

TWENTY-SIXTH ANNUAL MEETING

OF THE

IOWA IMPROVED

Stock Breeders' Association,

HELD AT

AMES, IOWA,

DECEMBER 13 AND 14, 1899.

OFFICERS:

President—W. M. BEARDSHEAR, Ames, Vice-Presidents—J. F. HEINS, Wapello; JOHN
HOWAT, Welton; RICHARD BAKER, Farley; S. A. CONNERSE, Cresco; S. H. HOAD-
LEY, Cedar Rapids; H. D. PARSONS, Newton; C. F. CURTISS, Ames; C. C.
NORTON, Corning; CHARLES EICHER, Botna; F. A. EDWARDS,
Webster City; H. G. McMILLAN, Rock Rapids; Secretary
and Treasurer—W. M. McFADDEN, West Liberty.

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Iowa Improved Stock Breeders' Association.

SECRETARY'S REPORT.

To His Excellency, Hon. Leslie M. Shaw, Governor of Iowa:

In compliance with the provisions of the statute I have the honor to render a stenographic report of the proceedings of the last meeting, held in Ames, Iowa, December 18 and 14, 1899.

W. M. McFADDEN,
Secretary.

OFFICERS FOR 1900.

PRESIDENT.

C. F. Curtiss Ames

VICE-PRESIDENTS.

P. G. Henderson Central City
 H. D. Parsons Newton
 H. G. McMillan Rock Rapids
 S. A. Converse Cresco
 M. D. Clark Mt. Vernon
 John Howat Welton
 Chas. Escher, Jr. Botna
 F. F. Luther Grand Junction
 J. P. Manatrey Fairfield
 J. W. Stribling Earlham
 J. T. Brooks Hedrick

SECRETARY AND TREASURER.

W. M. McFadden West Liberty

The next place of meeting will be at Mt. Vernon, December 12th and 13th.

MEMBERS.

Lee Co'ony	Tiffin	I. N. West	Mt. Vernon
F. D. Tomson	Cedar Rapids	Chambers Bros	Corwith
C. H. Brown	Dakota City	C. W. Norton	Wilton
Jas. Hook	Hedrick	C. E. Wilson	Earlham
F. A. Shafer	Campbell	M. D. Clark	Mt. Vernon
S. C. James	New Sharon	Wallaces' Farmer	Des Moines
W. W. Vaughan	Marion	P. G. Henderson	Central City
A. Sonneland	Harlan	J. E. Mann	Woodbine
S. N. Hinman	Belmond	H. C. Cadwell	Logan
A. C. Crawford	Lone Tree	C. W. Mecaskey	Ames
J. A. Hamilton	Kirkville	S. A. Converse	Cresco
John Lister	Conrad	L. S. Coffin	Ft. Dodge
A. J. C. Wingate	Burr Oak	Chas. Ott	Hedrick
Jos. Wallace	Eldora	W. M. McFadden	West Liberty
J. F. Heins	Wapello	W. M. Beardshear	Ames
W. A. Fritchman	Muscataine	E. F. Brockway	Iowa City
G. W. Coleman	Webster City	G. A. Munson	Oldfield
W. A. Moffitt	Mechanicsville	S. B. Packard	Marshalltown
T. A. Davenport	Cornelia	A. M. Avery	Mason City
A. McKeever	Farley	H. G. Skinner	Ames

Edwin Rex.....	Ames	E. C. Bennett.....	Tripoli
H. F. Woodruff.....	Ames	P. B. Lake.....	Muscstine
I. S. Pearson.....	Springville	B. Wilson.....	Earlham
C. Escher, Jr.....	Botna	J. P. Manatrey.....	Fairfield
E. G. Schevenell.....	Belle Plaine	F. P. Wylie.....	Jordan
J. H. Watson.....	Madrid	Pasteur Vaccine Co.....	Chicago
Thos. Toyne, Jr.....	Lohrville	C. S. Barclay.....	West Liberty
Jos. Toyne.....	Churdan	B. P. Norton.....	Cresco
G. H. Van Houten.....	Lenox	Henry Wallace.....	Des Moines
Dan Sheehan.....	Osage	E. Lefeburne.....	Fairfax
G. W. Dickens.....	Hedrick	J. W. Wadsworth.....	Algona
W. C. McNiel.....	Postville	G. H. Burge.....	Mt. Vernon
W. Z. Swallow.....	Booneville	C. F. Curtiss.....	Ames
J. C. Copestake.....	Kelly	L. Steltenburg.....	Amity
C. C. Dye.....	Marion	D. L. Howard.....	Jefferson
W. A. Bryden.....	New Sharon	Asa Turner.....	Oldfield
Chandler Bros.....	Fairfield	S. Antoine.....	Rock Falls
J. N. Dunn.....	Central City	W. J. Veneman.....	Maxwell
L. L. Goreham.....	Odebolt	A. M. Caldwell.....	New Holland, Ill.
Geo. H. Dunkelberg.....	Rockford	Joe Trigg.....	Rockford
Geo. F. Clark.....	Bridgewater	Dan Leonard.....	Leonard
R. J. Johnston.....	Humboldt	John Cownie.....	South Amana
J. R. Crawford.....	Newton	J. J. Edgerton.....	Ames
V. O. Holcomb.....	Jordan	E. M. Wentworth.....	State Center
M. E. Andrews.....	Capron	John Cooper.....	Gordon
S. G. Crawford.....	Lohrville	E. Beam.....	Newton
Chas. Eckles.....	Marshalltown	John T. Toyne.....	Lohrville
F. A. Bayhes.....	Des Moines	S. G. McBurney.....	Churdan
J. J. Repp.....	Ames	G. L. Cochran.....	Iowa City

THE CONSTITUTION.

