteen. He told me that he had not the books; the man that run the creamery had the books, but they paid him \$600 for the cows, on grass alone. During the months of June, July and August the cattle got no extra feed; they gave extra good grass to these cows; did not get any extra feed in that time. In the month of June, when these cows had nothing but grass—grass alone—I have seen on the side of the can a variation of one inch a day.

Mr. Sherman: Mr. Sheehan has explained why there is a variation. I am glad to know that there are some places in this State where they are doing so nicely, as it shows the possibilities to which we may arrive.

Mr. Sheehan: I have told you that they only varied an inch during these months, when they were upon grass alone. Whenever they commence feeding them corn you won't have the variation you do on grass. This is my experience.

President: It will have to be observed as a rule in this association that every person addressing the audience must address the chair, and not get up a discussion between members, such as we have had this afternoon.

Mr. Bennett: In regard to the separated milk for the cows, we have separators in our county, and the calves are going to market in a steady stream all the while, but it is not all owing to the separator system. We raise more than we want, but the separated milk is not a good thing for calves, Mr. Sherman says, if rightly handled. It is not possible to handle it so it will be good for calves. He says a man travels twenty-four miles in gathering the cream, and as a matter of course, it will not be good. I only live a mile and a half—it is not quite that far. You are apt to feed more than will be eaten, but you must keep the feed until night. That is not good feed in hot weather, even if it is put in a tank of cold water. I know a large farmer who only lives five or ten rods from the creamery, who takes the milk right from the separator to his calves, but you cannot make it as good as the set milk, and the calves will not do as well upon it. You cannot make good, lousy calves on separator milk, because you have to take it home in the morning, and your man is gone to work, and the driver won't handle the calves, and you cannot go yourselves; and so it is to be left until evening, and by that time it is not fit for the calves to drink.

President: There are certain things that might be attended to, and my observation in the past has been that they can be attended

to best at this stage of the proceedings, and one is, the renewal of the old membership and paying in your dollar.

Adjournment for supper.

EVENING SESSION—DECEMBER 4.

I take great pleasure in saying to you that we have to-night a very fine bill of fare. Three addresses, or papers, one by the Hon. James Wilson, on "Trusts," and one on the "Legislation Most Needed Now," by Prof. W. I. Chamberlain, and one on the "Big Four," by Hon. John McHugh.

I now take pleasure in introducing to you the Hon. James Wilson.

Mr. Wilson: Mr. President and gentlemen: My paper is short, because our theory has been that papers should simply suggest the discussion, and for that reason I have prepared but a short address.

TRUSTS.

BY HON. JAS. WILSON.

Speculation in lands, government bonds, railroad construction and other securities, incidental to the rapid development of our country, have measurably ceased, and those who desire to make money by their wits and keep out of the penitentiary have turned their attention to fortune making by controlling the staple products of the country.

Everything that enters into general consumption that can be controlled is more or less subject to combinations.

Farm products have not escaped, nor have many articles that are used in farmers' families. We had the barb wire combination that Iowa farmers destroyed. We are threatened with it again, and we are ready to fight again.

We had a twine trust that we beat by combining against it. We had an oat meal trust that could not live because people used less oat meal, and because limited capital will build oat meal mills. We had a trust in lawyers'

supreme court reports that died because the lawyers in the Iowa legislature combined and fixed the price of the books. We have a combination in school books because we do not insist on a statute preventing it. We have a sugar trust because we buy nine tenths of our sugar, and a duty of 80 per cent is maintained, while so much capital is necessary to build refineries that competition cannot readily divide profits. We have a trust in kerosene because railways built up the Standard Oil Company by rebates until it bought up most of the oil wells of the country, and became so strong that it is not practical to compete with it. We have a combination in anthracite coal, a home product, to limit production and keep up prices. And one in coffee, that is altogether imported. We have a beef trust that is likely to get an airing. It grew from railway rebates that made cattle shippers and railway managers rich at the same time. It is continued only by the same pernicious practice. Of all the trusts it has become the most insolent and far-reaching, absolutely controlling the price of cattle to the producer, which it has pressed down to rates current while it keeps up prices to consumers. It is gradually stopping of cattle in all the considerable towns in the country, thereby continuing increased shipments to Chicago where its buyers have had prices at their mercy for years.

Beef is very dear abroad—at famine prices in some European countries—while we get scarcely any benefit of it here. Buyers who met growers in markets formerly have disappeared, and one bid is all the shipper gets. Competition cannot enter against the cattle trusts because rebates are still given for the use of cars, that we know of, and what besides we hope soon to hear for. Congress has at last waked up to the necessities of the occasion.

We find in looking over the field that the most pernicious trusts have grown out of transportation favoritism, and to stop this class it is necessary to give all shippers the same rates. We find also that our revenue system does not of necessity create trusts, as many of the very worst have no revenues collected from them.

Whatever can be carried on with moderate capital cannot be successfully put in combination if railways do not give it advantages. Wheat flour presents a phase of the problem that differs from some others. It costs the consumer the price of two or more bushels of wheat to get the flour of one bushel, and flour is not in trust that I know of, but like many other factors in society, the miller maintains his wages while those of others have gone down, and maintains their general understandings. Iowa has stopped wheat growing and buys from her neighbors. Time will bring us back to growing our own breadstuffs and having grain grown at home again. Time will remedy some of the evils that beset us in this direction, but legislative action, state and national, is necessary. Buying up the idleness of a plant should be punishable. Combinations to limit production and put up prices should be made penal offenses. The use of our courts to collect debts for all trusts should be refused. Severe penalties should be enforced against all transportation companies that evade the interstate commerce law. If we cannot get redress this way government must build or buy freight lines.

The beef trust makes more each year than would build a railway line from the lakes to the seaboard. The beef trust would fall to pieces at once if the

farmer could ship his to the east, and to Europe, at the same rates the beef trust does.

These are the surface remedies, but I have not great hope of seeing them applied till farmers ask louder. It may take more drastic treatment to remedy present outrages than one likes to even name, but the parties that permit four men in Chicago to absorb the profits of a million of farmers are storing up wrath for some future day.

Our states are struggling with statutes to protect themselves that the courts declare unconstitutional. We had experience with courts in the barb wire struggle. Made up cases were decided against us as they have been in the beef inspection cases. If the states have no right to demand inspection let Congress enact it if it takes ten thousand officials a year or more to destroy the miserable scoundrels that grasp the profits of this business.

I hope our committee on resolutions will prepare a memorial to Congress asking such a statute, and also appoint a committee to wait on the legislature and ask a joint resolution to this effect, and also a penal statute against all trusts. Iowa farmers have brought things about before and we can again. We did secure lung plague legislation that stopped the disease at Chicago. We did secure the oleomargarine laws. We did several other things. Let us try again. The United States Senate has a very drastic bill in process of completion that will be introduced again. Let us stiffen their backs. The big four and others are to go before the Senate investigating committee that has the beef trust in hand. There is power to question them and I am persuaded it will be used, and if they do not speak freely there is plenty of power to hold them until they do, or until Congress adjourns. No court in the land can interfere.

We are told by half-baked lawyers that the Senate cannot compel attendance of witnesses. Deny this power to either house of Congress and you refuse them facts where the people demand a redress of grievances. The Leland-Stanford case is cited, where a court refused to compel Stanford to testify before a commission created by Congress, not a house of Congress. That is the distinction. The Hallet-Kilbourne case is cited, where the House of Representatives turned that person over to a court for punishment. Kilbourne was summoned before the House to tell what he knew about the people's money being used by a ring in Washington to improve private property in the District of Columbia. He got before a court on *habeas corpus*, but the court sent him back to the custody of the House. He refused to produce his books and was held by the House for contumacy until near adjournment. That is as long as a witness can be held. He was turned over to a court for punishment, with no federal statute with which to do it, and on acquittal sued the sergeant-at-arms for wrongful prosecution. The House could have sent for him at its next session and could have held him to its close. There is a lack of statutes for punishing a witness for refusing to testify, but no lack of power in either house to send for and compel attendance during the whole of a session, nor of power to punish, as far as holding during a session is punishment.

How far a statute could go in punishing by a court for refusal to testify before Congress would depend upon the nature of the testimony refused. Purely private affairs could not be inquired into, but the means by which

the beef trust operates on inter-state railways are public and we want a penal statute for contumacy in such cases.

Why does not our legislature use this power, and inquire into the several trusts that prey upon the state? Light should be shed upon all of them. Let a committee be created to look into every trust. The state has power here that Congress has not. It can inquire farther into trusts that are purely state affairs.

DISCUSSION.

President: There is now an opportunity for a brief discussion on this subject by any member of this association.

Mr. ———: Let us hear from Mr. Wallace.

President: I have had my say this afternoon. Is there anybody that wishes to speak on this subject?

We will now listen to a paper by President W. I. Chamberlain, of the Iowa Agricultural College, on the subject of "Legislation Most Needed Now."

LEGISLATION MOST NEEDED NOW.

BY W. I. CHAMBERLAIN.

Mr. President and Gentlemen:

I feel greatly honored to be sandwiched in on your programme between two such thinkers and speakers as the Hon. James Wilson and the Hon. John McHugh. Still more highly do I feel honored that my chosen subject, "Legislation Most Needed Now," should be sandwiched in between the subjects they have chosen, "Trusts," and "The Big Four," and following our President's grand address on the same general subject.

What does it mean that on this, the great opening evening session of this the greatest of our Iowa agricultural organizations, our hearts and minds seem all to be turned to one general subject, the fearful aggressions of wealth aggregated in a few hands by monopolistic privilege. It simply means that those aggressions have become intolerable, and that we mean to answer the insulting question, "Well, what are you going to do about it anyway?" We are going to stop it. Not in a day or year, but before we stop our agitation or give any quarter. We shall succeed sooner if we recognize the evil and try to overcome it, than if we hide our heads like the ostrich or "cry peace, peace, when there is no peace."

I have little patience with a certain class of "agricultural" papers and writers that patronizingly say to the farmers, "Yours is the most intelligent

and progressive class of citizens. Devote all your great intelligence to making two spears of grass grow where one grew before; two pounds of beef instead of one. You raise the crops. Let commerce handle them. Do not dabble with commerce." No, no! Accursed be such doctrine. The farmer must guard all that lies between his farm and "the head of the market" for his crops. All other producers push their products to final sale and fix the price. Why not the farmer, too? I have little patience with agricultural editors who abuse the courtesies of this and similar platforms by declaring the great "beef combine" or "big four" to be the stock-breeder's friend, and devote their columns for months to the task of proving that there is no combination to put up the price of binding twine.

Why have the things the farmer sells *gone down*, and the things he buys gone up or remained firm in price? Fine heifer beef one and one half to two cents on the hoof, and steak and roasts as high as ever. Liverpool Christmas steers three cents and steers in Liverpool as high as ever, and a monopoly on ocean transportation to help tell the reason. Why has wheat gone down 30 per cent and the twine that binds it gone up 30 per cent, and would have gone up 50 per cent but for the fight the farmers made? Why are oats seven sixteenths of a cent per pound and oat meal five cents, a profit between producer and consumer of 1,143 per cent? Brethren, these things ought not so to be.

Of trusts, the latest and worst form of monopoly, I shall speak but briefly, and on general principles. Mr. Wilson has handled that subject with ungloved hands. Of the "big four" I need say little; Mr. McHugh will handle that. My work is the broad and general one of considering what legislation is most needed now to control not only trusts but all special privilege by which one person or class of persons takes from others what really belongs to them. Special privilege to the few means special damage to the many. It is hateful in a democracy. It is what our revolutionary war was fought to resist.

Andrew Carnegie says "trusts are short-lived." So are cyclones! But they leave little living along their tracks. Mr. Carnegie says the law of competition—of supply and demand, necessarily makes them short-lived. Again, I say that even if short-lived they do great damage while they last. But trusts suspend and sometimes even kill competition. They try to do it always. They succeed often and fix prices at will. They kill competition for a long time, or permanently, in either of three ways:

(1) By control of natural supply of crude material or of nature's potential energy; as, for example, coal, natural gas, petroleum, etc.

(2) By control of all patents on necessary or best machinery, or means of manufacture, or of utilizing nature's potential energy.

(3) By practical control of means of transportation to market.

You see how simple is this "rule of three," and that *either* of these three means gives complete monopoly as permanent as the means it rests upon. Give me either of the three—either control of material, control of necessary machinery, or control of transportation through rebates or otherwise—give me either of the three and I can levy a tax at will upon the whole consuming world. Permit me to join the three and I have woven a triple cord that Sampson cannot break, and have shorn him of his locks of strength. Let me give a few examples.

By the first means (1) above, the Cleveland or Borea Stone Company owns the entire natural supply of "Borea grit," the finest deposit in the world, cleanest, most easily quarried and worked, of whet-stone and grind-stone grit, a grit, too, that combines in the highest degree the three desirable qualities in building stone, beauty, durability, and ease of working. Under its monopoly that company sells its stone at its own price all over the United States and grows rich. In the same manner are formed trusts or combinations on lumber, coal, petroleum, natural gas, material for binding twine; some of these combinations, as, for example, that which controls the output and sale of hard coal, being often most cruelly oppressive to the poor.

(2) The second means, control of patents, is on the whole, perhaps, the worst means of monopoly. A trust or combination, built upon a valuable patent, is invulnerable and immortal till the patent dies, in seventeen years, or, with renewal, in thirty-four years. Thus, for thirty-four years, nearly, has the "gimlet screw" monopoly taxed every citizen and piled up wealth. At the end of the first seventeen years its stock was worth \$900 on the original \$100, as I am reliably informed, and it used its wealth to buy an extension of time, based on the only legal claim for renewal, viz.: that the inventor had not been reasonably rewarded. The insulting sarcasm of the claim lay in the fact that the owners of the patent had been unreasonably, enormously rewarded.

The oat-meal combination owns and controls all patents for best manufacture of oat-meal, "rolled avena," "rolled oats," etc., products now almost a necessity on every breakfast table. This combination stands between the producer and consumer and taxes both at will. In order to diminish supply, which otherwise would be so large as to reduce oat-meal to real cost and reasonable profit on manufacture, the trust hired several mills, four, I think, in Iowa alone, to lie still or sell their product outside the United States. The price paid to each mill is \$30,000 per year, \$80,000 for Iowa alone. This sum we, the producers and the consumers, unite in paying every time we sell oats at seven sixteenths of a cent per pound, or buy oat-meal at five cents per pound. Formerly water-power mills were required to grind custom work for one tenth toll; now they take more than nine tenths. Twelve months the farmer works to raise, say, his 1,000 bushels of oats, and gets one tenth what the consumer pays. Twelve or twenty-four hours the miller takes to whirl off the thousand bushels into oat-meal, and gets nine tenths of the final sum it brings, or divides the amount with the retailer.

In like manner have the patents on roller process flour stood between producer of wheat and consumer of fine flour, and grown rich from both. From this, and from the lumber combines, and an exclusive use of nature's gifts of wheat and timber lying near the great falls of the great "Father of Waters"—nature's materials and force, have a few men in our great twin cities of the north grown immensely rich, while farmers and consumers have paid tribute to their wealth. Under patent for seventeen years, sewing machines were sold for over four times the actual cost of manufacture, and so of countless patented articles.

(3). Control of access to market. By unjust discriminations of railway companies, for example, have the milling, manufacturing and jobbing interests of Iowa been kept at low ebb, and Minneapolis, Chicago and other manufacturing and commercial cities been enriched. By secret rebates the

Standard Oil Company killed competition. With \$45.00 per car rebate, the "Big Four" built up vast wealth, killed local buying and slaughtering, and makes us pay freight to Chicago and back on our beef before we eat it.

The investigations before the senate committee have given alarming proof of the effects of trusts and other combinations built usually on one or more of these three foundations just named—their effects, I say, in stopping mines, mills, factories, throwing men out of work, injuring localities, advancing prices, injuring business, destroying competition. Trusts upon the necessities of life, like the notorious sugar trust, *e. g.*, to force up prices and levy private taxes, are conspiracies against the welfare of the people. Government has the highest right, the very right of self defense and preservation, to prevent such combinations.

Under (1) it is plain that since nature's materials and forces, its timber, coal, gas, electricity, are clearly intended for the good of the people, and not of a select few, it is the solemn duty of a republican government to prevent their being used by the few to the injury and oppression of the many.

Under (2) it is clear that since government alone can grant *monopoly* of patents on inventions, and can grant them at the first only on the ground of the public good, it should limit patents so that they shall not be used for the public damage. *God's share of each patent He clearly intends for the people.* What is God's share of any patent? It is the main share; that on which the possibility of the invention rests. God's share of the steam engine is the *possibility of steam*. Water, with its mighty expansion under heat and quick collapse on cooling, the power that drives the piston in every engine that whirls its acres of spindles, or drags its rolling trains across the continent. The piston man makes—a useless toy but for the power of steam, and that God created "when the morning stars first sang together." God makes broad lake, swift river and gushing fountain. Man makes dipper and pump and water-wheel to utilize the water, and even in making these he uses God's materials and forces, and these belong to the race, the people.

The inventor's share of the steam engine or of any machine is simply the discovery of some new means of using God's materials and forces. Watt, the two Stevensons and Fulton, the great inventors of engine, steamboat and railway, were benefactors of the race, because they at once gave the race the benefit of God's share of the steam engine and its uses. The inventor that sits dog in the manger over any great means of utilizing nature's great forces, is not a blessing, but a curse.

What is God's share of the telegraph, the telephone, the electric light, the electric motor? His share is the *main share*. His share is electricity, that marvelous agent that seems to show the theory true that sound, heat, motion, light and power are all related forms of energy. Electricity is nature's part of all these inventions. It seems the very right hand of omnipotence, omniscience and omnipresence. It belts the globe almost in an instant with your written words, and sends your spoken words and voice inflections across a great commonwealth. Silently it enters our barred and bolted bed chambers before the morning's dawn while yet we sleep, and with unseen hand sets all the room ablaze with the glory of its bow of promise, its incandescent arch. It lights and heats and moves with rapid strides the street cars in our cities with twice the speed and thrice the cheapness of horse power. To whom then belongs the untold benefits of this great gift, God's

agent, this right hand of omnipotence? It belongs to the people, not to a few sharp souls that have fortified themselves behind our present patent laws, wise in the slow times of one hundred years ago, unwise now in many respects. To the inventors belong liberal recompense for their inventions. To the people belong the main benefits of electricity, steam and all of nature's great sources of energy. And it is the business of a republican government to require that they all be used for the good of the people, not under long and oppressive monopoly for the enrichment of the few.

As our laws are now made and enforced (or rather not enforced) look how this newest and most marvelous agent—newest to be harnessed to man's work, I mean—look how this agent is used. By the lightning rod fraternity to curse slow thinking farmers. By the telegraph company to enrich Jay Gould and well nigh to curse the business and social world. I could exhaust an hour in telling the outrages of the telegraph. Railways, newspapers and heavy business and speculative firms are about the only parties really benefited. Calls of affection to a mother's dying bed, delivered after the funeral is over. Urgent appointments reach you after the day is past. Managed as our telegraph system is for private gain, it is an extortion, and well nigh a curse. Managed as our mail service is at cost and for the public good, it would be an untold public benefit. Why it should not be managed by the government, in connection with the post-office service, as in other countries, it is hard to see.

Again, see how the telephone system is managed: for the enrichment of stockholders on the ground floor. I know a gentleman who can now support his family on the annual income from less than \$500 invested by lucky chance in "ground floor" telephone stock when the telephone was first invented. And how has the public been served meantime? Through the worst extortion. Instruments *rented annually* for ten times their total original cost. Kept from the mass of the village and country public by extortionate prices for seventeen years, till the patent shall at last die. Last winter in a blizzard thirty-five degrees below zero, several of us sat out the night at a wretched depot at Osage, Iowa, waiting for a belated train. The telephone company wanted \$100 per year for a private half mile telephone to the hotel. The hotel could not afford it. With that line, that need not cost \$30 per year, we could have got much needed sleep in comfortable beds.

Again, electricity for lighting purposes is the subject of almost as great extortion.

Again, the electric motor system moves street cars at about one fourth or one fifth the cost of horse power. The companies using the public streets free made money with horses at five cent fare. Has any motor company reduced from five cent to one cent or two cent fare, as it should to give the public the benefit of God's share of the invention of the electric motor? Has any city council compelled them so to reduce?

The attitude of inventors has been, that since they find the means or instrument for using a given force, therefore, they own the force. If you harness my horse do you thereby own the horse? If I furnish you a scythe do I own you, the mower, and your power of muscle? Franklin caught and bridled the lightning. Morse harnessed it to man's work in the telegraph. Did either of them thereby become the owner of the lightning?

The state has special right to claim for the people God's share, *their share*

of each invention, because the people, through schools, colleges and technological institutes, promote the knowledge of the sciences on which invention rests, such as chemistry, physics, and mechanics, and even botany. Take two illustrations. The invention of the Bessemer process of making steel rested upon a knowledge of the minute difference in the per cent of carbon in iron and in steel. Chemistry revealed that difference and the means of changing the percentage so easily as to make steel as cheap as iron, while the steel rail is ten times as durable and strong. Our free schools and colleges supported by the State teach chemistry. Have not the people then this added claim to an interest in God's share of this invention?

The invention of wood pulp for paper manufacture rested partly on the knowledge of the cell structure of wood growth. That structure was revealed by the microscope in the botanist's hands. Also partly on the physical knowledge of the power of superheated steam to force itself inside those cells. The blocks of wood were placed in a strong box and subjected to superheated steam under high pressure, which penetrated every cell. Then suddenly, through a trap door, they were thrown into the open air, where, the outside pressure being removed, the expansive force of steam within the cells burst them outward and the hard block of wood spread out at the inventor's feet a soft and fluffy mass ready for the paper maker's art—a marvelous cheapening of paper material. Now our free schools and colleges give that knowledge of botany and physics. Have, then, the people, who by taxes support these schools, no rights in the inventions they promote?

Our patent laws need thorough revision in the interests of the people. They should in these swift days shorten the time to run from seventeen to five or ten years, forbid renewal, and require prompt manufacture and sale, not mere rental, at not more than 100 per cent net profit on cost of manufacture.

I have spoken now of patents on electrical appliances, because electricity is one of the latest in use, most mysterious, most powerful, and destined to be most useful of nature's agencies, and from its newness and mystery most subject to monopolistic abuses.

As to combinations built on neither of the three firm bases of monopoly indicated, but simply by binding together all producers of a given useful commodity to raise its price inordinately, it is a comfort to know that the people are at last awake, and that the voice of what Judge Hubbard is pleased to call "the town meeting" has been clearly heard by judges on the bench and legislators in their halls. The sugar trust, after taxing us all for months about three cents per pound on all the sugar we have eaten, is at last in trouble in the courts, and seems about to collapse, as did the copper syndicate. The Chicago gas trust is in trouble, and other similar ones, after doubling the price of gas for months and even years. The match trust, or combine of 1880, taxed us all outrageously for years on all the matches used, but has at last collapsed. A case growing out of it came lately before the supreme court of Michigan. The defendant in the suit had swindled the plaintiff out of certain stock and profits. The case was carried to the supreme court. Its judges said: "There can be no doubt that all the parties were active participants in perfecting the combination known as the Diamond Match Company, and that the present dispute is the fruit of the scheme by which all competition in the manufacture of matches was to be

stified, and the entire business of the country in this line engrossed by that company. Such a vast combination as this is a menace to the public. It is no answer to say that this monopoly has in fact reduced the price of matches, for that policy may have been necessary to crush competition. The fact exists that it rests in the discretion of the company at any time to raise the price to an exorbitant figure. Such a contract should not be aided (by the courts) in its execution, nor should a party to it be relieved from loss growing out of it."

This is wholesome doctrine. If all trusts are denied all aid from the courts it will be a stunning blow. But if our laws and courts will actively assail them as conspiracies against the public welfare, they must soon die.

As to the third point above (3), corrupt rebates and discriminations by railway companies, I should have said in its place; railways are creatures of law; only as public thoroughfares, common carriers, public necessities, can they get their charters and their rights of way through land of parties often unwilling. They must, as public servants, serve all impartially, reasonably and well.

I notice briefly some other matters that need legislation now:

(1) *Adulteration.* This has grown to be a frightful evil, little restrained by law as yet. No other civilized nation on the globe is so negligent in this respect as ours. Almost everything we eat, drink, take as medicine, or use, is counterfeited, cheapened, or adulterated by deceit or fraud. Such fraud is of the same essence, as criminal and as harmful as counterfeiting the currency or debasing the coin of the realm. Yet if one passes counterfeit money he is a fugitive, an outlaw, a criminal fit for the penitentiary if detected. But if one knowingly sells counterfeit goods for pure the law has until lately had no remedy, except in large frauds, in an action for damage and fraud. Until our farmers took hold of it some four years ago in regard to dairy products, we had no really effective laws. Our present excellent oleomargarine laws, State and national, were the result of their work. They should be retained and enlarged so as to cover all adulterated products, and prescribe severer penalties against the most common and most outrageous frauds practiced.

(2) *Gambling in margins,* on grain, produce and stocks. This has grown to be an enormous evil, wrecking railway properties and disturbing prices of our chief food products. The evil grew originally out of legitimate contracts for grain or stocks to be delivered at a fixed future date. The sum paid down to "bind the bargain" was called a "margin." Hence, has grown up the frightful evil and immorality of speculating or gambling in margins. It injures the whole country. It leads to crop reports persistently false; as a rule, of large crops, if possible, until the crops leave farmers' hands, then of small crops, justifying high prices, until the crops are sold to customers. It confessedly increases the margin of unholy profits between producer and consumer. Strict laws are needed here. It is well to call crime *crime*, and punish it as such.

Gambling in railway stocks is similar, possibly worse. A line of railway is deliberately mismanaged, its stocks and securities depreciated, its original owners frozen out or cheated out, and the property gotten into a few hands. Then it is well managed, and its stocks appreciate rapidly. This is called railway wrecking. I have seen Harlem River Railroad stock wrecked down

to \$8 on the \$100, and then boomed up to \$200 on the \$100. This is rascality of a high and wholesale type.

(3) As to grain gambling,—a strong check could be put upon it by an accurate and prompt annual crop census in each State, with annual monthly reports of condition of growing crops, by state and national authority. We should demand and get legislation to this end. The annual accurate census is taken at small annual expense, by having the annual assessors of personal property, with suitable additional blanks, get from each farmer his actual acres and bushels or tons of each crop. In a few States such a census of crops is thus taken each year. In this State we have none. Once in ten years the United States census tells us what crops we raise, and I think a State census alternates with it midway in the decade. On these data the United States department of agriculture bases its estimates, having some thirty or forty county correspondents reporting monthly from Iowa. Since the last census wheat and winter apples have greatly diminished in this State, and corn has greatly increased. The *fact* of some increase and decrease we all know, and the United States department reports the *fact*. But the *extent* or amount of increase or decrease, neither that department nor we ourselves have the least means of accurately determining. The General Assembly should this winter establish an accurate annual census of crops.

(4) *Taxation.* Our tax laws need revision. Of national tax or tariff, I need only say that if it is to be made protective to manufactures we demand that it should alike protect agriculture. Tariff does not always increase cost to the American consumer, however, as is sometimes claimed. The duty on steel rails is \$17 per ton. They are as high now in Liverpool as in New York.

As to State taxes, in this State they are, I think, proportionately more burdensome to farmers than in many other States. Our exemptions and our scaling of values in assessment both are against the farmer. The \$300 exemption to farmers on personal property practically exempts the salaried and wage-working classes in the towns and leaves the real estate owners in town and country to bear the brunt of the burden. If A. has simply \$300 and B. has \$300 and some land, and you exempt each \$300, then the land must pay the taxes for the two. The scaling of values for assessment works an evil, too, for the scaling is wholly uneven. Land goes in at about 30 to 35 per cent of its value in most of our counties. Common personal property of the well to do classes in our towns is often thrown out wholly or put in at scarcely 10 per cent of its value. I hold in my hand the *assessor's* appraisal, not mine, of my own personal property—good horse, carriage, barn (that happens to be personal property, with right to sell and remove from a rented place), upright grand piano, good library, good furniture and table silver, wardrobes, watches, etc. I told him the actual cost and value of each article or group of articles, amounting to over \$1,500, and then said: "I simply ask that you appraise it on the same scale of valuation on which you do that of my town neighbors." He put it at \$120! And I see the statement does not surprise you. And yet such assessments are an outrage on the real estate owners, and a worse outrage on bankers, unless they hide their assets. Why, the books on one shelf in that library cost me \$120, and those on another cost still more, and the piano \$500 cash, and so on.

The just way is the best way, and the only just way is to tax each man on

the full cash value of all the property he actually owns, with no exemptions of private property, and with no double tax, i. e., both on what you own and what you owe. The moment you begin to scale down from full value you scatter your assessments all the way from 50 per cent down to 10 per cent or even 5 per cent. The moment you exempt \$300 on farm implements, etc., you practically exempt almost the entire salaried and wage class in towns, better able really to pay taxes, as a rule, than the farmers.

(5) Of two special laws or appropriations, I wish to speak in this the best farmer audience of the State. No one can doubt the great benefits to the material interests of Iowa that have resulted from the annual meetings held by this association in various parts of the State, or can there be a doubt that the benefit would be very greatly increased could similar work be carried to or rather raised up in each county each year. That is exactly the work carried on in every county, in several—indeed, most of the States of the union through the system of farmers' institutes. It has been begun here as you know, but without State funds. The work cannot really succeed without some central organizing hand and moderate State aid. Liberal legislative aid is given in many States, as for example: Wisconsin gives \$12,000 each year, Minnesota about \$6,000 or \$7,000, New York \$6,000, Ohio about \$3,000, really, and so on for other States. In Ohio the work has been going on now for ten years, including this; in Michigan and Massachusetts longer, though not so actively; in Wisconsin about seven years. Nearly 100 successful institutes are held each year in some of these States, with some of the best agricultural talent, practical and scientific, in the corps of speakers, paid their expenses and a very moderate per diem. The very best results have been secured.

(6) *The Agricultural College.* I am subserving your interests, not my own, chiefly, when I call attention to this institution. It needs certain new buildings and improvements—indeed, has needed them for five years. It cannot grow further without new buildings. Its distance of two miles from town limits our numbers to the 300 a year that we can board and lodge. This matter has been clearly stated to the last two legislatures, but the State has been in debt, crops poor, times hard, and the college has had to wait. Now the State is out of debt, crops good, times easier, and there seems no reason why it should not keep its covenant with the college and the nation. That covenant was clear, distinct, binding. Our national land grant now yields \$48,000 per year, and congress gives us \$15,000 per year for agricultural experimentation. By our organic law not a dollar of the first sum and only \$750 per year of the last can be used for buildings or repairs. In 1862 the Iowa legislature accepted this grant under these conditions and bound itself to erect and repair all needed buildings. The trustees elected by the legislature to see to the needs and manage the funds of the college have declared by unanimous vote that additional buildings are now urgently needed.

Some have questioned whether the college is doing the work its organic law contemplated for agriculture and the mechanic arts. I believe that it has, more fully and more faithfully, than almost any other similar college in the land. Over half of our graduates down to date have gone into agriculture and the industries, and of those who left before graduation, the proportion is even larger. Look at the following:

Statistics of two Graduating Classes, 1887-89.

INDUSTRIAL CALLINGS CHOSEN.

Agriculture and horticulture.....	16
Architecture.....	1
Assistant State entomologist and botanist.....	1
Civil engineering.....	11
Draughting and designing.....	1
Electrical engineering.....	1
Mechanical engineering.....	4
Practical and manufacturing chemistry.....	6
Veterinary medicine and surgery.....	20
Total agricultural and industrial callings chosen.....	61

PROFESSIONAL CALLINGS CHOSEN.

Dentistry.....	1
Law.....	8
Medicine.....	5
Merchandising and banking.....	2
Teaching (two teaching military tactics).....	10
Total professional callings chosen.....	26
Net yet decided.....	5
Total.....	91

As to the industrial character of the callings named as such in the first list, there can, I think, be no question unless it be in regard to veterinary medicine and surgery. A veterinary doctor is in a just and most honorable sense a professional man; but his work is clearly and chiefly for the promotion of our agricultural interests. In no way, as you at least will readily coincide, could the college more effectively promote the agricultural wealth and welfare of Iowa than by sending forth each year a band of scientifically and practically trained and equipped veterinarians, to supplant quack doctors and to save life, promote health and prevent contagion among our domestic animals. Iowa's wealth lies in her farm live stock. Proper care of its health increases our agricultural prosperity and our material wealth. The Hon. Jas. Wilson, of this association, has indorsed the agricultural and useful character of our veterinary course by sending two of his sons to it, one already a practising D. V. M., and an honor to his calling.

Thus have I sketched some of the "legislation needed now." I would invoke the aid of law to destroy monopoly and special privilege root and branch, whether it rest on (1) exclusive control of natural material, or (2) of means of manufacture and use, or (3) of means of reaching necessary market, or (4) on simple combination of all producers to limit supply and advance price of any commodity. I would suppress all counterfeit and adulterated products, especially of foods and medicines.

I would destroy grain and stock gambling and to that end promote statistical knowledge of crops.

I would put our taxes, State and national, on a just and righteous basis, and finally, I would promote the intelligence, enterprise and virtue of our farming and industrial classes by a hearty support of farmers' institutes, and of the State Agricultural and Mechanical College at Ames.

DISCUSSION.

President: Does the Association desire to discuss this paper now?

Mr. Bennett: I arise for a question. I had an idea that the State took the census every ten years.

Prof. Chamberlain: That is probably true; but what I had reference to was, that it does not take the annual census of the crops.

President: I have now the pleasure of introducing to you the Hon. John McHugh, who will address you on the subject of the "Big Four."

THE BIG FOUR.

BY JOHN M'HUGH.

Soon after agreeing to furnish a paper giving additional light on the beef combination, better known as the Big Four, I took steps to secure more complete and authentic evidence than yet possessed on this subject. During the recent Fat Stock Show I met representative breeders and feeders from different sections of the country and secured from them some data. I wrote to others whose extensive connection with the cattle business encouraged the hope that something definite might be obtained. Recourse was had to the files of my stock papers and here I found a good illustration of the old saying that "doctors will differ."

Confused and discouraged, but not yet exhausted, I had recourse to government statistics from which I gleaned after a careful analysis, covering several years, that like conditions prevailed as well before as since the gigantic connection of the so called Big Four with the beef product of the country.

Without consuming time or confusing you with figures, I find that, covering a series of years, there is a close but indirect sympathy between the prices of corn and beef, pork constituting the connecting factor.

In other words, a good crop all over the corn belt means lower prices for this cereal, which invariably lowers the price of pork, the effect of which seems to be about a corresponding reduction in the price of beef. With

pork low and beef high, more people use the former and thus depress the price of the latter article. Finally, an abnormal value has never long existed between those two products, and it is safe to assume that it never will. But to borrow a much quoted phrase, we are confronted with a condition, not a theory, and it says plainly that when the production of pork is abundant and the price low there will be less beef consumed than when these conditions are reversed. My further inquiry went to show that the exceptions to this rule are rare and only influenced by a temporary activity in the export demand for our beef product. This deduction may suggest, cannot those interested in lower prices for beef depress the pork market also and give a less selfish coloring to their operations? I think not.

The immense pork packing interest centered in Chicago has the reputation of being able to squeeze the pork market without any assistance from the beef crowd. The figures consulted reveal discrepancies difficult of explanation by grouping hogs, corn and beef. Thus, in 1882 the price of hogs was lower than in 1881 and the price of corn higher. The same apparent contradiction appears for the years 1887 and 1888. This I find is due to the fact that the price given refers to the crop produced in the year named and not the average price of corn for the year. Thus the hogs marketed in 1882 were fed partly from the crop of 1881 and partly from that of 1882, so that by averaging the two years we find the rule of relative values fairly well maintained.

Very little that is satisfactory can be obtained from the proportion of beef animals to population at given periods.

In 1850 this proportion was 491 bees to 1,000 of population. In 1860 it was 542; in 1870, 286, due no doubt to the effect of the war in this decade. In 1880 it had again come up to 490, and in 1885 to 562, while in 1888 it had fallen to 537, marking a steady decline for the past three years. The laws of supply and demand would tell us that the price of cattle would be less in 1887 than in 1884, with a slightly reduced proportion of bees to the population, but this was not so, as there was a difference of \$1.45 per hundred in favor of 1884 with the greater number of hogs. The officials of the department from which these figures are gleaned fail to furnish us a reason for this freak in prices. The outcry against the Big Four had become so general that I confidently expected, by comparing the years of the beef combine with an equal number before its organization, to find such an upsetting of statistical information as would aid in conviction.

But figures, when not supported by reasons for the unexpected in trade results, are not only unsatisfactory to him who deals in them but frequently lead the way to inaccurate conclusions.

Enough is known, however, to warrant the unqualified statement that there is a huge beef trust which is surely sapping the life out of the beef industry of the entire country. That this trust is composed of four firms with headquarters in Chicago, is not disputed.

That in a few years it has revolutionized the former mode of purchase, slaughter and sale of the fresh beef product of the country, is equally true. This quartette, backed by unlimited capital, have destroyed the local live stock markets of the country by coercing and compelling butchers, both in town and city, to buy their refrigerator product.

They compel the shipment of beef cattle to their slaughter points, chiefly

to Chicago, where a price fixed by an individual conscience is paid the producer by a representative of the pool or trust. They have rendered escape impossible and the beef producer can only submit to the terms imposed, however galling and arbitrary they may be. They have employed means to silence local competition in many places that stamp their business methods as dictatorial and tyrannical.

They compel the consumers of beef to pay a price quite as high as that paid at times when beef cattle brought the producer one third more than at present. The claim is made in their behalf that those who retail their product are responsible for the high prices demanded. But this is not true and if it were true they represent the system and are as powerless to reform it as a toothless dog would be to resist an intruder. The fundamental trade laws of supply and demand are reduced to a sickly misnomer in the presence of this grasping monopoly.

Entrenched behind their plundered millions they defy the authority of the United States Senate, and like the vilest of criminals they hide to avoid service upon them.

No better proof of guilt is needed than their resistance to investigation. Honest men and honest methods have nothing to fear from the most searching examination of their business affairs. Like the anarchist who cried "down with all law," let us hope that, like him, they will yet be forced to admit its supremacy.

ARNOLD's refusal to testify, and the subsequent dodging and hiding of his guilty partners, has opened the eyes of both producers and consumers to the enormity of the burdens imposed by this unscrupulous quartette. No one familiar with the slaughtering and distributing methods of the Big Four will deny its many advantages over the old system. Not only is a great saving effected by it, but it appeals to our humanity, since it reduces the suffering of three-fourths of the stock that formerly was shipped from Chicago for slaughter in the east. The carcasses of thirty-eight are now sent east in a single car, where before but twenty went on foot. If this system could be made competitive so as not to force men to sell whole train loads of cattle on a single bid, then could we feel that it was a blessing, instead of the blight and ruin that the Big Four, by their recent actions, admit it to be. But before competition is possible, the crushing influence of the Big Four must be checked by legal enactment. Some say there is no United States statute by which these conspirators can be reached.

If this is true, the cattle producers of the country should demand, not on bended knee, nor in whispered tones, that Congress cannot too soon, with law in hand, come to the relief of its outraged constituents.

There should be neither division or delay, but ranchers and farmers should at once join in demanding some measure of national protection.

If the wrong cannot be righted without it, then for one I say tack on another amendment. The last one put there gave legal permission to colored people to ride in street cars. If need be, let the next stand as the defender of the threatened homes of thousands of white people and the perpetuity of our greatest national industry. It is evident from the defeat in the lower courts of the State inspection law passed by Indiana, and some three other States, that redress can come only from Congress. To the defiant cry of Jay Gould, "the public be damned," we can credit our present inter-state

commerce law, and it requires no prophet to foresee that to the intolerant course of Phil. Armour, and those associated with him, will be due the credit of at least hastening our much needed relief from the grasp of the Big Four.