ARTICLE I.

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

ARTICLE II.

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

ARTICLE III.

Any person who is a citizen of Iowa and a breeder or owner of fine stock may become a member of this association by paying a fee of \$1 annually, and signing the constitution or empowering the secretary to write his name thereon.

ARTICLE IV.

The officers of this association shall be a president, five vice-presidents to represent the different branches of stock breeding, and a secretary and treasurer, and these seven shall constitute an executive committee, of whom a majority shall be a quorum for the transaction of business, and the duties of these several officers shall be the ordinary duties of such officers in like associations.

ARTICLE V.

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

ARTICLE VI.

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

[The above is the amended constitution. The number of vice-presidents has, by the custom of committees, been changed from five to one from each congressional district.]

PROGRAM.

WEDNESDAY AFTERNOON, 1 O'CLOCK

Prayer, by Rev. H. Paul Douglas.
 Music.
 Address of welcome, by Hon W. J. Dixon of the college board of trustees,
 Sac City.
 Response, by Hon. Dan. Sheehan, Osage.
 Appointment of committees.
 "The Essential Elements of Improved Stock Breeding," by Pres. W.
 M. Beardshear, Ames.
 "The Public Sale," by W. C. McNeil, Postville.
 Discussion.
 "Principal Points in the Care and Management of Swine," by D. L.
 Howard, Jefferson.
 Discussion.
 "The Education of the Iowa Farm Boy and the Farm Girl," by Hon. L.
 S. Coffin, Fort Dodge.
 Discussion.

EVENING SESSION, 7:30 O'CLOCK.

Music.
 "The Tendency of the Boys on the Farm to Go to the City, and What
 Shall the Farmers Do About it," by A. M. Caldwell, New Holland, Ill.
 Discussion.
 "Dogs," by John Howat, Welton.
 Discussion.
 "The Return of the Horse," by Hon. H. G. McMillan, Rock Rapids.
 Discussion.

THURSDAY MORNING, 9 O'CLOCK.

A college symposium consisting of ten minutes object lessons as follows:
 "Stock Judging with Illustrations and Animals," by Prof. John A.
 Craig, Ames.
 "Experimentation With Good and Bad Cultures in Butter-Making," by
 Prof. C. H. Eckles, Ames.
 "Soil Moisture and Fertility," by Prof. J. J. Edgerton, Ames.
 "Recent Phases of Cheese-Making," by Prof. G. L. McKay, Ames.
 "Ounces of Prevention in Caring for Domestic Animals," by Dr. J. J.
 Repp, Ames.
 "Farm Crops and Their Enemies," by Prof. John Craig, Ames.
 "The Range Problem," by Prof. L. H. Pammel, Ames.
 "Observation on Different Types of Dairy Animals," by Prof. C. F.
 Curtiss, Ames.
 Address, by Hon. Cownie, South Amana.

THURSDAY AFTERNOON, 1:30 O'CLOCK.

Music.
 Reports of committees.
 Report of secretary and treasurer.
 Discussion.
 "Advance in Farm Methods in Iowa," by E. F. Brockway, Iowa City.
 "'Hoss' to Horse," by E. M. Wentworth, State Center.
 "The Raising of the Calf," by S. A. Converse, Cresco.
 "Practical Cattle Feeding," by Hon. John Shambaugh, Booneville, and
 Hon. J. Wallace, Eldora.
 "The Question of Forage," by Hon. S. B. Packard, Marshalltown.
 Discussion after each paper.
 Adjournment.

Twenty-sixth Annual Session.

The twenty-sixth annual convention of the Iowa Improved Stock Breeders' association convened in college chapel, Ames, Iowa, December 13th, at 1 P. M.

The meeting was called to order by the president, Prof. W. M. Beardshear, of Ames.

Prayer, by Rev. H. Paul Douglass.

Hon. W. J. Dixon, of Sac City, one of the trustees, in a brief and pleasing address conveyed, on behalf of the college and the citizens of Ames, to the association, a warm welcome. In the course of his remarks he spoke of the great importance of the live stock interests and also directed attention to the achievements of the students sent out from the agricultural college, and the successful work of its departments.

Dan Sheehan, of Osage, responded as follows:

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

I am sure I have not words enough to thank Mr. Dixon and the faculty of the Agricultural college of the great state of Iowa, for the royal reception we have received at their hands. I have been one of the followers of this Improved Stock Breeders' association for years, and it gives me pleasure to look and see to-day some of the old wheel-horses, not as many as I have seen before, and to see the young men who have not been with us long, and it is to these young men that we will look in after days to keep up the association. We have not got as many in numbers as some states—yes, we have all but one state, Texas,—but when it came to value, Iowa stood at the head; she had more dollars and cents than any.

I am not going to take up a great deal of your time, but let me say to you young men that are here that on you and you alone from now on depends the welfare not only of the great live stock industry of Iowa, but of the states. I believe that one who has probably done more or as much as any other man in the state, J. B. Grinnell, who came and talked at the meeting, and hale and hearty as he was, said, "Gentlemen, I believe it is the last time I will talk with you," and I felt bad. Probably there are a great many here to-day we will never see again. I tell you, young men, there is no more honorable calling, I do not know as there is any more profitable, take it on the average,—there are some men you know who strike something and make a fortune in a few days,—but I do not know of any calling in the United States to-day that is more sure than improving the stock of the state of Iowa. This meeting is not for the Shorthorn

breeder alone, nor the Holstein or Hereford, but for every man in the great state of Iowa who would like to see the stock of Iowa improved, and that is why I have not words enough to express thanks for the welcome we have received from Mr. Dixon and the college to-day.

For the last ten years I have never come here, and I do not believe you have ever come, without seeing some little improvement. Now on you, and you alone, depends whether these improvements can be kept up. It takes money, you all know that, to run any kind of business, and it takes a great deal of money to keep this institution running. When he mentioned that great man who has done more, not excepting Abe Lincoln, who has done more for Iowa than any other man that ever lived in the United States, Judge Morrill, whom Dr. Dixon spoke of. We ought to revere his name and his memory and I hope you will all keep it fresh and green in your hearts, you young men as well as the old.

I believe there is no more honorable calling than improving the stock of Iowa. If you expect to be what you ought to be, if you expect to improve yourselves, one thing you must set down, there is no man, I care not what his calling or profession is, that wants to deal fairer or more honorably than he who wants to improve the live stock of Iowa. His word must be as good as gold. They must know that when they get your pedigree and the record you have kept of your stock that they can have confidence in you, and I hope they will because there is no state in the union where there will be less fraud perpetrated on men that we deal with, than in this great state of Iowa.

I remember, ten years ago, I think it was, I think our meeting was at Oskaloosa,—I think I will never forget the words of J. B. Grinnell, who was talking about the Iowa Agricultural college, and he mourned that there was some fault to find, you all remember it, and he made a motion that a committee of five be appointed from the Improved Stock Breeders of Iowa to go and investigate and see where the fault lay. You remember well A. S. Welch who helped lay out these grounds, who helped fix them up. You have had, if I remember right, five presidents, Mr. Welch and Mr. Chamberlin, and then they began to look for a man from the west. They thought, the trustees did, that they could find some material west of the Mississippi. They found a man that worked this agricultural college up from 300 students three years ago, from one student in the agricultural department to 200 in the four-year course and fifty in the short,—just mind the figures,—they found this man in Iowa; there is where they found him, they found him close at home, who worked this college up till it stands in the front rank with the colleges of the United States.

There are a great many in Iowa and all over the world that think there is nothing at all in education. They do not believe in these scientific principles. Write it down in your notebook in raising a girl or boy. There is another thing. It is no hit or miss that does it when a man goes and three years in succession, in competition with probably 300 creameries, and when he can take a prize three years in succession for making butter. It was a student of the Iowa Agricultural college that made it. Are you not proud of it? I am, and I do not believe there is a man in Iowa who is not proud of it. One thing more. There is a fear among some men, and it is not among our stock breeders, but you all have neighbors, that if a young man

comes to this college his place is to go right back to the farm. It is all right for a man of wealth to send his son to this college and expect him to come and help him on the farm, but a great many of the students who come here were not born with the silver spoon in their mouths and when they go out they have nothing but their two hands and the brawn and muscle they have got in Iowa—and I believe the soil of Iowa is capable of raising the best young men and women on the face of the earth,—when these young men go out they have nothing in the world to sell but their labor. That is their capital. I knew two brothers who lived in the same township that I live in, and one of them thought it took too long a time to go to college. The other thought he might get an education. Neither had anything but his hands. There was a neighbor told this young fellow who wanted to go to college so bad, if he thought it would do him any good, he would loan him the money if he thought it was best to borrow it, and the young man told him "I will avail myself of the gold." He took a part of the money and worked himself through college and it did not cost him a great deal. The older brother is plodding away, working at \$22, and his board and washing. The other young man came here under the instruction of Dr. Beardshear and Professor Curtiss and is now getting \$1,800 a year and house rent. Now would you want that young man to go back to the farm? No, neither would I.