Had these men, already rich, conducted their operations after the manner of the Standard Oil Company, and been content with a few millions each, for yearly profit, the present fury and indignation throughout the country might have been averted. But in calculating chances for congressional relief, we must not underestimate the power of the enemy, and the unscrupulous means that will be exerted to defeat legislation against their interests.

When we speak of the Big Four we must not forget that it includes the Chicago stock yards and the great eastern trunk lines that own or control them.

It means every western railroad interested in a Chicago haul and whose business would be better advanced by hauling beef offal to Chicago than having it left in the States and Territories west of the Mississippi river, where packing houses would most assuredly spring up if the present monopoly were stamped out or competition to it made possible. Make no mistake, then, in calculating the strength of the trust and the means that will be employed to prevent its curtailment.

The Big Four and the transportation companies are becoming so interlocked as to suggest a division of the enormous margins now consumed in handling our beef product. So identified are they with our export trade, and so withering of profits to producers is their slightest touch, that ocean freights cost \$11.00 more per bullock at present than before the country was over-run by this iniquitous trust. Stimulated, no doubt, by the audacity and success of the Big Four, our beef exporters have made competition in their business impossible by chartering the entire capacity of the beef carrying vessels for six months in advance.

But no ten or fifteen minute paper is sufficient to shed light upon the impudent ways of the Big Four and its kindred offshoots, all engaged in sapping the life out of an industry, without which the country would be very poor indeed. A system is wrong, from turret to foundation, that will permit the closing of large establishments for months at a time, whilst their owners share in the profits of operated ones across the way, though in no wise interested in their ownership. It is wrong in principle and ruinous in its results, save to the few connected therewith.

It fosters monopolies by killing competition, after which it preys upon the public after the most unscrupulous fashion.

Like Nero of old, who fiddled while Rome burned, the beef syndicate of to-day look on and laugh at the ruin they have caused and the wrecks they have made. Ranching interests are being sold under the hammer, men and capital are being withdrawn from this once prosperous field of operations. Everything salable, and much that is not, is being rushed upon a flooded market, while thousands of young heifers are being destroyed for breeders as a means of early release from the business.

This shrinkage on the frontier is due partly to injury done the ranges from overstocking, the inroads of settlement, and uncertainty of climate, but more than all combined to shrinkage in the price of their cattle by the operations of the Big Four.

In this shrinkage of supply and increase of population, there is hope for the survivors, but the probability that the route to "fields more fair," will be found strewn with the wrecks of men who fell by the wayside almost within sight of the "promised land," is at best a regretful situation to contemplate. War between the oppressed and their oppressors is now declared, and before the never ending legions of the former the latter will go down as surely as the great wrong of slavery had to give way to the demands of justice and humanity. Until this needed change is brought about we can only agitate, work for our rights and let the world know our wrongs. Awaiting release, the situation can best be endured by raising only the best, those that mature early and feed kindly. In this way, together with diversified farming, rigid economy and general good management, we may out-ride the storm and yet drop anchor in a more friendly port, where trusts and combines are unknown.

President: There is now an opportunity afforded for discussion upon the general topic which has been presented. It is generally conceded that there are two sides to every question. The questions have been ably presented by the triumvirate or trinity of speakers to which you have just listened to-night. We shall be glad to hear from any others.

DISCUSSION.

Mr. Smith: I believe if there is anything discouraging, when a paper is read before an audience of this kind, it is to have no discussion. I believe the reason that there has been so little discussion is from the fact that the subjects have been presented in such a strong manner and with such an array of facts that there is little or no criticism to be offered. I believe since the last paper has been prepared, Mr. Armour has been heard from. I believe he claims that there is no such thing as a "Big Four." He has been before the Senate committee with a large array of figures and has had two or three men to read them to the committee and has presented them in such a manner that they did not care to question him, and let them go. He claims in the business of 1888, in which there was so large a margin on stock that there was only \$1.22 a head margin on cattle sales by the syndicate, and that saving was made from what the ordinary butcher would not save, but he failed to show the discrepancy between the prices paid the producer and the price paid by the consumer, which it seems to me is quite a margin. The only gentleman that I ever heard deny that there was such a thing as a "Big Four" was Armour himself and Orange Judd, of the "Orange Judd Farmer," who is here to-night, and I would like to hear him present his side of the question.

Orange Judd called for.

Orange Judd: Mr. President and gentlemen, I am not here to defend Armour or anybody else, am unable to speak much to-night, and prefer not to go to the platform. Owing to a long foodless railway detention I got here late to-day, and missed the first proceedings and papers referred to, and furthermore do not know that it is best for me to say anything. I am rather inclined to think from the distortion of the few remarks I made last year I cannot speak without being misrepresented. For example: I find myself charged in a newspaper with coming here to this association last year by courtesy and abusing that courtesy by supporting monopolies and trusts. It so happens that the publishing company of which I am president is a member of this association, promptly paying its initiation fees and dues at the start. (The treasurer can tell whether the maligning journals have done so.) Besides, you very kindly elected me an honorary member. It is very common when popular opinion runs in a particular way, if one says a word on both sides or the other side, for some people to say "Oh he is in favor of trusts and combines." I have been too long before the country as the exposé of frauds, humbugs, monopolies, etc., to need to tell people I am not subject to this charge. I have not a dollar's interest, nor have my friends or family, or my journal, in any of those business transactions; I publish a paper for the benefit of and as a defender of the people. I do not know Phil Armour; never passed a word with him except to send over for some statistics to his office. I am *not* his defender, and do not wish to be, and have no occasion to be. Last year I stated that certain large operations resulted in a public benefit, but that there was not a "trust" as that term is usually understood. I said I did not to defend the Armours, or any others of his kind, and I do not care for them whether rich or poor, or whatever they are. I have nothing to do with them in any manner. My lowliest reader, on the remotest frontier, is of more personal interest to me. It is very easy to get up and denounce a man who says anything in favor of them. We must remember that there are two sides to all questions. I may say a few things and trust you will not twist and distort them. I have had a very intelligent, reliable man in the market every week day in the year watching the condition of things. I charged him months ago to keep his eye open with reference to this thing. I am well satisfied that there is no business partnership between these four men that you call the "Big Four." They do affect the market in a cer-

tain way. I know that these men have bid against each other many times. If there are not enough cattle in the market to supply all, they bid against each other, and push up prices. There are always present a large number of *other* buyers, from the East and elsewhere, to take all the cattle at such times. Then the law of supply and demand decides prices. When I have spoken anything on the question I have said that combines to limit supplies and control or affect prices are against the public interests, and therefore unlawful.

In regard to the "Big Four" they trade in this way and I think I am positively right in this matter. They are as independent of each other in their ordinary business as you and I are. They buy independently of each other when there is a scant supply of cattle, and bid against each other. When the yards are over-stocked some one of them will drop out and will not be there as a bidder. What is the result? There are not competitors enough to take the large supply of cattle at high prices. Other brokers are selling for you farmers, and do the best they can. Their very business life depends upon doing this. But on such occasions there are only three big buyers instead of the four. The prices are not entirely fixed by them because they cannot govern them. But when there is a large over-stock of medium and poor cattle, they step in and buy up a heavy supply for canning, and thus steady prices, and keep the market from "going all to pieces." Prices seldom fall on any day more than fifteen to twenty cents per cwt., however great the supply. They thus help. I was formerly for a long time connected editorially with the *New York Times*, while editing my own paper, and I watched the cattle market carefully for that paper as well as for my own. A thousand extra cattle often dropped prices \$5 to \$15 per head. It was formerly so here. These large canners steady the market, and do not leave owners to give away their animals because of no buyers. They are not shippers of beef. Those men are watching, and so are other cattle buyers, and they will get what they want. It is utterly impossible for the "Big Four" to control the market ordinarily, but, as I stated, in case of an over-stock, one or two of them drop out, and do not buy, and a little sagging off will naturally follow. Two or three of them will buy more cattle than they want, and the others will afterwards buy of them, probably paying them a commission. Thus, while not a "trust," and not in partnership, they do "steady" prices, keeping them from going way down, sometimes, and also keeping them up to certain figures. In that way their trust is not a combine, simply

an agreement between themselves. I am not their defender. I say the "Big Four" do affect the price of cattle somewhat at certain times, how far favorably or unfavorably, *on the whole*, you must judge. I advise you to read what Armour said to the investigation committee.

Mr. Smith: I will ask you, Mr. Judd, if Nels Morris is not understood to be one of the "Big Four?"

Mr. Judd: Yes.

Mr. Smith: Is he not understood to be the one that controls the ocean transportation?

Mr. Judd: No, sir. That is governed by supply and demand. We have shipped abroad more than 250,000 cattle as fresh beef the past year, which has helped out our over-stocked market. The big packers have packed and canned over a million and a half head, have hunted up foreign markets for the meat, much of it the poor stuff, and thus helped reduce our supplies.

Hon. James Wilson: I have not seen any of the testimony yet. I have not heard from him since Armour gave his testimony before the committee. I presume you have seen it?

Mr. Judd: I have not read it through.

Mr. Wilson: Did he not admit that he with the others did combine to keep prices of beef up?

Mr. Judd: I do not so read it, but have not yet studied it fully.

Mr. Sage: That is what he assented to.

Mr. Judd: To what?

Mr. Wilson: Mr. Armour admitted that they did combine to keep up the price to the consumer.

Mr. Goodwin: He denied that he had a combination. He said he had a little arrangement with his own members.

Mr. Wilson: Did you not understand they "combined" when one drops out and refuses to bid against the others?

Mr. Judd: I did not say they do not practically combine. I have simply explained how they affect the prices both ways. When reprehensible, pitch into them. I am not the defender of them or their methods, but simply try to get at the facts as they are, and state them, and believe in "giving even the devil his due." Should a diminished supply of cattle occur in the future, these big buyers will be on hand bidding up prices against each other. I simply said there is not such a trust or combine as will prevent this.

Mr. Daggett: I would like to ask the gentleman what is the difference between an "agreement" and a "trust."

Mr. Judd: A "trust" generally means a close union or compact

between all those engaged in any one line of business, by which they control and limit the production, and absolutely control supply, sales, prices, etc., and thus have the public at their mercy, and subject to their greed. I have simply said that certain men could not entirely control the cattle market at all times, because there were many other interests antagonistic to the Big Four. I repeat that they are affecting the market at times, and I am not defending them here. I challenge any man to show that I have ever defended them. While I am on the floor I want to speak of another thing. I have been charged in this State with supporting a "twine trust." When that subject came up I went into it with the sole purpose of investigation, as I have in the case of thousands of other humbugs, and probably wrote more letters than any other person, on the subject, and finally got at the bottom facts. Why, I have defended more than two score libel suits and paid over thirty thousand dollars to defend myself against these parties whom I have denounced, and it does not seem fair at my time of life to be charged with being in favor of trusts, or combines, or monopolies. I defy any man to show that I am, in any manner or shape, large or small, interested in any combine or trust.

Now in regard to the "twine trust." When it was charged that there was such a trust, I went heartily to work to find out whether it was so, and I spent more time in that investigation, as I can show you if you will come to my office, than any one here. I found out what the circumstances were. I could tell you the whole thing, giving you the names of the houses and the parties who put their heads together and tried to form a trust, but failed, and who were then trying to fight each other. I say that there was no twine trust, as I understand a trust. If there is a more iniquitous combine or trust in existence to-day, more iniquitous than another, it is this wire trust they are trying to form. If the effort is successful, we will have to rise up in our might and suppress it. It is the worst trust proposed. I go in for abolishing the tariff upon wire right away, if necessary, to break it up. But in regard to the twine trust, I found there was no such trust. My readers in northern Iowa and Dakota, and elsewhere, were alarmed. They wrote anxiously, saying the local dealers will not agree to sell us twine under twenty-five cents, because of the twine trust. I told them there was no trust; that there was competition and that I could name the parties who were in competition. When the last straw came, when a company professing to be the "Farmers' Cheap Supply Company," run by a newspaper in Chicago, came out with a circular,

which I have, and said: "Owing to the twine trust we can buy no sisal twine under sixteen cents a pound, by the ton," I said to myself that was a little too much. They ask a profit for themselves of \$20 a ton, besides commission. I can buy plenty of it at fifteen cents a pound. So, after looking the matter over, and finding how the false alarm was being worked against the farmers, I bought fifty thousand pounds at fifteen cents, with the agreement that it should be shipped in parcels of one hundred pounds. I merely took that course, and did what I did with the idea of checking the injurious effects of the cry of a twine trust. What was the result? Straightway up in Dakota these fellows came down in their prices, as did some fellows out here. One large dealer has told me that I was the cause of his losing fifteen thousand dollars, because I broke the price. And I will say to-night, to any gentleman here, farmer, improved stock-breeder, or newspaper man, that I will pay three hundred dollars in cash if he will show that there was a twine trust. I do not bet, but I will put up three hundred dollars and present it to anybody who will prove that there was a twine trust. I claim that I did more, and if you will appoint a committee I will prove it, that I did more than anybody else to keep down the price of twine. [Applause]. I have not a thing to conceal in these matters, and what is there about this Big Four? I have been looking through this matter. This packing business, do you realize how much there has been done? I sent my reporter out to make some little investigation for my own information, before coming here. During the year 1888 the Big Four alone packed one million, five hundred and four thousand, six hundred and forty-nine cattle. In the present time four thousand head of cattle walk into cans daily. This affects the market materially. Formerly the owners of these cattle, many of them the cattle barons of the west, forwarded cattle from the ranges, and after traveling that distance they were in poor condition and were not wanted, but they over-stocked the market and demoralized it. Some of you can remember that under the old order of things, when there was more than was wanted, they could not be kept long, and the owners had to take anything they could get for them. Now the packing establishments do not let them go down below what they can afford to pay. If there happens to be more than are wanted for present killing, a thousand, or four or five thousand cattle, they can easily be sold. I believe in giving the devil his due. There are many questions that arise with it. I only refer to this because I have a statement here that I compared after a careful investigation. What I have stated to you in regard

to the custom, does exist, and the Big Four does affect the market. There is no twine trust, however, at present, and I hope you will all get over that and satisfy yourselves on that point.

Jas. Wilson: You have been looking into the matter somewhat, I see, and you are telling us now about the good things these devils are doing, and you want them to get their due?

Mr. Judd: Yes, sir.

Mr. Wilson: There is no such thing as their coming in there without finding a market. You being there, and backward and forward over the ground, and having collected statistics, have you ascertained how many considerable towns in this country these gentlemen have stocked completely with local cattle killed at Chicago, sending them back, thus increasing the volume of supply?

Mr. Judd: I have looked into that and have no defense for it. I do not know any way to meet it while they have that power in their hands. Last year I ate a piece of beef at the place where you met, which had been grown right there, sent alive to Chicago, and sent back as beef.

Mr. Wilson: They are now at work at Des Moines. I have estimated that fifteen hundred cattle a week have to go to Chicago. Heretofore they have been killed there for local use in Des Moines. They have to go there and what does not go at that price has to go into cans.

Mr. Judd: The whole methods of business are changing. We do not spin yarn now, as we once did, but send the wool to the factories. The mode of doing all lines of business is changing.

Mr. Wilson: But in those days you could send your yarn, your cotton, or whatever you had to work up, to any one of the hundred factories. They never demanded that you send them all to the one factory.

Mr. Judd: So far as that is concerned I am not here to defend them.

Mr. Wilson: Will you tell me on what points you do defend them?

Mr. Judd: I do not defend them at all.

Mr. Barclay: I understand that Mr. Judd has stated the facts in the case as he found them, but does not say that these facts are all right.

Mr. Judd: Not by a long sight.

Mr. Barclay: He says that when the market is crowded one of the bidders drops out and the other bidder gets the stock. Because

such a thing is done he does not say it is all right. Do not they drop out by agreement?

Mr. Judd: They do, and so far it is a combine.

Mr. Barclay: By that means a man can only get one bid on cattle in Chicago?

Mr. Judd: I just explained that, and said that the "Big Four" was doing that thing when there happened to be an over supply.

Mr. Barclay: You said they were not combined.

Mr. Judd: I did not. I said they were not what we called a trust. They do bid against each other when there is a small supply of cattle.

Mr. Mott: I have shipped a great many cattle, but I have never seen the time when I did not get more than one bid.

Jas. Wilson: I can't get more than one bid, and they won't now even let me go into the stock yard where the cattle are.

Mr. Judd: I will go with you at any time you wish and show you that you can get more than one bid.

Mr. McHugh: I would like to ask that gentleman if the man making the second bid raised the bid made by the first party?

Mr. Mott: Yes, sir.

Mr. Judd: That is a very common thing.

Mr. McHugh: I wish to ask a question and I do not direct it to any person particularly. Some of the Chicago newspaper men may have seen the item to which I refer, which stated that an Illinois shipper sent five hundred steers to Liverpool and realized twelve dollars per head more than he was offered at Chicago, or six thousand on the five hundred head. Feeling good about his success, as he naturally would, on his return from the east through Chicago he made a statement of that fact. He went home, purchased fifteen hundred more and returned with a view of shipping them to Liverpool, but found that the transportation had been taken up for six months in advance, and he could not ship them.

Mr. Judd: The Big Four did not do it.

Mr. Wallace: I would like to ask Mr. Judd a question. He is an older man and has had more experience than most of us; has been long editing an agricultural paper, and studying agricultural products. I would like to know what suggestion he can make to help the American cattle raiser out of the ditch.

Mr. Judd: I said about four years ago: "If, because cattle are relatively higher just now, you all go into the live stock business, you will overdo it," and it is overdone now.

Mr. Wallace: May I ask you to tell me on what grounds you

claim we are overdoing it—on what authority—that there is any increase in the number of cattle in the United States in the last four years, or that there are as many in proportion as there were four years ago?

Mr. Judd: You can make figures tell almost anything you want to. The number of cattle shipped to Chicago, St. Louis and New York markets is vastly larger than it was four years ago, in proportion to the population.

Mr. Wallace: So much because of the trusts and combine. Simply because by iniquitous combinations of railroads and by rebates which they are obtaining to this day, they have secured a monopoly of packing beef, and by combining they are driving out the local dealers by making lower rates to the principal towns and by entering into partnership with individual members of their firms, or with men who obtained rates in the medium cities, they have been able to control the vast amount of cattle to be shipped to Chicago, which comes in connection with the amount of cattle in the United States. I ask how, under this state of things—this admitted fact, and known to be an admitted fact—how, under this state of things, are we going to get relief? We want wisdom.

Mr. Judd: Assertions, I am not responsible for. I should call for proof of the assertions, if I went into the discussion. First, I will say that the statistics show that there is a large increase, and that these past two months, there have been vastly more cattle sent to Chicago than ever before. I say that there is a very large increase there, and at nearly all western markets, besides the large increase in exports to foreign countries.

Mr. Norton: They send them there to slaughter them, and send the beef back.

Mr. Judd: How would you prevent these economies? I say that the tendency to-day is to economize by large transactions. What would be furnished to the dogs by the ordinary butcher, pays for the butchering of these cattle in Chicago. They save and utilize the horns, the hoofs, the bones, the hide, the manure—everything to the last end of the tail.

Mr. —: What about the hair?

Mr. Judd: That will almost pay for the butchering. They save all that, in all these improved modes of slaughtering. Hear me through, if you please. I say that in slaughtering animals, as in every other department of labor and manufacture, the tendency is to economy. Any of you who have visited the cattle yards have seen how they collect and use these small things. You will see

how they have the advantage. It is so in all other things, even in newspapers. I paid five times as much for printing paper twenty years ago as now, and four times as much for press work. The facilities are increased. It is so in the killing and packing, and in everything else.

A voice: How shall we get relief?

Mr. Judd: By combining at home. Have establishments in the local cities where you can introduce the same economy. You can do it quite as well as they. To illustrate: They can buy your cattle and bring them back again cheaper than you can do it here under ordinary circumstances. Have two or three combinations in this State and around through the principal cities elsewhere. Say you establish one at Iowa city, one at Des Moines, one at Omaha and at other places.

Mr. Blakeley: Don't these Big Four fellows go to towns like Des Moines and say to the butchers: "We want you to handle cattle for us." The butchers say: "No, we don't want to." And they say: "We will put men here to handle them if you do not." And they will put them there at low prices, until they run the local butchers out and control the market; and don't they do that by agreement among the Big Four?

Mr. Judd: Did you not notice when Mr. Armour was asked by Senator Vest if the territory was not divided, he would not answer?

Jas. Wilson: Let us get down to something more practical. You admit the iniquity of these men, and you have told us of some of the iniquities that we have never dreamed of. I think you ought to be taken before the investigation committee, at Washington. But, when we ask what you are going to do under this admitted state of facts, this going from town to town, taking these cattle to Chicago and shipping the meat back, how do you logically conclude it is an over-production of cattle that brings that about? Won't that go on and on until local dealers are broken down, and they have the control of the market, making prices to suit themselves?

Mr. Judd: Using the same argument, you might as well say that Marshall Field & Co. will come out through this country and buy up and control the local stores.

Mr. Wilson: Is it not a fact that this Big Four owns hundreds and thousands of cars of their own, and that they get a rebate for furnishing the cars?

Mr. Judd: I understand Mr. Armour has an old contract by which he furnishes cars, which contract the railroad companies cannot break until it expires by limitation. This is a matter in which I cannot answer for them; I am not their keeper.

Mr. Wilson: In view of that fact, then, how are we to form a butchering combination company? We can not get the same rates they do, and so cannot compete with them.

Mr. Judd: There is, nevertheless, quite a difference between butchering five thousand head of cattle and butchering them in small parcels, even if they have their contract for furnishing cars at reduced rates. You can fight them by adopting the same methods that they adopt and using the same economy.

Mr. —: While they have the rebate? The difference between killing on a small scale and killing five thousand to fifty thousand at one time, even if you reduce that work to a system, would not be as much as any freight that you pay on the shipment of cattle.

Mr. Wilson: The amount of rebate given on these cars is equal to the amount of profit Mr. Armour swore to before the investigating committee; and in view of that, how are we to compete with them?

Mr. Judd: I am not defending these trusts. You asked me what we should do, and I said, "I do not know what to do? The best thing I can say is, to fight fire with fire. The tendency of the day is to introduce economy in the manufacture of everything and in farming, as well. You cannot compete with them by a man killing one beef a day, but if all butchers combine and kill five thousand every day, they are much more apt to break down the combination; and I do not know of any other way. And I wish to be understood that I am not here to defend anybody.

D. W. Mott: I am not a member of this association, neither am I a fine stock breeder, and I am hardly physically able to say what I want to. I would hardly try if I was in good health, or good voice, to convince this audience, when ninety-nine out of one hundred are on one side of this question. I live on a farm and feed some cattle. All the interest I have is in that business. For my information, and to make some calculation with a view to the future, I have investigated these cattle from the mountains on the west to Wall street, New York. I shall differ in some respects with you, gentlemen, as to one thing. The only way to find if there is a beef trust is to find where the prices run very low and then where they jump to a high price. Is it in Armour's? The

"Big Four" is the only thing that we hear of now days. I think that you had better take time to look this up, as I have. I have been in the house in New York looking at the prices they are selling meat in New York. They are selling meat at prices astonishingly low to me. The finest quarters I saw, the price was seventeen cents. The first week they started there they were offered eighteen cents per pound, and twenty for better cuts from parties that were entirely out of the hands of the Big Four. You can talk all you wish about four men combining to keep up the prices to the consumer. Why not put your attention to a combine beyond the Big Four? They are like any others who are selling in New York. They sell in the open market. Any man can go out there and get a first class quality of beef for from six to seven cents. If you will take time to investigate you will find a combine beyond the Big Four, which rises up like a mountain. You need not expect good prices until that combine is broken down; that is, on the butcher's block. I believe I feed as many cattle as anybody else on this floor. We feed largely, and it is a very serious question with us, and if you, gentlemen, will take the trouble to investigate something beyond this Big Four, I think we shall then be able to devise measures of relief, but not until then. It is one of the very strongest combinations. They issue a strong paper and they hire a secretary. The secretary appears and attends the sessions of the legislature. He is getting up laws in this State, and I wish to say that, even farmer as I am, when I read your statute on this question of trusts, I saw that they could not stand before the supreme court. I know that one State cannot get up laws whereby they may fence against another State. I say to you, gentlemen, that I have to differ with the views of the president as given in his paper. He has made a mistake in regard to the production of cattle. There has not been a time in ten years but the amount of cattle to the thousand people has been over seven hundred. No, I do not think there has been a time in the last twenty years when cattle have been over seven hundred head to a thousand people.

The President: From what source do you get your authority?

Mr. Mott: From Norman J. Coleman. I took the government statistics and made the computation from them. There is no question in the world in regard to the matter. I am suffering from a severe cold, and you will excuse me for showing any pain in my talk. This is a subject that I have thought of about as much as any other man on the floor. There is a large increase in cattle, and I will hazard on my own responsibility, that there is a surplus

of cattle in the United States over and above former years. If there is anything in the world when we have a surplus that will help us out it is the increased consumption, and it can be put upon the market by the retailer at a fair profit. The consumption will take care of the profit.

Mr. McHugh: I would like to ask Mr. Mott what quality of cattle are handled by the Big Four in New York? Are not the best steers exported?

Mr. Mott: That is true, although there are as fine quarters hung up in New York as I ever saw. I never saw grain-fed cattle finer than what I saw there. I will say to you that in an adjoining county to this some of the beef, the grain-fed beef, from Chicago, has been laid down regularly, twice or three times a week, to a house that I know of, at nine cents per pound, better than that cut in this county. We do have the poorest kind of beef in this county, and I know it.

Mr. McHugh: I agree with you that they possess great advantages in selling over smaller dealers, because, even the shin bones and the entrails are utilized, sent out here, at a cost to the butchers less than they can handle them for themselves.

Mr. Mott: The opportunity they have enables them to introduce meat to parts of the country they would be unable to get at all. I say we have thousands of such cases. All we need is to have men to do business on as low a basis as they do.

Mr. McHugh: I went down to a restaurant and inquired what they were paying for steaks and roasts, and they said from eighteen to twenty cents a pound.

Mr. Mott: Did you inquire what they were paying, of the Big Four?

Mr. McHugh: No, sir. This was where they were setting them up, buying them of meat shops.

Mr. Mott: I know that is true.

Mr. McHugh: If these butchers are selling at present at such prices you can see that they are simply coerced to do it.

Mr. Mott: The coercion is the other way. I have spent much time investigating this matter, and I am surprised at you, gentlemen, looking to the four men for the cause of complaint, when the trouble all lies clear beyond, and in most all cases you will not have to look farther than your own town to find the real trouble. This combine I refer to have their own salaried secretary, they publish their paper, and that man works through our legislature. I am surprised to come in here and see this dignified body of men, one

of the best institutions of Iowa, and hear them spend all of their powder on four men who do business on the lowest margin of anybody in the State. I do not believe there is anybody doing business on so small a margin—introducing meat in places where there was never meat before at such a price. I was in western New York, and riding along with a farmer; and he says: "We have the finest improvements we ever had." He says: "Dressed meat comes in by the car load, and we have western meat finer than we have it here." He said: "We never had better dressed cattle before in the world." By this means you will see that the "Big Four" is introducing our meat in by-ways where it never was before. They send it east and west. If they can send it to New York and Montana at such prices, there is no reason why other butchers cannot buy meat cheaper than any other man. There is no use of talking about the other butchers being forced out by the "Big Four."

Mr. Wilson: One or two of your propositions I would like to call your attention to. The Bureau of Animal Industry, over which Norman J. Coleman has been presiding until Benjamin Harrison became president, told us that the number of cattle dropped down to 537, and the reports show it.

Mr. Mott: I will say that that report is a mistake.

Mr. Wilson: That is a good deal for gentlemen like us to believe as to the reports of our country. If you have the last report you can make the computation and you will find it all right. On the other point, speaking of these four gentlemen, does not the gentleman know this, that every town where this Chicago influence goes applies to the local butcher; that they go there and go into partnership with these butchers in the town, and whilst twenty thousand butchers are selling on their own hook, is it not a fact that these four men are in partnership with more men in America than any other butchers in the world?

Mr. Mott: No sir.

The President: I wish to say that I received from the secretary of agriculture the last report, dated the 10th day of November, 1889, and that the whole matter is figured out by the department, and here is a table which I read to-day, clipped right out of their report, set up exactly, by my compositor, as it is published in the report. What does he say? In 1880, four hundred and ninety. Other cattle, including milk cows per thousand population in 1880, four hundred and ninety.

Mr. Mott: I will stand right on my assertion. I am not sure that I can show you before you go away from here that you are

mistaken, but I will endeavor to do it before the 1st of January, for I think the figures are accessible.

Col. Scott: There is a proposition—I am not sure whether in philosophy, mythology, or theology, you can help me out on some of these propositions. I do not care which it is, but the methods they have of keeping the streets of the New Jerusalem clean is, for each party to sweep before his own door. Now I approve of it, and I do not have a great deal of respect for the party who does not do it. I will have at least but a small amount of respect if Americans go on from one time to another continually asking that the government shall do everything for them. Now, we have had this matter discussed to-night about the "Big Four," and we have had "The Legislation Needed;" we have had another branch of the subject called "Trusts" discussed here, yet, after all, the question comes right down to, what are you going to do about it? No man has given us any remedy. I will tell you what my remedy is. The gentleman says we use pressed beef in all America, and we do it here in proud Iowa. I will tell you that that is not true. I am one man who stands here before you to-day with my energy and powers renewed by eating beef out of *my own stock yard*; and the last breakfast I had was at the table of a woman who feeds me grandly, for my home is not the kind where the Lord sends food and the devil cooks. The last breakfast I had there was liver and bacon. Now, you may think that is like the hired man's conundrum, when the landlady asked him if he liked liver. She says: "I am afraid you don't like liver." He says: "Yes, I like it for sixty or seventy meals, but for a steady diet I get tired of it." We not only have calves' liver, but whenever we butcher we have good, healthy liver from animals grown in my own yard, and bacon cured by my wife, from my grandfather's receipt for curing bacon. [Laughter.] Now, what difference does it make to me about the "Big Four," so far as I am concerned? They push none of their beef down my throat; they get no beef of me to take to Chicago and back again; and, not only so, but they do not take a whole hog for a ham, nor do they get the best meat in the pen. I slaughter for myself and for my wife and little ones the best pig in the yard, and I take that myself, and because I take that, sir, it is not essential that I should go away from home and spend a week in squealing. [Laughter.]

Mr. —: Do you eat all the hogs, horses and cattle you raise?

Col. Scott: I do not. I feed my neighbors; and I am feeding them now on cattle out of my yard, and good ones, too. They are getting fat upon it; and I furnish them better beef than they can get from the butcher. I have no objections to selling beef to honest, good men and women all around me: and they fare much better than they would if I did not do that; and I am paying out no money to the railroads for shipping to Chicago and for shipping the beef back again.

Mr. ———: What price are you selling it at?

Col. Scott: I sell it low enough for them to eat, and yet I get more than the shippers are paying for it. I get ten dollars more on the animal than the shippers pay me for it, and yet I have everything good myself, and my neighbors have the same thing. Not only the same, but I did not go into that section where the ground, like in Maryland, had to be manured in the hills to make the grain grow. Our friend, the president, was telling us the interest that God had in these things. I use corn that we grow on God's land, here in Iowa, and I grind it upon my own mill, and I help my wife to sift, and she makes the griddle cakes from that.

It is not necessary for us to go back to the old times when you and I, and every man here, almost, used to chop his sausage meat with a dull ax on a slab. It is not absolutely necessary for us to go back to the time when we were compelled to use the old saucer and lard, with a wick made of an old rag, twisted around in such a way that when it was lighted it would give us a little light to show us how to do these things. It is not necessary that our wives and daughters shall go back to the spinning wheel again and take up the flax and the wool in order to prepare it for the clothing we need. It is not necessary to go back and do these things over again; but if the "Big Four," or forty thousand that Mr. Mott speaks of, shall combine against us and strike us in our own homes, we have within ourselves, if we will do as I said, sweep before our own doors, we have it largely in our power to offset all these things, and we need not whine to our general assemblies or our congress of the United States, to take care of us. (Applause.)

Prof. Chamberlain: I feel like saying that if our government does not protect us in these matters, what is the use of having a government? What is a government for, if it is not to protect us against these outrages? It is known for years that this shipping combination had this rebate of forty dollars on each car. Armour admits himself in the combination to keep up the price of beef as reported. He is in the combination with the forty thousand that

Mr. Mott speaks of. When these fellows keep up the prices Armour will put men out, too. He admitted that he was in that combination that divided the territory. With the rebate they build up their business, and by the combination they keep up the prices of beef. Remember, also, the secretary of the Stock Yards Company, before that committee, refused to testify whenever asked whether our railroads, or officers of railroads were not part owners in that concern. Remember these things, and you will know that there is a combination of these men grown up among us reaching out to destroy our business. You know they will wipe out the butchering establishments along the road. As soon as the railroads are interested and they can make more by sending three-year-old steers to Chicago and the dressed carcasses back to Des Moines, they are going to do it. They are going to help Armour when he combines with the retailers to keep the business in their own hands. Can we put those down ourselves? No, sir. Can our State legislators? No, sir; but congress, with the help of our legislators, can do it, and we should demand, as citizens, from our representatives in the State legislature, and in congress, that our interests be protected. We have seen these things growing up under our nose. If we will demand of congress that these things be righted, and if they get the backing of the breeders all over the country, they will give us protection. (Applause.)

Mr. Mott: I would just like to ask President Chamberlain what there is in the way of Des Moines' butchers, right in the heart of the finest cattle region in the country, that they cannot dress their own cattle? Why can the "Big Four" have their cattle taken to Chicago and dressed, and sent back to Des Moines and crowd out those butchers? Can you tell me why the Des Moines butchers cannot protect themselves?

Prof. Chamberlain: Because, as long as they sell at the combination prices he don't disturb them. My butcher at Ames does not dare to disturb the prices, because Armour will be after him. He killed the slaughtering business in Davenport by compelling them to go into partnership with him and selling at those prices. We know that as long as these railroads can make more money by shipping stock in there, they will stand by Armour, and you and I cannot help ourselves.

Mr. Judd: What I object to are these off-hand statements. Give us facts. Let us be careful about making assertions. I object to these ideas gotten up for demagoguism in political circles, and about these twine trusts and other trusts. Give us the facts. I do

not put much trust in what comes from the agricultural department at Washington. I think you are wrong if you think there is not an over production. There has been an over production. Look at the enormous amount of Texas cattle that are continually coming in. That has stopped to some extent now. I have not seen so many lately, but I think we should not have so many broad assertions without facts to back them.

President: As, for instance, last summer all of you who read the newspapers read the interviews with Nels. Morris, and with every member of the firm, in which they every one absolutely denied that they, or any one else under heaven, should butcher and wholesale beef. That, I think, appeared on the twelfth day of August, in the *Chicago Tribune*—those interviews. On the thirteenth day of August the same paper contained a report of a lawsuit in the courts of Chicago between G. F. Swift and a man named Sutton, in Duluth, Minnesota, in which Swift sued Sutton for refusing to sell his beef. Swift sued Sutton for refusal to carry out the partnership. The case was taken up as an agreed case and judgment given declaring a combine. Here you have Morris & Co. making the denial, and the next day comes a report of a lawsuit between Swift & Co. for refusing to sell Swift & Co.'s beef. There are the files of the newspaper for it. I was very much surprised at my friend Mott in his remarks to-night, in regard to the Des Moines butchers, as well as with the gentleman who has taken the other side of the question and suggested that we are to look further than the Big Four. The man is a perfect baby on the question who has not looked further than that, and who does not know that such a combine does exist? The prices of beef were quoted in the New York papers. It is by this combination with the retailers, in some form, that the consumption is cut off and the farmer is deprived of his market and the small eastern dealers are deprived of their shops. When you come to look at it right you will find that the Chicago, Milwaukee & St. Paul road, and others, are giving rebates to this combination, and if you do not believe it, read the Chicago papers.

Mr. Judd: As for instance, I defy the president or anybody else, to bring up facts as proof.

President: If you will read the report in the *Chicago Tribune* week after week as to what this combine is doing, you will find this question of rebates for refrigerator cars discussed. It has been suggested that three-quarters of a cent a mile is given as a rebate, and I have seen it alleged that it is more than that. When you come right down with this thing, it is a combination between the railroads

and the large shippers. The inter-state commission, when they want to find out about this thing, if they will put the fellows on the rack can tell us about the whole thing, how it reaches out into every hamlet in the country.

Mr. Flynn: I would like to ask Mr. Judd how he proves that production of cattle is greater than formerly. He says the receipts of cattle in Chicago are more than two or three years ago. If the farmer continues to drive out the local butchers in local towns in the State of Iowa, as he has been doing, how many beef cattle will the average fifty thousand people consume a day? Or, in other words, a week—we will say a week—how many beef, or average beef cattle, which are fed and shipped to Chicago from the State of Iowa, will fifty thousand people consume a day?

James Wilson: The American people are supposed to pay eight million dollars a day for their beef. That is from Edward William Thompson.

Mr. Flynn: I ask this because I think I can show why the increase of beef is growing, and that it is not from over production of cattle. For instance, the city of Des Moines consists of a population of about fifty thousand people. If this fifty thousand people consumes about fifty—

Mr. Wilson: That is about five hundred a week.

Mr. Flynn: Mr. Armour furnishes it and hangs it up at the Des Moines butcher shop—that five hundred head of cattle a week are slaughtered in Chicago, after being sent there from Des Moines to be slaughtered, and the freight on the offals is paid for by the consumer, and it is sent back to Des Moines and hung up in the butcher shops and the consumer pays the freight for the beef coming back again. Is not that adding five hundred cattle a week to the receipts of cattle in Chicago? What has that to do with over production of cattle in this country? Simply because ten thousand cattle are received in Chicago daily, and five hundred of those cattle ought to have been slaughtered in Des Moines to feed a population of fifty thousand people. I say that is not a proper criterion as to the over production of cattle. I refer to the receipts of cattle going into Chicago. If all the cattle in Iowa, that is, all the beef that is consumed in Iowa, must go to Chicago to be slaughtered, and is then sent back here by Mr. Armour to the retailers to be sold to the consumers, that is not a criterion.

Adjourned for the night.

THURSDAY MORNING—DECEMBER 5.

Meeting called to order by the president.

President: As announced yesterday, the first paper this morning is "The Draft Horse," by C. E. Stubbs.

THE DRAFT HORSE.

BY C. E. STUBBS.

Hippologists tell us, that in Asia and in Europe when civilization was just dawning, the equine family was divided into tribes, recognizable principally by their difference in color, but each differing slightly in its peculiarity, in response to natural environments. From this point man himself started to improve, and the horse, in some particulars, has certainly kept pace with him. Other historical events are not more certain, than that for ages before our christian era the horse roamed at will in the fertile valleys of the Rhine, the Seine and the Upper Danube. Here the Grecian found the steed which with care and a little improvement, carried him to the charge in battle. From that time on the horse has been indispensable to the wants of man, and when Greece succumbed to the power of Rome, the latter used the war horse that had previously made Greece mistress of the world. Africa and Arabia had produced good horses from a very early date, and when the Mahometans, flushed by their brilliant success and the spread of the Moslem faith in those countries, crossed the Mediterranean and passed like a whirlwind into Spain, their cavalry was invincible. You will find that where the horse has been improved by man, his improvement has in some degree kept pace with his masters; and when the nation which produced him fell in the scale of greatness, the horse has followed in its decline as it did in the ascent. The horses of the Orient are not what they were when Arabia was at its zenith, nor, is he found in his high state of perfection in other countries which once flourished, but long ago decayed.

Europeans, after having felt the power of well-mounted warriors, at last awakened to the fact that they needed a better war-horse—not such a one as her adversaries possessed, for during a few previous centuries, great progress had been made in the art and science of war, and Europeans needed a

horse large, strong and fleet; one which could carry the warrior of that day with his heavy battle axe and his weighty coat of armor. Up to this time there had been no real need of a much larger horse than nature had furnished, as before the tenth century it was not required of them to carry the heavy armor, and the horse had not, up to this time, been used in industrial pursuits. War was the only honorable occupation, and with the wealthy classes, pleasure was its counterpart. With these pursuits alone was the horse identified, but they now needed a larger horse, and the requirements were at hand to produce him. The Normans, having settled in the most fertile part of France, began the great industry with a will. It was not long until they had a war horse such as the world had never seen. He was large, muscular, fleet and graceful, and glorified himself in the beginning of the crusade. Equine writers tell us that William the Conqueror introduced this horse into Great Britain, and that he was the most formidable charger of the age. This horse was gradually increased in size and improved in quality as necessity demanded, and from that time on we find him yielding to climatic effects, the influence of civilization and the fancies and desires of mankind. Sometimes the horse was crossed on one class to produce a certain desired quality, and sometimes on another for an entirely different result, until at the present we have so many different kinds of horses that it would be tedious to enumerate them.

In my opinion any class of horses, though identical in their origin, will yield to the effects of climate and the products of the soil, and it is no easy matter to trace out from the early periods the progress of the equine race into its different types and formations. To-day we are confronted with the fact that there are but four countries in the world producing draft horses, viz.: France, Belgium, England and Scotland, and, I might add, the United States, making five. It sometimes causes the breeder no little trouble to decide what kind of a draft horse to breed to, if in fact he has decided to raise draft horses at all. We, of course, all have our preferences, and I would not attempt to advise which is the best, but will say that good individuals may be found in any of the draft horses of the four European countries, and some bad ones. But the best of any breed you may choose is none too good. Nothing short of the very best should satisfy the breeder. We can all afford to have good horses, but none of us are well enough off to raise poor ones. I know we have been told for some time past that the draft-horse business was being overdone, but in spite of all this it has grown better and better, and while other stock has fluctuated in value, the draft horse has gone right along to market at a good price, and has been the one thing in Iowa that has paid the farmer's taxes and helped him on in many ways. The number of horses increased in the United States, according to government reports from 1880 to 1889, nearly three millions, and during the last year they have increased in value nearly \$30,000,000!

There are obvious reasons for this. In the first place, horses do not depend for their market on one central point, where the price is fixed every morning, according to the number in transit, as is the case in the cattle market, but they go to every place in the United States, and the rapid growth of this great country cannot be carried on without them. The phenomenal growth of our cities makes their demand greater, and the great industries depend for their success at present on the draft horse. The

lumber regions, the rolling mills, the saw mills, the brewers, the wholesale merchants, the farmers, all must have the draft horse. While the manufacturing interests of this country prosper, and the mercantile business of the world is on the increase, there is no probability of the price of the draft horse decreasing materially. Yet the remaining days of the streeter are few. The plug must go, and already we can see the handwriting on the wall telling us his days are numbered. Steam and the electric spark have superseded him. The cars which he once drew are now run by a cable or by electricity, and even if they were not, the small horse could not handle them, as they are now built on such a scale as to hold double the number of people they formerly did, and they need larger horses.

When the first draft horses were introduced into this country they were laughed at. People thought "Louis Napoleon," the first horse imported from France, was a colossus and entirely worthless, yet he was considerably smaller than the horses we import from the same country to-day. Those we bring now, our customers often tell us, are too small. The draft horse thus far has done us more good than any horse we have ever had. He is not a luxury, and he has fairly won the fame he has gained. As a sire, worker, and traveler, he has paid the farmer back the losses from his other stock and bad crops. He has gained renown after a thorough trial of twenty years because he deserved it. If you doubt their working capacity, hitch a team of them to a seven-foot mower and see the result. On our farm we do not now call 1,500 pounds a load of hay, but usually haul between forty and fifty hundred weight at one load; and with this immense weight behind them, we have teams of mares that will walk four miles an hour without worry. The brewer and lumberman want these horses, because they will pull anything a reasonable man can hitch them to, and the farmer should have them for the same reason, and for the further one that they sell at a good price.

Thus far I have spoken of good horses, and if you will have them good you must breed for them. Don't go shifting about and breed to a horse you don't like because he is cheap; then make bad worse by crossing the poor colt you get and are not satisfied with, onto a jack or a running horse, and then because this colt won't sell complain about the horse market being low. If you want mules, raise them—they sell well; but if you want a good one, do not fail to take a good mare to the jack or you will be disappointed. A poor mule is the worst property on earth, because he will not sell and you cannot breed him up—he always remains a mule. One trouble is that some farmers breed in keeping with some conclusion they have jumped at. You cannot jump over any point and arrive safely at the goal you have in view. There is only one straight and narrow path to success in breeding and you must follow it or fail. If your mares are small do not imagine them just right to raise coachers from, for they will fool you, and then you will be "down on" the coach horse. Breed them up by crossing with some of the established draft breeds until you get a fine large mare and then you may pursue any branch of the industry you desire. Above all things when you get a good brood mare do not sell her. If she is a good one don't even price her, for fear some one will take your offer. You may need money, and will reason with yourself that you must sell something—this conclusively proves that you should not part with your mare. If your good stock is all that will sell, it proves that you must keep your mares to get more of it. Almost every

time you go to town with your team of mares some one will want to buy them, and this should convince you that you have fooled away your time in raising the scrubs you have at home. When the thought strikes you that the horse business may be overdone, stop and think—has everybody good horses yet? Do you know of more large fine teams in your neighborhood than small inferior ones? You must answer in the negative because the good ones are sold and gone to supply the eastern markets. We have not now enough good draft teams in the county where I live to make a respectable showing, though we have been raising them for the last eighteen years. Eastern buyers know this—two of them are there all the time and they have "spotted" every horse in the country, which will do to buy, and they never lose sight of him until he is old enough for them to use. If he does not get old fast enough, I have heard it said that eastern buyers (but not the ones who buy at Fairfield) sometimes knock out their colts' teeth and sell them for five years old when in fact the horses are but four. While we follow the course we are pursuing there is little danger of the draft horse business being overdone. We will only succeed in producing too many scrubs, because that is not hard to do. We have good horses and bad ones in this country, and some of us are willing to accept the latter; but the eastern buyer, when he comes round, always wants the best we have. Why men who are wise in other things should be so foolish when it comes to breeding, I cannot tell. We hate to acknowledge this, yet it is a fact. At the present rate we can breed until doomsday and still be where we are, because we are not at the present rate raising enough good horses to supply the eastern markets. The east is wearing out the good ones faster than we are producing them. In my opinion the prospect for the draft horse industry was never better than at present. We have not yet advanced sufficiently to really appreciate a good horse. Breed for the best and have no fears of the future—there is plenty of room at the top, but the bottom of the ladder has been crowded for the last ten years.

It is customary, and I grant that it is right, to get things as cheaply as we can, but you will agree with me in saying that a good horse is worth more than a bad one. He is worth much more in the European country where he is raised. He costs the importer more money and must be sold at higher price to the breeder in this country. The stallion owner must have a higher service fee for him, and the man who breeds to him will not forget to ask a higher price for his colts. Any importer who has sold horses in this country knows that what I am about to say is correct. We often get letters from Mr. So-and-So, saying that he wants to buy an imported horse and wants our best prices and terms; that he has written several other parties and is going to the place where they price horses to him for the least money; that if our prices suit him he will come to see our stock, but if not it will hardly be worth while. He does not say that if our horses are good enough he will come to see them. He seems to have lost sight of everything but the price. Now I may have a horse which would be dearer at \$1,000 than one of my neighbor's at \$2,000, yet the customer does not go to see my neighbor's horse at all, because the price does not suit him. If this same man wanted to buy land and some one priced him a piece at \$5 per acre and another at \$30 it might occur to him that there was some difference in the land; but not so in the horse business with some persons. If you ask this man for an ex-

planation, he will tell you that farmers of his neighborhood held a meeting some time ago and decided that they would only pay \$10 for colts the coming season, hence he had to get them a stallion he could afford to stand at that price.

We will drive every good horse out of the country if this course is pursued. If we want the best we must expect to pay something for them and we should be willing to pay a reasonable service fee. I know times are hard, but we must not ask the draft horse to bear all the brunt. Because corn is twenty cents a bushel is no reason why you should breed mares to a good stallion at half price. "Let every tub stand on its own bottom," and when you are figuring what you can pay for the services of a horse, figure on what you can get for his colt and not what oats are worth. If oats are cheap have some good colts to feed them to, and don't forget that scrub colts will eat as many or more of them than a good one, and that a good one will pay you double price for the amount you feed him. True, grain is cheap here, and for this reason we should soon be raising the horses for the world's markets. In England and in France the man who is raising the colts to sell us, is feeding oats which are worth at least five times as much as the ones we are feeding. The hay his animal eats costs in the same ratio, and his pasture costs him five times as much. But as a rule he is trying to raise a better horse than we, and notwithstanding the cost of production he selects his sires with more care than the average farmer of this country. The plug may pay for all the oats he can eat at fifteen cents a bushel, but he never will sell for enough to pay for as much oats as he could eat at seventy-five cents a bushel.

While I am on the subject of feed let me say that if you want good horses you must be a good feeder, as that is the only way to do it. Even if you have made a good start you can spoil it all by starving your stock. When some one tells you that our large draft horses will not eat much, don't believe him. One of the most noted writers in France in speaking of the draft horse of that country said: "If you want to export good horses from here, don't forget to take their sack of oats with them." Don't turn your colt out in the field where the piercing winds will strike him all winter. He may be hardy, but when you ask him to paw the snow off the broken down corn stalks before he can get any breakfast, you are asking a little too much. Don't let him stand day after day, and night after night in the fence corner when the mercury is twenty below zero, and then wonder why he does not develop into a fine horse. Stable your colts and feed them all the fifteen cent oats they will eat up clean, and you will find it to be one of the best investments you ever made. Give the dam plenty of good, wholesome food when she suckles her colt. She may be fat; that makes no difference. If you feed her her milk will be richer, and you will soon see a difference in the appearance of her offspring.

I would like to treat the subject of crossing the full blood draft horse on our western mare, but space forbids. Let me say, however, that it is a success, and that the first cross usually brings an eleven or twelve hundred pound horse. Is it possible that the mission of the imported full blood horse is performed until the thousands of these western horses are bred up to some degree of usefulness? In the west there are thousands and tens of thousands of these animals, and what is to be done with them? There is no market for

them, and the only alternative is to breed them up by the aid of the draft horse. You cannot breed them to the coach horse in their present state without the worst kind of failure. The redeeming feature of the magnificent coacher of to-day is his size, and that we must maintain; this can not be done by breeding them onto an eight hundred pound mare. Horses are not only scarce in this country, but they are also scarce in Europe. You would be surprised, perhaps, to learn that in the kingdom of Belgium, where the draft horse has been bred for centuries, they are so scarce at the present time that much of the light work is done with dogs. Yet such is the case. The value of a dog as a work animal is from \$20 to \$30, and one sees them even in the streets of Brussels, but much more frequently in the smaller places and in the country, harnessed to wagons like a horse. The milk cow is also used to plow in the fields, to team on the road, and to do in general what is done by the horse in this country, except drive for pleasure, though I have frequently seen them driven about to a wagon on Sunday. The steer is seldom worked because he is too valuable for beef, his meat being worth from fifteen to thirty cents per pound on the block. This is a fact for cattle men to consider as well as horsemen.

The time is not far distant when there will be but two kinds—two types—of horses raised in this country (of course I do not now include the horses bred for speed): The draft horse and the coach horse. The latter is constantly gaining favor. Will it be the future horse, or will it be the draft horse? I answer, both. The time has almost reached us when we will not ask our driving horse to do the work on the farm, or our farm horse to do our driving on the roads; yet, if we require both at the hands of either, they can do it. We have produced a high grade draft animal in this country, which has cheerfully responded to our wants in the field and on the roads. When we have crossed these high grade mares upon the coach horse, we have produced an animal sufficient in size and strength, and courageous enough to respond with equal grace to the wants of the farm. But there is still a greater destiny in store for the coacher we can produce from such a cross. We need have no regret at not getting him sooner. Had we done so we would have spoiled all. Not until the present time, not until we had a fine class of large, smooth draft mares on which to breed the coacher, were we ready to receive him; and had we taken him ten years ago, we would surely have failed in producing a class of horses we can now raise with certainty. We now have this smooth, heavy mare, with good style and action, and those who admire the coach horse can now embark with safety in the enterprise of breeding them. I have said that the future for the coacher was a grand one, and before I have finished I shall tell you why I think so.

The European countries are already turning their attention toward America for their cavalry horses, and the time is at hand when we are expected to furnish them. At the present time, however, we have none such as they want. Only a few days ago I had a conversation with a gentleman who has bought horse for the United States army for a number of years, and he told me we have few horses fit for that purpose. We have in the United States cavalry about 10,000 horses, and they are very inferior horses as a rule. The gentleman told me that he had inspected hundreds without finding many that would do, and of the 1,500 our government buys annually few are really good ones, and about one-third of the number are found entirely unfit for the

work for which they have been purchased. Perhaps some of you have given the matter no serious thought, and will imagine that our little native horse is just the thing for our army, but such is not the case. He is too small, he lacks the action, has not the endurance, is not level-headed enough, and, in fact, possesses few or none of the qualities which go to make up what is considered, at the present time, a first-class cavalry horse. I need not tell those of you who have seen the English cavalry, the mounted men of Germany, or the superb war horse of France, what is wanted.

But for the benefit of those who have not had that privilege permit me to say, that the cavalry horse for those countries must be large, weighing from 1,300 to 1,400 pounds, with fine clean limbs, short back, well rounded ribs, broad flat bone, long hips, but wide, with a well developed loin which can sustain a great weight and carry a man weighing, with his equipment, about 300 pounds. His shoulders must be oblique, his withers high, and his head well set on a fine arched neck. His action must be good, his courage undaunted, with a good disposition but not nervous or uneasy. In short he must be possessed of the strength of the draft horse with the endurance of the Arab and the quality of the thoroughbred. Only a short time ago in conversation with one of the most extensive horse dealers in Europe, residing at Lille, France, I was told that France, in her eagerness for cavalry horses had tried our American horse. I was at the same time shown some forty head of horses in the man's stable which had just arrived there from this country. This dealer, who has a contract to furnish the French government cavalry horses, told me that these horses had been sent there for that purpose, but that few of them would be accepted. He told me that the American horse did not show enough blood; that he was found wanting in many respects and in none more than in his endurance when subject to a hard trial of successive charging, that was often in the mud and slush, and which tested both horse and rider. Where are we to get the horse I have described? Certainly he is not to be had in this country, and soon the same may be said of all European countries, because the few places producing them cannot furnish them to the world for any great length of time, as they have been doing for the last few years. We must not imagine that America is the only country drawing on the horse-producing countries of Europe for their stock. Every country in Europe is after them as eagerly as are we, and South America is not much behind us. England produces a good cavalry horse, but not as many as she can use. France sells to Italy, Russia and South America, and Germany sells to all the world. For one who has never visited these countries it is hard to understand how zealously these governments are guarding their horses.

The alarm has already been given. England has none to spare, and France and Germany are liable to call a halt at any moment. The governments have taken the matter in hand, and France buys her own coach horses by the hundred, paying large prices for them, and placing them in stables owned and kept at the government expense. The way the government keeps all the good stallions from leaving France is by being thus willing to pay such prices for them for use in their own stables. In Germany the government does not buy her stallions outright, but she might as well do so. She has the stallions that are allowed to stand for mares approved by commission, and the persons having their stallions thus approved draw from the govern-

ment a pension varying in amount from \$200 to \$1,000 annually. The persons receiving this pension or premium cannot sell the stallion for which it is given during the year he is approved without forfeiting all the premiums he has drawn and paying a penalty besides. In Belgium it is much the same in regard to draft horses. Since the importation of the Belgian horse began a few years ago, the Belgian government has become alarmed and has more than doubled her bounties on the stallions her commission approve for service. The first prize stallions in Belgium now draw an annual premium or pension of 5,000 francs, or \$1,000. Not only are the different governments drawing so heavily on the coach horse countries for the cavalry horse, but the royal families of the world are using them in great numbers for their carriages. Even the wealthy class of our own country have the "craze," and only last August I crossed the ocean on a vessel on which Vanderbilt had a fine team of gelding coachers he had just bought in England at a price which would seem fabulous to persons in Iowa. The Italian government has become awakened to the necessity of improving her draft horse and her cavalry horse, and during the year 1888 spent over 63,800 pounds sterling, or \$324,000 for this purpose. English army officers each year visit our country in the vain hope to find horses to replenish their cavalry.

We have about 13,000,000 horses, yet few of them fill the standard of excellence for any purpose, and one English gentleman, after visiting this country, went home and reported that he had seen 10,000 horses, and that hardly ten of them would do for the English cavalry. The foreign countries are willing to pay good prices for the kind of horses they want, and if we could supply them, a market would be opened up for thousands upon thousands. The cavalry horse in Europe brings from \$400 to \$500, but those suitable for officers' use sell much higher. Why should we not furnish them? The world expects it of us. Shall we disappoint it? Will American energy, which has never been found wanting, fail to respond to this profitable call? I think not. You may wonder why we are expected to furnish the world her cavalry horses. It is easily answered. The countries needing them are aware of the fact that we have, for the last few years, imported more good horses from Europe than any other country. America's enterprise has characterized her as a nation ever awake to the demands of the future, and last, but by no means least, we can raise a horse here until he is three years old for about \$75, while in Europe it costs about double the sum for each year the animal is kept. With such natural advantages as we have, is it possible for any European government to compete with us? Here is the greatest field yet opened out before the breeders of horses, but we never can reach it while we stand quibbling about service fees. Good horses are scarce; they cost much money, and as a rule, the very best are worth most in the older and I might say European countries where they have been bred the longest. This is partly due to the production, but mainly to the fact that there they appreciate a good horse more than the average American.

DISCUSSION.

President: The paper is now open for discussion.

James Wilson: I want to say one word on this paper. It meets my idea about the position we occupy on horse raising. One re-

markable feature in it is, we raise horses cheaper than they can anywhere else in the world, and the man taking up the subject of the capacity of Iowa grass might show conclusively in connection with that that the grass grows from the lime-stone soil of Iowa, demonstrates that we can raise the best horses, the best cows, the best pound of butter, from the soil and climate we have here. Everything is favorable. One feature of the gentleman's paper I would like to have more time to consider, myself, because I am probably wrong, and that is, in regard to the stabling of colts in winter. I have heard of colts that run out in the blue grass pasture, protected by timber all winter, that those colts live all winter without hay. They do not leave one hundred pounds of feed, for they would not like it. They would eat blue grass, though, in some instances the masters, for humanity's sake, have put up a little shed for their protection, and they would not go into it. In the development of horses we want good, stylish coach horses and heavy draught horses; but I think it would be to their advantage to let them have a little chopped grain, or give them a little of our chopped oats. To-day I am still leaning to the opinion that I would rather let colts run in the blue grass pasture than to tie them up. That is all I have to say.

President: We will have another paper on horses after the blue grass comes in. I think it is best to discuss them at that time. Mr. Hemingway will take the place of Mr. Pendleton on the subject of trotting horses.

[Mr. Pendleton being absent, Mr. Hemingway kindly gave a few points of excellence in the standard bred trotting horse. Mr. Hemingway gave his remarks orally, and our stenographer failed to get them, thinking he had a paper.—ED.]

(Here arrangement was made for the exhibition of fine stock by Franklin county, for the association, and it was announced that the convention would meet at the Methodist church in the afternoon instead of in the opera house.)

DISCUSSION.

Mr. Stubbs: I want to say to the association that I do not want to be understood as advocating the keeping up of colts in the winter time, in the stable. We raise colts much as Mr. Wilson says he does, though we have sheds for them. We keep oats in the trough and the rack filled with good hay all the time. Mr. Wilson assumes the position I wish to occupy in regard to shelter, unless the pasture is sheltered by shrubbery, and all that kind of thing. I think his

shed is always a good thing to have in a pasture, but I think he will find them in the shed if he will go into the pasture when the mercury is twenty degrees below zero. Colts will do well on grass, but should have hay and grain.

Mr. Baker: I would like to ask Mr. Wilson if his shed is double boarded.

Mr. Wilson: No, sir.

President: The secretary will announce some of the committees and I will state that it is necessary that the committees meet as soon as possible and report. There is a delegation of improved stock breeders from Dakota that may be here this afternoon.

Mr. Wilson: Your committee on resolutions are ready to report whenever you call for them.

President: The secretary will please read the reports of the committee.

Secretary: Committee on Location: Col. John Scott, Don D. Donnan, Maj. J. W. McMullen, Hon. J. B. Harsh, C. E. Stabbs, B. F. Elbert and William Cook.

Committee on Officers: H. B. Daggett, Henry Lefebure, A. K. Emerson, G. B. Rockwell, Richard Baker, jr., E. C. Bennett, Hon. D. M. Moninger and Capt. W. H. Jordan.

President: The next paper will be one on clover, by Henry C. Wallace.

THE CLOVERS.

BY H. C. WALLACE.

Of all plants raised on the farm the clovers are the most valuable. Clover is the only crop we can raise that will yield a direct profit and at the same time enrich the land in that element of fertility most valuable in the west, namely, nitrogen. While the scientists are wrestling with the problem as to whether this fertility is derived from the air either directly or indirectly, we can well afford to rest content with the knowledge of the undisputed fact that clover furnishes at one and the same time the best hay crop and the best manure crop, and incidentally a seed crop frequently as profitable as any of our grain crops; and, without inquiring into the why and wherefore, should feel satisfied if we can handle this crop in the most economical manner. I will endeavor to state as briefly and concisely as possible how I

have handled it, not with the expectation or design of imparting any new information to the members of this convention, but rather for the purpose of starting a discussion of the subject among men who have had sufficient experience to speak with authority.

Of the four principal clovers grown in the west, the white is adapted solely to permanent pastures, the alsike will be used to the best advantage on sloughs, swales and bottom lands. In case of a visitation by the destructive midge it may prove to be an exceedingly valuable crop for our corn lands. I will confine my attention to the two remaining varieties, the common red and the mammoth, believing that they especially deserve the attention of every farmer in the State of Iowa. The late Dr. Asa Gray says, in his *School and Field Book of Botany*, that red clover is a perennial, living from year to year. I do not believe this is strictly true. On heavy soils it does seem to be a short perennial, but on a light soil, such as our sandy points, it does not live more than two years. The mammoth is generally regarded as a variety of the red; although I have not noticed the suggestion anywhere, I am rather inclined to believe that the red is really a variety of the mammoth, if indeed there be not *three* varieties under the one name, to be distinguished by the different colored blossoms, and also by the habits of growth. The mammoth grows larger and coarser than the common red, attaining on very rich soils the height of from five to six feet—on this land, from three to four. On rich lands it grows rather too rank and coarse for hay, while on thinner lands it is not objectionable, and is well adapted for sowing with timothy, on account of their blooming at nearly the same time. The seeds of the red and the mammoth cannot be distinguished from each other. The ease with which a stand can be obtained depends upon the character of the soil and the weather. There is no trouble at all on a moderately heavy soil. The best time to sow is generally considered to be early in March. To insure a stand the ground must be in good mechanical condition, and the seed sown at the rate of twelve pounds to the acre and harrowed or brushed in. If the ground is dry it should be rolled. When sown with oats, as is generally the practice in our part of the State, the critical time is when the grain is taken off. A few dry, hot days at that time are frequently fatal to the tender young clover. This period passed we can be reasonably confident of a good meadow the next year, as it very seldom winter-kills with us. I think it is about as profitable to let it alone the first fall. The young clover is very "washy," and does not seem to do the cattle much good when pastured, while if let alone the tops will serve as a protection to the roots.

When it is desired to cut a crop of seed from the red clover, the hay crop should be taken off not later than the twenty-fifth of June; and then comes up the troublesome question of how to cure it and how much to cure of it. This question is rendered more perplexing at the present time by the fact that during the last six weeks hundreds of tons of clover have been destroyed by fire, resulting undoubtedly from spontaneous combustion. It will not do to let it dry enough to be brittle, but if put in too green we run the risk of fire. The first crop of hay I ever put up was ten tons of very fine clover. It was about the 18th of June, and the grass was sappy but the days were hot. I began to haul in at noon, when the grass was merely wilted, putting it in a mow twenty by thirty-five feet, with no floor. The next morning a perfect

cloud of steam was rising from the mow, and the grass was very warm. I began to be alarmed. While resting that noon I read a report of a farmers' meeting in Illinois, in which some of the speakers recommended putting in alternate loads of green clover and old hay or straw. I tried it with the rest of the ten acres and the result was highly satisfactory. That put in first was black and dusty, but the cattle ate it with apparent relish, old hay and straw included. In feeding it out I frequently came across a forkful as perfect in color as when put in. The main object, I think, is to get the clover dried evenly without any rain or dew on it, and put in a barn where there is no floor or places where air can gain access into the interior of the mow. As clover readily absorbs moisture it should not be handled on a damp day or late in the evening. I regard this as a *very* important point.

To handle a heavy crop successfully a hay tedder is absolutely indispensable. There is no way by which it can be dried as evenly and as quickly. The tedder should be run over the swath in from two to three hours after cutting. When no water is visible after wringing or twisting the stem I believe the hay is fit to go in, providing there is no rain or dew on it. When the crop is light from four to six hours of good drying weather is usually sufficient; when heavy, eight to ten. The nicest way to cure clover is to cock it and let stand for several days; but the weather is too uncertain for this, and I usually try to have that cut one day fit to go in the next.

The main value of the mammoth is for a seed crop, manure and pasture. It should be pastured close up to the 10th of June, or mowed at that time, and then allowed to grow until the seed heads ripen. For seed, clover should be cut as soon as the more advanced heads begin to shatter. There is nothing gained by waiting long after this, and the danger of bad weather is very great. Every rain on it is a damage. I cut with a self-rake machine, and let it lie for two or three days, when we go over it with barley forks and throw three gavels into one row, turning the underside uppermost. Then hull inside of a week, if possible. The profit of a clover-seed crop depends upon its being hulled before any rains come on it. As I had not had much experience in hulling clover, I inquired very diligently this summer and fall as to when it should be hulled. Nearly every man who gave me any information at all told me to let it lie until rotten. I did so with twenty-two acres of mammoth, and lost fully half the seed. The old tradition that it must be rotten to hull good cost me \$200. I hulled the second cutting of the common red in from four days to two weeks after cutting and saved seven-eighths of the seed. There was no apparent waste in that hulled four days after cutting; the huller took almost every seed out. If a huller cannot be obtained at the right time, the clover should be stacked and hulled in cold weather. It will not pay to hull with a threshing machine attachment unless it is impossible to get a huller. More than enough seed is lost with an attachment to pay for the hulling.

A stock raiser cannot realize the greatest profit from his stock unless he raises grain, and it will not pay to raise grain unless he raises big crops. I believe enough stock should be raised to eat up all the feed, and enough feed should be raised to keep all the stock. The stock will not furnish enough manure to keep up the fertility of the land; the land must not be allowed to go back; hence, we must raise some growing crop for manure. Unquestionably the plant best adapted for the purpose is clover. It is the most valuable manure

crop we have. I had sixty acres of corn this year in one piece. Thirty-five acres of this was timothy sod, plowed up two years ago this fall, this year making the second crop of corn raised on it. The remaining twenty-five was clover sod, part of which was plowed last fall and part last spring. The corn on the clover sod averaged twenty-seven bushels more to the acre than that on the timothy. I know, for I weighed every load. It takes a little more work to plow the sod and prepare it for planting, but the increased yield more than pays for it. The general impression is that sod will not raise a good crop in a dry year. It will if enough work is put on it to thoroughly pulverize it and re-establish capillary communication with the subsoil so that the moisture can come up. It must be disc harrowed, harrowed and rolled over and over until pressed back into place; then it will stand a dry season very nearly as well as old plowed land.

DISCUSSION.

The President: The next on the programme is a paper or address, by Hon. J. B. Harsh, of Creston. I will say, he has been for some years editor of the *Creston Gazette*, and has given large attention to farming and farm interests, and is prepared to give us something of interest to the association.

Hon. J. B. Harsh: Mr. President and members of our association, I am very much obliged to the president for the introduction he gave me, for he really obviates the necessity of my saying a great deal about myself, before I get through. As to whether my effort is an address or a paper, you will have to determine that as we go on. I was in here during part of the session yesterday afternoon, and heard Mr. McHugh congratulating himself on appointing a committee which gave us our present presiding officer. I think somebody ought to congratulate you on getting the secretary you did, because, if it were not for him I would not have come here. I think he has imbibed one of the chair's characteristics, which is, to get all there is out of anything. When he first asked me to prepare a paper to be read here, it was for a very modest sort of document. I wrote him back that I would prepare a paper and lay it by. I made a note of it, as I am in the habit of doing, lest I forgot it, and just about two weeks ago he wrote and wanted me to give him the subject. Up to that time I had not myself decided on the subject, but he was bound to have the subject, so in my mind I ran over the field and selected a subject and sent it to him. Then, lest I might forget it again, in a day or two after that he suggested in another letter that I prepare a paper in duplicate. Then he fortified himself by insisting that it should not be a paper at all, but it was to be an address; and, of course, if it was an ad-

dress it would not do, unless the person who made it came along with it; but I had the paper prepared and concluded that I had better come up and see what kind of a crowd this was, anyway. I had often promised myself the pleasure of attending your meeting, but the distance I had to travel in this instance was such that it almost seemed a hardship; but I had only attended your meeting a few minutes on yesterday, when I felt amply repaid for coming to this part of the State to see the beautiful country and to mingle with those in attendance and hear their views.

Now, have you ever been in the condition of an after-dinner speaker on a toast when the speakers all seemed to have divined your thoughts in advance and drawn them all out? That seems to be the condition I am in now. We have had the subject of which I am about to speak treated as collateral in nearly all the other papers which have preceded me, and yet, it is a very large subject. My subject, as you see, is "Pastures." Pastures are mostly made of grass, which is the basis of modern, at least, agriculture. Grass is the foundation of agriculture. It is the most valuable production of the soil. Unlike other crops it enriches instead of impoverishing the field. Cotton, by almost common consent, wore the crown in this country until Hinton Rowan Helper, in his "Impending Crisis," proved by statistics that that part of grass annually cured as hay was of greater value in dollars. Later an effort has been made to prove that corn is king, but an examination and comparison between corn and grass will show the latter makes annually not only more animal bulk than corn, but more than all the grains combined. How much grass was grown the past season? Who can tell? An approximate estimate may be made of that portion cured as hay, but what of that consumed as pasturage? Grass is the only crop that cannot be measured. The statistician does not give it a column in his return of crops, for the reason that its bulk is too large to be computed by the rules in his arithmetic. It grows everywhere. It is found along the highway, in the meadows, and even crowds its way into fields untouched, for a season, by the plowshare.

There is no soil so poor that it will not grow thereon, and none so rich that it may not profitably be planted to grass for use as pasturage. Without a knowledge of the nature, habits and uses of the different grasses, it is impossible for any one to procure a good, permanent pasture. The study of the grasses by the masses is in its infancy. The average farmer does not recognize, and cannot give even the common name of a dozen varieties at sight. I had,

last summer, in the bank where I work, specimens of thirty-three varieties grown in the locality, and there was not a farmer, business or professional man of the scores that saw the collection every day that could give either the common or botanical name of one-third the number of specimens. Of the thousands who visited the Blue Grass Palace at Creston, this fall, there was not a score that could name one-half the grasses which were grown in the region and on exhibition there. Nor were those whose business it is to make a study of the science of agriculture found much better informed on this subject. In several instances, while the collection named was being made, specimens were sent for naming to professors in agricultural colleges, whose answers indicated very recent encyclopedial research. Attention is called to this to show how little man has done and is doing toward the improvement of pastures. As before stated, no improvement can be made without a knowledge of the different varieties of the grass family. Finding the pastures at hand good enough, he has given very little thought or labor to making them better. He has been forced by circumstances to grade up his live stock, improve his corn, seek new and better varieties of wheat, oats and potatoes, but has expended little labor and less thought on the subject of better pastures. The farmer of the near future, it is believed, will look back to our day and view with derision our comparatively bare pastures and barer boned animals. He will wonder that we spent so much of the year preparing the products of our fields for winter use, meanwhile neglecting to have our pastures in condition to present our animals to the first cold storm of winter with a lining of fat within and a covering of thick flesh without. Animals furnished with suitable pastures in summer are well fortified against winter storms. The meadows may be pastured, but the primary object of grass in the meadow is, or should be, a resting crop for the soil, the hay being incidental only. I say the meadow "may be pastured" because this should only be done occasionally and not followed as a rule. The farmer who understands the nature of the grass (for the purpose of this paper clover is considered as grass) with which his meadow is seeded, *may*, in the exercise of his best judgment, allow his live stock to crop the grass therefrom at certain seasons without damage, but the chances are that he will make a loss as often as a profit by the transaction. Meadows, as such, are very often damaged by being used as pastures. The value of permanent pastures is forcing them more and more into recognition as the years go by.

Fortunate is Iowa in this respect. By proper selection of seed, preparation and treatment of the soil, good, permanent pastures may be had in any section of the commonwealth. In the southwestern portion of the State, known as the "Blue Grass Region," permanent pastures are common. Soil and climate there unite to form permanent pastures of unsurpassed excellence. The pastures of Southwest Iowa are permanent in more than the sense ordinarily understood by the term as applied to ground used only for pasture purposes year after year. Pastures in the Blue Grass Region furnish grass the year round. Horses and cattle may there be profitably grown on pasture alone. By this it is not meant, of course, they will live any winter on a pasture from which the grass had been cropped close in summer, but during an ordinary winter, on one prepared for the purpose by carefully excluding all stock therefrom from May until November. Winter pastures should be seeded with blue grass and have therein abundance of water and shelter. The best results in my experience have been obtained where brush was plentiful, and board sheds were relied upon to protect the stock from rain and snow, and they had access to good running water every day. Pastures, other than the one used expressly as the winter grazing lot, should be seeded with grasses adapted to the different soils found in every tract. There is no field of even twenty acres in extent that has not on it half a dozen or more soils that require seed of a different variety. Besides, the live stock is more greatly benefited by such a pasture to graze upon than upon one seeded to but one variety of grass. By having a succession of pastures thus prepared, into which horses and cattle may be turned at different seasons of the year, I repeat that it is possible to profitably keep them the year round on pasture. But if not the whole year, then, at least, the feeding season may be cut down to at least thirty days for horses and, say forty to sixty days for cattle in ordinary winters. The cattle under such arrangement should run with the horses, as the latter paw the snow off the grass, and the cattle follow after and feed upon it. In this climate, which is comparatively a dry one during the fall of the year, all kinds of late grown grass are very nutritious. This comparative dryness of our climate is one of the main factors in producing our unexcelled blue grass pastures. Localities in other States have as luxuriant a growth of grass, but the frequent rains and "muggy" weather wash the "good" out of the grass. A steer will fatten on a good blue grass pasture almost as quick, and the flesh will be nearly, if

not quite, equal to that made by feeding corn. There is nothing that will make bone and muscle in the horse like Iowa blue grass cropped by the animal from the land where it grows. Cattle grow as well as fatten upon it.

The other day (remember this is December) I weighed a lot of my yearling grade Short-horn steers. There were sixteen in the bunch, and their average age would not exceed sixteen months. They were not selected for the purpose, but were all I had of that age. The average for each steer was 881 pounds. They had had no other feed than pasturage, except a little oats and hay for a few weeks after weaning. None of them were more than half Short-horn, being the product of common cows, mated with a plain bred Short-horn bull. A few days after I weighed a two years old pure bred Galloway heifer, similarly treated as to keep. She weighed 1,200 pounds. They had been, during the early spring and summer, on pastures for foundation—the best of the wild native grasses, and the usual amount of blue grass, which had “come in of itself.” The tract had been seeded, as hereinbefore indicated, by scattering the seed, for most part, on wild prairie sod (while stock was pasturing thereon) with red, white and alsike clover, timothy, orchard grass, tall meadow oat grass and English blue grass. On September 2d last, they were turned in a common native or Kentucky blue grass pasture, that had had nothing on it since May 30th last. Their flesh was hard and firm, and a local butcher who saw them said he would as soon have them for his block as though corn fed. The pasture I refer to as being the one stock was turned into September 2d, had at that date a heavy growth of grass in its fall form. I turned in about one hundred and fifty head of all sizes and ages of cattle and horses. The pasture contains 160 acres, through which a creek of excellent water runs. There is still a “coat of grass” three or four inches thick on the tract, and I intend to leave the stock in there until January, when I will remove them to another pasture, there being no shelter of any kind in the one referred to. Of course, if a hard storm comes before January, I will remove them sooner, but I think none will come that I cannot overcome with a load or two of corn. The stock at this time are sleek and fat enough for the butcher's block. Last winter my colts and brood mares run in a blue grass meadow pasture, coming out in good flesh and fine condition in the spring. There was considerable brush in the lot, and though rude sheds were provided, they scarcely ever availed themselves of such shelter. At the time of the organization of the Blue Grass League in Creston in March last, I had one of

the mares brought up to exhibit for the purpose of showing the practical result of a winter blue grass pasture. She had been stabled and carefully curried and brushed for a week. The visitors who saw her, one and all, declared her to be in splendid condition, and her coat as shining as one could desire. One remarked: “She is fat enough for beef.” “But,” you say, “last winter was a mild one. It will not do to arrange with reference to such exceptional winters.” True enough. Yet my observation and experience led me to make the trial, confident of results. I had good shelter, hay and grain on the place in reserve for contingencies, and would have every winter, for blizzards and northwesterers are likely to come, when stock should be housed. I want, however, to impress the idea hinted at before, that properly conditioned summer and fall pastures fit stock to withstand almost any kind of winter. There is something about blue grass pastures that gives to horses bone and muscle, and imparts suppleness and qualities of superior endurance which is lacking in other pasturage, or indeed, in any food rations with which I am acquainted. A common mistake is to overstock the pasture. This means death to the pasture and financial loss to the stock owner. I have often had men remark, when walking over my pastures with me: “Why, one could cut a good swath here.” I am often asked to receive my neighbor's stock into pastures which I consider already overstocked. Mention has been made of amount of food on one of my 160 acre winter pastures. I want now to tell of the producing capacity of an hundred acre tract I had some years back. It produced sufficient pasturage and hay to keep seventy-five head of cattle the year round for two years, with the exception of sixteen tons of hay. I think I could easily have cut down the rations so as to have saved buying the sixteen tons of hay. I fed a part of the cattle grain during the period named. The herd was never off the place, and in good flesh during all of the two years. Part (about one-third) of the place was kept for meadow, being used very sparingly for pasture at certain seasons, and the remainder (two-thirds) was in pasture. The cattle were a mixed lot—cows, heifers, steers and calves. That 100 acre tract was brought to that condition by persistent pasturing thereon of stock, sowing of grass seed and top dressing with manure. The land was hardly an average piece of land, but after four years of treatment as above, it is now one of the most productive tracts in the State. One need not hesitate to top dress a pasture with manure, especially if well rotted, during any season of the year. “But,” says one, “why attempt, in a locality famous for its corn fields, to make so much of the

pastures?" My answer is: Because it is nature's way. Such a course is kindness to the animals, the soil and the man who cares for them. The difference in the life of that horse or cow which roams the pasture at will, cropping the herbage from the field in its natural, juicy state, and the one tied in the stall, compelled to digest dry, woody substances, called hay or corn fodder, seven or eight months in the year, is very great. One is healthy, well conditioned, free from disease, and enjoys its brief existence. Can as much be said of the other? The pasturage system as against the "all plowed land" system of farming insures the building up of the soil every year. Plowed land means "washed" land. Wherever the sod is broken a means is furnished by which the best of the soil goes into the rivulets, thence into creeks, from there into the rivers and thence on to the sea. The saving of manual labor is great. It saves much plowing of ground, harvesting of small grain, corn husking and pitching of hay. Were I the owner of an hundred or thousand acre farm, two-thirds of it would always be kept in grass. My plea to-day is, for more and better pastures, and less plowing on our Iowa farms.

I remember when I began to study these things that I used to read over the deliberations of your society and the different books on the subject, and I have endeavored to put the theory into practice, and have given you the results as well as the theory.