I am not going to talk because you all know what this college is, but I will say to the trustees that I am gratified, and I will say to you men here that have charge of this agricultural college that in behalf of the Improved Stock Breeders' association of Iowa I have not got words to thank you for the reception we have received here, and I will say to you that while we may not agree with you individually, I believe in everything that goes to advance the interests of this great college and the great state of Iowa and the Improved Stock Breeders' association which you have in hand. I hope to see the day come, and I believe it is pretty near here now, when this will be the greatest college of this greatest state in the union, and I hope to see the day, and I believe you do, when the young students that get their education at this college will be sought by other colleges to take chairs which I believe and you believe they will be well qualified to do.

Another thing I hope to see is that this farm here of about 900 acres, I believe this farm and agricultural college ought to be and I believe will be the place and at no distant day, when the Improved Stock Breeders of Iowa can look to the college for sires to head their herds, and where they will know and be sure there is no fraud either in the animal as recommended or in the pedigree. I look for that day to come and come soon. With the exception of your wives and daughters, there is nothing that ought to be so dear to you as the live stock interests of this country.

Gentlemen, again I thank you; I have not got words to thank you for the kind welcome we have received here at your hands.

The next on the program was an address by the president, W. M. Beardshear, as follows:

ESSENTIAL ELEMENTS IN IMPROVED STOCK BREEDING.

W. M. BEARDSHEAR, AMES.

"I am enamour'd of growing out-doors,
Of men that live among cattle or taste of the ocean or woods,
Of the builders and steerers of ships and the wielders of axes
and mauls, and the drivers of horses,
I can eat and sleep with them week in and week out."

As the president of our association I am possessed of a feeling of modesty. By my own pencil the article "the" slipped in before "essential elements" in the program. I do not presume to present to you all the essential elements in improved stock breeding, but to speak of some of these that should be emphasized in this great calling. I say "great calling" advisedly, for there is regal nobility in working with the Creator of the universe through the laws of selection, variability and heredity. We often hear a young man say laudably that he is seeking a good clean life work. In the industries of life he will not find a cleaner or nobler undertaking than that of improved stock breeding. Great admiration should be given to mechanics and the ingenuity of man in handling the material forces of nature. Much credit is due the men of great business enterprises that establish houses and systems of merchandise and banking that are the bulwarks of commerce and the granite support of our national resources. The calling of no man should be belittled in order to comprehend the greatness of another. It is counted a chief excellency of man that he is made a little lower than the angels, and the people who devote themselves to humanity, as the priest and the philanthropist, are said to have the highest calling on earth. The animals employed by man in domesticity, the horse, the dog, the cow, the sheep and the swine (in spite of its greed), are in physical organization but little lower than the man; and they who give themselves to the intelligent improvement of these meet the same laws of perpetuation, health, strength, instinct and beauty that have wrought out great families of nobles and rulers in empires and republics; that have made possible the conquerors in armies, the brains of learning, and the founders of religion and civilization. Every standard book on improved stock breeding draws many of its important facts from the lineage and genealogy as chronicled in the human race. He who works amid these wonderful forces treads on holy ground and should take off his shoes in more senses than one. Improved stock breeding appeals to the heart, to the sense, and to the humanity of man. I like what Walt Whitman says:

I think I could turn and live with animals, they are so placid
and self-contain'd,
I stand and look at them long and long.
They do not sweat and whine about their condition,
Not one is dissatisfied, not one is demented with the mania of
owning things,
Not one kneels to another, nor to his kind that lived thousands
of years ago,
Not one is respectable or unhappy over the whole earth.
So they show their relations to me and I accept them,
They bring me tokens of myself, they evince them plainly in
their possession.

An improved stock breeder must be a man of spirit. Nature is one of the most simple yet exacting forces of life. She waits for nobody, yet, when properly interpreted, is an unfailing servant and friend of man. Her laws move with the precision of a divine instinct and respond to a spirited worker with marvelous readiness. Hence sluggishness of management, slipshod effort, scrimp and scrape endeavor, impetuous and blind procedure, hit and miss measures, always bring failure and grief in the high calling of improved stock breeding.

An improved stock breeder must have a quick eye and a sound judgment. For centuries the breeder went largely by two rules,—“Like produces like” and “Breed from the best.” These rules will always stand, but Robert Bakewell, in the middle of the last century, had a farther reaching eye into that first law of Genesis that “Like begets like,” and discovered that it applied not merely to external features, but it had application to the various parts and internal qualities of an animal, so that he was enabled to make quite a different sheep out of the Leicestershire breed, to modify the Long Horn cattle, and to make the Black Coach horses famous. He went almost to the principles of mechanics and planned in his mind what a perfect animal would be for a certain purpose, and then used nature's laws to bring about these desired results. The excellencies of modern breeds, as the Poland China, Chester White, Berkshire, Yorkshire, Essex, and Tamworth among swine, the Southdown, Oxford Down, Suffolk, Leicester, Merino, and Dorset among sheep, and the Shorthorn, Hereford, Devon, Jersey, and Holstein among cattle; as the running and trotting horses, the draft, the coach, and the hunter among horses, that have revolutionized the stock interests and made stock breeding profitable, came about by many penetrating eyes and careful judgments. All these representative breeds have been established, not by general rules alone, but especially by the application of these rules to the breeding out of specific defects and breeding in especial perfections. This requires wakefulness and painstaking.