A short time ago I weighed some of my yearling grade steers. They had been treated as I have spoken of. They had no grain, except a few quarts of oats, after weaning. There were sixteen in the lot. I had eighteen of that age, but could not catch the other two. We weighed them about the middle of last month, and they weighed an average of eight hundred and eighty-one pounds. They were the product of a common cow, bred to a Short-horn bull, and I have given you the kind of pasture that they have been on, and they will probably remain on that pasture during the rest of the winter.

Mr. ———: How long did they run with the cows?

Mr. Harsh: Six of them were raised by two-year-old heifers, and run with the cow all summer, until they were weaned, and the others were kept up.

Mr. ———: So they got a good send off?

Mr. Harsh: Yes, sir; I believe in giving them a good send off all the time. I do not say they were large, but know it is possible to make a steer of that age weigh more. A day or two after that

I took up a pure bred Galloway heifer. She tipped the beam at twelve hundred pounds, and I positively know that she don't know what corn or grain is. She did have a little oats after she was weaned, say, for fifteen or twenty days after weaning. Now, I propose to leave those cattle on that tract. There is plenty of water, and I salt them once in awhile; and that is all the care they have had this winter, or that they will have. If there comes a blizzard, or bad weather, I expect to shovel out some grain, but I propose to leave them there on the blue grass this winter. I say that what we need is more study of the grasses and more diligent inquiry into the varieties, to learn their different forms and to learn the preparation of the soil. I think we have pursued the system of plowing lands long enough to see that it weakens the soil. My plea to-day is for more and better pastures; leave the plow lands alone on the Iowa farm.

Mr. Lowe: How are we to find out the different grasses and their different qualities?

Mr. Harsh: I will say in reply to Mr. Lowe that that will be governed by the rule of the "survival of the fittest." That is the best way to make the pasture. Those that deserve to live and are desirable selections for pasture will live on the soil, and those that are not will soon be crowded out.

Mr. ———: What are the two leading grasses?

Mr. Harsh: The mammoth clover and the blue grass.

Mr. ———: Is there white clover there?

Mr. Harsh: Yes, sir; we do not need to sow that.

Mr. Gabrielson: I wish to ask the gentleman how he prepared his pasture of one hundred acres, in order to be able to get it into a condition to carry seventy-five head of cattle?

Mr. Harsh: That will take me back to about seven years, when the man sold me the land on a mortgage. That is, he let me take it for what it was worth; and, by the way, a good deal of the land I have I got that way, and therefore it was mostly poor land when I got that kind of land, and I had difficulty in making it pay. My first experience was to put twenty-five two-year-old heifers on the land, and bought grain and hay for them that winter. By continued judicious pasturing I brought the land up until it would carry seventy-five head instead of twenty-five.

Mr. Gabrielson: How long were you getting that land in that condition?

Mr. Harsh: Three years from the time I speak of.

Mr. Wallace: Mr. Pammel is not here, so that paper will not be read unless we have time. We have already had papers by Messrs. Harsh and Wallace, and the members of the association want to get all the information they can on that subject, so we will allow any person who wishes to ask either of these gentlemen any questions they may wish in regard to what is in their paper, and we will then proceed with other papers.

Mr. Lathrop: Mr. Harsh spoke of the blue grass of Iowa. I would like to have him state what that blue grass section is.

Mr. Franklin: It is Iowa.

Mr. Lathrop: The question is answered. That answer is satisfactory, but I think I would like to have it answered more fully in view of the fact that our public proceedings go beyond our State.

Mr. Lowe: I have always been doubtful whether for permanent pasture it would pay to use good tillable upland for that purpose. I think in our section of the country we had better change our land and raise clover, and timothy and grain, and let the permanent pasture go unless we have slough or brush land, such as these gentlemen have spoken of.

Mr. Harsh: This question seems to be answered satisfactorily to ourselves. We can sometimes answer a question satisfactorily to ourselves when the answer is not complete. You will remember I said we could in any part of Iowa have permanent pastures by selecting the proper seed. The gentleman is evidently a man who has traveled and is acquainted in Iowa. I admit that it is a glorious State. Some parts of the State, however, have difficulties, and some have not. Some parts of the State do not raise blue grass as much or as readily as some other parts. Have you ever been in Woodbury county?

Mr. Lathrop: I have.

Mr. Harsh: Have you ever seen any grass in Woodbury county?

Mr. Lathrop: I do not know as I have, but that is one of the newest counties of the State. I have spent nearly forty-five years in Iowa, and there was no blue grass when I came. The blue grass is not timothy or clover sod, and just in proportion as the newness of the country disappeared, the blue grass and clover have come in. The white clover came into my yard in Johnson county, and blue stems came in; the first patch of blue grass that I noticed was no larger than my hand. I do not believe there has been a quart of blue grass seed sown in Johnson county, but the pastures are full of it.

Mr. Harsh: The gentleman has come right to the point that I

was going to make. We have certain sections in the State that has blue grass, and it seems to me fair to speak of those as the blue grass sections. Whether the entire State may come to be a blue grass region in time, I do not know. It is not so now, but it may be in time; when the sod is tramped down it will come to that. Another difference is the climate. Some portions of the State are more favorable to blue grass than other portions. The farther you go to the south, especially to the southwest, you will find for a number of years they will have the advantage in respect to climate. I look, however, for the whole State to become a permanent blue grass region.

Mr. Mallory: I would like to ask the gentleman to tell us what he knows about the different kinds of blue grass, and would also suggest that there is a time in the year when we cannot spread manure upon pastures profitably.

Mr. Harsh: So far as the Kentucky blue grass is concerned, of course there has been a great deal of discussion. So far as I know there is but one kind of blue grass in this country used for pasture. Of course we have a small blue grass that is used in the door yards, and the large blue grass that is recommended for pasture, and it would seem as if there were a great many varieties. They claim in our country that the large blue grass came from Kentucky. I know that a great deal has been sowed that came from Kentucky, but I can see no difference in the grass that came from Kentucky and the old blue grass that was there before.

Mr. Mallory: My experience is, that blue grass in this northern part of the State, on the upland, is a failure. We cannot raise it. We must resort to the rotation of crops. I also find that it will not do to put manure on the blue grass, as the cattle will not eat it.

Mr. Harsh: You have sowed blue grass?

Mr. Mallory: I have sowed some, but the manuring of it I am particularly interested in, as I cannot put it on the pasture lands, not having land sufficient to allow it to lay idle until the cattle will use it. I have been pasturing for the last nine years, but find it impossible to pasture more than one head on two acres. I want to understand more fully this important method of improving pastures and raising them to a higher degree. I also want to ask what improved lands in the vicinity of Creston are worth?

Mr. Harsh: You can get the best improved land at about forty to sixty dollars, and from that down as low as eight and ten dollars, an acre, as I have known some to sell within ten or twelve miles from town. Of course, that is, all rough lands are

selling low, but the improved uplands are rated higher, as I suggested. In regard to the hauling of manure on pastures, I, myself, would not hesitate to haul out well rotted manure at any time of the year.

Mr. Baker: Do you not think that the acid in the grass would set the teeth on edge while feeding on the fodder?

Mr. Harsh: No, sir.

Mr. —: There is another fact about the matter of furnishing shed for stock. The prominent senses marked in the animal are sight, hearing, smelling and feeling. When there is danger the animal goes by sound. When hunger oppresses him, he goes by sight and smell. When he is seeking for comfort, he goes by feeling. He cannot see comfort, neither can he feel fodder with any degree of facility.

Mr. Cook (from Marion county): I think, in southern Iowa, our meadows, in the last few years, are largely composed of blue grass and red clover. Now, after the hay crop is taken off in the month of June, the blue grass springs up and makes a fine pasture. Wouldn't you favor pasturing that in the winter time after the ground freezes up?

Mr. Harsh: Certainly; I would if there is sufficient blue grass.

Mr. Cook: You do not think pasturing that would injure it for the next year's crop of hay?

Mr. Harsh: Perhaps not. I have had poor experience in pasturing my hay land; something seems to be the matter; think it is the clover; perhaps I do not leave enough seed, or something of the kind.

Mr. Cook: If you do not commence pasturing the clover until the seeds ripens there is no objection to the stock eating the dead stems.

Mr. Harsh: We depend upon the second crop for re-seeding the tract.

Mr. Cook: I mean, not to pasture it until the second crop ripens.

Mr. Harsh: Yes; in such a case as that I will say it would.

Mr. Sheehan: I feel very much interested in Mr. Wallace's paper; I would like to ask him a question. I want to give a little different treatment from what he gives. We raised on twenty-seven acres more grain on the clover sod than you did on the timothy sod. What did you raise the first year on the sod?

Mr. Wallace: I have not raised anything but corn on the timothy sod.

Mr. Sheehan: How was the corn the first year?

Mr. Wallace: Why, it was not as good a year for corn, and the corn was not as good as it was this year.

Mr. Sheehan: The mode of cutting the clover—we all know that "necessity is the mother of invention." I broke my heavy reaper which proved to be the best thing that ever happened me.

Mr. Lyon, of Floyd county: I have had a very good pasture for a summer pasture. I never kept a winter pasture, but the past three years have nearly destroyed it, leaving only white clover and blue grass, and some orchard grass. I want to ask either one of these gentlemen what I can do to renew it. It takes some time to renew it. I have put a great deal of manure upon it. Will it do to sow any clover or timothy in the spring?

Mr. Harsh: What section of the State are you in?

Mr. Lyon: I am in Floyd county.

Mr. Harsh: I do not know the character of your soil.

Mr. Lyon: It is a sandy loam.

Mr. Harsh: I should say then you could sow grass on the soil right on the snow in March. I would sow timothy in the fall. I would not sow it in the spring if you wish to pasture in the summer.

Mr. Lyon: It is better to sow that way than to plow it up and lose the blue grass.

Mr. Wallace: I would suggest that when you go home you take your grass seed and sow it any time between now and March.

James Wilson: Mr. Chairman and gentlemen: I am delighted with these two papers from Messrs. Wallace and Harsh, and I think they are the best papers on grasses that we have ever had. I think Mr. Wallace got his impressions based upon his experience of raising a crop of corn on ground after having plowed clover under it. Have you ever tried plowing under old blue grass pasture and getting a crop of corn?

Henry Wallace: I may state the best crop that I ever raised was on clover ground. I never tried blue grass.

Mr. Wilson: My experience was based on sod from old blue grass pasture.

Mr. Harsh: I want to say that the piece of land adjoining the one I speak of now, the pasture, was plowed up this spring, and never was plowed before. It is a piece of prairie that has been running into what was called blue grass. The party got five years use of the ground for fencing and breaking it. He said he was going ninety bushels to the acre.

Orange Judd: I have hardly time to say what I wish. The thought first came in my mind last evening when you asked me to state what farmers should do to make farming more profitable. I think there is some danger in what Mr. Harsh has said. I could not do justice to this subject in less than ten minutes, but I will say that if farmers would give more attention to winter protection to their animals, that would do more than any other thing, without regard to feed or pasturage, to make the keeping and care of animals prosperous. I should be very glad for five or ten minutes to speak of it, but I do not know where it should come in.

If you have not an absolutely tight fence at the ground, if you would put up a straw heap eight or ten feet high, it will be a great advantage, or if you will put up sheds your animals can get under you can make a great difference between profit and loss in the care of animals. You have referred to the matter of letting these animals run out and how they do. There is a great error in pursuing that course, in my judgment. I have been through the blue grass pastures of Kentucky where they are most careful in the protection of their animals. I have seen horses doing well as four-year-olds that have never been in pasture. In all cases the heat of our bodies is about 98 degrees summer and winter. If the temperature rises up to 106 degrees you are pretty near a dead man. It is a wonderful thing to think how nature has made provision so that our bodies will keep about that temperature whatever else it does. Now, all that heat, at least anywhere below 100 degrees, comes from within. That heat is provided from within by the food that we eat just as much as the heat in our homes is provided for by the fire which makes it. The heat is escaping from our bodies and food is being consumed to supply that heat, and what you use and eat and what measures you take to prevent the escape of that heat, is where you may expect your profit to come in. Heat is being conveyed away from the body continuously. This heat is being conveyed away continuously by radiations—being conducted away on the air. The great point, as I think, is that to secure growth of the animal, to save food and secure health, is to save as much as possible the escape of that heat. Let me give you an illustration: Here is a warm iron or warm stove which the air comes in contact with. The air expands and rises. The cold air settles below while the warm air rises above us. The same thing is going on in our bodies all the time. Our animals are not provided with artificial heat as we are. They can live in the mountains, in the valleys and on the plains, however, and get up heat

enough for them on the blue grass they eat, but you must save that heat from escaping. The cold air descends and the heated air rises. There are eight and a half inches of air moving over them every second. If that is increased to a rate of two miles an hour, it will carry away eight times as much heat. If it is four miles an hour, seventeen times as much. If it is twelve miles an hour, which we have in Iowa sometimes, it is carrying away forty or fifty times as much heat. The point is, and I will have to illustrate it as quickly as I can—the point is that every movement of the air that sweeps over your animals is carrying away heat that has to be supplied or provided for by food. Then if we will save the escaping heat we will save the use of food that is necessary to produce that heat. I have had to state it quickly and briefly because I have not the time to enlarge upon it. If you will send me your address I will send you a discussion upon this point. I think that question lies at the very bottom of profitable farming.

Mr. Harsh: May I have just one word?

Mr. Chairman: Yes, one word.

Mr. Harsh: These scientific principles are all true. We have had them time and again. At the same time it does not do away with the logical fact. He may keep them warm by saving heat, but I would put them out and let them get their own carbon and produce their own heat. A great many arrive at a wrong conclusion by comparing Iowa and its uses of blue grass with that of Kentucky, because they cannot do as we can. The fact is that it is not the soil alone that makes our blue grass superior. They do not pasture it in Kentucky at certain seasons of the year, because the climate is too moist, and the strength is all washed out of the blue grass before winter sets in.

Mr. Judd: You would then have need to save the heat?

Mr. Harsh: Would you build a fence around a pasture to keep in the heat?

Mr. Judd: I would not let them out in the winter time.

Mr. Norton: I want to thank Mr. Harsh for the pains he has taken in handling this subject. I have learned much of value in regard to the pasturage of stock in the winter time, and I say again that I wish to thank him for it. I want to say to our Mr. Judd on the other side of the question—he who has done so much for us farmers and stock raisers, that I have read his paper way up in the Western Reserve of Ohio. I want to say that farming is quite different from what it was in New England, New York and

Ohio. The question with me is: Will it pay here in the west to cut hay and put it into the barn with which to feed our stock during the winter at such times as now, when we have to pay such prices for labor as we do? Will it pay us better than it will to let the grass lie on the ground during the summer and let the stock pasture during the winter? Which pays the best? The plan adopted by Mr. Harsh I have adopted. Eight years ago I sent to Kentucky for sixty-five bushels of blue grass, but I do not think there is any difference between the blue grass of Kentucky and our own. I do not think it is any better.

Mr. Wallace: But fifteen minutes are left for this discussion.

J. M. Hemingway: I was asked to make a few remarks on trotting horses. It seems to me that this crowd is more interested in draft horses, and the time could be taken up more profitably in some other way. I have been requested to speak about trotting horses. I have been listening to the papers read here, and have been so thoroughly interested in them, that I have had no time to formulate anything in relation to trotting horses. Whatever I may say will be an effusion, so to speak, of what is already in my mind in relation to trotting horses. I want to premise what I say by saying that I am extremely interested in this horse, and if I could not say any more, I could say, as I used to hear the people say when my parents used to take me, as a lad, to class meeting at the Methodist church, and if they could say no more, they would say that they rejoiced that they were Christians. I can say that I rejoice in the ownership of a trotting horse. I suppose the simple fact of my owning a trotting horse is what has got me into all this difficulty, because I have never tried to make a speech on trotting horses. In the fifteen minutes that I have to speak, if I could take it all, I could say but little about the trotting horse. I believe all of you have read more or less about him, and know that he came but from two or three sources. Trotting horse men, if they can trace their horses back to the old Hambletonian, as he is called, or the Mambrino Chief, have gone back to the fountainhead, and indeed, no trotting horse man cares to trace the pedigree further. Hambletonian Ten, as he is called under the rules of the standard, was raised in New York. The Mambrino Chief was a horse raised in the State of New York, and while many people have the idea that the trotting horse originated in the blue grass regions of Kentucky, yet the truth is that they originated in the State of New York, in New Jersey and Long Island, and that vicinity. Now the trotting

horse impulse—the great impulse it received was when under the direction and management and the study of the Iowa man, John H. Wallace. A set of rules were established defining what should be a standard bred trotting horse. The fundamental principles of those rules were that a horse that was capable of trotting in 2:30 was a standard horse. Any gelding or any mare capable of trotting in 2:30 was a standard horse. That was the foundation. Now to produce a standard stallion it was necessary to have some other requirements to make him a standard. He must, in addition to being able to trot in 2:30, be a horse that had a record. Those are some of the rules. They were twelve or thirteen in number, upon which the standard horse was based. Since the formation of these rules breeders have been directed in a certain course. They have been directed to certain sources to procure their blood, and a very few, probably one hundred, or one hundred and fifty, or possibly two hundred and fifty, were found capable of trotting, and which had a record of 2:30, and the record has been up to 2:30 until at the present time, some six hundred more have been added to that list. The horse breeders having had their attention called in this direction, being founded upon the principle of producing speed, it has tended greatly to increase the price of trotting horses by following out the principles of breeding established by those rules. A trotting horse, over all things, if properly bred, is the most valuable to-day. I have not time to define the value of the different lines of breeding, but if there is any party here who is anxious to succeed in the future in trotting horses, he must follow closely this standard. The time has now come when he must not only breed to get speed, he must breed to speedy ancestors. His sires must be producers of speed, and must be producers of speed for several generations. He must, however, extend his inquiries further. The time has come when people demand something more than mere speed. There are horses that have speed and nothing else. The demand comes now for the production of a horse of good size; to produce a horse that is beautiful; that has a good disposition; that has a fine trotting action; to produce a horse that is a pleasant driver, and the aim of the trotting horse men in the future will be and their success must depend upon securing all these qualities in a horse, and when this is done I firmly believe that the trotting—the standard bred trotting horse—will be the horse of America, if he is not already. I think by following certain principles of breeding you can produce a horse large enough to be used upon the farm, or in any position you can

place him, and at the same time have a horse that will not only draw your plow but will draw your carriage. He will not only have size, but beauty. He will be an animal which you can take pride in seeing, not at the end of a halter, but hitched to a heavy load, or wherever you wish to put him, and you will take pride in seeing him upon the road carrying your friends behind him, or in any place you may desire to use him. My time, however, is limited, and I will say nothing further. [Applause].

Report of committee on resolutions were read by James Wilson. Motion to adopt.

Mr. Jordan: Do I understand that motion to be that the report be received as a whole?

Chairman: It means adoption; that it be adopted *seriatim*. It will be proper, however, to adopt it section by section, and we will listen to the reading of the first section.

Section one here read as follows:

Resolved, By the Iowa Improved Stock-Breeders Association, that we respectfully petition the congress of the United States to enact such legislation as will protect us from the exactions of the beef and other trusts, by statutes punishing such combinations and refusing them standing in our courts.

Adopted.

Section two read, as follows:

Resolved, That we ask of our State legislature a full investigation of all trusts within our State, and the enactment of severe penalties for all who combine, in any way, to interfere with competition in the commodities of life.

Adopted.

Section three read, as follows:

Resolved, That we ask our legislature to require all county and district agricultural societies receiving money from the State, to hold farmers' institutes in their territory every winter.

Capt. Jordan: I said at our meeting that we should endeavor to persuade the legislature to make an appropriation for us of one or two thousand dollars. That is not in the resolution. I would like to ask whether it is not better to have it there yet. I was at our last meeting, and I found that our institute work was at a very low ebb, in fact were without funds, and it seemingly was about to be abandoned, when a few gathered together last year and pledged themselves personally to raise, I think, a thousand dollars or more, and institutes were carried on throughout the State successfully with

the understanding and hope that the institute work should be favored with appropriations when we came before the legislature.

Mr. Norton moved as an amendment: "And that we ask an annual appropriation of \$5,000 from the State."

After some discussion the motion as amended by Mr. Norton was carried.

Section four read, as follows:

Resolved, That we favor the continuance of the oleomargarine law; the office of dairy commissioner, and an addition to the present statutes against all adulterations of foods, and penalties to punish all who sell food not correctly labeled, and not true to name; and we hereby endorse and approve of the efficient work of Dairy Commissioner Sherman.

On motion, resolution adopted.

Section five read, as follows:

Resolved, That we favor the more extensive use of silver currency, equal at least to the contraction of bank currency, and favor coinage to the full limit of the law.

On motion, resolution adopted.

Section six read, as follows:

Resolved, That we demand more stringent enforcement of the inter-state commerce law, to the end that all rebates on railways be entirely stopped in whatever form, and that no shipper be permitted the exclusive use of cars.

Mr. Wilson: We think that congress should rid that feature of commerce from the lake to the seaboard, whereby rebates are now had by men who own cars, who could get advantage in mileage, and who have the use of these cars, and thus obtain the monopoly. That is one of the most obnoxious features of the trust. The man who comes to get transportation and does not own cars, is at an entire disadvantage. The exclusive use of the rate goes to the man who furnishes the cars, and the fellow who don't own a car don't get any. We believe this is a vicious feature of the transportation, and congress should take hold of it and obliterate it.

By motion, resolution adopted.

By motion, the resolutions were adopted as a whole.

Meeting adjourned for noon, to meet at 2 o'clock at the M. E. Church.

AFTERNOON SESSION—DECEMBER 5TH.

Chairman: Unless the association orders otherwise this meeting will continue until the banquet. For the purpose of expediting business it is thought best to change the programme and take up the reports of committees. Are there any committees ready to report? As there seems to be no committee ready to report an opportunity will now be given for discussing the papers that have been read with reference to draft and trotting horses, and we are ready now to hear any remarks on that subject.

DISCUSSION.

Mr. Lathrop: One of the horses we at one time had hundreds of has dropped out of the State. I refer to the English trotting horse. I have been wondering if a little infusion of the old thoroughbred would not be a good thing in our high grade draft horses. There was something in that old thoroughbred—there was a nervous energy and a power in the sinew—that we do not get in any other horse; that is we do not get it to the perfection that we did in the old thoroughbred. Go back to the history of horses in this country before trotting horses were known—when the race course was a running course. I know the old style used to be three days' races. They would put on three-year-olds that would run a mile heat on the first day, and the next day the horses were to run two miles, and it was three heats and rebate. The last day was almost four miles. There you had horses that would have to run twelve miles. Where are the horses of to-day that could do that? That tested their bottom as well as speed. It tested their endurance, their wind and muscle. Your trotting horse of to-day goes a mile, while the old thoroughbred would run four miles. I am still of the opinion that a little infusion of the old thoroughbred horse is about the best blood we can get. I do not want them pure bred. I will say fourth blood is pretty good infusion. I state that because at one time I had a mare that was one of the best things I had. She was game; she never said die, and pulled for all that was out,

and traveled for all that was out, and she did not get tired as soon as the rest of them, I thought.

Henry Wallace: I would like to ask the gentleman what he has in view in the introduction of the thoroughbred?

Mr. Lathrop: They give a little more nervous energy. That is one of the best things you can get in a horse. Now, I do not care whether it is a draft, running or trotting horse. There is more of it in a thoroughbred than in any others. I do not know but they are getting it in the trotting horses. There are now breeding trotting horses until they are about pure bred. There was an idea thrown out by Mr. Hemingway that I liked. The question with trotting horses has been speed. It was how soon we could get there. That is the main idea of a trotting horse. Flora Temple was the first trotting horse to trot below 2:20. She was a little mare that did not measure more than 14½ hands high. I do not know what her weight was. There was nothing about her but speed. Mr. Hemingway spoke about size. If you are going to get a roadster, we have a good many of them that are not fast enough to put upon the track, and a trotting horse weighing twelve or thirteen hundred is pretty large.

Chairman: Is there any further discussion on this subject?

Mr. Baker: The present demand for horses is horses of style, of length of power. We want horses of twelve or thirteen hundred pounds weight, and the class of horses that we need are hard to get. They should have a small head with a large eye, a long neck, a high breast and chest, clean legs and a big tail, and a body like a locomotive—are the horses that are in demand if we can find them. These will come whenever we have a blue grass pasture for them. Wherever there is good pasture there is no danger in that direction. I think we should cross with the thoroughbred, because they take on flesh more easily.

Mr. Norton: How would crossing with the English shire horse be an advantage?

Mr. Baker: That would give them more bone. But there is a difficulty with European horses, and that is their speed. We want something that will endure hardship, and stand the severe winters.

Mr. Smith: I take it from what Mr. Baker says that he advocates the crossing with the thoroughbred, and that includes the running horse. If Mr. Baker means to cross with them I do not agree with him.

Mr. Baker: I understand the thoroughbred is a horse that traced his pedigree down from Arabian stock, that has style and vigor,

that will give a horse a certain cut and quality, vigor and constitution. That is the horse that serves a man anywhere for a general purpose horse. For instance, animals that are under size will produce an undersized animal. Large roomy mares that are of good build, and a good constitution, will raise good coach horses. The principle of like producing like has a great deal to do with the selling quality and price of horses.

Mr. Gabrielson: It seems to me in our horse-breeding we are always trying to wipe out the good effect of blood we have been saving and concentrating for years. The moment we begin to use foreign blood it seems to me that we lose ground. It seems better to keep on building up in the direction started. The Short-horn breeders do not go to the Herefords to improve their stock. Nor do the Herefords go to the Short-horners to improve their stock, or to get pure breeds.

H. C. Wallace: That is a point that I have been waiting for, and though I have not been much inclined to take part in the discussion, yet I have been reading the report of this association for many years, and am forced to the conclusion that if we want draft horses we must breed to draft horses. If we want beef we must breed to beef cattle. If we want milk we must breed to milk cattle. Undoubtedly in this State there is a want of a general-purpose horse, and while we want that kind of a horse, we also want a horse to sell. There is nothing that will sell as well as a draft horse, and we want them with enough of the draft blood in them to produce that quality of horse. I sold a pair of two-year-old colts that had never been haltered, but had been literally brought up on pasture. I sold them off of the blue grass and clover pasture—went out and caught them and handed them over to the man who bought them at \$112 and \$150 apiece. I do not think if they had been all thoroughbred, however, that they would have been any better.

Mr. ———: What weight were the colts?

Mr. Wallace: One colt was 1,330 and the other 1,360. I think they averaged about 1,345. Two years old in the spring.

Mr. Chairman: At what time did you sell them?

Mr. Wallace: During the latter part of February and the first two weeks in March.

Mr. ———: What was the cost of those colts?

Mr. Wallace: Service fee was \$15. We worked the mares—did all our farm work with them, and from the time the colts were four months old—probably a little younger than that, the mares

got all the oats they would eat up clean until the colts were weaned. During the first winter they got two quarts of oats twice a day, and beginning in December they got a quart of corn in addition to that—four quarts of oats a day and one quart of corn, and they ran out on pasture. That winter, however, there was a great deal of snow, and we did not let those colts run out. They were turned out on prairie pasture about the 1st of April, and were fed hay until the 1st of May. After that they never had a halter, and never had a bite of hay or grain until Christmas.

Mr. ———: What was the weight of the sire and dam?

Mr. Wallace: The sire was an imported horse that would weigh between 1,800 and 2,000 pounds; the dams would weigh 1,200 or 1,400 pounds—about that, possibly a little more.

Question: The dams were grade draft mare?

Answer: Grade draft mares.

Prof. Chamberlain: One thing comes to my mind in this connection, and that is that we have been breeding to draft horses in the past, and we want to more than ever in the future, because the small draft horses that have been in demand for street car work are no longer in demand, as electricity is taking their place all over the country. If I can see the future of electricity right, horse car work is going to be wiped out of existence, and that general demand for the small-purpose horse that brings not over \$100 for street car purposes—that demand to a considerable extent is going to be wiped out, so the tendency will be toward the solid draft horses for the cities and the farms, too, and then toward a large, strong, carriage horse that can make his mile in four minutes without any particular training.

Mr. Lathrop: I think there is going to be a market for what we call our street horses. The raising of horses is working west all the while. They commenced in Massachusetts, and men went to New York, then to New Jersey. This summer there was a gentleman down at our place wanted two or three car-loads of from 900 to 1,100-pound horses. They were putting them on their small farms on their truck patches, and that class of light work. That class of horses are going to the cities, and there will be a demand for them on all milk wagons, bakers' wagons, and they will be used more or less as family horses. In Central New York they cannot afford to raise horses, and while they generally want heavy draft horses for the express companies and heavy draying, etc., in the large cities, yet these lighter horses will always be in demand.

Mr. Norton: Axtel has made a record, and Mr. Williams on that account is a great man to-day. I would not lower Axtel's record, and as far as Mr. Williams is concerned I would not say anything against him, but I rise to make this request: Don't let the boys go wild on Axtel. The danger is this: That every man has a lot of fast blood spirit in himself, and he has a lot in the boy, and we do not want to run in the direction of fast horses. We want large farm and draft horses, because that pays. It is likely that there will never be another Axtel or another Sunol in California. But it is likely that there will never be another horse in Iowa as fast as that. While I wish Mr. Williams success, yet I am glad that he is not one of my sons. I say this to our young men who are younger and more inexperienced than the rest of them. When I was across the water last year, I thought if I had the horse which they call the large hackney, I could bring it into Muscatine county, where we have horses just fast enough for a man to lose all the money he bets upon them, and by crossing that horse with the horses we have, called the Hambletonian, we would make good roadsters. That is the kind of a horse that makes a man money. I cannot say that I am not interested in the fast horse, but I say that to cross our trotting horse with that kind of blood would be a desirable improvement, but to breed in the line spoken of, will run to a small sized horse that you can buy any number of from seventy-five to one hundred dollars. Before coming here last Saturday, I sold three colts, two of them mares. They were three years old next spring. Mr. Miller wrote me that he wanted a couple of two-year-old fillies that would weigh about eleven hundred, and I wrote him to come down, as we had several of them. When he saw them he said they would not weigh eleven hundred. They had no shelter and no grain. We got into a dispute a few years ago on the question of shelter, as I had been letting my colts run out in the pasture with no shelter but a small patch of woods, and I sent out for the colts to see how they were thriving, and the man came back and said that they were not suffering; that he could not drive them down from that neck of woods; that they were very comfortable and he could not drive them down. I was up there a few days afterwards and the colts were looking nicely, and they ran there that winter and did not get any grain. The last three or four years we have treated all our colts that way. These colts that I have referred to, we got them on the scale, and they weighed 1,160. I asked Mr. Miller \$235, and he gave me \$230 for the two, and I let him have another four-year-old colt, for which he paid about the

same money. It pays to raise that kind of horses, even in that way.

Mr. Smith: Mr. Hemingway, when he brought up this subject of horses this morning, premised his remarks by saying "the good old Methodists started out in telling their religious experience by saying that they were glad they were Christians," and he rejoiced in the fact that he owned a trotting horse. I will say that I am glad to say that I rejoice in both. I have good trotting horses, and I am a Methodist, and I am glad to see that this Methodist chapel is none too good to hold our meeting in, I was sorry to hear friend Norton deride the horse business, and especially his remarks against Mr. Williams. He said he was glad that Mr. Williams was not a son of his. I should not be ashamed of him as a son. Mr. Norton assumes a great many bad features. Mr. Williams does not allow visitors to his stables on the Sabbath day, and he does not bet on horses, and it seems to me that this is removing some of the objectionable features. When we get these trotting horses so we can all use them, we can make money. I have only one and I got her in a rather peculiar way in this respect; she is out of a mare that I rode when in the army, and I bought her for that reason. I am not ashamed because she is a trotting horse, although the boys and I have made a solemn covenant that we won't allow the mare speeded for money, and we expect to live up to that covenant. We were talking with some party in the dairy business from St. Charles, Illinois, and he remarked that we had much better horses than he had. He attributed it to his farm laying too close to town, but he is one of the best draft horse breeders in the State, and he so thoroughly infused the draft horse blood in that part of the State as to have nothing but draft horses in that country. I may be talking against my own interests, because I breed draft horses. But I believe we will have to go back to something else that will give them style and speed.

Don Donnan: I, for one, feel that we owe a great deal to Mr. Williams for producing what he has in Axtel, and that the farmers of Iowa owe a great deal to him. An instance came under my notice just the day before I started from home. A gentleman in my office called my attention to the fact of the sale of a horse up in Cedar Falls. He said that a farmer came to see him and saw that he had a nice colt and wanted to trade a mare for that colt. The mare was with foal. I could not see it, as I had not any use for the colt, and I would not trade. The fellow wanted a nice

coach, and he traded the mare to a doctor there for a coach. The doctor sold that mare to a Pennsylvania man for twenty-five hundred dollars, a few weeks ago, simply because she was a sister to the dam of Axtel. Axtel did not only bring Williams five hundred thousand dollars, but he has put plenty of dollars into all parts of Iowa.

Mr. Norton: As far as Williams is concerned, I have nothing to say about that, and I spoke of the boys—only just the principle. We don't want to go to fast horses. I drive a pretty fast horse myself, and it was only last week that he ran away with me.

Mr. Wallace: I shall now take up the next subject on the programme, which is on Exhibitors and Breeders, by Hon. C. C. Carpenter.

EXHIBITORS AND BREEDERS.

BY HON. C. C. CARPENTER.

The modern fair is an exhibition of the products of the cultivated field, and the grazing pasture intended to be an object lesson to the ordinary producer. There are many phases in which its benefits to the visitor or onlooker may be considered. The subject with which I am to deal, however, will naturally and properly confine me to the benefits derived, from an exhibition of domestic animals, to the breeder of those animals. A few years ago I remember seeing a very striking and instructive picture in our county newspaper, *The Messenger*, of which Mr. Coffin was the agricultural editor. It represented two scenes: one showing the hog of the olden time—a long-legged, long-haired, raw-boned, hunch-backed, scurvy-looking animal, with a nose long enough to reach through between the bottom rails of the old worm fence and root up the second row of potatoes. He was represented as feeding on the acorns under an old oak tree. This was the hog of our fathers. The other was the picture of a representative Poland-China, or Berkshire, of the present day. There was a whole chapter of agricultural history in this simple picture. It is a lesson which agricultural exhibitors have been repeating in a thousand forms during the last fifty years. I remember in my own youth, whilst working on a farm in northeastern Pennsylvania, one man by whom I was employed was regarded at that day, and in those times, as being an expert stock grower. He bred and raised the best cattle in that section, and one of the points which were regarded as adding to the beauty of a cow, or yoke of oxen, was a long, slim, nicely curved and graceful horn.

With what pride and care he would train those horns and watch their development, until they were ready to be ornamented with nice brass knobs. Now the breeding of either figurative or literal Short-horns is not satisfactory to some stock growers, and the Polled breeds have gained popularity, in part, because they are hornless; whilst other breeders are making artificial Polled cattle with a hand saw. The difference between the breeders of fifty years ago and those of to-day in their judgment of the value of horns, measures the difference between the character of domestic animals—whether cattle, horses, sheep or hogs—raised by the farmer of to-day, and those raised by the farmer of half a century ago. And this advance all along the stock growing line is largely the result of the education derived from the fat stock shows; and the county, district and State fairs, which have grown into such popularity within the last half century.

I have taken an interest in fairs and their exhibits for many years; long before I attempted to breed anything better than the ordinary stock. I was deeply interested in the displays of the better breeds and superior animals shown at the annual fairs. And as the stock display of the exhibitions at the fair have been a good school to me, I have but little sympathy with the criticisms sometimes made, that there is nothing for the practical, every-day farmer to learn at the fair, as the animals which adorn the show ring, have been pampered and petted to such an extent that their condition has been secured at an expense which the breeder for the shambles could not imitate without loss. It, perhaps, is true that occasionally herds are forced by such artificial methods as to destroy their future usefulness, and render them worthless as samples in their class. But it seems to me that the salient point in a display of products at the fair, is to show what feed and care will do for the various classes and various breeds of domestic animals. We frequently hear the stock grower, who does not believe as fully in the law of heredity as does the breeder of pedigreed animals, say that his old "Spot" or "Bride" were just as good as pedigreed animals which he had seen. And undoubtedly there are exceptional instances, when the pedigreed animal has been starved on a poor pasture, or on poor keeping in the winter, in which there is some reason for this claim. Though, even under the most unfavorable circumstances, there are always certain points which the experienced breeder will readily recognize in the pedigreed animal. I remember looking through a herd of Short-horns a few years ago, with a friend of mine, who was an older breeder; and when the owner of the stock began to apologize for the appearance of his cattle, declaring they did not look much better than scrubs, as they had absolutely been on starvation feed, my friend said: "Well, you couldn't starve those hips off that cow," pointing to a large cow with a splendid frame, on which a little corn and care would produce the marbled steak of the modern block. So it is my judgment that the exhibitor teaches the breeder the most valuable lesson by showing him the classes of stock which respond most readily to good feed and good care. And in order to make this lesson thoroughly useful, it would be an excellent thing if in some way the exhibitor could be required to publish his "bill of fare" for the herd he brought into the ring.

I am in a small way a breeder. The beautiful things on my farm lazily chewing the "cud" and turning upon me as I walk among them their great mild eyes, are my "pets," and I want here and now to acknowledge my

obligations for information which would have cost me money and years of time to have evolved from personal experiments, to the breeder who has the enthusiasm and the nerve to take the chances of the show ring. Every one knows that there is no money in winning premiums. Whatever of compensation the exhibitor gets out of his display, however successful he may be, will consist largely in the fun of fitting his choicest things for the show; in winning, over generous, good-natured and honorable competitors, and in the advertisement his success will be for the herd he does not show. So I come back to the point that the exhibitor is a public benefactor. From him the breeder learns the important lesson that good blood, good keeping and good treatment will ninety-nine times in a hundred bring good animals. And further, this unchangeable law is gradually leavening the public mind—very largely influenced by the exhibition—so that gradually but surely new markets are being opened to the breeder. In this view it seems to me that it is the duty of the directory of the State fair to encourage, by every advantage and attention which may properly be extended to the exhibitor, the largest display in all the classes of domestic animals. I hope the time may come, and it probably will, though not in my day, when every man who raises stock will fully comprehend the value of blood and will recognize the unfailing law of heredity, as this alone will assure advance in all classes of domestic animals; and in my judgment this will more surely ameliorate the condition of the toilers on the farm than all the political financial theories that have troubled the statesmanship of the last century. But I need not enlarge. The truth is that the exhibitor is a breeder who has the spirit of adventure which takes him into the show ring. It is true that occasional exhibitors by paying long prices establish a herd which is the product of the care and knowledge of other breeders. And while a herd brought together in this manner may not as fully illustrate the real object of the showing as the herd or flock bred and fed by the exhibitor, yet it does not detract from the value of the exhibition, or in any manner injure the breeder who does not compete for the prizes of the ring. The exhibitor and breeder are alike benefactors to all the people of the State. They bring to the front the animals which constitute the chief attraction of the great fairs that now annually call together thousands and thousands of the most enterprising people of the State. They teach all observers the possibilities that exist in good blood, warmed and quickened by generous rations of corn, oats and hay; to which, if the best results are to be attained, there should be a daily use of the curry comb in the hands of an even-tempered man. If sheep or hogs are being raised the curry comb can be dispensed with, but there should be a care and carefulness in other directions which will be the equivalent of the curry comb.

Finally, the exhibitor and the enthusiastic breeder form the important factor of the thronging multitude who annually take their lay-off and recreation, after the summer's toil, at the great exposition of the wealth and the products of the State. Here they spend a few days, throwing off vain care, forming new acquaintances, renewing old ones, absorbing the experience of their fellows, imparting their own in return, thus making the exhibition what it should be, the great experiment station of the State, from which better farmers, better men and better women will go forth to the duties of another year.

SWINE.

BY H. E. PENDLETON.

In anatomical structure and disposition the hog approaches man more than any of the brute creation. The most notable difference between the two is that one walks on two legs and the other on four. Their general characteristics are so near alike that I have never been able to fully determine why it was that the hog was not set up on two legs. The only explanation I am able to make is, if he had been, and the two should meet, neither would step aside to let the other pass. The devil took possession of man in the Garden of Eden, and about 4,000 years afterward he was driven from man to the hog, and man, hog and his Satanic Majesty have been companions ever since. Both man and hog want the earth, and either will waste more in trying to get something for which they have no use than would more than satisfy their natural demands. * * *

In fixing a type the leading features to be kept in view are size, early maturity, perfection of the different parts, great powers of assimilation, symmetry of form and sound constitution. In starting out it is essential that the dam should possess as many of the above qualifications as possible. * * * The great value of a type when once established is their power to transmit their excellent qualities upon the general make-up of their breed. We see this by noting what the family of Noras has done for the Berkshires and the Black Bess for the Poland-Chinas.

* * * I am satisfied that where one judge makes an award dishonestly actuated by outside influences, nineteen make erroneous decisions through a well cultivated form of ignorance. If a man doubts his ability to judge, he should most assuredly refuse to act. * * * There is a beautiful charm in a decision when the judge says that animal is best and he knows whereof he speaks. It is the life's blood of the show ring and the quicker fair managers find it out, the better for all concerned. The best managers can do at present, is to use the best material now at hand. The worst mistake they make is in having one judge to-day and another to-morrow, or even one this year and a change the next. Where there has been a judge found who takes pride and interest in the venture, sufficient to make himself familiar with the proficiencies or deficiencies of the various points of any breed or breeds of animals, he should be retained by fair associations, whenever his services can be had. Experience is a teacher that never leads her pupil blind-folded, and it is the actual practice in the show ring that prepares him for the work to be done. It is there he forms the acquaintance and friendship of the exhibitors and managers. It is there he sees the different breeds. It is there he can study the judgment used in crossing, coupling and forming the types.

Speaking from experience on the matter of judging with the score card or judging by comparison, the judge should be competent in either case, and consequently the result would be the same with either system. It is for fair managers and exhibitors to say which they will have, and then secure a judge that is competent to use either. A judge is not competent to judge by comparison until he has had a rigid schooling under the score card system.

There is nothing pertaining to the management of swine that requires more care, diligence and judgment than getting hogs onto the market at just the right time and in the right shape. For the last eight years I have never sold a fat hog as low as \$4 per cwt. but once. When they are selling below \$3.50 I feed for all there is in it. I pay but little attention to the market. If everything indicates a depressed market for some time I feed accordingly, that is, I do not feed a full fattening diet. When the market begins to move up I manage to have my hogs about ready to sell. As the market strengthens I watch carefully for a sudden spring, and if one comes I manage to get all the shippers in my vicinity interested while the fever is on. From the time of selling till the time of delivery, which is usually from four to ten days, I give the herd the best of care, and on the morning of delivery I treat them something as I would an old friend that was about to take his departure and I never expected to see him again. That means I give them a square meal of the best. After they have gorged themselves, I get them to the scales as quickly and quietly as possible. If you have over eighty rods to market, there is no surer way of being well paid for your time than loading and hauling your hogs. Every farmer should have a strong chute at some convenient place for loading swine. * * *

I believe if anything is being said or written relative to swine the subject of hog cholera is always in order, and I shall take the liberty to present this very old subject in a new form. I take it that I am reading to an intelligent audience, one whose judgment has been weighed in the scale of common sense and not found wanting, and it is here I wish to avail myself of the opportunity of dealing the matter of hog cholera some blows with the terrific force of a pile driver.

What the swine husbandmen of this country want is something practical, something they can get hold of, something they can see without having to look through the stained, smoky and obscure glasses of a professorship; something they can use; something simple; something they can understand; something they can apply when necessary; something that will permit them to launch into the business of swine-breeding, and if their herds are liable to an attack of hog cholera they are prepared to knock it higher than a cocked hat. So far doctors have investigated and disagreed, professors have filed criminalizations and recriminations upon each others' heads in sufficient quantities to supply a political campaign. The government has stretched forth its strong arm and set up commissions; quacks have advertised and scattered their nostrums to the four winds of heaven, and yet hog cholera triumphantly marches on to the tune of "root, pig or die." The farmer who has had his heart beat high in his bosom by the thought of being a successful breeder of swine still finds his aspirations withered and his fond hopes blasted by the hallucinations of that terrible bugbear—hog cholera.

Now I will give you the first—mark you, the first—symptoms of this disease. Go to the archives of the government, hunt through the State and public

libraries, turn over the files of your newspapers, and you will find them not. Talk with the learned and the wise, and they know them not. But here they are: Hair rough, standing out from the surface of the body and failing to reflect that smooth, shining appearance when exposed to the light. When standing or moving, the back is arched more at the point over the kidneys, the flanks are more drawn up, and in looking directly from above the animal there is a bulging or paunchiness of the body always present in health. This is absent. Wet streaks extend from the eyes toward the angles of the mouth. The head is carried lower. The bowels are costive. The voidings contracted into hard pellets. The membrane of the rectum scarlet in color. Urine scanty, and of a lye color. Dry, short cough when driven from sleeping places or after a few swallows of water. During the day part of the time is employed in rooting on gravelly points or along the banks of washouts, or around old stack bottoms. The animal goes to his regular meals but is satisfied with half rations. He brings with him nearly all the above symptoms, which point as unerringly as the compass to the poles, that hog cholera is upon his track. But the man in charge has noticed nothing wrong. To him all was well so long as the animal partook of food. But hog cholera is there. How has it come? On the wings of the morning? No. Some one from an infected district has brought it in his vest pocket and accidentally dropped it where the hogs found it, you suppose? No. A Missouri turkey buzzard, having an eye to business, seized a small piece of a dead hog and makes a circuit of the northwest, dropping a germ here and a germ there, in hog pastures, you think? No. Somewhere a fish pond sprung a leak and the water came trickling down through meadow and vale, forest and glen, across fertile plains and sandy deserts, full many a league, and the unsuspecting swine drank the poisoned drop as it went floating past, you say? No. You have it now. The owner of the swine sinned long and much, and hog cholera came to avenge the wrongs. Well, there might be some sense in that, but there is ten thousand times more sense in the fact that the man having that herd in charge does not understand his business.

He (the man who gets hog cholera in his herd) is feeding too much corn and not enough water. They are getting their water from some stagnant pond or mire hole. They are fed their grain on the ground, where it is dusty when dry, filthy when wet, and stinking when froze. They are imprisoned during the months of September and October, exposed to the hot sun during the day, and the cold wind and frosty air of night. They are sleeping in some stable, shed or basement where the heat of their bodies, added to that of the decomposing manure, would make a hyena laugh with glee. They are burrowing around stacks steaming and sweating by night and cooling off in a raking wind at morn.

Farmers of the northwest, open your eyes. Go to the feed yards and swear that it shall no longer be. Feed in troughs. Feed on floors. Give your swine decent quarters. Pour in the sulphur, ashes, salt, coal and coppers. Feed everything, from a dead rat to a dead horse, and you will drive the spectre of hog cholera from your farms to torment only the slothful, the foolish and the unwise. Keep the best specimens you can get of the standard breeds. Spare no expense to improve them by introducing fresh blood every year from recognized breeders. If you have not the wherewith to improve, mortgage your farm to do it, and my word for it your hogs will lift that

mortgage and have you many left, and when the markets of horses and cattle are rocking and rolling, raising and falling, like a ship on the troubled waves of the sea, you can look on with serenity, knowing that you are sailing in smooth and placid waters. As money makers against other farm stock, the porker stands head and shoulders above any other domestic animal. He has paid more debts, paid more taxes, has brought the big pile and brought it quicker, has made light the hearts of more children and housewives, than any other animal extant. When everything else was going to smash he has come to the farmer's rescue. He is a legal tender in all seasons and under all circumstances.

[Owing to the lateness of the hour and lack of time to admit of discussion on the above paper, it was not discussed. Statements made in papers are mere opinions of the writer, and are not always fully endorsed by members of the association. Readers will bear this fact in mind when perusing this work, where discussion does not follow.—Ed.]

Treasurer's report read by George W. Franklin, which, by motion, was referred to the auditing committee.

The committee on officers for the ensuing year reported as follows:

For President—Hon. H. C. Wheeler, Odebolt.

For Vice-Presidents—D. M. Moninger, Galvin; Daniel Sheehan, Osage; Richard Baker, Jr., Farley; J. W. McMullen, Oskaloosa; A. T. Judd, West Liberty; Hon. C. C. Carpenter, Ft. Dodge; W. W. Fields, Odebolt; Martin Flynn, Des Moines; Hon. J. B. Harsh, Creston; W. W. McClung, Waterloo.

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

Membership fee, \$1 per annum.

The seventeenth annual meeting will be held in Oskaloosa, beginning Wednesday, December 3, 1890, at 1 p. m.

By motion ex-President Wallace was continued in the chair on account of the absence of Mr. Wheeler.

Col. Scott: On behalf of the committee appointed on location I will report that the committee has recommended the city of Oskaloosa. We did not fix the time.

Mr. Franklin: The constitution provides the time.

By motion the report was received and adopted.

Mr. Black: I followed the secretary's report carefully, and I did not see that there was any charge for services on the part of the secretary. I do not know what is expected in that respect. Perhaps it is expected because Mr. Stacy for a number of years generously donated his services that other secretaries will do the same, but this must only be an assumption. I do not think we are so poor

now that we ought to ask anybody to prepare matter for printing, and send out these notices, without compensation. I would offer the resolution that the services of the secretary during the past year, and for the coming year, be referred to a committee of three to be appointed and confer together at once.

Gov. Carpenter: I move to amend by leaving it to this committee to report.

Motion carried as amended.

Chairman: It is understood that this committee will bring in the report on compensation.

Now is the time for discussion of Gov. Carpenter's paper. If there is anything indistinct or one-sided that needs to be brought out more clearly, please ask questions of Gov. Carpenter, and after that we are ready to hear any remarks on that subject.

Mr. McHugh: I wish to offer a suggestion brought out by Gov. Carpenter's paper. He speaks of two classes of exhibitors, and breeders, and about giving precedence, etc. I wish to state that I have a great deal of respect for the exhibitor who breeds the cattle or other stock he exhibits, but there are many gentlemen who exhibit animals, many of which have been purchased perhaps thirty days prior to the exhibition. That has a tendency to discourage the breeders in their work. I think there ought to be some discrimination against that class of gentlemen. In other words our premiums ought to be given in such manner as would encourage the breeding and exhibiting the stock of the breeder. I hope that point will be brought out by the discussion.

Mr. McHugh was called to the chair.

Mr. Wallace: Governor Carpenter's remark that he would probably not have written this paper if he had heard Mr. Harsh's statements, has led me to take this occasion to make a remark, not upon the governor's paper, but upon the subject we discussed this forenoon. I fear from the drift of the discussion this morning with reference to the results produced by raising stock without grain feed that the idea will get out, or rather that the erroneous idea will go abroad, especially among what we call the common farmers—I mean by that, the average farmer—an impression that is entirely misleading; that will be evil and only evil, and that continually. Now I happen to know something about the region of country where Mr. Harsh operates, and I ought to know something of the conditions which prevail of the farm my son manages. I want to say that no good results can be produced without good feed and plenty of it,

and that these statements made by Mr. Harsh and others do not contradict that idea in any sense. These results were produced either on big blue grass pastures which is about as big and strong as you can get summer and winter, doubtless, on second crop clover pasture, or else in connection with grain fields that had not been cut. Results such as they have got can be produced I know from personal knowledge. I know that what these gentlemen say is true, but remember that these conditions are among the best conditions for producing these results. Those results were never obtained on pastures in the summer, nor were they obtained on bleak prairies, without shelter, nor were they obtained when winter rains washed the grass out. They were obtained on blue grass that was cured dry, and that was almost like range conditions, and plenty of it. Something was said on the subject of shelter. Bear in mind that the results Mr. Harsh talked about were produced in open air, but with grove shelter. I would think very little of the sense of a horse that would go into a board shed if he could get grove shelter. I am satisfied that I could not drive him into it except in very severe weather. What I want to emphasize is that these statements do not contradict the other at all. There must be abundant food and good conditions when you make results such as they have stated. I do not want the idea to get abroad; you cannot give ordinary treatment and expect good results. "Whatsoever a man soweth, that shall he also reap." We will now proceed with the discussion of Governor Carpenter's paper.

Col. Scott: There is a thought in the paper of Governor Carpenter that seems to me worthy of the attention of this association. It is worthy the attention of every enterprising breeder who cares to advertise himself. For my part I am not so enterprising as to do what I would advise myself at my own trouble and cost. But he states that one of his friends in the early day took so much pride in the horns of his cattle; there were others who had some enterprise, also, who reared at that time what was known as the "two row" hog; a hog that would take the second row through the cracks of a rail fence. I say these facts that are suggested in the paper of Governor Carpenter show us where the country is; show us what the condition of this industry was when the men who improved it took hold of it, and is an object lesson, which I could myself scarcely take the time or effort, or stand the cost of, but for the interest I have in it. I say as an object lesson, at our State fair, I would greatly like to see a pen constructed so as to be safe for them; a pen of the hog that is now only found in America, I think, in the far

south. That hog that knows all the rough brush; that hog that does not go under the fence but over the top of it, and that will, when the people who attend the State fair, go up to the pen to see what is in that pen, go "whoo, whoo, whoo," and go to the other side of the pen with bristles raised and back curved, and tail in three or four coils. I say there is an object lesson to show where this swine gain, and what we have obtained by looking over the other pens at the various breeds. I really believe it would be worth while if this association, though I am not exactly prepared to propose it, but I believe it would be one of the finest object lessons, and would impress itself upon the minds of the people more than any thing else. It could be done at some cost and trouble. I would myself be willing, if some enterprising man should take the idea from what I say, and would make a side-show of it, I would be sure to see it. If the association with which the governor is connected would make arrangements by which a side-show of that kind would be associated with the State fair, I would make that contribution for the purpose of seeing my old friend of five years ago.

Mr. Funk: I simply want to emphasize the remark made by Mr. McHugh in regard to the difference between an exhibition of stock by the breeder who exhibits stock of his own breeding, and those purchased by money and somebody else's experience and fixed up for the show ring. I have taken the rounds of the fairs this year, and I have heard a great deal of complaint in that direction all around. There is a very general complaint. I have seen herds made up, and I know parties, without giving the names, who are looking around now to pick up a herd of cattle and hogs for show animals to take the circuit of the fairs, and take in the big premiums of the fairs. The results are, that the ordinary breeder, a man who produces his own stock, has no chance at the fairs, and becomes discouraged. I frequently ask parties to take stock to the State fair, ask them if they are going to exhibit, and they say no, they will not, as they will have no show. I have heard complaints in Iowa, Missouri, Illinois and Indiana, and I have heard it in Minnesota, and I think it is about time that the management of our State fairs should make a distinction between the man who breeds and exhibits stock of his own breeding, and the man that has bought up his stock for exhibition with money.

Mr. Wallace: I would suggest that this is a proper subject for resolution, and if some gentleman will prepare a resolution requesting the management of the Iowa Agricultural Society to do so and so, we can have a discussion upon it.

Mr. Rockwell: I would like to suggest that both plans are proper for the reason that the sight-seer goes to see the best herd of animals, and a good exhibition is a good thing to increase the gate money. While the stock breeder demands that he shall be represented in his particular work as well as the capitalist, who makes his money out of exhibitions, I think that the system on which the agricultural fairs have proceeded has been harmful with reference to the exhibition of young animals. I think there have been premiums offered for young herds bred by exhibitors to a limited extent. But I understand that it is only to a limited extent. I believe that these discussions are in the right direction, yet we must concede that we have done something in that line. I think the resolution should embody the idea of extending what has been done further. I would not, however, want to say to a man of wealth and enterprise enough to group animals of one breed together in a herd, and by his enthusiasm and capital bring them to the State fair for exhibition, that he should not compete for the prizes and thus discourage that work. I think we ought not to discourage that class of exhibitors, but the other class ought to be promoted.

Mr. Mathews: I think there is a great deal in the claim that the prizes should go rather to the breeders than the exhibitors, but we must remember that the greatest prize winner at the fat stock show at the Iowa fair, was not exhibited by the breeder, and in all probability would not have been exhibited by him, and it seems to me it would be unfair to stock interests to make it impossible for a man to buy up a good animal and exhibit it when the man who bred it in all probability would not do so. I offer this resolution that it be the sense of this association that the agricultural societies of this State and country should give 25 per cent additional premiums where the animal is exhibited by the breeder. This gives the professional exhibitors a chance, and it also gives an additional incentive to the breeder. The breeder has an inducement then to hold onto his animal. He can allow it to be exhibited, and thus make it an object lesson to the country.

The Chairman: You will please write out your resolution, and I would suggest that in drawing up that resolution you would use some word which will define what you mean by breeder. For instance, a man may take care of a calf from the time of its birth until the time of its exhibition, and yet not be, technically speaking, the breeder of it. Please write out your resolution and be ready to offer it.

Col. Scott: It does not serve the interest which this association has at heart, so long as the State fair opens its class to the world. We are interested in Iowa breeding. The State fair opens its doors to the world and asks them to bring in their stock; if they have any better stock than we have, to bring in their stock and show it. It won't amount to anything to us that these men who bring herds from Illinois, Nebraska, Wisconsin—it won't amount to anything to Iowa breeders, to say that we will only give premiums for animals that they have owned for a certain number of years. And I will say that we cannot, unless we more maturely consider it than we are able to in a session of this kind. I can scarcely see how we can make a suggestion to the State Agricultural Society that will be practical and feasible to adopt on an occasion of this kind. There are many of these points that hinge on those questions, and I fear we shall only embarrass them and possibly stultify ourselves. I know that they have had it under advisement, and it has been suggested that they offer premiums for young herds—to breeders of young herds. I think that, as well as all these other questions, is open to a good deal of thought. I do not know but what I would like to see that confined to our Iowa breeders. We are more largely interested in a few of these lines of cattle. Those other lines of cattle in the hands of those capitalists who make these professional shows, of course profit by it, and the people who go to State fairs, many of them go to see the show, and those of us interested in the business would learn the possibilities of live stock. We learn what the bovine can do. It is really an object lesson, too, and entitled to consideration. I hardly feel that we can offer anything which the State board will approve.

Mr. Myers: As to the county fairs, if they should be included in this kind of an arrangement, an animal that was bought a few days or months before the fair would be virtually excluded, because the exhibitor was not the breeder, and I think it would counteract very much what the county fairs intended to do in that line. I think something should be done to encourage residents of a county to buy good animals and bring them into the county.

Mr. Funk: If a person keeps his eyes open at our State fairs he will have no trouble in seeing herds made up for the express purpose of taking the premiums around at the different fairs, and that has been going on right along for some time. I know one man I could name if I wished to, who took the first prize at the Illinois State fair, and from another fair the second prize, and so on. He

threatened to go to the St. Louis fair with his show and scared another fellow until he bought his hogs. I offer the following resolution:

Resolved, That we request our fair management to give more encouragement to the exhibitor who raises his animals himself.

Mr. Moninger: I think I will agree with Col. Scott's ideas. This question has been before the State board, and we have been free from trouble on that score to a large extent. These breeders do not need a great deal of protection. They can breed a herd and show it. I believe we have everything in that direction which the board needs in the matter, and I believe it will be useless to send any such resolution to the management of the State fair.

President Chamberlain: I was for six years a member of the State Board of Agriculture in Ohio, and can state that our board finally arranged the matter this way: They gave certain premiums that were open to the world, and that included breeders and buyers of our State or any other. We had other premiums open to breeders alone. Finally we had premiums paid to the breeders of Ohio. We noticed that as a rule the Ohio breeders took the sweepstakes premiums open to the world, from not only breeders of other States and buyers of other States, but the buyers of the State of Ohio. As a rule the breeder came out ahead. You have a chance for the breeders to infuse new blood, but as a rule the breeder will come out ahead. A man with a large pocket-book goes into the breeding business, and when that is the case, no time, labor or expense is spared in the direction he has laid out. I think the plans adopted in Ohio would work well in this State, and it seems to me that a general resolution looking in that direction should be offered.

Orange Judd: Does not such a rule practically prevail in nearly all the States now?

Mr. Chamberlain: I think it does.

Mr. Judd: I think they usually give special premiums to breeders and general premiums to all competitors. It is true that there are certain large importers who buy up fine herds and go around and exhibit in the different States; but I think the grounds have been pretty well covered?

Mr. Franklin: Our State board has made a rule in regard to the fruit department something similar to this. They have a class for the nurserymen for exhibition. They have a class for the commercial order, and a class for the home grower, or what they call the farmer who grows fruit for his own use. Those distinctions are

made in the fruit department, and it seems to me that if the agricultural society has endeavored to correct those evils in this respect in the fruit department that they might also be corrected to some extent in the stock department.

Mr. Judd: Isn't that done already?

Mr. Franklin: Not in the stock department as I understand. In no department is it so much needed as in the sheep department, in the mutton breeds. In England they have a moist climate and they are pushing their sheep to the front by feeding them on roots, and those sheep are brought over from England and we have to compete with those sheep with the sheep grown in a dry climate, and Iowa has nothing but grass to prepare sheep for the ring. Now I have never kicked or squealed about this because I had as good sheep as the other fellow had, but if there is such discrimination in the fruit department, I think it ought to be in the stock as well.

Resolution here offered by Mr. Mathews:

Resolved, That the stock breeders of Iowa recommend that the State Agricultural Society pay at least twenty-five cents extra where the exhibitor is the breeder as well as the exhibitor of his own stock.

Mr. Blakely: This would give the same competition as under the old plan. It would not give any new impetus to the breeders of Iowa. I do not like the resolution. I would very much prefer the idea advanced by President Chamberlain. I would go and make a request of the president that he suggest a substitute according to his proposition, which he can do better than I can now. There is some encouragement given under our present arrangement as there is a premium given to the Iowa breeders, but there should be other encouragement given. I do not know that I would offer the twenty-five per cent additional, as I think the premiums are liberal enough, but I would like to have a chance as an exhibitor to show my whole flock or herd, and have some show in doing so, rather than to be pitted against professional showmen who go from State to State with herds they have picked up throughout the entire United States, and spent time and money in preparing for these exhibitions.

Mr. McHugh: It is customary with the officers of the State fair to be compelled to cut their garments according to the cloth. They have to know how much they are going to give for premiums. One objection to my friend's resolution is that the twenty-five per cent additional will leave them in the dark as to the amount they

will have to pay, not knowing how many of these premiums will be taken by men who have grown their own stock. I will offer a substitute which will be acceptable, I think, to the greater part of the association, and which will leave the State board in a condition to act:

Resolved, That it is the sense of the Iowa Improved Stock-Breeders Association that the highest honors of our State fair, as measured by the premiums paid to exhibitors, should be awarded to stock shown by the party upon whose farm they were dropped, no matter where they came from.

Col. Scott: I have been requested by a gentleman who sat near me, who probably has the same thought I have, that these are questions the State board can wrestle with, and that we had better get rid of them and go to something of more interest, and I will therefore move that the whole question be laid on the table.

Motion carried.

Mr. Gabrielson: I hold in my hand a resolution which was given to me by Mr. Wilson, and which he asked me to present:

1st. *Resolved*, That we demand the same protection for the American farmers that those engaged in other industries receive.

2d. *Resolved*, That no exception be made for breeding cattle that now admit those of animals for the beef market under the guise of breeders.

I move its adoption.

Mr. Baker: Will Mr. Gabrielson specify what industries he intends to include?

Mr. Gabrielson: This comes to me from Mr. Wilson and the other gentlemen of the committee, and I was asked to present that, as they had to go away.

First section of resolution read and adopted.

Second section read.

After some discussion the resolution was by motion tabled.

Mr. Donnan: Mr. Chairman, I would offer the following resolution:

Resolved, That we respectfully request the legislature of this State to enact a law which shall establish a standard measure of the butter value of milk.

By motion resolution was adopted.

Mr. Smith: Mr. Chairman, I would offer the following resolution:

Resolved, That in the opinion of the Iowa Improved Stock-Breeders' Association, Chicago is, by its natural advantages, better adapted as the site of the World's Fair in 1892, than any other American city.

By motion resolution adopted.

Mr. Franklin: As a rule the roll call has been left until the last thing and then has been rushed through, and a great many of the members get away, and I would suggest that the roll be called the next thing on the programme.

Chairman: If there is no objection the secretary will next call the roll.

The following resolution was offered and by motion adopted:

Resolved, That the members of this association desire to express their thanks to the local committee and citizens of Hampton and Franklin county for the hospitality and good will shown towards the members of this convention.

Mr. Carpenter: I would like to move further that the thanks of this convention be expressed to the board of trustees of this church, who have so kindly given us the use of it for this convention.

Motion carried.

Mr. Smith: The committee appointed to examine the report of the treasurer, and report on the compensation of the secretary, have to report that they have fixed the amount of compensation of the secretary at twenty-five dollars.

Mr. Franklin: I will accept it on condition that that compensation is to be paid after all others are paid.

Mr. Smith: We will accept that amendment, as it comes by request of the secretary, and report that we find the account of the treasurer all right and in proper shape.

By motion report of committee adopted.

DISEASES OF FORAGE PLANTS.

BY S. H. PAMMEL.

Forage plants suffer from the attacks of a large number of parasitic diseases. Many of these are familiar to you. I will not weary you with long technical descriptions, as those can be obtained from books, but rather invite your attention to a few well known facts, and thus call out discussion.

CLOVER DODDER.

Your president recently sent me a parasite on one of our most important forage plants, clover, clover dodder. To one who has lived in Europe this is no new thing. The average American farmer, however, is not familiar with it, as it is of recent introduction. Macoun reports it as occurring in Canada as early as 1884. A few references in agricultural papers have come to my notice during the past summer. Dodder is a parasitic plant of yellow color twining around objects on which it lives. It obtains its nourishment by means of little suckers which it thrusts into clover or those plants upon which it grows. It is a native of Europe, where whole clover fields are often destroyed. Its near relative, the flax dodder, has been known for a long time in this country, although it does little damage.

HOW TO ERADICATE THE PEST.

It is important that this pest be recognized at once in order to exterminate it. The most radical means should be used. The clover affected with it should be burned with straw, and then planted with such crops as corn, wheat and oats, upon which dodder will not grow. Sufficient time must elapse before planting to clover again, as dodder seed maintains its vitality for several years in the ground. Care should also be taken not to allow cattle to pasture where it occurs, since it has been found that seeds maintain their vitality even after they have passed through the alimentary canal.

No other flowering plants are parasitic on our forage crops, but most of the troublesome diseases are caused by lower forms of plant life.

BACTERIA AS CAUSES OF PLANT DISEASES.

Though the low forms of plant life are common in the soil and atmosphere, and cause many of the most contagious diseases in man and animals, yet few diseases in plants are caused by them. The well known scientist, Prof. Burrill, was the first to discover that apple and sorghum blight are caused by these

minute organisms. He has lately discovered a germ which causes a disease in corn (a bacterial disease of corn). This one interests us and is an abstract from a bulletin of his. A patch of corn was planted in a piece of land which was too wet for cultivation. It was tile drained, put in corn, and no sun and the corn grew satisfactorily until after the second plowing, when the plants were more than six inches high. The corn ceased growing, became yellow, and unusually slender; then most of it died. But ordinarily there is a perfunctory amount of water previous to planting, in 1887. The seed germinated are no definite borders to the infected area, but after the tassels have appeared the disease is widely distributed through the field, affecting a stalk or hill here and there. The diseased plants are yellowish in color, the lowest leaves being the worst. The leaves wither chiefly at the ends and margins. The roots of the infected plants give away easily in consequence of death. The bottom portion of the stalk is likewise affected, and will be found dead or dying. After midsummer the leaf-sheaths become variously spotted, these spots ultimately become brown, and have a half-rotten appearance. The ears are also affected. The husks have the same spotted appearance as the leaf-sheaths; the parts appear wilted, packed closely together by the gummy exudation from the tissues. These ears often become mouldy with a white felt-like fungus. It is not improbable that this fungus makes its inroads after the bacteria have attacked the ear. Your attention is called to it in this connection since Dr. F. S. Billings isolated a germ from cattle, which were affected with a corn-stalk disease, and which he considers to be identical with Prof. Burrill's germ.

This bacterial disease of corn no doubt exists in many parts of the United States. At Ames I saw corn similarly affected.

SMUTS.

No fungus is better known to the farmer than smut of corn. It forms large galls in the leaves, stem, ears and tassels of Indian corn. These galls late in the season are filled with a large number of brown spores. The germinating spores attack the young plant. The mycelium or vegetative part of the fungus makes its way upward through the growing tissue, usually producing no effect until the formation of ears. The spores maintain their vitality for a number of years. Barnyard manure is a most excellent place for them to grow. Brefeld, a German investigator, has shown that in such places they bud in a yeast-like manner.

Certain varieties of corn suffer more severely than others. Thus Capt. Speer had an experimental plot of Philippine Island corn in which every stalk was not only badly smutted, but rusted also. Moisture, and the amount of nitrogen the plant is capable of appropriating, has perhaps some thing to do with the amount of smut produced.

It has been recommended to use sulphate of copper, water and lime to prevent smutting, but it has been shown by experimenters that it is very injurious to the germinating plantlet. As a preventive, rotation of crops and the use of well rotted manure are valuable.

LEAF SMUT OF TIMOTHY.

The leaf smut of timothy is troublesome in some places. This fungus reduces the leaves to brown shreds. Its mycelium is perennial in the tissues of the plant affected. It can, no doubt, be destroyed by the application of copper sulphate, lime water, or simply by rotation of crops.

Many other smuts occur on our grasses and cultivated crops, but these need not be considered in this connection.

RUSTS.

A large number of our forage crops are attacked by fungi which are known as "rust." We must make a distinction between such imperfect fungi as the fungus on the cherry, pear, and strawberry, which cause brown or red spots and discolorations in the leaves, and the real rusts of the apple, wheat, oats and grasses. These latter are caused by such genera as *puccinia* and *uromyces*, etc.

One of the most common rusts affecting the grass is the "grass rust," (*puccinia graminis*). At first orange red, powdery spots are formed on the leaves, sheaths and stems of grasses. This powdery mass is made up of one-celled, orange colored spores, and in this stage known as the "red rust stage." Later these spots become black, and are filled with two-celled spores, known as the "black rust" stage. These spores germinate in the following spring, and produce the cluster cup on the barberry. This is the generally accepted view, but there can be no doubt that the mycelium, especially in a warmer latitude, may live perennially in the tissues of the cereals and grasses, and that the barberry stage is simply an advantage in the perpetuation of the species.

More damage is done to wheat by another rust, closely allied to this one, and according to Prof. Arthur the mycelium of this species is certainly perennial in the tissues of wheat.

Red top grass is frequently attacked by the common grass rust, as are also some of the species of quack grass, which are sometimes cultivated as forage plants, but are not to be recommended, since they rust very badly.

White clover is attacked by a one-celled rust which is very destructive at times. So far as I know, red clover is free from rust of all kinds in this country, using the term in its restricted sense, though it is frequently attacked by many imperfect fungi.

It has frequently been recommended to remove barberry bushes, but as it seems most probable that the most destructive rust of wheat does not produce one of its stages on that plant, little good will result from removing them. It seems to me that in grasses and cereals the proper thing to do is to grow such plants as are more or less exempt from the attacks of fungi. Blue grass is little subject to the common grass rust. It does not occur at all on timothy. One of our native grasses, blue joint (*andropogon provincialis*), is quite free from diseases of all kinds. I cannot but admire this tall, beautiful, native grass, growing along side of such grasses as quack, red top, wild rye and brome. At the Experiment Station it certainly does well under cultivation, and I hope tests will be made as to its value as a forage plant, and how it will adapt itself to cultivation under all circumstances.

ERGOT.

Breeders need not be told of the terrible disease "ergot" (*claviceps*), causes in man and animals. The gray spurs in the flowers of grasses are familiar to almost every one. These spurs are the resting forms of the fungus. It appears at the base of the young grain, and gradually takes its place. In its young stage large numbers of small spores are produced. These are carried by flies and beetles, which feed on the sweet fluids secreted by the fungus to neighboring plants, and causing these likewise to be affected. Ergot occurs on a large number of our grasses. I have seen thousands of heads of timothy in the pastures affected. Red top is equally affected. Wild rye, which is common in prairie hay, contains a large number of ergotized grains.

I think Dr. Stalker was the first to recognize that what was taken for "foot and mouth disease," in Kansas, was due to the ergot contained in hay fed to cattle.

PREVENTIVES.

A pasture in which ergot is common should be rotated with plants upon which ergot will not grow. In closely grazed pastures it is not common. I have never seen it on blue grass, nor does it occur on the various sedges which make up a part of our prairie hay. By all means avoid feeding such grasses which contain the ergot.

RELATION EXISTING BETWEEN THE IOWA STATE AGRICULTURAL SOCIETY AND THE IMPROVED STOCK-BREEDERS' ASSOCIATION.

BY JOHN R. SHAFFER.

In all the past there has existed the most cordial relations between the Improved Stock-Breeders' Association and the Iowa State Agricultural Society. The organization of the latter association dating for many years that of the former, made the Improved Stock-Breeders' Association a possibility, if not a necessity. Without the impetus given to the introduction and rearing of fine stock, by the early labors and efforts of the State Agricultural Society, the Breeders' Association might possibly have been postponed a long time, or might never have begun its most useful career. On the other hand the one has proven the hand-maid of the other, carrying forward the well-designed plans of the State Agricultural Society, and making them more effective as the years gave opportunity for their fulfillment. Both organizations have worked in their separate spheres to the one only end and object of educating the people to a larger appreciation of that

which is best. Their joint labors have been a helpful agency in placing the State among those in the front rank of the stock-growing sections of the country. The time was, and it was in the memory of many here assembled, when pedigrees were ridiculed and careful breeding regarded as a useless refinement. The time was when the period required to put cattle, hogs, etc., in market was not considered. Steers were kept three or four years instead of hastening the maturity in a short time; and such is the system largely in vogue even now, but the Stock-Breeders' Association teaches that there is no profit in the last year's feeding and keeping; and the State Agricultural Society shows on its grounds the actual demonstration of the theory. It was theory; but soon it came into the domain of fact. The instructions which grow out of experience, told over and again at the annual meetings of the Breeders' Association, fixed a lodgement in reflecting minds, and a trial is made. The result may not at first be fully successful; but the advanced Iowa farmer, made thoughtful and energetic by your work, hesitates not to try again. The unenviable prejudice so long existing against pure blood, gave way to the logic of more money for less labor, more comfort with less care, and now he who stands still, or attempts to do so in the path of this wave of progress, will be engulfed or left far in the rear.

Horses are bred, and raised and matured as one of the results of the joint teachings and influence of the two societies. Heretofore they were bred without any reference, or with very little reference to any of the qualities or conditions which looked toward improvement in size, strength, speed, courage, utility for this or that purpose, or any of the excellencies so much sought after to-day.

All through the country every blacksmith shop, cross roads, sign posts, and tavern were ornamented with pictures of horses that would stand for a very small price indeed. The mare was brought to the nearest or cheapest horse as a general rule. "Any colt will make a horse if it lives long enough." So it will ordinarily; but the cheap horse and the cheap mare, without any selection, or any regard to propagating desirable qualities, will bring a very cheap colt.

Your society is constantly teaching the high importance of having a suitable horse put with a suitable mare, having a wise and intelligent idea of the character of the colt that may be the offspring.

Our society brings for the inspection of the great public the result of what you, in your discussions and recitals of experience, have been instilling into the minds of those who attend your meetings or read your reports. Those who see, also meet the owners of stock superior to their own, converse with them, learn a few brief generalizations, and lay the foundation for study and reflection, which in due time make the inquirer informed, who in turn becomes a teacher of others.

There is, perhaps, not an old-fashioned hog in Iowa; there is surely not an old-fashioned hog raiser. His place, or better said, lack of place was for the pigs to be littered any place or any time of the year; let them run loose, destroying his own and his neighbor's crops until winter; then hunt them up with hounds, fence them in and feed them corn until spring; let them race again on mast and grass, but mostly on the cultivated fields and gardens, for several miles around, but they were not lost very much by reason of ears beautifully designed about the ears; pen them up and feed another winter,

and so on for several years; then put them on market only in the dead of winter weighing about 250 pounds. Your society, with other aids, has well nigh accomplished its mission, as far as swine are concerned, by making the hog of a quarter of a century ago apocryphal.

You taught by practical experience the law of breeding, keeping, feeding, and how to insure early maturity. You made a market for hogs every day in the year; no time or season comes that a steady supply of hogs does not flow from west to east. What you and those who labored with you taught would have had its influence greatly narrowed without the public had opportunity to be convinced by ocular demonstration of the truth of your utterances in the dead winter months, seeing the pens full of swine of all ages under two years at the State Agricultural Society's Fair in the beautiful autumn.

The relations, therefore, are mutual. The one society supplements the other. What the State Agricultural Society would fail to accomplish, or do but imperfectly, the Stock-Breeders' Association can aid in doing. Not all of the progress made in the life-time of these organizations is due to them. There are many other important and justly recognized factors that are co-workers, that are in full sympathy with their objects, and that strive for the same bright goal, the improvement of farm stock, but they travel and work and experiment and write in different lines. There are books provided, newspapers published, individual effort made which do not appear at annual meeting or at annual fair.

The general government has organized a comprehensive bureau, with its special divisions, its special experts, its special efforts in the line of stock-raising, and all the accidents and incidents that pertain to it. There are many other influences that are part of our available force. Our mutual relation with all these are natural and beneficial also; and we would not ignore their helpfulness, even as they recognize the value of our seemingly independent, but actually united efforts.

There should be congratulations of the heartiest character, that there is no division either of interest or effort between the Stock-Breeders' Association and the State Agricultural Society. In your meeting you may differ ever so widely as to minor points; even as we differ in opinions as to the merit of articles placed in competition. That is not to be deplored, for it is a sure evidence of mental activity. Not to disagree is stagnation, and that is death—death to free inquiry, to progress, and going on toward perfection. If all were agreed that the Short-horns were best for beef, dairy and all other purposes, that would supersede the necessity of having associations for Jerseys, Angus, Herefords, etc. If all were satisfied that Short-horns possessed all the needed qualities of the great family of cattle, that would expunge all other classes from the premium list, and there would only be a show of one branch of the family. It is your happy duty to hear what each breeder announces in behalf of the fancied superiority of his stock, allow the broadest charity, and make no attempt at arbitrary judgment in the matter. It is our happy privilege to let the great public see the best which your influence may add in developing and affording the living witnesses to testify, permit each man to decide for himself. That is the practical plan for a liberal education which will constantly seek for further light, and not be slow to let it shine upon those of his countrymen who are less informed.

There need be no change in these reciprocal relations. They have been of value. Let them be continued. To enlarge the functions of one could hamper the work of the other. Let the existing union be the symbol of strength. Let no discordant element arise to disturb the harmony which has marked every movement of the past. Then shall the Improved Stock-Breeders' Association continue to occupy its proud position, going forward to yet greater excellence. Then shall the State Agricultural Society furnish it a larger field for the display of its achievements, and hand in hand they both shall contribute to make our noble State the center of the very best farm stock in the world.

Chairman: There was a paper by Mr. Blakely that was withheld for a while, and Mr. Blakely will now read the paper entitled "Sheep for Wool."

SHEEP FOR WOOL.

BY A. J. BLAKELY.

In the memorable reply of Webster to Hayne, the great statesman would recognize no such word as "liberty first and union afterward," but "liberty and union, one and inseparable, now and for ever." Your secretary has furnished for me a topic, "sheep for wool," while another gentleman has the topic, "sheep for mutton." To raise sheep exclusively or mainly for wool or for mutton is about as disastrous as to try to maintain in this country union without liberty, or liberty without union. We must have wool and mutton, "one and inseparable."

I remember when a small boy in Vermont my father and his neighbors kept flocks of sheep that averaged only two to three pounds of wool to the head. One large farmer with 600 or 800 sheep I remember had a lot of rams that averaged two and a half pounds. The sheep of the neighborhood averaged in weight of carcass about sixty-five pounds, and the form was not such as to atone for diminutive size. Wool growing was the principal industry, and the good pastures and the yankee industry and economy, and the house full of stout boys enabled many farmers to become quite wealthy with wool at 35 to 45 cents per pound from 1842 to 1850.