Science is human experience systematically arranged. No matter how difficult it is to report accurately the many similarities that chronicle one day's life, it is difficult for the most honest observer, as a witness in court, to give accurately the details of a human event. Honest witnesses do not see things alike. What one man sees another man overlooks. The science of improving stock depends in a great measure upon careful observation of the lives, habits, and manners of various animals, and the honest chronicling of biographies of these animals. A pedigree of an animal is simply an honest record of its descent or breeding. The historian of the human

family has difficulty to keep the accurate record of the genealogy of a certain descent. The tracing here often is largely through the male side, while in cattle and domestic animals pedigrees are traced largely through the female. Mr. Warfield, in his cattle breeding, gives an illustration of this in the pedigree of his stock bull, Baron Butterfly, as traced along feminine lines and then along the lines of the sire.

In seven generations 128 parts of blood are represented, in which are combined a number of strains running through thirty-eight of the Duchesses, twenty-five Oxford, sixteen Booth, and so on to a small ratio of one of each.

In these records a man's word must have the old fashioned custom of being as good as his name; but memory cannot be trusted in this, and the record must be made promptly and carefully in order to secure accuracy. In India it was the custom for centuries to keep wholly in the memory the sacred books of the Veda, the books which are, to the religionist of India, what our Bible is to the Christian. The youth that gave themselves to the study of theology committed these records to memory, thus proving the marvelous capacity of the human mind to carry extensive lore from generation to generation. Yet, in spite of all their devotion, error crept in and a number of perversions came about in the religious practices, a striking one among which was the matter of burning widows. It remained for a young college student who grew up in Europe many miles from the Indies, to produce the books of the Veda from the original manuscripts, after long study of the Sanscrit and those manuscripts. F. Max Muller translated these sacred books after a most careful, painstaking research of the original manuscripts in the libraries and archives of learned institutions of Europe, and for the first time the common people of India saw their own Bible produced from the original manuscripts by the hand of a barbarian. But the accuracy of the pen and the record was much completer than that of the memory, and it was found that there was no divine authority, as claimed in their Bible, for the burning of widows.

If man, in his religious devotions, can thus be misled in the face of the most painstaking study and effort of memory, we can readily see the importance of a record, made in black and white, as it has to do with the certainty of lineage in the domestic animal.

Such a person must be a man of integrity. Nature is intolerant of a lie. The irrevocable law of divine truth written in animals is unsurmountable by falsehood. This integrity must prompt man in all his observations of excellency and defect in the animals under his experiment and culture. Like the individual that would have the telling of good blood in his own veins, he must have a high standard of merit in accord with which to develop the individual or the body of his herd.

You are aware of the old methods of keeping books of pedigrees in Europe largely through the male lines, and the placing of a dash instead of the names of the dams upon the record books. Fraud and error, intentional and unintentional, crept in to an alarming extent. The names of the dams were placed in the place of the dashes. This led not only to the detection of fraud and error, but to the discovery of a more intelligent method of keeping a knowledge of the fountains of pure blood. And the requirement in America that cattle bred must be traced to an imported cow has led to the dam giving the family name and expressing a large amount of value of the families among herds.

We can readily see how a dishonest man cannot be an improved stock breeder. The moment suspicion rests upon his records the lines of worth in his animals are broken forever in the estimation of thoughtful judges. He will need to go into some other business. Upon the other hand what monuments to the integrity of man are the pure breeds that have been established in history, in cattle, in sheep, in swine, and in horses. Visitors from Connecticut to the United States senate used to stand in the gallery or doorway, and, pointing to Roger Sherman, would say: "There sits a man that never did a dishonest or mean thing in all his life." So the student of the pedigrees of pure breeds of domestic animals could point to the men who have been the promoters of these great lives that have made for the honor of the brain and the purity of the heart and the soundness of the judgment, and say: "Here are men whose honesty is embodied in the blood and the lives wrought out to great excellencies by the greatness of hands both human and divine."

On this question of integrity in stock breeding, Mr. John H. Wallace, founder of Wallace's American Trotting Register, gives emphatic and striking instances in which he tells of the breeding of the American race horse and the American trotting horse. He makes a remarkable statement that in the making of his register, at first, he assumed that a man of good reputation and intelligence, in sending him a lot of pedigrees for the catalogue, would have too much regard for his reputation to leave room for honest doubt; but he says that, in course of time, it began to dawn upon his understanding that there were many men in the world of unsullied reputation, as they were known in their business relations, who would stand up boldly for a fiction and a fraud in the pedigrees of their stock. It is but just to say that all of the men who uttered fraudulent pedigrees were not equally guilty, for in some cases the owners had been victimized by unscrupulous rogues from whom they had purchased. Others had been betrayed by the still more unscrupulous rogues whom they had employed to make up their catalogues, on the supposition that they were capable and honest. He soon evolved a rule by which he could detect the honesty and dishonesty of men. The one was, that when men had presented to them reasonable doubts with reference to the pedigree of an animal they would give immediate attention to finding out the facts in the matter, however, seriously they might reflect upon the worth of the animal involved. The other class he found to be those when such information would be presented to them would higgie and haggle regarding the matter, in the hope of covering up the defects in the pedigree.

An improved stock breeder must be a man of sympathy. Whoever walks a furlong without sympathy, walks to his own funeral dressed in a shroud. The matter of intelligence and kindness, especially in cattle and horses, is vital to the success of the work. The endowments of the domestic animals are instinctive. These instincts capacitate the animal to take on much of his surroundings. Rough treatment of a sire or dam soon begets viciousness. Sympathetic treatment seems to awake additional intelligence in a sire or dam among cattle or horses. We all know the law of nature in regard to the mother in the human race. How fright, ill-treatment, and personal disposition in pre-natal periods may mark the minds and character of the offspring forever. The same laws work throughout the animal

kingdom. There is a striking illustration of this in the history of the horse. It is conceded on all hands that the most intelligent and kindly dispositioned horse is the Arabian. The Arab makes the horse his constant companion by day and night. The family and the children pet him as we do a good dog. As a monument of the Arab's attachment to his horse, an anecdote has lived in history for years, as follows:

The whole stock of an Arab of the desert consisted of a mare. The French consul offered to purchase her in order to send her to his sovereign, Louis XIV. The Arab would have rejected the proposal, but he was miserably poor; he had scarcely a rag to cover him, and his wife and children were starving. The sum offered was great—it would provide him and his family with food for life. At length, and reluctantly, he yielded. He brought the mare to the dwelling of the consul, dismounted and stood leaning upon her, he looked now at the gold, and then at his favorite. "To whom is it," said he, "I am going to yield thee up? To Europeans, who will tie thee close,—who will beat thee,—who will render thee miserable. Return with me, my beauty, my jewel, and rejoice the hearts of my children." As he pronounced the last words, he sprang upon her back, and was presently out of sight."

But the Spanish and Italian pure bred horses are brutes of fearful dispositions. The French racer is said to be not far behind. The instincts of these horses have been perverted by the unkindness and brutality of their owners. To the credit of our American people the pure bred horse, as a rule, possesses kindness and gentleness. Some of the noblest animals in our history enjoyed the fondling of women and children and exhibited an intelligence and docility akin to that of the celebrated Arabian. The same rule holds good in the treatment of cattle. A good dispositioned animal can be spoiled in a few months by unsympathetic treatment. There is something in the blood of all animal kind, human and brute, that kicks back, hits back, hooks back, bites back, feels back, when you strike it unsympathetically without reason.

I remember when a boy there used to be upon the farm in a large flock of sheep, a ram of most violent tendencies. If he ever got a fair chance at a boy in a field or on a highway, it was either a stake and rider fence, or an everlasting butting. One of the terrors of early memory is the sight of a playmate being woolled around the road by that animal. I did not think much of the cause of it at the time, excepting that it was deviltry in wool and horns. But I now recall that some boys, yet in the flesh, used to poke sticks, fence stakes, at that animal through the cracks of the fence, and laugh at him madly and fruitlessly butting against the rails. Doubtless the heartlessness of those boys had much to do with the disposition of the animal. There is a great deal of Indian about a brute, so that when the old fellow had a chance he made for those same boys direct in a Kilpatrick charge.

Much of the nervous forces of an animal is determined by sympathy. You can nag an animal as you can a human being, into the most irritable temper and nervousness. The way in which some men go into a stall doing the ordinary chores of bedding and feeding will make animals jump in excitement, while these same animals greet with evident satisfaction the coming of some other person. There is an unwritten intelligible language

between man and brute. And many a dollar is wasted out of stock breeding by the methods of the stall. Emerson relates of Thoreau, the New England naturalist, that snakes coiled around his leg, that fishes swam into his hand and he took them out of the water; he pulled the woodchuck out of his hole by the tail, and took the foxes under his protection from the hunters. He would sit immovable until the bird, the reptile, or the fish, which had hurried from him would come back and resume not only its habits, but moved by curiosity, would come up to him and study him in turn. That was the spirit of man thoroughly in love with animate life, and it is the secret of good sense and good money that the stock breeder can well employ in the every day duties of his work.

Here comes in a consideration that is important in the question of breeding. There are animals in all breeds that are vicious by nature. Their unruliness has come of the heredity of the past. A wise breeder will avoid the using of such animals any great length of time as sires and dams. The sooner they are gotten off the farm, and out of merchantable use, the more money it would be for the owner and the better for the industry. The intelligence and disposition of an animal are not only valuable qualities in the pleasure of the handling, but also in the profits of the trade. A vicious animal has uncertainties about him, whether it be a horse in a race or a sire and his offspring among cattle. And the dam, too, for that matter.