But my father was not satisfied with the small, light fleeced Saxony and native sheep, so he got a few Bakewells, large coarse wool sheep. A few years experience with these proved them not hardy to endure the winters, and the run with large flocks, so they were disposed of, Consul Jarvis had imported some Spanish Merinos. They were ten or fifteen pounds heavier than the Saxones, and the ewes would shear four to six pounds of brook-washed wool. My father went over to the east side of the

Green mountains and got some of the Consul's rams, and was pleased with the improvement made on the flock. A couple of years later he took his horses and sleigh and went 100 miles south, into Connecticut, and brought home a few Atwood ewes, and a little later went north sixty miles into Addison county and brought home eight more Spanish ewes for about \$100. The investment proved profitable. The sheep were good form, hardy, and weighed about eighty pounds, and sheared four to six pounds of washed wool; twice as much as the old flock, and the wool brought the top prices. Such were the Merino sheep forty and forty-five years ago.

Twenty years later the Vermont Merinos were but little larger, but the unwashed fleeces of ewes weighed nine to twelve pounds, and the rams fifteen to twenty-four pounds. The high grade Merino wethers twenty-five years ago weighed eighty to ninety pounds, and sheared nine to ten pounds of wool. The wool brought a better price than now, and such sheep were profitable, as ten of them ate no more than the common scrub cow.

If wool were the only product from sheep, a sheep weighing eighty pounds would be much more profitable than one of twice that weight, for the general rule holds that animals of the same species and age eat in the ratio of size, and the weight of fleeces is in the ratio of surface, if the fleeces are of the same compactness and length of staple. Thus, two sheep of eighty pounds each will eat the same as one of 160 pounds weight, but the surface being much greater on the two small sheep, the two will have much more wool than the one large sheep.

The best breeders of Merino sheep, however, some years ago recognized the fact that the sheep of eighty pounds, shorn and put on the mutton market did not sell for as much as the sheep twenty or twenty-five pounds heavier. So they gave attention to improving the size by liberal feeding and selection of the larger ewes and rams, so that now the ewes in many Merino flocks weigh from 100 to 125 pounds, and shear from twelve to twenty pounds, the rams weighing from 130 to 150 pounds. My own two-year-old ewes running through the past summer in a flock of 800, weigh on an average of 115 pounds, and shear over fifteen pounds of wool. They match the Southdowns in form and size, and the fleeces are three times as heavy. These Merinos fattened and shorn will sell in Chicago in the spring for as much by the pound as the largest English sheep, and sold in the winter and spring with the fleeces on, will outsell them, and I claim the Merinos are the better mutton, for the fat is not so much laid on in bunches, fit only for the waste basket. No sheep take on flesh more readily than the modern Merinos. Six or eight weeks liberal feeding with grain is sufficient to make them rolling fat. It is conceded that for large flocks the Merino is preeminently hardy. They have nothing of the snuffles so common to all English breeds of sheep.

I have also found a cross of Merino and Cotswold to be profitable sheep, the weight of ewes and wethers being 130 to 140 pounds, and the rams sometimes running up to 175 pounds. The fleeces are a few pounds lighter than the pure Merinos, but this medium wool, unwashed, commonly brings two to three cents more per pound than the Merino wool, and more than the long coarse wool, the medium wool fleeces selling for some twenty-five or thirty cents less than the fine fleece. I consider these crosses of Merino and Cotswold better sheep in all respects than any of the long-wooled English breeds. The fleeces are heavier, and sell for more by the pound, and the

crosses partake of the hardness of the Merinos. But the pure improved Merinos—ewes and wethers weighing 100 to 125 pounds, and showing an average of fifteen pounds (I have some ewes that show twenty pounds), are undoubtedly the most profitable sheep for wool and mutton.

Wool is not high in price, the unwashed wools of Iowa selling the past summer at home for twenty to twenty-five cents; but wool and mutton have not fallen the past three years like beef and dairy products, and wool growing is more profitable than cattle raising. My best Short-horn steers at three years old weigh 1,500 to 1,600, and sell at home for about \$65 per head. Ten Merino lambs, kept from birth to three years old, will eat less than the steer during the three years of existence. The ten sheep cannot possibly eat a half bushel of corn in a day, which the steer, after two years old, will readily consume. The ten Merino sheep will have produced forty pounds of wool each, or four hundred pounds, which, at twenty cents per pound, amounts to \$80. (I sold my last clip for twenty-one and a half cents, at home, bucks' fleeces included). The advantage of the income of wool at the end of each year, instead of waiting to the end of three years, balances the expense of shearing, and at the end of the three years the steer is gone and you have the ten sheep left. The advantage of hogs following the steer will scarcely bring the beef and pork product up to \$80, the value of the wool from the ten sheep.

The diminution of sheep in the United States since 1883, which has been principally in Texas, California and the Territories, has been attributed to the unfriendly tariff legislation of 1888. This legislation, which hit the wool grower harder than the manufacturer, together with the unfriendly interpretations and rulings of the treasury department, still continued, relative to the duties on factory waste and so-called carpet wools, which latter have been imported at two and a half and five cents per pound, and are really largely used for clothing purposes, have doubtless somewhat discouraged the wool grower. But the terrific winters which have swept off the sheep of Texas and the Territories, where no winter provision was made for them, have probably contributed more to this lessening of the sheep than unfriendly tariff legislation. It is a fact, however, that the American wool grower does not get for his wool the London price, with the duty added, though we raise but two-thirds of the wool manufactured in the United States.

The importation of shoddy—the rags of Europe, which are now permitted to be brought into this country, and on which there is a small duty—should be prohibited. These rags are ground up and mixed with a little strong wool, to hold the stuff together, and are sold to the American people as all wool goods. They are a fraud not easily detected. Money expended for such goods is worse than lost or stolen, and a doubt is often created in the minds of those who have worn the goods as to the durability of genuine all wool goods, and thus the use of woollen fabrics, so necessary to health in this changeable climate, is discouraged, and the manufacture of good goods discouraged. Let the use of shoddy in manufactures be made a penal offense, or demand that every garment or yard of cloth containing the rags be labeled "shoddy," as oleomargarine is required to be labeled.

One other matter and I am done. The wolf not merely *figuratively* at the door of many an Iowa farmer, but the real wolves, large wolves, prowl over the Iowa farms in increasing numbers, seeking what they may devour. No

census like that of their cousins, the dogs, has ever been made. Like the flea, when you put your hand on them they are not there. But their name is legion. Much of the best sheep lands of the State, the bluff, bushy portions along the streams and adjacent to timber belts, cannot be pastured with sheep. The sprouts from the cut off timber and the hazel brush can now be exterminated only by the grubbing axe and the brush hook, and at large expense. If sheep could be kept on these lands, how quickly would the young sprouts vanish and the roots decay, and their places be taken by the rich blue grass preparatory, a few years later, to easy plowing and large corn crops. Not merely would the owners of these rough, bushy lands be benefited, but their reclamation and settlement would bless the neighboring schools and the neighboring towns, and in fact the tax payers of the whole State. Sheep can't live there now on account of the wolves. Pigs can't be raised there on account of the wolves, and the chickens and turkeys must every night roost high, as though Thanksgiving day were to follow. Really it is a stain, a foul stigma, on the civilization and the enterprise of the people of Iowa that these wolves remain and are frequently seen crossing the best cultivated farms, and even near the best towns in our State.

What is the remedy, do you ask? Wipe out all trifling and unequal bounties and induce the legislature to provide a State bounty of twenty dollars for the scalps of the old wolves and five dollars for the young ones. The boys will then arm themselves with the best rifles of long range, will watch and hunt for the game, and speedily exterminate the lupine race.

THE MUTTON SHEEP.

BY GEO. T. UNDERHILL.

What are the different mutton breeds of sheep? This we cannot answer as they all produce mutton, more or less. Then, which are the most popular breeds of mutton sheep? This you will say is a mere matter of opinion. Some claim one breed of sheep and some another. Everyone has his own idea as to this.

I will here give you my idea as to what constitutes a true mutton sheep—Iowa as a place for such, its markets, etc.

In making up the mutton sheep we should first look to size and weight of carcass; the time it takes to get this size and weight; the amount of food required to produce it; the quality of mutton produced; the quality of lean and fat meats and the way it is distributed throughout the sheep; its advantages as a mutton producer, crossed on the lower grades of mutton sheep; or in other words the common or ordinary sheep of Iowa, their merits as a mutton sheep, early maturity, etc.

In order to get these heavy weights in sheep we must breed to some one of the more prominent breeds of mutton sheep. There are several, such as

the Oxforddowns, the Southdowns, the Shropshiredowns, Hampshiredowns, etc., and I might go on and name several others, such as the Lincoln, Cotswold, Leicesters, etc. As I said before, everyone has their own idea which is the best mutton producing sheep.

I will pick from this number, in order to illustrate my writing, the Shropshiredown. I think in this breed of sheep we will find all that goes to make up a true mutton breed of sheep. The advent of the Shropshire in this country is of comparatively recent date. Virginia has the honor of receiving the first importation in 1855, and to-day they are the most popular breed of mutton and mutton-producing sheep in the world.

This may seem to some a bold assertion. Nevertheless it is true, every word of it. In all the show rings in Europe and America the Shropshire stands at the head in the mutton class.

At the Royal Show in Shrewsbury 875 Shropshires were exhibited against 420 Southdowns, Hampshiredowns, Lincoln, Cotswold, Manutian, and all other distinct breeds, demonstrating conclusively that the Shropshire merits the requirements of the day, and surely is the coming race. Another thing worthy of notice is that this breed seems to thrive and become acclimated in all places if properly cared for, as is proven by the success of exhibitors of this breed extending over a wide area, notably at the recent Royal Show at Shrewsbury, the exhibitors of this breed numbering no less than sixty, and hailing from fifteen different countries, including Ireland, whereas the best that can be said of any other distinct breed is that the Southdown came from eleven breeders in six countries. And by experience of others who have seen the breed flourishing in every county in England, Scotland and Ireland, and in the United States, South America, Canada, France, Germany, Greece, and most other continental countries, where soil and surroundings differ to a great extent.

Shropshire shearlings commonly weigh twenty pounds per quarter.

At the Fat Stock Show in Chicago the Shropshire took first prize in the class between two and three-year-olds, competing with Hampshire and Oxforddowns, and took sweepstakes for best sheep, any breed, between two and three years old, and grand sweepstakes, any age and any breed, for heaviest fat sheep and best dressed carcass.

The mutton of the Shropshire is of the best quality, with a large proportion of lean meat, and in the English and American markets sells on a par with that of the Southdown, while the carcass often equals that of the largest breeds of sheep.

The Shropshire requires no more feed than the common scrub sheep. To look at them one would think it would take at least twice as much food, if not more, to satisfy their appetites, as they are as large again as the common run of sheep.

This is another one of the many favorite points of the Shropshire. They are noted for this the world over. They are easy to keep.

To illustrate this: I once took five common ewes that would weigh from ninety to one hundred pounds each, and put them in a pen. I then took five of my Shropshire ewes that would weigh from two hundred to two hundred and fifty pounds each and put them in a pen alongside the pen of the five common ewes, and fed to each the same amount for one week, and I found, without an exception, the hay rack in the pen of the Shropshire a third full

or more of hay in the morning, and in the pen of common sheep there was not a spear to be found and were still crying for more, every morning when I went to the pen, while the Shropshires in the other pen were lying around in a peaceful snooze, apparently not at all concerned but what they would get their food when the proper time came.

The Shropshire crossed on our common sheep make a most excellent cross, not only for mutton, but for wool, putting on from three to four pounds of wool the first cross. My neighbor has a drove of the common native sheep that had been shearing on an average of five pounds of wool per head. In the last two or three years he has been using some of my Shropshire bucks in his flocks, and his sheep are now averaging him a fraction over eight pounds per head.

A Shropshire crossed on our common ewes I claim will raise a lamb by the time it is one year old that will out-weigh its dam fifty pounds. This I have seen tried and tried myself.

What is there more profitable on the farm than sheep? I claim there is nothing. You can have your horses, your cattle, your hogs; I will take sheep and leave your horses, your cattle and your hogs all in the shade. I will throw away my wool and do it, if you please.

For instance: Suppose we take 100 or 200, say 200 of our common ewes and breed them to some one of our most prominent breeds of mutton sheep. If you have tight barns aim to have your lambs come in February or March, not later than this, and by December of the same year you will have a lamb that will weigh 100 pounds or more. If you feed a little bran with cracked oats and corn mixed with it from the time it is three weeks old up to December, you will have a lamb that will weigh more than this. But I am speaking now of a lamb that has had good pasture and plenty of pure water to run to, as likewise its dam, with a little grain along in the fall when pastures begin to shorten. I claim we can raise a lamb that will weigh 100 pounds or more by Christmas—at this time of the year worth six and seven cents per pound in Chicago.

Say our 200 ewes have 200 lambs (if bred to Shropshire they are as likely to have twins as often as single lambs). These 200 lambs, if they will average 100 pounds each, will bring us, at six cents a pound, \$1,200. Then suppose we take the wool from these 200 ewes. At five pounds to the ewe, which is 1,000 pounds of wool, at twenty-five cents a pound, come to \$250; making a grand total from our 200 ewes of \$1,450, or about \$1,500.

The cost of raising the lamb from the time it is born till it gets to Chicago market, is sixty acres of farm pasture, where they run with their dams, allowing five sheep to the acre. Some say an acre will keep eight sheep. I think it will have to be the very best pasture to do it. You will see I have added on twenty acres to the forty acres on account of the lambs. You will understand that this sixty acres does not only produce the lambs, but two-thirds of the wool of these dams. This wool costs more to produce than the 100 lambs.

First. In order to produce the wool we have two-thirds the benefit of the sixty acres. Then it takes twenty tons of hay to winter the 200 ewes, at ten tons to the hundred sheep. Some claim eight tons will do it, but I doubt it.

STATEMENT.

Two-thirds use of sixty acres of pasture at rental price, \$2.00 an acre	\$ 80.00
Twenty tons of hay at \$5.00	100.00
Expense of shearing at five cents per head	10.00
Cost of wool	\$ 190.00
1,000 pounds of wool at twenty-five cents per pound	\$ 250.00
Expense of raising this wool	190.00
Total profit from wool	\$ 60.00
200 lambs consume one-third of grass from the sixty acres, at \$2.00 an acre, rental price	\$ 40.00
To help out in the fall when pasture is short—	
50 bushels of corn, at twenty-five cents	12.50
50 bushels of oats, at twenty cents	10.00
2 tons of bran, at \$9.00	18.00
The expense of two cars to get the lambs to Chicago mar- ket, we call \$100.00. (From Knoxville it is \$30.00 a car)	100.00
Incidental expenses	20.00
Total expense of raising 200 lambs for market	\$ 200.50
From the time they are born till they are landed in the stock yards at Chicago—	
200 lambs at six cents per pound, at 100 pounds each	\$ 1,200.00
Expense of raising these lambs	200.00
Total net profit from 200 lambs	\$ 1,000.00

While we get only \$60 profit from our wool.

Therefore, I say we cannot raise sheep for wool alone, which a great many farmers are now doing. We must have mutton if we wish to derive the full benefit of raising sheep.

A reporter for the *Farmers' Review* started out to learn something about the condition of the market for mutton in Chicago during the past season. He reports that one of the best known butchers in Chicago informed him that well fed grades of Southdown and Shropshires have been a perfect fortune to the breeders. This season the price has remained steady for good sorts, and seven and a-half to eight cents per pound has been by no means an uncommon price.

In Iowa we have a sheep growing State that cannot be surpassed by any other State or Territory, made up as it is of rolling prairies, which is so well adapted to sheep raising.

The blue grass sod, which is always the first to come and the last to go—the blue grass is the home of the sheep. It is a noticeable fact from the blue grass pastures we find our best sheep and our best wool and mutton.

Our railroads and shipping facilities, our Chicago market, where we always, at all times, find a ready sale for our mutton and wool.

It is pleasing to note the great boom we are having in the sheep industries of Iowa. I hear it everywhere, the words, "where can I buy a few sheep?" I never go to our town but some one comes to me wanting to buy sheep. In speaking of our county, Marion, I will say that this year we shipped out of our county 80,000 pounds of wool, and in the last six weeks there have been brought into our county by farmers living here, some 900 head of sheep from Colorado, and some 3,000 head from Missouri. We expect to raise 100,000 pounds next year.

Like most of the other counties in Iowa we are troubled somewhat with the dog and wolf. A great deal of this dog and wolf trouble might be remedied by a little precaution. All sheep ought to be brought up every night around the house and put in a yard or pen by themselves, with a ten wire Duncan fence. Such a fence costs very little, and will turn all dogs and wolves. In the Duncan sheep fence I claim we have a boon to sheep men; the best and cheapest sheep fence in the world. I am not saying this because I am agent for the fence, but because I know it to be a fact. I claim the fence has as much to do in keeping more farmers from going into the sheep business in Iowa as the dog and wolf.

The fences, the dog and the wolf are the three great drawbacks in the sheep industry. Our greatest aim, then, should be to remedy this difficulty. First, let us fence our sheep pastures in such a way that the dog or wolf can not crawl through or jump over. Tear down your old rail fence, sell the rails for cord wood, and with the money replace it by an eight wire Duncan fence, that will turn wolf or dog. This you can do with the money you get for your rails at \$3 a cord.

My advice is to buy a few sheep to start with, and at the end of the first year if you don't say that little bunch of sheep is the best paying piece of property on the farm I will have no more to say. I have yet to hear the first man tell me otherwise than this.

We have in our county a dog tax of fifty cents on males and \$1 dollar on females, and pay a bounty of \$4 a head on all wolf scalps. We are in favor of having it raised to \$10. With success to all sheep breeders and wool growers.

DISCUSSION.

Mr. Franklin: I want to say that I have been breeding the Cotswold sheep for a number of years, and although Mr. Randall, in his "sheep notes" says that the Cotswold has to be watched that the muen does not gather and suffocate the sheep, I never have had to watch mine in the slightest degree, and I think that every mutton breeder will bear me out in this assertion.

Mr. Blakely: The fact is this, as all breeders who keep large flocks understand, that well bred Merino sheep are usually almost exempt from this trouble. I do not see why it is. I have experimented with the Cotswold sheep. I have had good Cotswold lambs

and liked them well, but even the cross is more subject to that trouble than the pure Merino sheep. Mr. Hunter, an old Scotchman up here, who is a large sheep breeder, and who, of course, was naturally inclined to the English breeds of sheep, made the same statements three or four years ago, but I think that the Southdown sheep are not any better. I have not had any experience with the Southdown. I know, however, that if you want a good mutton wool sheep I can get a good hardy sheep out of that cross with more wool by far than the Southdown. If we can get two or three times the wool and just as large a carcass that will sell by the pound, it would certainly be desirable. I would rather have a cross of the Cotswold, which I believe is the best coarse wooled sheep bred.

Mr. Gabrielson: What did you receive for your wool?

Mr. Blakely: Twenty-one and one-half cents at home, right after shearing season. My Merinos average some thirteen pounds.

Mr. Pearce: Do you pretend the Merino will bring as much for mutton in the market as the others?

Mr. Blakely: That the genuine Merino, weighing 115 to 120 pounds, as they do, will bring as much fattened and shorn in the spring as any English breed of sheep, and if sold in the winter or spring with their pelts on, they will beat any of them.

Mr. Franklin: Do you mean crossed by the Cotswold?

Mr. Blakely: I mean the American Merino, as they are called.

Mr. Pearce: Isn't it a fact that they do not sell as well or for as much in the Chicago market by a cent and a half.

Mr. Blakely: I do not know how the Shropshire sheep sell, but I know that a cross between the Cotswold and Merino will sell for from two to three cents more.

Mr. Pearce: I am talking about the carcass.

Mr. Blakely: A well fed sheep of a hundred and ten pounds will sell as well.

Mr. Franklin: I ask if a Merino would bring as much in the market as a Cotswold or Southdown?

Mr. Pearce: I do not think they will. I think you are badly mistaken about that. Take it in the Chicago market, and a lamb weighing ninety pounds will bring a much higher price.

Mr. Blakely: I am not talking about a lamb. That is another thing. Lambs always bring a higher price.

Chairman: Will you state what you get a pound for your Merinos?

Mr. Blakely: For my part, what Merinos I have sold I

have sold at home for from three and a half to four cents in the spring.

Mr. Pearce: I sold ninety Shropshire lambs that averaged six dollars per hundred on the 20th day of January, 1888.

Chairman: What price did you get after shearing in the spring?

Mr. Blakely: I never sold any that way.

Chairman: What price are they usually sold at?

Mr. Blakely: They are worth to-day in the market about six cents.

Question: What did the Shropshire sheep bring after the wool was off?

Mr. Pearce: From a dollar to a dollar and a half in the Chicago market more than the Merino would bring.

Question: What did they bring? How much?

Answer: Last spring about four and a half; in June and July four and a half to five.

Mr. Blakely: I sold in Chicago a few cross bred Merinos and Cotswolds a month or two later than he did, not lambs but wethers, for six and a fourth; put them in with another man's, who had lambs that were nearly pure Cotswold, and they sold for the same as his lambs.

Mr. Norton: What was the Merino sheep worth at the same time you sold the lambs?

Answer: The common sheep would be worth about a dollar and a quarter less.

Mr. Norton: I can say that I have not been without sheep for fifty years, and I am fifty-three years old. A good old grandmother gave me a lamb when I was three years old. When the old French sheep were all the rage, then we used French rams to cross with the Spanish Merino ewes. We paid as high as from fifty to one hundred dollars apiece for them. Then, when we came to Iowa twenty-six years ago, we made up our minds that where there was so much grass raised, and corn was so cheap, we would raise carcasses as well as wool, as the carcass was worth about the same as the wool in Iowa, and we got the best Cotswold sheep we could get at that time and crossed with our Merinos. It was wonderful what a cross we got. The cross gave us carcass but left out the wool. We found this objection: that the Cotswold wool was an open wool and when the sheep would be out in the rain the wool would divide right on top of the back and give an opportunity for the water to run into the wool. It was open—I made up my mind it was too

open for Iowa. At one of our annual State fair associations I bought a Shropshire ram that had been brought over from England within ten years. The party who owned him was willing to sell him as he had used him as long as he wanted to. Our friend Coffin, when we were out looking over the stock of sheep and Short-horns, priced the ram at twenty-five dollars. He cost one hundred dollars. While Mr. Coffin was off talking with his friends I bought him and sent him down to the train. When Mr. Coffin returned, he wished to know if he would not take less than twenty-five dollars, and received the reply that he had been sold to Mr. Norton. He then offered five or ten dollars extra for him, but I told him he could not buy him. We have used that ram three or four years. We found the cross gave us an improved carcass, and the lambs are much better. So that we have for the foundation, the Spanish Merino and the Cotswold, topped out with the imported Shropshire, and it makes us a first class mutton sheep, and a very excellent medium woolled sheep. We have never sold our wool during these years for less than twenty-five cents. The Shropshire, kept in large numbers, does not succeed as well as the Merino does in large numbers. If a man is keeping three or four hundred, or any large number, for two or three years, I would not recommend it—would not even recommend two or three hundred Shropshires being kept together. The experience in England is the same as here; that they do not do as well in large numbers; yet they will do well in such numbers as the common farmer in Iowa should keep. I do not think the Iowa farmer ought to be without forty to sixty sheep on his farm. I would have at least that number of sheep to rid my fields of weeds and sprouts, and I do not think anything the farmer in Iowa can put on his farm will do him more good than will sheep if properly handled and cared for.

Question: If you want to kill any kinds of weeds, or get rid of hazel, you have but to turn in sheep and they will soon rid your fields of them. I would like to know, however, if by turning the sheep into the corn field, you will get as good a crop of corn the next year? Whether what kills the weeds and sprouts will not affect the raising of a crop of corn?

Mr. Blakely: What kills weeds and the brush on farms when the sheep are turned in, is simply that they nip those things in their infancy. They bite off the sprouts, and they die. I had a locust grove that died, as they do all over the State—I had a large one on my farm. I cut off the dead weeds and turned the sheep in, and in five or six years these stumps all rotted out. I had a few of them

in my garden that I tried to grub out, and I have been grubbing at those stumps for fifteen years, and have not got them out yet. I think the worst things to exterminate are the locust sprouts; but the sheep exterminated those and seemed to like them, and it did not kill the sheep.

Mr. Funck: Mr. Blakely refers to the matter of shoddy. Will he please tell us how many pounds of wool a pound of shoddy will displace?

Mr. Blakely: I believe a pound of shoddy displaces a pound of scoured wool. I suppose it would make the same thickness of cloth.

Mr. Funck: My understanding is, that there is a great deal said about protection to wool, and yet we import shoddy at ten cents a pound, and every pound we import takes the place of three pounds of wool on the market, as I understand it. If our government wants to protect the wool industry, let them carry out the proposition of Mr. Blakely, and stop the importation of this kind of woollen goods. If the government will give us relief in that direction, it will do us more good than any other tariff it can give us. I understand that there is some fifty-six million pounds of shoddy imported each year, but I may be incorrect in that.

Mr. Franklin: I want to say one word. Mr. Hastie has been quoted as authority on disease among sheep. I want to state that Mr. Hastie says "that scab can be produced without any infection." If the scab can be produced without infection (and he can prove it as he claims), then how can we expect his authority to be accepted regarding the "snuffles"? I only speak of this to show you what kind of authority we are requested to accept. I think scab can only be produced by infection. I agree with my friend Norton that every Iowa farmer ought to have forty to sixty sheep. Not to kill weeds and hazel brush, but for profit. Sheep are death to weeds, blackberry briars and hazel brush.

Mr. Pierce: The remark was made by the gentleman a while ago that the carcass from the Merinos would make more money in wool and mutton than the Shropshire.

Mr. Blakely: I did not say with reference to the Shropshire; I said a cross between the Merino and Cotswold. I have had a good deal of experience with them. I believed that they were better than any of the long wool English breed. I understand that the object of this meeting is for us to get as much information as we can on the subjects brought up. I have been watching the sales in Chicago. I know that what we call the Merino sheep, will sell for

a dollar and a dollar and a half less for mutton than any of the other three breeds named. As far as the wool is concerned, I know nothing outside of my own flock. I had one hundred two-year-olds that I sheared, and sold eighty-eight at six and one-quarter cents per pound, and sold eight hundred and ten pounds of wool at twenty-three cents per pound. I think that if we would go to raising sheep and let the cattle go, I do not think we would lose so much to say about the "Big Four."

Mr. Smith: I think I saw a statement in the *Breeders' Gazette* that the best carcass was produced by the Merino foundation, with the Shropshire crossed.

Chairman: I want to say that there are one or two papers, one on poultry, by W. K. Laughlin, who is present, and one by Mr. Speer, of the Experiment Station, on the important subject of breeding animals. Mr. Laughlin's paper will finish the programme; as printed, but Mr. Speer's paper is here to be read, also.

POULTRY.

BY W. K. LAUGHLIN.

This paper will not be confined to any particular subject, but a brief summary of matters of general interest to poultry breeding on the farm.

Very few realize the magnitude of the poultry business in this country. Col. Robt. Little stated at the last meeting of the Iowa Dairy and Butter and Egg Association that the egg crop this year was nearly equal to the cotton crop. Yet here in Iowa there is very little general interest among the farmers, who raise the bulk of the poultry, in trying to raise more and better fowls and give them better shelter and care to insure best returns from them.

Nearly all have made a wonderful advance in improving their herds and giving them the shelter, feed and care to produce the best results.

Fowls are supposed to take care of themselves, and with such neglect do live and thrive better than any other stock can under like conditions.

There is no animal kept will pay a better per cent for proper care, feed and shelter, especially in winter. How many farmers are as particular that their every want is supplied?

Fowls are hot-blooded and want water convenient to access all the time. Do they get it? Seldom, or hardly ever, especially in cold weather, when

they need it most, and they must have plenty; and a variety of feed that furnish the components necessary for the formation of eggs, especially when confined or in winter.

Dairymen have learned how to feed cows to get the best and largest yield of butter. Nearly all feeders know what kind of feed will produce the most beef in the shortest time.

Fine stock breeders do not feed their young animals or breeding stock same as those fattening for market, yet most farmers feed them a little dry oats and corn the year round if they feed them at all.

Improved stock means more than unimproved breeds, but it is the strict attention to all their wants necessary to their best development. The little things are the paramount factors to success.

One of the leading obstacles to those who would like to change to improved or better fowls is the imaginary trouble and expense to make the change. They cannot afford to dispose of old stock at once and stock largely with new. Cannot realize that with one good mating of six to twelve hens and one good cock, and yarded to themselves, will furnish more eggs than any ordinary farmer ever thinks of hatching and raising chicks from, but they will, if the right kind of layers, lay fifty or more eggs each in the three best months for hatching. We have known hens that lay fifty eggs in sixty days, and not belonging to the non-sitting breeds, either. In this way the entire stock may be changed in one season. Do not let a scrub cock or cockerel live, and no others are needed except in the breeding yards. Hens will lay without their company. Yes, and better eggs for all purposes, except hatching eggs that will keep longer under any conditions than those that would hatch; may be set on many days without spoiling for use. Farmers who do not gather their eggs every day should make a note of this, and their reputation for quality of eggs marketed would be better. On some farms, during the breeding season, may be seen fifteen or twenty roosters for every 100 hens. Three or four are enough. They should be butchered, and their price would go far towards buying a choice breeding pen of thoroughbreds. The cost of yarding chickens is no more than fencing to keep pigs under control. Pickets and wire netting can be bought at from thirty to sixty cents per rod.

Hens are preferable to pullets for breeding, and should be the very best in every way, whether thoroughbred or not, and if possible such as are known to be good layers, for eggs are the most important factor in the hen business. In all breeds are to be found hens that are more constant and persistent layers, and such should be marked if not distinguished in some other way, and if good in other points and breeding from such and selecting of their pullets that develop some characteristics, cannot fail to bring sure improvement.

Poultry fanciers are in advance of other breeders inasmuch as they have a standard of excellence that is definite in describing perfect birds. So they can be judged understandingly.

The most attractive feature of fancy poultry is the wonderful, varied beauty of plumage and fine form of the different breeds; and at our fairs no other stock draws such crowds of admirers unless we except the fast horses.

Our State fairs make a mistake in offering large collection premiums on poultry which are nearly always won by hucksters traveling from State to

State with their car loads of every conceivable kind of fowls, while the regular premiums are not sufficient to induce best breeders to exhibit largely.

What kind of an exhibit would breeders of other kinds of stock make if all premiums above regular were offered in the men, firms or syndicates that could show the largest collections of horses, cattle or hogs?

Money can buy such collections, but no breeder can breed them with success with all kinds, and fairs are not intended to foster and encourage such practice, but by an oversight they do, in the poultry department, to the discouragement of best and real breeders. But if instead of the collection they would offer a reasonable premium for best and largest exhibit of each breed or class, this would call out the best breeders and a larger and better exhibit from all the leading and best classes of fowls, and more and better birds would be there.

The market price in weight of chickens is nearly always double that of beef cattle, and turkeys are double the price of hogs, and eggs nearly always as much per dozen as butter per pound. The cost to produce a pound of butter is estimated no more than two pounds of beef, but a great amount of labor is required after the cow has furnished the milk for this pound of butter to prepare it for use, while the hen's product is furnished in ready-made packages. The only labor required is to gather the eggs; no distasteful drudgery like milking and churning or driving to the creamery twice a day.

Farmers are making a great mistake in not waking up to the necessity of keeping more and better fowls and giving the care and attention to insure success in these hard times, when all kinds of stock farm products are so distressingly low.

While chickens are found on every farm, turkeys are only occasionally to be seen, and generally of the small and inferior mixed breeds; yet there is no fowl raised with so little expense nor that brings more per pound when marketed.

We read much in our poultry departments of our agricultural literature in regard to the care and coddling necessary to successful raising of the young turkey (much of which is very old chestnuts), but the way to best success is to leave it all to the old hen turkey, one that has been a success at it in former years. She builds her nest away in some never dreamed of place, lays as many eggs as she can cover, and hatches nearly every one, and cautiously conducts them through meadows and woodland, where nature has made a wiser provision for satiating their remorseless appetites from the myriads of grasshoppers, spiders and flies, than the most approved bill of fare as laid down in the coddling and keeping-out-of-the-wet programme, when very young.

Yes, every farmer ought to raise turkeys, but don't be content with the small mixed breeds that are not much over half the size of the large Bronze. Select best and largest, young or old, hens if possible, those that will weigh from fifteen to twenty pounds each. Mate to a young gobbler weighing twenty-five pounds or more, or an old one above thirty pounds weight, and from such stock there will be young turkeys that will weigh more at Thanksgiving, or by the holidays, than old birds of the common varieties. It is the pounds that bring the cash, and a big bird is just as easily raised as a small one.

We have known of flocks of from fifty to one hundred that have been raised without any feed or care, except the grain necessary to fatten after they had completed their growth on the range, and among them more good birds than we have ever known in similar flocks reared by the book methods.

Wolves are the greatest hindrance to successful turkey raising, but they are only found here and there in Iowa, and with the aid of sheep men and all good farmers we hope to get the State to grant a bounty sufficient to exterminate this worst marauding animal that inhabits the face of the earth.

Now, in conclusion, we will say again that the farmers are the ones that raise the poultry that supplies the markets of this country, and no others can do it so cheaply or better than they can. They should have the very best breeds for all purposes, and if every farmer would select just one kind of chickens and breed only from their very best specimens, having flocks of uniform color, they would soon learn to view them with much more interest and give them better attention, and better attention would bring better returns, which would be an increased incentive to further and continued improvement.

We do not think the poultry business is or can be a great success, except perhaps to a very few who have embarked in it, as an exclusive business. The farmer's advantage is that he does not have to buy his feed, and much of the waste is utilized by fowls that would be lost without them.

DISCUSSION.

Chairman: Now is the proper time to ask questions, and I will ask how the bronze turkey originated.

Mr. Laughlin: I cannot answer that.

Chairman: Is it the wild turkey, modified by civilization and cultivation?

Mr. Black: The best turkey I ever saw was a common bronze hen crossed by the wild gobbler.

Mr. Lathrop: That seemed to be the idea of John Wentworth, who sent and got bronze hens and crossed with the wild gobblers.

Mr. Barclay: A friend of mine sent me some bronze hens from Missouri that came from a wild turkey brood. I sent to Wentworth and got a wild gobbler, and those turkeys have raised more turkeys and raised them better, and kept out of sight more, than any turkeys that I know of. They grew the largest and earned their own living, and never bothered any one until it comes time to kill them, and then the trouble was to catch them.

Chairman: When you come to study the crosses between the bronze and the wild turkey, how much do they differ?

Mr. Barclay: The hens I had were from the wild turkey.

Chairman: Did you notice any difference between the product in the results you obtained between the wild and bronze turkeys?

Mr. Barclay: No, sir; I could not tell any difference. The young turkeys in the fall after they were hatched—after they were six or eight months old, you could not tell them from the wild gobblers. The wild gobbler when he was two years old past, weighed thirty-five pounds. The young turkeys at Christmas time would dress about twenty-five pounds.

Chairman: What is the difference between the size of an average wild turkey and the common tame turkey?

Mr. Barclay: I cannot answer that.

Chairman: Is a wild turkey larger or smaller?

Mr. Barclay: Those we raised were a great deal larger.

Question: What was the color?

Mr. Barclay: The common turkey we use to-day, I think, is a little darker in shade, but I think they are simply the wild turkey domesticated.

Mr. Pendleton: I remember reading, some two years ago, the history of the American bronze turkey, but cannot recall the name of the author. He advanced the idea that the American bronze turkey was a cross between our common black turkey of the eastern States, and the wild turkey. In my experience since that time we have used the common wild turkey gobbler and the common bronze hens, and the result is about the same as the common bronze turkey we see everywhere.

Mr. Funk: My understanding is that the bronze turkey is a cross between the common black turkey in common use, and the wild turkey gobbler, and I wanted to ask Mr. Laughlin a question. In my travels over the State I met a lawyer in Western Iowa who advertised bronze turkeys as having been purchased from Mr. Laughlin, the originator of the breed. If that is true, we ought to be able to get the origin of the bronze turkey, and if not, I think he ought to correct that statement.

Mr. Laughlin: I never advertised anything of the kind. About the time I came from the war the papers were advertising what was called the bronze turkey. It was four or five years after that that I saw it. I had never seen it before, I had seen wild turkeys domesticated. I have the same turkey in my brood, and yet there is a little difference. The wild turkey, as Mr. Barclay says, is not the standard bronze, as I now understand it. They are a quality of the wild turkey. They are not black, but are of changeable hues that show all colors in some of them, and the tips of their tails and wings, and the lower part of their bodies, were white, while the wild turkey is brown. That is the difference, as I understand it, in

the color. There is also a difference in the shape and form. The wild turkey is more slender and of better shape, aside from that.

Mr. Funk: I think a cross between the common black turkey and the wild turkey, is a judicious selection.

Mr. Laughlin: I may say that the Narragansett turkey, which is not so common now, was similar to the bronze turkey, before the bronze turkey was known. Their wings were of a kind of slate color; the gobbler is dark and the hens are a kind of slate color, and they produce strong breeds.

Mr. Norton: What would you recommend as a strong, general purpose hen?

Mr. Laughlin: I won't name any breed unless you insist upon it. I would recommend a pretty fair size and a fair layer; my experience has been very satisfactory with the light Brahmas and the Plymouth Rock.

Mr. Norton: Do you know anything about silver turkeys?

Mr. Laughlin: They are not known to be good layers. They are a good table breed, but not a good laying breed.

Mr. Franklin: Mr. Gilerest, who has had a great deal of experience with turkeys, said that for some cause or other they did not do well here; that they did not do well in this country.

Question: What do you regard as a heavy weight for a bronze gobbler?

Mr. Laughlin: Forty pounds.

Question: Which do you regard as the best layers, the Plymouth Rocks, or the light Brahmas?

Mr. Laughlin: The light Brahmas. The brood I have I know are. They will lay more eggs with more contents, and lose less time than the Plymouth Rocks. They will do what no Plymouth Rock will do; they will lay from two to three or four months and sometimes a season through, without wanting to set.

Mr. Barclay: Don't you find the light Brahmas to be the best layers in the winter time?

Mr. Laughlin: I do not know as they are better than the Plymouth Rock in the winter.

Mr. Franklin: My experience is they are more easily hatched, and hold out much better.

Mr. Gabrielson: I am inclined to recommend the brown Leghorns. I have sold from fifty Leghorn hens one hundred dollars worth of eggs in one year.

Mr. Funk: I would like to know how many dozen eggs you can get from feeding a bushel of corn.

Mr. Gabrielson: I put the corn in the crib and take from it what the chickens want to eat, and make no account of it.

Mr. Norton: I want to say to our Scotch President, that I brought a pair of those chickens across the water with me, because of their wonderful laying qualities, and because of the large amount of white meat. For this reason it was a temptation to bring them across with me.

Question: Will some one of these gentlemen tell us what amount of poultry and butter is produced in one year in the United States?

Chairman: Mr. Gabrielson can answer that.

Mr. Gabrielson: We have the authority of Edward Dickinson that it is two millions of dollars. That is the best authority I can find. Other authorities put it all the way up to seven hundred and fifty millions, but I think Edward Dickinson's figures correspond nearly with the census reports.

Question: Do you mean in the United States?

Mr. Gabrielson: Yes, in one year.

Mr. Funk: Do we import any?

Mr. Gabrielson: About sixteen million of dozens each year at about a million and a half dollars. I mean to say we import eggs. I want to make another point. I have made a study of the egg business, and I want to say that I have learned from a gentleman in New York, who imports eggs, that he can get eggs easier from the villages of France and Belgium than from Iowa, and with less expense. There is no duty on eggs, and therefore they can be transported across the water at a less price.