A stock breeder must be a man of extensive experience. He must know animals by the eye, by the hand, and by the finger. Yet who can know anything with his eye in a day, or a year? Who can judge with his hand in skill in a year or two years? Who can judge for definite knowledge with his finger in these periods? It requires hundreds of observations and experiences to discipline the eye, the hand and the finger to accuracy. Murray says that no one ever knows a horse by looking at him; he must look through him as well. Our live stock exhibits and the butcher block exhibits accordant therewith demonstrate the necessity of this rule for the intelligent judgment of all animals. A man must not only know the rules of nature already discovered, but have wisdom enough to discover an excellent animal, in spite of pedigrees. Some of the most excellent animals of cattle, swine, and sheep grew up out of the concurrence of happy circumstances in the forest, or the field, and became thereafter the celebrated heads of famous strains of blood. Among horses we cannot tell to-day the origin of Dutchman, nor the Flora Temple, nor Ripton. Dutchman was found in a team drawing bricks, and Flora Temple behind a drover's wagon. But their dams, and their sires are unknown to history.

This obscurity calls for the sound sense of extensive experience to recognize worth when it is seen, and more loudly utters, upon the other hand, a warning against trusting to luck. We all remember in Iowa when Williams discovered Axtel and Allerton; many persons in Iowa went gambling after blood, using all kinds of obscure dams in the hope of a happy-go-lucky hit. The fruitlessness of such efforts has been proved over and over again, east and west, yet men of limited experiences have spent years and money in such a foolish trusting to luck. Williams has just returned from an extensive sale of stock amounting to \$39,000, and he says that he is only using dams whose descent for three or four generations shows them to be of more than ordinary merit at the start. As a consequence he finds it

very profitable to raise young animals for the market and sell them for others to develop. He banks on acquired supremacies and enhances their values by Allerton. Broad experience guards against many artificial weaknesses. Among horses, Ethan Allen is noted for his strong physical build, and yet many of his colts were of weak legs, because men did not pause to consider that when a sire is doing his best to put his nerve into a successful racing season, nature will not permit him to be normal in the propagating of his excellencies in his offspring at the same time. In all lines of animal husbandry men have lost thousands of dollars and injured the reputation of noble sires by overlooking undesirable artificial conditions of their animals.

The excellencies of animals, such as legs, lungs, stomach, form, toughness of bone, muscle, life, courage, intelligence and temperament must be the outcome of years of thought and study upon the part of the breeder. In all animals the question of the stomach is a profound study, to know whether it will support speed in the racer and the trotter, strength in the draft horse, make lard, ham and bacon in the swine, wool or mutton in the sheep, frame, milk or beef in cattle. Of equal importance are the lungs, for where blood is the principal thing for brutes, as wisdom is for man, there must be plenty of good air brought in contact with it. Even pure bred horses may be otherwise lacking, like imported Messenger, of ungainly form, Membrino, the son, seriously string-halted, Abdallah, his grandson, overgrown, angular and big-headed, ragged-hipped and with a rat tail; the lop-eared Melbournes of England and the son of the uncomely descendant of the imported Basha. But they had good lungs and stomach, and these in spite of their grievances of eye, made them useful and famous.

But form in any kind of an animal is desirable in these days and greatly enhances its selling price. Good form in cattle, sheep, swine and horses is pure gold in flesh. Ungainliness may not figure in a horse race but it does in the stock exhibit and at the day of sale. I doubt if an animal off in form has all the blood it needs.

The stock-breeder must be a man of untiring patience and painstaking. In animals there is a confliction of acquired and so-called natural traits. Desirable acquired traits may be transmitted for several generations and then make way for some stronger blood coursing the veins from remote ancestors. The founders of new traits and the improvers of established traits develop their ideas in their herds, through periods of prolonged trial and observation. General Guthrie, who is establishing the Polled Kansans, tells me that he began with a freak in his herds, and, through seven and eight generations, has developed a herd of polled cattle which have many of the combined characteristics of the Shorthorn and the Hereford. In doing this he has had to weed out with utmost care.

And there is the question of feeding that plays havoc with all novices. Underfeeding induces degeneration and stuntedness. Overfeeding introduces degeneracy of fat and sterility. Normal feeding avoids these extremes. But here art must save the breeder again. What would be overfeeding for some animals would be normal feeding for others, and what underfeeding for some would be normal for others, and what normal for some would be abnormal for still others. It is like teaching children at

school. A teacher that knows his business instructs according to individualities, rather than by classes. So that the successful breeder learns to do by doing, and that doing must not be repeated too many times before he learns.

Then the question of fecundity is of vital moment to his success. He must know the laws of nature to start with, but experience alone can fortify him for the successful management of his herd. It is a great question—to secure the advantages of nature wild and nature domesticated; how to secure the desirable conditions of an animal without fields and stalls and of one with the advantages of stalls and fences. In animals like the elephant and lion domestication tends to check their propagation. The lion traveling about in a show breeds better than in a zoological garden. As palaces and millionaire residences belittle the progeny of the human family, so fields and stalls need to be guarded against. The breeder of experience has discovered that he can make conditions of regularity, of food, and sympathy in the field and the stall, that the animal at large, as a rule, could not have, and that therefore he can get more and better progeny in the stalls and the fields than in nature wild. But the matter of air, of exercise, of feeding, and environment all bear vitally upon the productivity of his animals.