Chairman: We have exhausted all the papers on the programme of which the authors are present. We have with us Mr. Spear, of the Iowa Experiment Station. You all understand that this station is supported by the government for the purpose of conducting experiments that are beyond the reach of ordinary farmers. Mr. Spear is director and manager of that station, and is here at the request of the secretary of this association, to read a paper on the subject of breeding animals. I now take pleasure in introducing him to the association.

THE BREEDING OF ANIMALS AND PLANTS.

BY R. P. SPEER.

Animals and plants are alike in many respects, and the most skillful breeders of both are guided in the performance of their work by the same general principles. The objects which intelligent breeders have in view are, either to reproduce the characteristics of one or both parents in their offspring, or give it more desirable qualities. A man can not be a successful breeder who does not understand the causes of prepotency and revision, and the effects of surrounding conditions upon animals and plants. As these three important topics are closely interwoven, they can be explained together more satisfactorily than separately. I will endeavor to avoid theories in this paper and will present plain facts which have been well established by many thousands of observations and experiments made by such noted scientists as Youatt, Darwin, Lindley, Knight and Burbridge. Animals and plants are divided into classes called genera, species and breeds or varieties, possessing certain characters in common, by which they are distinguished from all others. A species is an assemblage of varieties, races or breeds, which are more closely related than the species of a genus. They have greater sexual affinity for each other and possess more characteristics in common than species. The species of the many different genera of plants and animals have been produced by a difference of surrounding conditions; therefore, to surround the species of a genus by similar conditions would destroy the distinctions between them after many generations. Many facts could be offered to show the effects of changed conditions of climate upon animals and plants, but I will offer only the following, to-wit: After the third or fourth generation, sheep that were imported from Europe to the West Indies lost their wool, and afterwards had short hair like goats. The coverings of hair or fur, are heavier on animals in a very cold climate, than on others of the same species in a warmer climate. The color of animals in the Arctic regions is generally white, while the color of others of the same species farther south is usually dark. The feet of wolves, dogs and foxes in the cold north are much broader (to enable them to run on the snow) than the feet of similar animals in countries where there is but little snow.

Animals and plants are less vigorous in much colder or warmer countries, than in the one to which they are adapted.

Opposite surrounding conditions caused the difference between the twenty ounce pippin, and the insignificant Siberian crab. The castor oil bean, which is an annual plant in Iowa, is a perennial tree, forty feet high, in India.

The leaves of trees and herbaceous plants are much thicker, when the summers are very dry and hot, than the leaves of similar trees and plants, where they are cool and moist. And the wood and bark of trees in very cold countries are of much finer texture generally than in warm climates. Annual plants sometimes become perennials, and sometimes perennials become annuals, by a change of climate. Good care and regular and full supplies of nutritious food tend to increase the size and vigor of both animals and plants, while neglect, unsuitable food, or short supplies of food tend to dwarf and render them less vigorous.

Byuse and training, new and distinct characteristics are frequently given to animals and plants.

The horse has been trained to trot, which is not his natural gait, and he transmits the gait to his offspring. The dog acquires the habit of pointing, and transmits it also. The leg bones of the domestic duck are larger, and their wing bones much smaller, than in wild ducks of the same breed. Use has also greatly enlarged the udders of domestic cows. The junipers are naturally upright growing trees, but after growing in swamps for ages, where they were overshadowed by larger trees, some of them have acquired the habit of trailing upon the ground, and invariably reproduce it in their seedlings. By selecting and coupling suitable animals or plants, and continuing for a considerable number of generations to select such of the offspring as have the desired points or qualities most fully developed, it is not difficult to produce a class of animals or plants very different from their remote ancestors.

New characteristics can be fixed in animals and plants by "in-and-in breeding of the former, and self-fertilization of the latter for several generations. In-and-in breeding is the coupling of closely related animals, which should be avoided, except for the purpose of fixing desirable characteristics in the offspring. It is unsafe, because it tends strongly to weaken the constitution of the progeny, or cause blindness, deafness, idiocy or other serious defects. This rule holds good also in the breeding of plants; thus, plants are generally larger and more vigorous when produced by crossing two varieties of the same species, than when pollen of the same flower has been used on its stigma. Again, when the pollen of a flower and pollen from a plant of a different variety is applied to its stigma at the same time, the pollen of the latter will generally prove prepotent and effective. When animals and plants can reproduce their distinguishing qualities in their offspring, they are called thoroughbred. The following are examples of what has been accomplished by making proper selections or skillfully coupling animals and plants, to-wit: Pouter pigeons have been produced by selecting and continuing to couple those which had greatest length of body, and by so doing their vertebrae have been increased. Fantails have resulted from continuing to couple birds which had the most widely expanded tails, and their caudal vertebrae have been increased in size and number. The remarkable characteristics of certain breeds of rabbits, which have one ear lopped and the other upright, or both ears lopped, have also been produced and fixed by continued judicious selections.

Double roses, dahlias, balsams, astors, etc., have been produced from single flowering plants, and the most desirable characteristics of other ornamental plants and shrubs have been gained by carefully following the same

methods. Undesirable characteristics are also acquired very frequently by animals and plants on account of the ignorance or negligence of breeders. Such diseases as blindness, deafness, insanity, etc., have frequently been inherited regularly for many generations. In his work on the horse, Youatt says: The power of inheritance is so strong, that it would not be difficult to breed a race of blind horses. Very frequently latent characteristics lie dormant for many generations. When mongrels are equally well bred and equally vigorous, reversion is likely to take place, especially if the surrounding conditions are unfavorable. The characteristics required by reversion are generally adapted to the conditions which surround the offspring. Thus, when tame black and white rabbits or other animals become wild, they acquire their original colors after a few generations, which are generally such as will screen them best from beasts of prey. Frequently, when mongrel parents lack vigor, latent characteristics of remote ancestors will appear in their offspring. Instances of latent characteristics appearing in the offspring of domestic animals are very common; in fact, they can be seen in the diversity of heads, horns, colors, etc., of the animals in most of the herds of Iowa. When judicious selections of animals and plants have been made for breeding purposes, it is much easier to produce new distinguishing qualities in the offspring when surrounding conditions are favorable, than when they are not. It is impossible for men who are not skillful breeders to understand the full force of the expression: "Blood will tell." Thoroughbred animals may show much prepotency when coupled with others of their own breed or mongrels, and yet fail to transmit their characteristics to their offspring when coupled with a more vigorous thoroughbred animal of a different breed. When mongrel animals are equally well bred, their young will generally be most like the male parent, because males are usually more vigorous than females; but, in such instances, if the female parent should prove most vigorous, the progeny would resemble her most. But again, if both parents are mongrels and one of them is poorer blood than the other, the former would be most likely to prove prepotent, even if the latter should be most vigorous. In certain families, some one ancestor, and after him, others of the same family, have shown great power in transmitting their likeness, especially through the male line. The following are instances, to-wit: The Austrian emperors, the Adamases and other noted intellectual families. A well-established race of animals or variety of plants may never fail to transmit its characteristics, but lack prepotency when crossed on another race or variety. This difference has been noticed frequently, also, in crossing distinct species; thus, the ass is prepotent over the horse; the jackal over the dog, etc. Certain characteristics are confined to one sex, which are transmitted by both sexes, as in the following instances: Baldness in people is an attribute of the male sex, which is inherited frequently through the mother. In many instances it is difficult to affect a cross between animals or plants of distinct species, but in others it is not. The offspring of parents of different species are generally more vigorous than either of their parents, but they are inclined to be sterile. The only example which I will offer is that of the mule, which is the product of the ass and horse. Confinement and excessive fatness are common causes of sterility, which may be noticed very frequently in Short-horn cattle. By breeding to produce either animals or plants of remarkable size, it is very probable that we would lose

valuable characteristics. The following are instances, to-wit: When such garden vegetables as onions, beets and squashes are remarkably large, they are of coarse texture and unfit for table use; very large fruits are generally of coarse texture also, and do not have desirable flavor; the draft horse which weighs a ton does not have the speed or bottom of the Arabian race horse, which only weighs one thousand pounds.

Variability in animals and plants is directly related to their surrounding conditions, but it would not be possible for us to comprehend the extent of the remarkable changes which have been produced in them during countless ages by unfavorable surrounding conditions, even if we could master all that is known about the different species, races or breeds of animals, and the different genera, species, and varieties of the same species of both animals and plants having various characteristics, scattered from Siberia to points near the equator. That the acquiring of such new characteristics has prevented not only breeds and varieties but entire species of animals and plants from becoming extinct, we cannot doubt. Having stated the general principles of breeding as they are understood by the men who have been most successful in improving the different classes of domestic animals and useful varieties of plants, I will now point out, as briefly as possible, some of the serious mistakes which many farmers make by not observing the natural laws which apply to the reproduction and improvement of the characteristics of animals and plants.

Domestication has wrought remarkable changes in the horse. The size of the animals of the different breeds varies from that of the Shetland pony, which is but little larger than a sheep, to that of the English draft horse, which weighs a ton. The natural gaits of the Arabian race horse are, to walk or run. The American trotter has acquired an artificial gait, and walks, trots or runs. The heavy draft horse requires much nutritious food, while the Shetland pony requires but little. But this difference is not remarkable, as the quantity of food required by the animals of all races is generally in proportion to their size. There is a strong resemblance between the texture of the bones of the Arabian race horse and that of ivory, and this characteristic of fineness of texture extends to all parts of his body. He is also remarkably intelligent, and will endure more fatigue than horses of any other breed. The texture of the entire structure of the draft horse is coarse, and he cannot endure fatigue when pushed beyond his only gait, the walk. As horses are required for many kinds of service we could not expect that any breed would be well adapted to all kinds of work. It is very evident that the Arabian race horse is not adapted to the heavy work which horses are required to do in cities, and it is equally evident that large draft horses are not the best roadsters. But as there is a strong tendency to lose the valuable characteristics of intelligence, gentleness, speed and ability to endure fatigue, and live upon moderate supplies of food, by increasing the size of horses above that of the thoroughbred race horse, it is very probable that we would lose more than we could hope to gain, by breeding for size beyond certain limits.

For plowing, drawing good loads, going to town, and nearly all other kinds of work, a horse which will weigh from eleven to twelve hundred pounds will pay better in the end than another which is much lighter or four hundred pounds heavier.

The trotting gait is a valuable characteristic, but it has been abused to such an extent for the purpose of securing speed, that it is much easier at the present time to find an unsound trotter than one which does not have serious defects.

It is not long since a large majority of the horses in Iowa were much too small, and for practical uses they were but little better than ordinary Indian ponies, but the fashion in horses has changed, and before long they will be entirely too large.

Cattle are bred for beef, milk, butter and cheese. The Hereford, Polled Angus and Short-horn breeds are remarkably well adapted to the production of beef, while the Jerseys, Holsteins and Ayrshires are deservedly noted for their dairy qualities.

There are many recognized points or characteristics by which beef breeds are distinguished from dairy breeds. If we should cross Hereford and Jersey cattle, and the offspring was not affected by prepotency in either parent, or by surrounding conditions, it would be of intermediate value, or equally suitable for beef or the dairy. It follows, then, that these are best beef cows and best dairy cows, but that it is impossible for cows to be best for both purposes.

As hogs are grown exclusively for their flesh, most people would suppose that fewer mistakes would be made in breeding them than any other class of farm animals, but such is not the case. In nine instances out of ten, properly developed hogs have deteriorated rapidly under the care of ordinary farmers. And this has occurred, not only on account of their ignorance of the principles of breeding, but because they did not know how to distinguish a good hog, for breeding purposes, from a poor one. Generally, the largest pigs are selected for such purposes, when frequently the smallest would be best. To illustrate the reason why the best breeders do select the smallest pigs once in while, I will give here the principal points, or characteristics, of a properly developed hog:

First. He must be large around the lungs, to insure health, and vigorous growth.

Second. He should have a good jaw, as the jaw is a never failing index as to whether a hog will fatten easily or not.

Third. He should be of proper length. The hog is more easily affected by unfavorable surrounding conditions, and more liable to revert to the wild race, than any other class of the domestic animals. This tendency is noticed first by increase of length and loss of jaw. A very large size is also objectionable, because the sides of hogs are less valuable than their hams or shoulders. But very short sides would be objectionable, also, because they would not allow sufficient space for the development of the lungs, stomach and other internal organs. A pig is not of proper length for health or profit if, when cut at the usual points, it would not be divided into three equal parts.

Fourth. As male hogs are usually more prepotent than females, and are inclined to have light hams and large shoulders, therefore all boars should be discarded which are defective in this respect.

I will now point out some of the common mistakes in the selection of seeds for the different kinds of farm crops. In Iowa the average length of the growing season is only about one hundred and fifteen days; nevertheless

the planting of large varieties of corn which cannot complete a season's growth in less than one hundred and thirty days, is a very common error. In many instances, since I have lived in Iowa, a large number of the corn crops have been destroyed, or seriously injured, by early frosts. We have lost many hundreds of thousands of dollars worth of fruit trees, also, from the same cause. We deserve no sympathy for the loss of our corn crops, because we knew the length of our summer seasons, and could have selected and planted earlier varieties; but we were excusable, to a certain extent, for the loss of our orchards, because we did not discover until lately that every American variety of the apple, pear and cherry was too tender for Iowa. Sometimes I have thought that western men had been greatly overrated for intelligence and shrewdness, but I can see now that I was wrong, as they have already discarded all of the old favorite varieties of fruits and are calling for the varieties which have proved well adapted to the interior of Russia, where the climate is similar to ours, except that the surrounding conditions there are more unfavorable to fruit culture than here. We lose immense sums of money every year by not having varieties of wheat, oats and the grasses, which are adapted to our climate. The hot, sultry days which cause rust and other fungous diseases, are very common in Iowa just before harvest, and when such spells of weather occurred, fields of wheat which were in the milk, have generally fared much worse than other fields which were earlier. It is a well established fact that trees and shrubs which are adapted to dry and hot summers, have thick leaves, while others of the same species which have thin leaves, do best in cool and moist climates. A corresponding difference in the structure of the leaves or blades of the cereals, grasses, etc., is as necessary to adapt them to such opposite climatic conditions as in the trees and shrubs. But we have generally planted seeds of the grains and grasses without asking any questions as to where they had their origin, or to what climate they were adapted. By examining wheat fields or timothy meadows, we would find large stalks and small ones growing together. Such large plants would overshadow the small ones, and produce large and healthy seeds, while the latter would prove unfruitful or produce seeds which would have but little vitality. This would be natural selection, which tends toward the "survival of the fittest." If we would assist nature by selecting the largest and thickest bladed stalks of wheat and timothy, and should continue to reproduce them, and select the best, for several generations where they could not be cross-fertilized by inferior varieties, it would not be long until we would have harder and more productive varieties which would be adapted to our climate.

DISCUSSION.

Mr. Sheehan: Mr. Chairman, I want to ask this question: I understood Mr. Spear to say in his paper that a large animal eats more, according to its weight, than a small one. I was reading a few days ago of a German station where they put cattle of different weights in different stalls, and fed them for a series of days, and the experiment came out the same as stated by Mr. Spear in his

paper. I would like to know if he has actually experimented in this matter, or if he is guessing at it, the same as we farmers do.

Mr. Spear: I have gained my information from reading and from the experiments of others. I know that a small man will sometimes eat more than a large one, but I know that the general experience is that a large animal will eat the most. Take the horse for instance. The Shetland pony eats much less than a larger horse, and but a small amount of feed is required for it.

Mr. Sheehan: You do not know it from experience, then?

Mr. Spear: No, sir.

Mr. Brown: I have noticed for many years that in the pairing of animals in the spring, at a time when the male is more vigorous, and when mated early in the spring, in both cattle and swine, the male will predominate among the offspring, but later on the female will predominate. This has been my experience for many years, and I would like to know if that can be accounted for, or in other words, can we by the science of breeding control the sexes?

Mr. Spear: I will say that a gentleman in Missouri wrote me last season that he would like to send me a sow and some pigs, and if at a certain time I would say whether I preferred sows or boars he would accommodate me. I told him to send the sow and pigs; that he need not pay any attention to that matter. When I was a boy, in Pennsylvania, it was the common belief among the farmers, that the young ram would produce one sex and an old ram another. It is well understood that the males and females in animal life are about equally divided, and though there may be a rule whereby to discover and regulate these things, I doubt if as yet any man has ever discovered a way to do it. It may be that vigor or lack of vigor, or the age of the animal, may affect these things, but I do not think it has been decided.

Mr. Brown: I will say that when I have kept the male up and bred him to a limited number, the males have predominated.

Mr. Spear: One thing I wish to call the attention of the association to, and that is that I have sent bulletins to every member of this society, so far as I have their names from your last report. We issue bulletins every three months. If your names are in the report I will send them to you, but if they are not, send your names and addresses to me on a card, and I will send them to you also.

I came up here more for information than for anything else, and if you are not in a hurry I want to ask some questions. I have

had a man come to the station and ask me if I am not experimenting with poultry, and I told him "I am not." "Well, why don't you? Poultry is one of the most important things in this country." In a few days another man came along and asked if I was experimenting with bees. I told him, "No, sir; I am not." He said, "Well, now, I think you ought to get some bees. There is the Italian and the common black bee," and he named over several, saying, "We want to know which is the best." I had to put him off, and tell him we had not a suitable building for that purpose. Another man comes along and asks if I have been experimenting with artificial fertilizers. I say, "No; and we do not expect to do it, because we have other means by which to keep up the fertility of the soil of Iowa better than bringing in fertilizers from other countries." Another man asks me if we are experimenting in the breeding of domestic animals, and I tell him, "No, sir," and he wants to know why we don't. I have to say that we have the best breeders in Iowa, breeding Percheron horses, draft horses, trotters, Short-horn cattle, Devon and Callows, and all the breeds of cattle and horses, and they are giving the matter their entire attention. Their bread and butter depends upon it, and it is useless for us to breed animals when the farmers of the State have so many fine breeds of horses and cattle as they have, and they ought to be paid for their work.

The next man that comes along says, "Are you conducting feed experiments?" We did conduct some last fall, but I will say that we didn't have a special building for that kind of work. I do not think, however, that it will pay, from the fact that if you want it we can give you the results, by the thousands, from breeding experiments conducted in France and England and in this country. I will tell you what we are making a specialty of. If you want me to run that station differently I want you to let me know it. I have been in the nursery business for twenty-three years. In the study of the fruit problem I have found that the common apple is too tender for northern Iowa, and I am giving special attention to the crossing of the best American apple trees with the Duchess, from central Russia, which is perfectly hardy. I am giving special attention to the improvement of corn. The corn crop is the great crop of this country, but we find all kinds of corn in the same lot. I am trying to give special attention to the grains and grasses. I do not give much attention to table vegetables, from the fact that gardeners get the improved varieties as fast as I can. A great deal

of sorghum syrup is being manufactured, and I hope that some kind of machinery will soon be produced which will enable us to produce sugar from sorghum. I might speak of the amber cane. I planted a small patch of that, and the canes of that patch ran up to between twelve and fifteen feet, and were somewhere from an inch to an inch and a half in diameter.

Mr. Sheehan: I understand this paper of Mr. Spear's, which has been read, will be published not only to the State of Iowa, but to the world. I wish to call attention to one matter, and I do it not only in justice to myself, but to a great many men in the State of Iowa, and that is in regard to investing thousands and thousands of dollars in the improvement of domestic animals in Iowa. I understood Mr. Spear, in his paper, to say that the horses for Iowa—the most profitable horses, or the best horses, I forget how it was worded—were from eleven to twelve hundred pound horses. Does Mr. Spear know that by putting eleven to twelve hundred pound horses to work on a farm down there at Ames, they will prove a better animal than an animal weighing from fourteen to sixteen hundred pounds, which he speaks of? Does he know this from experience? Has he tested this question for himself? I am not asking for my own information, but this paper is going out to be read all over the country, and I should like to have that matter understood.

Mr. Spear: I will answer generally by saying that we all have our hobbies. Some men prefer small animals, and some large. I did not say that eleven or twelve hundred pound horses are the best, but I said one that large would be better for all purposes than a horse much heavier. There is a great deal of difference between an eleven-hundred-pound horse and a sixteen-hundred-pound horse.

Chairman: He is speaking of the horse that is best adapted to work on a farm.

Mr. Lathrop: I understood you to say that there was not an American apple that could be raised successfully in Iowa.

Mr. Spear: I said in northern Iowa. I was in the nursery business in northern Iowa, and I do not think during the last year that there was a single apple, pear or cherry blossom in northern Iowa.

Mr. Norton: Did I understand you are not making sugar at the experiment station?

Mr. Spear: No, sir. We tried to conduct a sugar factory. We commenced work about the 18th of September, but frost soon after killed the cane, and in two days after that frost there was no glu-

cose in the cane and we had to abandon it. We should have commenced operations earlier in the season.

Mr. Norton: I thought that you had made a small quantity of sugar.

Mr. Spear: We made a small quantity of syrup, but have not been able to make sugar successfully with the machinery we have, and also for the reason that the season is too short. I do not think that it will do to invest a large amount of money in a factory, but I think that small factories can be erected that will work thirty-five to fifty tons of cane in twenty-four hours; that will be large enough for any neighborhood.

Mr. Blakely: I understand Mr. Spear has been making experiments in corn raising.

Mr. Spear: I spent the entire silking and tasseling season of last year in the cornfield.

Mr. Blakely: I wish you would devote ten or fifteen minutes to this subject. We have various ways of raising corn, and with various success. I hardly know whether my success is mostly due to cultivation, or to the soil. I have been raising this year, and for a good many years, on upland, over one hundred bushels to the acre, and I want to know how to raise one hundred and fifty bushels.

Mr. Spear: I will say that I have been giving more attention to variety than anything else for the last two years, but I have not found a variety that suits me, yet. In sending to Chicago and Philadelphia for the various grains, we find some that will ripen in July, and others that will ripen at other seasons of the year later on. Some of these varieties of grain will cost twenty-five dollars per pound. I find that to get the varieties they have to mix them. I find it so with the wheat, and so with everything. I had nine or ten varieties of wheat and they all rusted except two; the blue stem and another variety. I went into the varieties that were recommended not to rust, and they all were a good stand. I parted the wheat and looked for the best stalks from each variety, and culled them out. I kept on parting the stalks and culling until I got a sheaf of these varieties that made two or three pecks of grain. I went into the oats in the same way, and took the variety that suited me best, selecting them in the same way, sometimes a single stalk at the time, and next season I shall plant the grain thus selected, and if I live, shall go on planting in that way until I secure the variety I desire. I have made a study of the breeding of plants and animals.

Another experiment that I made was the collection of a large

number of the different Hungarian grasses and millets. We planted in drills about eight feet apart, first one variety and then another, and then duplicated those varieties at the other end of the rows. From the German millet seed there were fifty varieties. Some were the pure fox-tail, and some looked like fox-tail, but it was fifteen to eighteen inches long. It ran from pure German millet down to the meanest kind of fox-tail. I found that the German millet was the best of anything that was produced. It is all right, only you should be careful to have it pure.

Question: Was there any difference in the ground where this wheat you speak of was planted? You say that all the varieties rusted but two. Was there any difference in the ground or the mode of sowing or the time of sowing?

Mr. Spear: The blue stem was planted near where there was a bad slough last April. Nothing could be done with it and I went to work and tilled and drained and broke it up in the fall, and sowed it with velvet stem and blue stem. Part of it that was plowed had not been cultivated for many years; had been manured several years before, and was plowed the fall before and harrowed again, and then rolled. The ground had not received any extra care. As to the other varieties, more care had been taken with the ground. In reference to the corn, one of the varieties that I secured was the Yellow Flint corn. I thought it was about an \$80 variety. When it grew it kept on growing, and was the highest corn I had in fifty varieties, and it had not less than from five to seven brace roots up that high, (indicating) showing that it came from a country subject to storms.

Mr. Barclay: Don't you think you will get better varieties by selecting different grains from the various parts of Iowa?

Mr. Spear: No, sir; I think not. I will give my experimental work on grain in the next bulletin, which will be out in a few days. I find that I can produce a variety of corn, thirty rows to the ear, that will ripen as early as the ten-row variety. By careful selections, good surroundings and proper attention I can produce an ear ten inches long as well as seven inches long. I also find that there is a difference in the characteristics of the stalk. By looking over the different fields in Iowa, I find that the variety should not exceed about nine feet in height. The different varieties have a certain number of blades upon them, and the tall varieties grow so high that there is no chlorophyl in the blades, and they will fire and die early, and if you get the stock below nine feet it will be inclined to grow like the ninety-day corn. Corn nine feet high will

grow blades nearly to the roots, while that twelve or fifteen feet high will shed its blades.

Mr. Barclay: But can't you get those varieties that come nearer your idea, in Iowa, and get better results than by going farther away?

Mr. Spear: Yes, so far as they exist in Iowa. I have the Early Mastodon from Nebraska that yields thirty-two rows to the ear. I do not think it is best to go much north or south of the latitude of Iowa. Of course, if we can get corn such as we want adapted to the conditions which exist here, it is much better. I have had more trouble in getting a start in corn in Iowa than I at first supposed I would have.

Mr. Norton: Corn is good for hogs and cattle, but our horses need something else, and horse raising has become one of the important features of our State. I would like to know, in the interest of the horse raisers, whether you have ever tried the English oats. They weigh about forty pounds to the bushel.

Mr. Spear: I got oats from Canada, said to be imported from England, and I got oats from the agricultural department of England, but I find that those oats adapted to the cold, moist climate of England are not adapted to this climate.

Mr. Lathrop: Is it not a fact that foreign grains lose their foreign character when cultivated here? I got some of the Russian oats from the patent office some years ago, and in less than five years you could not tell them from the common Yankee oats.

Mr. Spear: I am working for you men more than I am for myself, for I have my own farm at home that I have left in the care of my son, and I wish to get your ideas to aid me in the work. Have you the red or mammoth clover that you have grown on your farm six, seven or eight years? If you have, it will be better for your seed in Iowa than any you can get from seed men of New England, or any place else. There is a difference in the clover seed, even grown beyond Chicago and ours, and there is also a difference between ours and that grown in Nebraska. That that is grown here is better for this climate, and if you gentlemen have clover that has been reproduced six, seven or eight times on your own farm, you will find it much more satisfactory for your purposes here.

Mr. Gabrielson: I want to say that about a year ago a relative of mine brought from Norway some Norwegian oats, grown in Norway, that weighed forty-two pounds to the bushel. I sowed them, and my first crop produced twenty pounds to the bushel.

Mr. —: I want to remark that I settled in this country about thirty years ago, and I thought what wonderful corn we had here; but it was late. I thought I would get some of the early eight-row corn, and so I got some from Maine. It grew about half as high as it did in the State of Maine where it came from, and the ears grew out near the ground so that I had to stoop down to pick them off. It did not grow as large or as many ears to the stalk as it did in Maine. I also sent after pole beans, as we call them down there in Maine, where you could reach up and pick them as high as this, (indicating) and planted them here in Iowa, and they would not climb the pole. (Laughter.) You would actually have to coax them up the pole. That was my experiment as made thirty years ago. Whether the Yankee corn would grow if I had continued to plant for four or five years, I do not know. I suppose it would, but my experience was disastrous.

Mr. —: I think we should say a word with reference to the work of Mr. Spear, and I believe I express the sentiments of the association in regard to what he says he is doing at the experiment station, when I say we are much pleased with it, and that we shall be much gratified if he will go on and give us more and more of his experiments.

Mr. Spear: I will say that we have laid out the whole of the \$3,000.

Col. Scott: I would like to ask Mr. Spear if it is within the province of the work at the experiment station to solve, practically, the question that is largely interesting the people of Iowa in connection with the diseases of the hog, as that is where we put the most of the corn that we raise. We have listened to the paper upon the hog, which, if I understand it correctly, ignores the theory of infectious germs in hog diseases. It was a surprise to me. If I did not understand it right, any gentleman who will set me right will confer a favor. It would be interesting for us to know whether any experiment could be made there in this matter.

Mr. Spear: That will be looked after next season. Dr. Stalker will look after that.

Mr. Daggett: As I understand it, inoculation as a prevention is only recommended at the present time where they already have the cholera.

Mr. Gabrielson: No, sir; it is the reverse.

Mr. Daggett: But it is not intended to be used where there is any cholera.

Mr. Wallace: It is not recommended to be used where there is

no cholera, but where there is any danger of cholera. It is not intended to be used where they have the cholera, but only in that middle ground where there is danger.

The Chairman: Now, gentlemen, I wish to thank you for the courtesy, kindness and good order that has been shown during this meeting of this association. It is not always an easy thing to preside over a meeting of this kind. The chairman has to use a great deal of discretion in allotting time to speakers, and sometimes may appear exacting or arbitrary, but it is necessary in order to get through the work that lays before us. I desire, personally, to thank you for the kindness and courtesy you have shown me through all this meeting, and hope that we may never have, in all the years to come, a less interesting meeting than the one which is now closing.

A rising vote of thanks was tendered President Wallace for his able paper read before the association.

Vote of thanks was also tendered to the secretary for his earnest work and courtesy.

Adjourned for the evening.

REPORTS OF COMMITTEES.

The committee on resolutions, consisting of Mr. H. C. Wheeler, of Odebolt; Mr. James Wilson, of Traer; Mr. J. B. Harsh, of Creston; Mr. Martin Flynn, of Des Moines, and Mr. C. E. Stabbs, of Fairfield, presented the following resolutions, which were adopted almost, if not altogether, unanimously:

Resolved, By the Iowa Improved Stock-Breeder's Association, that we respectfully petition the congress of the United States to enact such legislation as will protect us from the exactions of the beef and other trusts, by statutes punishing such combinations and refusing them standing in our courts.

Resolved, That we ask of our State legislature a full investigation of all trusts within our State, and the enactment of severe penalties for all who combine, in any way, to interfere with competition in the commodities of life.

Resolved, That we ask our legislature to require all county and district agricultural societies receiving money from the State to hold farmers' institutes in their territory every winter, and that we ask an annual appropriation of five thousand dollars from the State.

Resolved, That we favor the continuance of the oleomargarine law; the office of dairy commissioner, and an addition to the present statutes against all adulterations of food, and penalties to punish all who sell food not correctly labeled, and not true to name; and we hereby endorse and approve of the efficient work of Dairy Commissioner Sherman.

Resolved, That we favor the more extensive use of silver currency, equal at least to the contraction of bank currency, and favor coinage to the full limit of the law.

Resolved, That we demand more stringent enforcement of the inter-state commerce law, to the end that all rebates on railways be entirely stopped, in whatever form, and that no shipper be permitted the exclusive use of cars.

The committee on location reported Oskaloosa as the next place of meeting.

Committee on officers reported the following officers, who were duly elected:

President—Hon. H. C. Wheeler, of Odebolt.

Vice-Presidents—D. M. Moninger, Galvin; Daniel Sheehan, Ossage; Richard Baker, jr., Farley; J. W. McMullen, Oskaloosa; A. T. Judd, West Liberty; Hon. C. C. Carpenter, Ft. Dodge; W. W. Fields, Odebolt; Martin Flynn, Des Moines; Hon. J. B. Harsh, Creston, and W. W. McClung, Waterloo.

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

MEMBERS FOR 1890.

[The Secretary's attention being called to section 10, chapter 32, page 115, of the acts of the Twenty-second General Assembly, the latter part of which reads as follows: " * * * * *Provided*, that this section shall apply to the reports of the State Agricultural Society, the State Horticultural Society, the Fine Stock-Breeders Association, and all officers and bodies required to make annual reports; *provided further*, that no banquet speeches or advertising shall be included in the printed proceedings of any report." The Secretary being governed by this law will not publish the banquet proceedings nor the advertising cards of members. Sorry to state that such is the case, but there is no misconstruing the law in such a way as to admit them].

J. S. Allison	Hampton.
W. A. Bryan	New Sharon.
A. A. Bryan	Montezuma.
B. S. Brown	Hampton.
C. S. Barelay	West Liberty.

Richard Baker, Jr.	Farley
H. C. Brown	Dumont
W. B. Barney	Hampton
A. J. Blakely	Grinnell
J. G. Brown & Sons	Solon
E. C. Bennett	Tripoli
J. E. Bingham	Hampton
C. S. Barney	Correctionville
A. Baker	Eddyville
F. M. Byrkit	Red Oak
L. M. Bearce & Son	Waukon
Thos. J. Beals	Newton
J. W. Blackford & Son	Bonaparte
Geo. W. Brett	Mason City
B. R. Bohart	Elvira
W. Cook	Marion
Frank Christie	Belmond
J. P. Coulter	Morse
J. W. Cummings	Hampton
D. Church	Hampton
John Claus	Plymouth
C. L. Clock	Latimer
W. I. Chamberlain	Ames
C. C. Carpenter	Ft. Dodge
L. B. Clark	Belmond
Daniel Courad	Bryant
M. Cresswell & Sons	Bonaparte
S. A. Converse	Cresco
L. S. Coffin	Ft. Dodge
O. T. Denison	Mason City
H. B. Daggett	Hampton
H. B. Daniels	Hampton
W. N. Davidson	Chapin
Don D. Donnan	Cedar Rapids
C. L. Dahlberg	Des Moines
A. K. Emerson	Newton
Albert & Fall	Albia
Frank Eberhart	Hampton
Jacob Funck	Fairfield
Martin Flynn	Des Moines
J. C. Feeley	Mason City
J. A. Ford	Iowa Falls
W. C. Fleury	Belmond
J. E. Fagen	Des Moines
Geo. W. Franklin	Atlantic
John Fox	Dallas Center
A. Gardner	Atlantic
C. L. Gabrielson	New Hampton
R. H. Gurley	New Hampton
J. B. Gray	Hampton

B. F. Gove	De Witt
J. H. Green	Cumberland
Frank Henry	Plymouth
C. A. Huston	Waukeek
S. N. Hinman	Belmond
J. M. Hemingway	Hampton
W. F. Harriman	Hampton
J. D. Herrick	Fredericksburg
J. H. Hutchius	Hampton
O. V. Hansel	Hansel
J. B. Hine	Hampton
James Hampton	Hampton
Harrington Bros	Grinnell
John Hayes	Red Oak
H. Chandler Jordan	Waukeek
W. H. Jordan	Iowa City
P. Jackson	Sheffield
A. T. Judd	West Liberty
Jacob Krubbs	Hampton
J. S. King	Fifteen Mile Grove
Lefebure & Son	Fairfax
A. Lufkin	Newton
H. W. Lathrop	Iowa City
J. F. Latimer	Hampton
O. H. Lyons	Rockford
W. M. Lambing	Des Moines
W. H. Luyck	Belmond
Frank Loss	Hampton
W. K. Laughlin	Ft. Dodge
W. R. Mathews & Sons	Sully
Wm. Morse	Floyd
I. W. Myers	Hampton
J. W. McMullen	Oskaloosa
D. C. Mallory	Hampton
N. McDonald	Hampton
Geo. Messelheiser	Hampton
Ben. H. Mallory	Hampton
John McHugh	Cresco
D. M. Moninger	Galvin
A. M. Mott	Hampton
John McNiel	Hampton
Geo. W. McKay	Geneseo
J. H. McKibben	Albion
W. W. McClung	Waterloo
E. L. McGrew	Doud Station
A. B. McClure	Dallas Center
C. W. Norton	Wilton or Durant
The North West	Des Moines
Orange Judd Farmer	Chicago, Ill.
John Osborne	La Porte

E. S. Patterson.....	Hampton.
Joshua R. Price & Son.....	Beacon.
M. K. Prine & Son.....	Oskaloosa.
D. J. Patton.....	Hampton.
J. P. Pearce.....	Iowa Falls.
George W. Pease.....	Hampton.
J. B. Peck.....	Hampton.
J. H. Page.....	Geneva.
T. J. Phelps.....	Hampton.
H. E. Pendleton.....	Russell.
G. V. Pond.....	Belmond.
J. S. Pritchard.....	Belmond.
R. Redmon.....	Leighton.
G. B. Rockwell.....	Rockwell.
John W. Reed.....	Alpha.
C. Roemer.....	Hansel.
Martin Rickard.....	Grinnell.
L. F. Ross.....	Iowa City.
C. G. Rogers.....	Grundy Centre.
H. M. Reasnor.....	Reasnor.
D. P. Stubbs & Sons.....	Fairfield.
John Scott.....	Nevada.
D. Sheehan & Sons.....	Osage.
H. I. Smith.....	Mason City.
B. Starr.....	Lynnville.
William Savage.....	Hampton.
Ed. Slee.....	Hampton.
Charles F. Showalter.....	Hampton.
W. J. Stonebraker.....	Hampton.
James W. Smith.....	Green.
Nat. Stevenson.....	Clarion.
C. C. Shafer.....	Hampton.
W. J. Stewart.....	Bristow.
R. P. Speer.....	Ames.
Horace Sanders.....	Iowa City.
I. G. Schulthies.....	New Haven.
H. D. Sherman.....	Monticello.
J. C. Stevenson & Sons.....	Littleton.
Dr. J. C. Shrader.....	Iowa City.
O. P. Thompson.....	Hampton.
P. Throssel.....	Sheffield.
Robert Thomas.....	New Sharon.
W. H. Thompson.....	Geneva.
E. Thorp.....	Allison.
H. S. Tyler.....	Hampton.
R. M. Timmons.....	Marietta.
L. M. Van Auker.....	Mason City.
W. W. Vaughn.....	Marion.
D. Vought.....	Chapin.
John Vought.....	Chapin.

Frank Vigreen.....	Hampton.
George Van Houten.....	Lenox.
R. C. Wheeler.....	Odebolt.
James Wilson.....	Traer.
H. C. Wallace.....	Orient.
Theo. Wiegand.....	Belmond.
Henry Wallace.....	Des Moines.
Jacob Wire.....	Hampton.
E. Watenpaugh.....	Sumner.
John A. Whiting.....	Belmond.
Simon Wagner.....	La Porte.
Western Resources.....	Lincoln, Neb.
C. Q. Wicks.....	Hampton.
Ira Wise.....	Hampton.
T. B. Wales.....	Iowa City.
Barnett Wilson.....	Earlham.
W. H. Withington.....	Toledo.
Windsor & Wilcox.....	Commerce.
John Wragg.....	Wauke.
A. M. Winner.....	Waverly.
Joseph Weaver.....	Durant.
W. P. Young.....	Mt. Pleasant.
Springer & Willard.....	Oskaloosa.
B. E. Vale.....	Bonaparte.
J. G. Brown.....	Marshalltown.
F. Curtiss & Son.....	Nevada.
E. S. Fonda.....	Osage.
W. A. Tade.....	Bonaparte.

TREASURER'S REPORT.

*Iowa Improved Stock-Breeders' Association in account with their Treasurer,
for the year ending November 30, 1889:*

1888.			
Dec.	7.	By fees received from 47 new members.....	\$ 94.00
		By fees received from 73 old members.....	73.00
		By fees received from 1 new member for 1890	1.00
1889.			
April	22.	By fees received from 37 members, to date...	43.00
		By receipts for proceedings.....	1.73
		By donations by W. I. Chamberlain.....	7.77
			<hr/>
			\$ 220.49

PER CONTRA.

1888.			
Dec.	7.	To balance overpaid	\$ 52.45
		To 250 envelopes	1.75
		To 200 letter heads	1.75
	5.	To fare and hotel expenses of Secretary to Iowa City.....	20.05
		To 2 telegrams to Hon. L. Young.....	1.10
	6.	To freight on box to Iowa City.....	1.90
		To postage at Iowa City.....	.15
	7.	To paid C. L. Dahlberg, stenographer	50.00
		To scratch book.....	.25
	11.	To paid J. H. Willey, 500 envelopes, and 300 notices, call for dues.....	3.75
	15.	To paid 300 1 cent stamps for same	3.00
1889.			
Jan.	4.	To paid for index number book.....	.35
		To telegram, 55, and telephone to Dahlberg. 25	.80
	11.	To Secretary's expenses to Des Moines, edit- ing and preparing proceedings.....	12.42
	14.	To paid Dahlberg, balance.....	43.34
March	16.	To paid freight on proceedings from Des Moines.....	1.62
		To postage on 200 proceedings to members...	10.00
		To postage December, September, October...	2.26
Nov.	30.	To postage November	2.40
		To postage on 1,300 programmes.....	13.00
			<hr/>
			\$ 222.34

REPORT OF COMMITTEE TO SETTLE WITH TREASURER.

The committee on Treasurer's report have examined the same, with the vouchers, and find it correct.

The committee would recommend that the Secretary and Treasurer be paid compensation for his services the sum of twenty-five dollars, provided there are funds in the treasury with which to pay the same, after other expenses are paid, the last clause or proviso being put in at the request of the Secretary.

H. I. SMITH,
W. H. LATHROP,
C. S. BARCLAY,
Committee.

APPENDIX.

APPENDIX.

IOWA DAIRY MEETING.

The three days' session at Mason City was interesting and profitable. Though not well attended by farmers, the chief parties in interest, there was, however, a goodly attendance of members, and the display of butter-making apparatus in operation was nearly complete. The meeting was called to order Tuesday afternoon (November 12) by Col. R. M. Littler, and after routine business, Prof. Patrick of the Agricultural College, led in a discussion of the value and methods of dairy tests.

His remarks were illustrated with a black-board. His experience is that one-third of the cows are kept by farmers at a loss, and that nothing poorer than the best grades pay. In the evening Mayor Stevens welcomed the convention. He spoke of the present superior advantages, by which our surplus home products can be easily turned into manufactured goods; of the modern and improved methods introduced by such societies as the one before him; and the great strength, knowledge, riches, wealth and honor gained by unity. E. C. Bennett, of Tripoli, replied in appropriate words.

In his interesting style, Col "Bob" Littler (president), said the importance of dairy interests in this country cannot be overestimated. Farmers are now beginning to learn that instead of marketing grain and hay, thereby impoverishing the farm, it is better to use the cow as a manufactory, producing milk and cream, leaving the phosphates in manure to be returned to the soil. Of the 60,000,000 people of this country, 40,000,000 are supposed to use dairy products. The average price for creamery butter in the cities of the United States this year has been twenty-five cents; of dairy butter, nineteen cents; making average price received, twenty-three and a half cents. The aggregate butter crop has been 1,400,000,000 pounds; cheese, 450,000,000 pounds. In manufacturing butter about one-half milk product has been consumed. The milk flow of this country this year has been worth \$790,000,000, over \$2,000,000 per day. The dairy crop is more than double the cotton crop, or more than any other single interest. The poultry and egg interest can be attended to by women and children. The system of cold storage enables holders to lay in large stocks, and dispose of them when hens are off duty and prices high. The poultry and egg crop of this year is nearly equal to the cotton crop of the United States. Eighty per cent of butter received in Chicago is inferior, and could be made good creamery butter and bring six cents more. Hence

the importance of these conventions; they inform the commonwealth and advertise best modes and modern appliances.

Other speeches were made by H. J. Smith, G. B. Rockwell and L. A. Hall. Hon. J. B. Grinnell called attention to the great opportunities of Iowa: "With land from ten dollars to fifteen dollars an acre, Iowa can do better than York State at sixty-five dollars per acre, or Illinois at thirty-five dollars an acre. This State should be made a clover country, and cut up in small farms; we should raise more from less, live more neighborly, and be intelligent, useful to each other, and thus better for the world.

A communication from C. W. Tenney, Plymouth, Iowa, said that the oppressed farmer could make the two ends meet only by curtailing expenses and by better management increasing the profits. To teach him how to do the latter was one of the objects for which this convention was assembled. To-day the bulk of the corn crop stands frost-bitten in the fields, dried by the wind and sun. If it had been cut in due time and safely packed in silos, the cows would not be wandering through the fields seeking stray nibbles left by the huskers. We should sow more clover, make our stables warmer and have the cows fresh in the fall; then feed so that the butter produced will yield a profit. You can as easily make one pound of butter as two of beef. You can always learn something from the man who is making a success at the present time. Enrich your land by proper crops and culture. Don't spread out over too much land when less will do if it is properly managed, and the product timely secured, will pay for all the trouble that may arise.

Capt. H. I. Smith, a banker of Mason City, said the value of the dairy interest in the United States foots up the enormous sum of \$3,000,000,000, while the entire banking capital of the country is less than one-third of that sum, or only about \$971,000,000. The number of milk cows is 21,000,000, giving an average of three hundred and fifty gallons each annually, or 7,350,000,000 gallons in a year. The value of the dairy crop last year was about \$500,000,000, being a little more than the value of the whole wheat crop of the country.

Dairy Commissioner Sherman said the amount of creamery butter made in 1888 was 41,500,000 pounds, and of cheese 4,500,000 pounds; in 1889, there was a gain of fifteen per cent. No oleomargarine to speak of is sold, as a State license is needed to handle it. No State is freer from adulteration than Iowa. The legislature gave the State Creamery Association \$20,000 to aid them. There were seventy-five new creameries in Iowa in 1889, total one hundred and sixty-three, and sixty cheese factories. Value of butter and cheese \$92,000,000. Iowa has five hundred separators.

Mr. Higby read a long paper on manufacturing, shipping and buying butter. He did not think it best to hold butter over summer for better prices. He thought the next system of separators would be to revolve the cow, producing from one teat butter and buttermilk from the other.

C. L. Gabrielson, of New Hampton, read an interesting paper on economy in feeding for the dairy. He endorsed feeding ensilage, plenty of ground feed and sweet corn. The thought prevailing was that it was the purpose of dairymen not to study alone how to get higher prices for butter, but how to produce more butter at the same expense.

O. T. Dennison read a paper on the needs of the creamery, and suggested

that separators would be more profitable than the present gathered cream plan.

Mr. Doolittle gave the factory methods and compared the value of milk converted into cheese and milk converted into butter, stating that the former was the more profitable by from ten to twenty-five per cent. The question was warmly discussed, very few agreeing with Mr. Doolittle in the latter assertion.

John Boyd thought that good milk made into good butter was as valuable or more so than milk made into cheese. The value of skimmed milk and buttermilk as food for young stock was variously estimated; he called one hundred pounds equal to half bushel of corn.

Professor Monrad, of Chicago, discussed the relation of the patrons to the creamery and cheese factory, and showed that absolute justice could not be done to individual patrons under existing circumstances, and the only solution was a careful test of the value of the milk product.

L. R. Bingham, of Estherville, read an interesting paper on Iowa dairy interests giving a history leading up through the various stages of dairy progress in the State. He claimed that there was yet too much loss from inferior products, insufficient feeding, and careless handling of dairy cattle, etc.

Awards were made as follows: Best creamery butter, Mason City Creamery Company; dairy butter, first, Lizzie Dawson, Clear Lake; second, J. Riche, Nora Springs; third, M. B. Doolittle, Cresco; grand sweepstakes, Mason City Creamery Company. Best cheese, Miner Creek Cheese Factory, of Cresco. Officers were elected as follows:

President—Col. R. M. Littler, Chicago.

Vice-President—C. L. Gabrielson, New Hampton.

Treasurer—C. W. Sibley, State Center.

Secretary—J. W. Johnson, Oskaloosa.

IOWA SHORT-HORN MEN IN SESSION.

The ninth annual meeting of the Iowa Short-horn Breeders' Association convened in the opera house, Hampton, on Tuesday evening, December 3, with an attendance scarcely up to that which has characterized the yearly gatherings of this association for some time past. In the absence of the president, Hon. James Wilson, and of all the officers in fact but the Secretary, William Cook, of Marion, that official sounded the call to order, and on motion, ex-Gov. C. C. Carpenter, of Fort Dodge, was made presiding officer *pro tem*. Upon taking the chair, Gov. Carpenter thanked the association for the honor, and briefly addressed the convention, saying in part the following:

Some nine years ago I began to breed Short-horns, and that time was just at the threshold of the years when Short-horns went down in price. For two years after I bought my cattle if I could have got out of the business

and saved myself I would have done it; but the only thing to do was to go on, and I have been breeding Short-horns ever since. I think more of the cattle to-day than ever before. As hard as times are, as much as the market has been depressed, I think more of Short-horns and the business than ever before. I feel an increasing attachment for my cattle; I make them my pets. Another pleasant thing about it is that it has brought me into association with the gentlemanly Short-horn breeders of Iowa, for whom I have respect and the highest regard. I believe we are on the threshold of better times. In fact, everybody believes that we have seen the bottom and will soon be on the up-grade. We are all stock-growers, and even if we have to sell cattle at low rates, it is better for us to sell good cattle than poor. What we want to do is to endeavor to teach the people, to do missionary work; to tell them that it is better to raise good stock than the ordinary kind—better for the pocket and more pleasant. It comprehends everything in which there is pleasure and profit on the farm.

At the conclusion of the chairman's remarks, he declared the topic for discussion was, "How to succeed as a Short-horn Breeder." Mr. C. W. Norton, of Durant, upon call, expressed his views on this subject, as follows, in part:

The first thing necessary is to raise good cattle. How? Have good females and remember that the bull is half the herd. If I were a young man beginning to raise Short-horns, if I had \$2,000 I would put nearly half of it into a bull. I would not try for numbers, but quality. I would rather have ten head of good quality than twenty-five of the grade we see around some farms. The most money is made in Short-horns in the best cattle; it is easier to sell that kind.

Here the speaker briefly referred to British methods of cattle raising as he had observed them, declaring that the practice was to keep the cattle always fat and growing. He believed the proper way was to keep the cattle in a state of thrift all the time.

Mr. Ben F. Elbert, of Des Moines, was requested to tell what he knew about raising cattle and feeding grand sweepstakes winners. In reply he said:

In this matter I give my partner (Mr. Wiley Fall) more credit than I take myself. Our rule has been when purchasing to buy the best individuals and the best pedigrees we could find for the money. In fact, we often thought we bought the animals and counted the money afterward. The true plan is to get for females first-class individuals, backed by first-class pedigrees. For sires, get bulls whose breeding and merits surpass that of the females if it is possible to do so. Mate them carefully at the proper age. Most breeders are rather hasty in this matter; they breed their heifers too young. I do not think any heifer should calve before she is thirty months old. As to her treatment after calving, I would say feed liberally and keep her growing. Many think that when a heifer calves and is on grass she is all right; they forget the constant strain on her is greater than on a matured cow. I believe in liberal feeding, no forcing or gravy business, but good, rich, liberal feed in good quantities. The point is to keep them moving; do not lose the calf fat. The question of breeding good hogs does not strike us as being as complicated as breeding cattle, but if we would apply the same rule to cattle-breeding as we do to hog-breeding, we would get better results. Who

thinks ever of letting a hog go back? We keep them growing from the start; apply the same rule to our cattle and we would bring them out in better form and health than we do by letting them go up and down in condition. We have had trying times; poor sales have tried us severely, and we have not made money. The only true way to succeed is to raise the best things; we can come nearer making money that way than the other.

The question has been raised as to the feeding of our champion bullock. There is no secret about it. We start out with a calf and give him liberal rations of milk. When he is about ninety days old we put a little feed around where he can get at it—meal, bran, and cracked oats. He begins nibbling at it and soon gets to eating, so when it comes time to wean him his digestive organs have been prepared for the change of feed. Nine-tenths of our farmers wean their calves in a minute, and they do not do any good. After they are weaned we keep them growing on good rich food. We feed cracked corn, cut hay, and oil-meal dry. We think it is nice to wet the feed when you are prepared to do so, but few can feed this way in the winter. In addition to this feed the champion steer ran in a blue grass and white clover pasture. We feed what the cattle will eat up clean and give them plenty of water. We prefer cracked corn to ground meal—cracked about as fine as grains of wheat. We sometimes mix a little bran with this feed, and we think crushed oats are a nice ration, but we do not raise them. I never had any experience in feeding mules, but unless a mule is the hardest thing on earth to feed a bull is. His mind does not seem to be on the feeding business. There is more money in raising pure-bred steers than bulls that sell for less than \$100; it is much more satisfactory, and there is much less risk. The cheap bulls should be cut; if they do not show up promisingly in ninety days cut them.

Capt. Jordan took up the discussion, which was further participated in by H. W. Lathrop and C. S. Barclay, the latter declaring, in reply to a point raised by Capt. Jordan, that in his vicinity the creamery men say that the best cream comes to them, nine out of ten times, from herds of high-grade Short-horn cows. This he knew to be a fact. He did not think Short-horn men ought to sell bulls under \$100. If every breeder would set his standard at that figure, he believed that Short-horn herds would pay better. The poor bulls should by all means be castrated. Yearling pure-bred steers he had found to pay him very well.

Mr. Daniel Sheehan was of the opinion that the inferior bulls should be sold to farmers as being superior to the grades or scrubs they are using, but Mr. C. L. Gabrielson stoutly combated this idea as working to the injury of the breed among the farmers on account of the inferiority of the cattle thus placed in their hands. The discussion became general, and was brought to a close by the chairman, who called for the reports of officers.

The financial statement of Secretary-Treasurer Cook showed a cash balance of \$37.32, and his report as Secretary was a review of the work done during the past year. These reports were referred to an auditing committee.

Col. F. M. Woods, the Lincoln, Neb., live-stock auctioneer, who was present, was invited to address the convention and he responded in a few sensible remarks. Taking up the question of milking Short-horns he declared his belief that this could be made the best dairy breed in existence,

but that at present the milking qualities were much neglected in their cattle by breeders of Short-horns. In reviewing the Short-horn situation in Iowa, Col. Woods likened it to a big corn field with too many grains planted in the hill, producing a few stalks, with too many "suckers." His extended observation in the State had convinced him that there is a scarcity of good Short-horn bulls, and he said he knew breeders who are buying likely bull calves in order to be able to meet their spring demand. Wherever good cattle had been sent under the hammer there had not been a slaughter; it was the "things" that had been slaughtered in the sales.

Col. Woods's talk was received with much approval and after the payment of the annual dues adjournment was taken for the evening.

At the session of Wednesday morning Messrs. McHugh, Barclay and H. I. Smith were appointed a committee on resolutions. The committee on nomination of officers for the ensuing year then reported the following named, who were declared elected by unanimous vote: President, Hon. James Wilson of Traer; Vice-Presidents, Hon. C. C. Carpenter of Fort Dodge, Martin Flynn, Esq., of Des Moines, and Daniel Sheehan of Osage; Secretary, Treasurer, William Cook of Marlon; Directors, H. Draper of Washington and C. S. Barclay of West Liberty.

The committee to which had been referred the reports of the Secretary-Treasurer reported that the financial statements were properly vouched for. The Secretary's suggestion that a building be erected on the State Fair grounds as headquarters for the association during fair time, was approved and recommended to the favorable consideration of the convention. This report was adopted and the Secretary is expected to make application to the State board for a suitable site for the building.

A paper by Mr. R. Baker, Jr., of Farley, was next called. The subject was "Farm Economics," the latter portion only having direct reference to the Short-horn industry. The body of the paper will appear in a later issue; following is the portion most pertinent to the present occasion:

"Improved cattle, as an economy, is the most judicious expenditure that may be made in these days of cheap meats and innumerable needs of the economical farmer. Short-horn cattle, by judicious crossing with the breeds of the best formation, have done more good in the producing of "fine fat flesh" in those parts of the animal carcass that sell at the highest price per pound at retail than those of any other distinct breed, judging by the eye estimate, in the great markets of the English-speaking world. In personal experience we find them the cheapest to buy, being more numerous in fine breeds, cheapest to raise, because it takes less in number to make a car-load of a given great weight, of a prime beef quality when grain-fed to a fully fattened condition. Thus the pasture is understocked and its grasses overgrown, until of these kine it may be said, '*they fed in a meadow*,' until suitable to sell at a good profit. 'Unto everyone that hath it shall be given, and he shall have more abundance. But unto him that hath not (grass) it shall be taken away, even that which he seemeth to have.'

"The economical cow is the granger's cow, the 'double-ended' Short-horn grade cow. It is true she is a large beast with a big stomach, that takes a good deal of fodder to keep it full, especially when 'she is good at the pail,' and being an animal machine to turn vegetable growths into flesh, fat, milk, and butter, she is the beast to do a big business in the dairy, and grass

or grain-feeding pen, and *they are doing it* everyday in very great numbers; and the breeders and the feeders of this breed of milk and beef cattle are said to be the wealthiest of farmers as cattle men.

"Depressed as is the agricultural condition of to-day, the best car-loads of this breed are beating the prices of ill-favored and lean-fleshed kine and scrub cattle, by double prices, with double weights, four to one, by farmers' economy."

Some discussion, mostly of a humorous nature, followed, Col. John Scott taking occasion to emphasize the points made by an ironical opposition to them, to which Mr. Baker replied in kind.

The committee on resolutions reported the following, which were adopted without debate:

Resolved, That it is the sense of the Iowa Short-horn Breeders' Association that on account of the central location, extensive railroad facilities, and hotel capacity, the proper place to hold the World's Fair for 1892 is Chicago.

Resolved, That the thanks of the association are due and are hereby tendered to William Cook, Secretary and Treasurer, for the interest he has taken in the work of the association and the able manner in which he has filled his offices, especially as it is understood that he positively refuses any remuneration for the same.

Resolved, That in the discharge of the duties claiming the attention of our State Dairy Commissioner we recognize in H. D. Sherman an officer who brings to the discharge of those duties a wealth of experience and an honesty of purpose highly commendable.

Resolved, That in the death of Oak G. Norton, on the threshold of what gave promise of more than an average useful life, we the members of the Iowa Short-horn Breeders' Association, feel that we have sustained a great loss; and that this resolution be spread upon our record and a copy sent to his bereaved family.

A resolution recommending to county fair associations the offering of prizes—\$10 for first and \$5 for second—for pure-bred bullocks in classes for two-year-olds, yearlings and calves, was also adopted.

Mr. Barclay submitted a statement of the comparative weights of steers of the different breeds at the late Fat Stock Show, grouped by ages, which made a very favorable exhibit for the Short-horns, in every instance showing greater weights at the same age than their rivals. He was requested to prepare this statement with the comparative weights for publication in the proceedings of the meeting.

Mr. Elbert reviewed the record of the clean sweep of the Short-horns at the Chicago show just closed, and Mr. Barclay stated the encouraging features of the situation which have come under his observation, notably the largely increased demand for bulls and the unusual scarcity of bulls of serviceable age in the State.

Mr. H. B. Daggett, manager for Mr. F. C. Stevens' herd of Holstein-Friesians, briefly addressed the convention, taking Short-horn breeders friendly to task for not filling the special classes for dairy Short-horns at the Iowa fair. The majority of dairy herds in the State, he believed, were made up of grade Short-horns, and it was anything but a wise policy, in his opinion, for Short-horn breeders to neglect the milking qualities of their cattle, and especially such means of bringing them before the dairying

public as this special premium offered. The convention was not in a mood to discuss this very live question for some reason, and attention was given to the reading of the following resolution, offered by Hon. John McHugh:

Resolved, That the thanks of the Iowa Short-horn Breeders' Association are hereby tendered Elbert & Fall for the honor conferred on the breed by their capturing the highest honors obtainable at the recent Fat Stock Show.

After some further discussion of a very general character, pertaining chiefly to the publication of the proceedings of the convention, final adjournment was ordered.

IOWA HOLSTEIN BREEDERS.

The Holstein-Friesian Breeders' Association of Iowa held their annual meeting at the Park house, in Hampton, on the evening of December 3. Owing to the absence of the president, Thos. B. Wales, Mr. A. F. Meservey was called to the chair.

H. B. Daggett, of the "Home Farm," believes that the Holsteins of the west excel those of the east. W. C. Nichols, of Cresco, holds that the Holsteins are the best cattle for dairy purposes that he has found; has several cows of this breed that have never been dry; and never has to feed more than two weeks to fit for the show yard.

W. B. Barney, of the "Home Farm" Company, thinks the Holstein breeders may well be proud of the marked improvement in the breeding of western Holsteins, and that they must not be slow in preparing for the World's Fair in Chicago, in 1892, since the breeders of Holland are already getting ready for that event; so that we must meet them with our best. Mr. S. N. Wright, of Elgin, Illinois, in 1874 borrowed \$350 to buy a Holstein bull for venture. He was called Crazy Wright, but after the returns began to come in, Holstein stock began to rise. The Elgin district represents about 30,000 cows, one-third of which are Holsteins. The talk that the milk of Holstein cows was refused by the condensing factories, but out of forty rejected dairies, not one of Holstein was refused. We need not fear the Holland cattle at the World's Fair, because they have bred for quantity of milk only, while we have looked for butter.

Mr. Thompson, another "Home Farmer," was called on to give his experience in raising calves. Always feed three times per day. The newly calved cow should be milked three times per day to prevent fever. After ten days begins to mix skim milk with the new milk, and after four weeks feeds skim milk altogether. Uses oil meal to replace the fat taken out in cream, and would continue its use until the calf is six months old, but does not want the calf to be fat.

A resolution, favoring the holding of the World's Fair in Chicago, was passed unanimously. Also, that three names be sent to the Iowa State Agricultural Society, from which to select a judge of Holsteins at the next fair.

S. N. Wright, Elgin, Ill.; John P. Hall, Emporia, Kan.; and W. M. Leggett, Benson, Minn., were chosen.

The following officers were elected;

President—A. F. Meservey, Cherokee.

First Vice-President—W. C. Nichols, Cresco.

Second Vice-President—John Klaus, Plymouth.

Secretary and Treasurer—H. B. Daggett, Hampton.

The meeting was well attended, showing a marked increase of interest in this important association.

IOWA SWINE-BREEDERS IN SESSION.

The Iowa Swine-Breeders' Association met at Hampton, December 4, 1889, with President W. W. McClung, of Waterloo, in the chair. After the minutes were read by Secretary George S. Prine, and some preliminary business was transacted, Maj. McMullen, superintendent of swine department at the Iowa State Fair, addressed the meeting on the subject of "Show Pens." He said that the resolution passed at the last meeting of this association, pertaining to the erection of judging or show pens for the special purpose of making it more convenient for the judge and exhibitor during the examination of the animal, as well as to make the work more entertaining and instructive to visitors, had met with approval by different members of the State Board of Agriculture with whom he had talked, and he felt quite confident that the board would build pens in accordance with this suggestion. He said that the swine exhibit at the State fair was considered by the board, as well as every body else, as one of the most prominent features of the State fair, and the board was ready to treat all suggestions from the Swine-Breeders' Association from that standpoint.

Following this was a very exhaustive paper by William Roberts, on the manner of judging. He referred to the committee of three, and single judge, by comparison and the use of the score card. He said he thought the card the best method of deciding the award, but where there is a large number of entries in a one class, to facilitate the work the animals might be brought out and by comparison the ones that would be close contestants could be distinguished and then scored for a final decision, while the ones that could easily be decided upon as standing no show for a premium would not be scored, thereby reducing the time consumed in judging.

This paper was discussed by A. J. Lytle, T. J. Price, H. N. Livermore, L. M. Van Auken, George S. Prine, and others.

The association favored the plan of judging the aged class first, and finishing that class and awarding the premium before passing to the next, and so on through the list, by ages.

MEETING OF IOWA WOOL GROWERS.

The Iowa Wool-Growers' and Sheep-Breeders' Association held a meeting at Hampton, Iowa, December 4th, at 9 A. M., with Geo. W. Franklin in the chair.

The attendance was quite light, but the interest in the welfare, breeding and protection from dogs and wolves was quite interesting. The association considered it best to not request any change in the present dog law, but that in view of the fact that the wolves are increasing in numbers we stand sadly in need of protection from wolves. The present existing laws for the extermination of wolves is lame from the fact that one county will give a \$2 bounty while a neighboring county pays a bounty of \$10. This induces enterprising wolf hunters to run wolves from a \$2 county into a \$10 county. This question, and fencing, as well as pasturing sheep, was discussed intelligently. Our State has too few sheep. We have a large State and but a half million of sheep. The association will meet Thursday of State fair.

SHORT-HORN BREEDERS MEET.

The American Short-horn Breeders' Association met in annual session at the Grand Pacific Hotel, Chicago, November 20. The members were called to order by President Cobb, who, in a short address, reviewed the work of the year. The Short-horn interests, together with all cattle interests, he said, were much depressed, the principal cause being over-production, and the secondary reason being the great numbers of heaves that have been thrown on the market during the past three or four months. Continuing on the same subject, he said: In the natural course of events this state of things cannot long continue, as it is well known that the causes which have contributed to the marketing of the great number (amounting to as many as 17,000 in a single day in the Chicago market alone) will not occur again soon in this country, if, indeed, they ever occur. Among the causes which have contributed to this end we may mention first, the fact that very many of our large cattle companies have been in such a condition financially that they have had to ship and realize in order to meet their obligations. We know, from sources that cannot be questioned, that this is the case, and we would readily come to such a conclusion when we know that a large proportion of shipments have been females, thereby stopping production. Another cause of excessive shipments has been the drouths that have prevailed throughout

Wyoming and Montana the past year, rendering the grazing during the summer and fall months very meager, with nothing remaining for winter grazing; consequently no course was left to the ranchers but to market their cattle. A case came under my observation during a visit to Montana in September last, where a man had to send his breeding cows to market, and upon which he realized, after all charges had been paid, the paltry sum of \$6.60 per head. The ranchers of the plains and mountainous districts, our former competitors, have reluctantly come to the conclusion that the time has come when it will not be profitable for them to produce any more cattle than they can provide for and maintain the year round, by feeding as we do in this part of the country; and when they have to do that, it will materially decrease the number of cattle raised in said districts, thereby reducing competition and advancing prices. Another change of special interest to Short-horn breeders is now taking place in Montana; the old ranchmen, who, prior to 1885, had used Short-horn bulls, and were induced to change to Hereford and Polled, are returning to their first love, and calling again for the "red, white and roan." He suggested that one way to effectually advance the interests of the Short-horn breed was to pay special attention to the milk-producing qualities of the breed, and prove the claim of the Durham as a general purpose cow. Referring to the dairy premiums offered by the society the past year in the great agricultural State fairs, he expressed his regret that so few entries had been made, and that the animals entered were no special credit to the breed, and urged that in the future more attention be paid to this special interest. In his address the president referred to the three directors whose terms expired at this meeting, commending them highly for the faithful discharge of their duties during the last three years. The association then proceeded to elect three members to fill the vacancies on the board, and N. P. Clarke, of St. Cloud, Minn.; W. A. Harris, Linwood, Kas., and John Hope, of Brantford, Ontario, the former incumbents of the office, were re-elected for the following three years.

The following resolutions offered by Judge Nourse, were unanimously adopted:

Resolved, That the American Short-horn Breeders' Association is in favor of the city of Chicago as the best place, in our judgment, for the location of the World's Fair in 1892, and that by this central location alone can we hope to secure a just representation of such an exhibition of the agricultural industries of the United States, and especially of the live stock interests of the country; and be it further

Resolved, That the secretary of this association be instructed to have a copy of the above resolutions properly presented to the senate and house of representatives of the congress of the United States.

A vigorous discussion arose regarding our trade relations with South and Central America, and after an extended debate the following preambles and resolutions introduced by Judge Nourse were unanimously adopted:

WHEREAS, Direct commercial relations between the United States of America and the people of South and Central America are of vital importance to the material welfare and prosperity both of this country and of South and Central America, and

WHEREAS, The present indirect trade through British ships and ports is carried on at a great pecuniary loss to both producer and consumer; and,

WHEREAS, The people of South and Central America are now purchasing and importing improved stock from Great Britain that can be supplied at far less cost from the United States; therefore, be it

Resolved, That we call the attention of the congress of the United States to the importance of this subject, and that we do hereby petition the senate and house of representatives of the United States to afford liberal aid to the establishment of lines of steamships between the ports of the United States and the ports of Central and South America, and to afford all proper and necessary facilities for the encouragement of such commerce; and be it further

Resolved, That the secretary of this association be instructed to furnish a copy of the above resolution to our delegates to the Pan-American congress, and also have a copy thereof presented to the congress of the United States, through some member of the house, and some member of the senate.

A noticeable feature of the discussion on and adoption of the above, was the complete abandonment of party lines, both republicans and democrats insisting that the government should subsidize a line or lines of steamers for the sake of a more direct intercourse with Central and South America.

Col. Judy addressed the meeting on a proposition to refund \$2,650 to members who had donated the above amount for premiums in the days when the society was too weak to carry its burdens alone, and a resolution was passed to that effect.

The question and feasibility of holding a great live stock show were considered, and the result embodied in the following preambles and resolution:

WHEREAS, It is desirable and important that all the live stock organizations in the United States unite their efforts in all matters calculated to improve the various breeds of domestic animals and advertise the excellence of the stock bred in America; and,

WHEREAS, A number of live stock associations have recently appointed committees to confer with similar committees to be appointed by this and other organizations concerning the feasibility of holding annually a national live stock show at some central metropolis; therefore, be it

Resolved, That a committee, consisting of the president and two members of this association, to be selected by him, be appointed to confer with the committees of the national live stock organizations in reference to holding the proposed show.

Col. Harris, representing the board of directors, requested suggestions from the members present in regard to the question of offering prizes to dairy Short-horns at the agricultural fairs. Mr. Strange, of Indiana, addressed the meeting on the subject, after which a motion was carried requesting the board of directors to continue the premiums, and fix the tests, etc., by which they should be judged. On motion of Mr. C. S. Barclay, it was voted to request the board of directors to offer first, second and third prizes for a herd of steers consisting of a two-year-old, a one-year-old, and a calf, to be bred and owned by the exhibitor, and shown at the fat stock show.

The report of the secretary was of much interest, showing a steady advance in the prosperity of the association. Following is the financial statement:

Balance in treasury November 1, 1888.....	\$ 19,612.45
Balance in secretary's hands November 1, 1888.....	58.18
Receipts for the year.....	20,796.78
Total cash credits.....	\$ 40,467.96
Expenditures for the year.....	18,166.82
Balance in hands of secretary and treasurer.....	\$ 22,301.14
The assets of the association are:	
Amount in hands of secretary, treasurer, and special deposit.....	\$ 27,301.14
Value of books on hand (herd books).....	16,626.50
Miscellaneous.....	1,175.64
Total.....	\$ 45,103.28

Besides these assets the association has on hand several thousand herd books of the English societies, upon which no value can be fixed.

The liabilities of the society are \$26,124.02, leaving a balance of assets over liabilities of \$18,979.26. During the past year volume 84 has been published, and contains 2,249 pedigrees. The office books have all been corrected at an expense of \$823.60 for clerk hire.

The revision of the herd book is steadily progressing, pedigree and produce tables being already prepared for about 16,000 animals, at a cost of \$909.45. From the progress of the work so far, it is expected that a further expense of \$2,000 will prepare the manuscript for the printer, and that the printing and electrotyping of the same will be from \$7,000 to \$8,000. The report of the secretary says: It may be worthy of note and of interest to state that the total number of cattle exported for three months during the past year amount to 1,000 head per day—90,000 in all. Of this great number of live animals exported it is estimated that at least 75 per cent were high-bred Short-horns. During the same period the dressed beef exported amounted to about 75,000 head.

SHROPSHIRE BREEDERS.

The regular annual meeting of the American Shropshire Registry Association was held at the Sherman House, Chicago, November 19. The roll-call by Secretary-Treasurer Mortimer Levering showed a large attendance. Treasurer's report showed a balance of \$949.52.

OFFICERS ELECTED.

President—S. H. Todd, Wakeman, Ohio.

First Vice-President—Hon. John Dryden, Brooklyn, Ontario.

Secretary-Treasurer—Mortimer Levering, LaFayette, Indiana.

Executive Committee—John L. Thompson, Arcadia, Ind.; Wm. H. Beattie, Wilton Grove, Ont.; Prof. W. C. Latta, LaFayette, Ind.; W. J. Garlock, Howell, Mich.; J. F. Rundel, Birmingham, Mich.

Pedigree Committee—John Dryden, John Campbell, Jr., Woodville, Ont.; Dr. T. H. Allison, Kittanning, Penn.; J. L. Thompson, Prof. W. C. Latta.

Vice-Presidents for States—Canada: Richard Gibson, Delaware; Prof. Thos. Shaw, Guelph; Robt. Miller, Jr., Brougham, New York; Dr. C. D. Smead, Logan, Pennsylvania; Dr. T. H. Allison, Ohio; J. T. Newton, Hudson, Michigan; T. A. Bixby, Kentucky; Polk Prince, Guthrie, Iowa; Jas. F. Camp, La Porte City, Tennessee; Eugene Hatch, Nashville, Nebraska; C. H. Ballinger, Plum Creek, Massachusetts; James Lawrence, Groton, Indiana; W. A. Banks, Door Village, Virginia; W. J. Green, Orange, C. H. Illinois; W. C. Vandercook, Cherry Valley, West Virginia; Louis Bennett, Weston, Missouri; U. P. Bennett, Lee's Summit, Wisconsin; Jas. D. Cass, Beloit, Georgia; T. P. Branch, Augusta, South Dakota; J. D. Wagner, Frankfort, North Dakota; E. C. Palmer, Willison, Maryland; C. H. Tilghman, Tunis Mills, Colorado; Rollin Sherman, Byers, Montana; G. H. Mullery, Gorham, California; C. H. Mitchell, Petaluma, Vermont; A. W. Wilcox, Brideport.

Auditing Committee—Prof. W. C. Latta, O. C. Goldsmith, and E. R. Kenny, all at LaFayette, Ind.

Rule 8 of the rules of entry relating to registry in cases when doubt as to purity of breeding or merits are concerned was stricken out. Fees were changed so that:

Members of the association pay for each imported sheep or lamb, \$1, if accepted for registry within one year after date of importation. For each American-bred sheep, 50 cents, if accepted for registry before December 31 of the year of its birth. Triple fees will be charged for registration of all sheep later than the time limits above fixed. Non-members will be charged double fees.

The following rule was also added:

Infringement of any of these rules or dishonorable conduct on the part of a member shall make him liable to forfeiture of the privilege of membership in the association.

Appropriate resolutions lamenting the death of Geo. Allen, Sr., were passed. The amount to be paid for premiums the coming year is not to exceed \$500, and the disposition of this is left in the hands of the executive committee. The general sentiment of the society, however, was that a smaller amount be given at the fat stock show, and that the money be more evenly divided among the different States; also to encourage American-bred animals. The aim of the secretary is to have the entries close about October 1st, and to have the volumes ready for distribution about February 1st.

POLLED DURHAM MEN.

November 14th the following men met at the Grand Pacific Hotel and formed the American Polled Durham Association and established a herd book: J. F. Burleigh, A. E. Burleigh, W. S. Miller, John R. and Peter Shafer, S. R. Clawson, and E. M. Snailey. The capital stock is fixed at \$1,000, with shares at \$10. The animals liable to registry must be one year old, hornless, color and markings characteristic of the Short-horns, and shall contain seventy-five or more per cent of Short-horn blood. Provisions were also made to increase this per cent of Short-horn blood as the times shall demand. The next meeting will be announced in due time.

The following officers were elected:

President—J. F. Burleigh, Mazon, Illinois.

Secretary—A. E. Burleigh, Mazon, Illinois.

Executive Committee—W. S. Miller, Elmore, Ohio, and Salem R. Clawson, Clawson, Ohio.

COTSWOLD BREEDERS.

The twelfth annual meeting of the American Cotswold Association was held November 19th, during the Fat-stock Show in Chicago. The meeting developed the fact that the trade in Cotswold sheep during the past year has been good, and that prices are advancing. The record has about one hundred patrons, and volume 4 will be issued in January, 1890. The finances are in good condition, there being \$675 in the treasury.

The officers for the ensuing year are:

President—R. C. Judson, Farmington, Minnesota.

Vice-Presidents—E. B. Emery, Centerville, Md.; J. C. Snell, Edmonton, Canada; E. E. Carothers, Houstonville, Pa.

Secretary and Treasurer—Geo. Harding, Waukesha, Wis.

Directors—E. B. Emory, J. O. Malley, Waunakee, Wis., and J. B. Herkless, Knightstown, Ind.

TO ANGUS MEN.

Secretary Thomas McFarlane, Iowa City, Iowa, writes: At the annual meeting of the American Aberdeen-Angus Breeders' Association, held at Chicago, November 14, 1889, the following rules were adopted:

"Males red in color or with a noticeable amount of pure white above the underline, or on leg or legs, or with scars, shall not be eligible to entry for breeding purposes, but the same when reported as castrated shall be accepted and counted under the rule requiring the castration of one in ten of males." See rule 2, section 3. Also that rule 3, section 3, be amended by adding "When an animal is a twin it should be so stated and the sex given of the animal with which it is a twin. Should a twin be entered upon the record without such statement, no subsequent application for the entry of an animal twined with same will be accepted."

The price of herd books hereafter will be \$2 per volume, post paid to members, and \$3 per volume, post paid to non-members. Stub books of application and transfer blanks will be furnished at twenty-five cents each, post paid. A printed report of the annual meeting will be mailed to members of the association and to breeders as soon as ready.

ANNUAL MEETING OF THE IOWA DRAFT HORSE ASSOCIATION.

The Draft Horse Association met last night in parlor "A" at the Savery. There was a fair attendance and an interesting meeting. President W. H. Jordan called the meeting to order. C. F. Curtis was selected as the secretary of the meeting.

In the president's address he dwelt upon a heretofore neglected feature, but, notwithstanding, a very important one to horse breeders, in respect to shoeing horses. It will not be in the very far future when breeders of good horses will demand an expert, rather than a bungling horse shoer. In too many cases profit is turned into loss by a bungler adopting improper methods in shoeing valuable horses.

The present law was the first topic of discussion, being presented through the question, "is the law prohibiting stallion service under false pedigree satisfactory, and is it being enforced?" Judge Stubbs, of Fairfield, lead the discussion. He maintained that the statute was far from satisfactory to breeders, and that there was practically no enforcement of it. He thought

it must be the product of the brain of some lawyer who knew nothing about horse breeding, for, he said, it was just such a law as he imagined he would have written when he was a lawyer and knew nothing about horses. He advocated a change in the statute, and his remarks were acquiesced in by the members present.

"What class of horses can farmers produce, promising greatest value," was discussed by Hon. H. C. Wheeler, in a paper, in which he held that draft horses were the most profitable for the farmer, both for farm work and for sale, and read figures showing the difference in price between the draft and the common horse when offered on the market.

"The age at which horse stock can be sold at greatest profit by the farmer," was discussed by Messrs. Wheeler, Jordan, and others, and all agreed that when young was by far the most profitable time. Two, three and four year old horses sell the best and bring the best figures.

"How can showing and judging horses at our fairs be made to advance better horse breeding," was discussed by all hands, and the fair was strongly upheld. The competition of fairs stimulates the exhibitors, and as a consequence the breeding of better horses is advanced. A public sale day, either during fairs or at stated intervals, was discussed, and the conclusion was arrived at that such an established sale day would be advantageous in the sale of Iowa horses, and would induce eastern buyers to come and enter into competition in the purchase of animals and stimulate the price.

The most valuable paper of the evening, perhaps, was one by Hon. B. F. Gue, of this city, upon statistics of Iowa horses. It was replete with facts in reference to the increase in grade of horses, the good it has accomplished, and the means that have brought it about.

Following the discussions the annual election of officers occurred, with the following result:

President—Captain Jordan, Iowa City.

Secretary and Treasurer—C. F. Curtis, Nevada.

Vice-Presidents—William Fields, Cedar Falls; Wm. Springer, Oskaloosa; C. E. Stubbs, Fairfield; and H. C. Wheeler, Odebolt.

Directors—Wm. Singmaster, Keota; Peter Hopley, Lewis; L. Wheeler, Pella; D. P. Stubbs, Fairfield; Daniel McCarthy, Ames.

To-day at nine o'clock a meeting of a resolution committee of the association will be held at the Savery to suggest some legislation that would be acceptable to the association, and arrange for its presentation to the General Assembly.

Among the members of the association present at last night's meeting were Hon. H. C. Wheeler, of Odebolt; Capt. Jordan, Iowa City; Judge Stubbs, Fairfield; C. F. Curtis, Nevada; H. G. and B. F. Gue, Des Moines; James Wilson, Tama; E. S. Fonda, Mitchell; F. W. Chase, Cedar Falls; Major McMullen, Oskaloosa.

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