Many men fail in fooling around with impotent animals or semi-impotent. As the missing of crops by drouth and unfavorable seasons renders farming a failure in some quarters of the country, so semi-impotency makes stock breeding a failure. It is one thing to have an animal of good form and endowments, and quite another for that animal to possess the ability to perpetuate its good qualities. Some dams imprint their own natures upon their offspring with the certainty of the registered seal of a trade mark, while others seem to be mechanical receptacles with no power to transmit their own excellencies. Among sires this virtue is of notable value. Among cattle the bull Favorite proved not only the illustrious fountain of a celebrated strain of blood, but worth thousands and thousands of dollars by reason of his pre-potency. Among horses, Justin Morgan, the founder of the Morgan horse breed, is most noted in America. Murray, speaking of other noted horses and of him, says: "They were all royal, but none were kingly; not one built a throne and founded a nation whose population were abundant and of his children, but Justin Morgan. He stands the propagator of a mighty race, spread over all the land from Canada to California; and wherever you find a Morgan horse, whether in city or country, east or west, in north or south, you know that he is a Morgan horse. One glance is enough; color, shape, style, limbs, feet, head, all suggest the little horse from which he lineally descended—Justin Morgan." This illustration is not to provoke discussion of breeds, but to emphasize a most valuable quality of some animals, that they not only possess desirable traits and qualities, but pre-possess the power to perpetuate themselves in their offspring.

Improved stock breeding is largely a commercial enterprise and business methods should prevail. It is poor economy to head one's herd with an animal just because he is cheap on the one hand, or because he cost a fancy price, upon the other. With a good pedigree, good form and sterling qualities, a so-called big price may be the best of economy. Whatever kind of stock a man is handling the wisest policy is to build up from both sides, from the sources of the dams and from the sources of the sire. It is a waste

of money to expect the finest strain of blood to redeem to advantage any old animal, with more bones and hidethan blood. Before the steam engine was perfected they used to strike out the ones called "old coal eaters," and some of us know what that means with the furnaces and stoves in our houses. There are a great many of these old coal eaters on four legs. Here is a sheep producing four pounds of wool, or six or seven, while another one in the same pasture, and on the same food, will produce ten, twelve and fourteen pounds. There is a cow producing five, six and seven pounds of butter a week, while in the same environment there is another yielding ten or twelve pounds a week. Here is a swine that lives along at a poor dying rate, making big holes in the corn crib every month with but little improvement in its frame and ribs. There is an ill-blooded sire of a herd of cattle and a lot of poor blooded dams consuming more food than would animals tipping the market in the realm of the top notches; and the curse that has come upon the horse industry, through indiscreet breeding of all sizes without regard to race or previous condition of servitude, is still, in our ears, notorious. A man ought to draw his pencil on his animals 100 times to one of the knife and the ink of sale. It is said one dot of ink will make millions think, but a few scratches of a lead pencil will do more satisfactory thinking for an intelligent stock-breeder.

A man cannot carry a book in his pocket to the stall and make it go in theory. He must be a man of thoughtfulness, of not only experienced years, but experience—full years; not a man of eyes but a man that uses his eyes in his head and his head in his eyes. He must be an up-to-the-hand, up-to-the-eyes, up-to-the-ear, and up-to-the-years farmer. It seems an absurdity that geology would have any connection with live stock breeding, and yet the soundest testimony to permanency of types comes to a breeder out of the rocks of the field. If cold, dumb rocks are eloquent with the voices of nature to a man handling live stock, what could not an up-to-the-years breeder get out of nature, living, breathing, growing fat, strong, and resourceful under his very eyes, to the fill of his pockets and the joy of his soul.

The following committees were announced by the chairman:

COMMITTEE ON RESOLUTIONS.—S. B. Packard, W. J. Veneman, Chas. Eckles, Dan Sheehan and P. G. Henderson.

COMMITTEE ON LOCATION.—J. P. Manatrey, W. W. Vaughan, Geo. H. Dunkelberg, E. C. Bennett and Dr. Copestake.

COMMITTEE ON OFFICERS.—C. S. Barclay, F. D. Tomson, Henry Wallace, J. W. Wadsworth and R. J. Johnston.

CHAIRMAN: The next on the program is a paper by W. C. McNeil. Mr. McNeil read the following paper:

"THE PUBLIC SALE."

BY W. C. McNEIL, POSTVILLE.

They were all Romans—but divided and known as Plebeians and Patri-cians. So among the Iowa Improved Stock Breeders there is the breeder

of high grade stock and the breeder of pure bred stock, of which the former compose the larger audience. Men of national reputation, breeders and auctioneers, have addressed themselves to the subject of the public sale of pedigreed stock in a manner so masterly and complete that I will confine my paper to the Plebeians of the live stock profession.

Individual human effort in all callings must at some future period cease and the farmer who has started down the incline of life is looking forward to the time when he will unburden himself from the cares of the farm and by a public sale strike the balance sheet.

It is not necessarily his last appearance upon the stage but from that day hence he loses touch with his neighbors who still pursue the activities of the farm and bids farewell to the kindly animals, the recollection of whose ancestors brings to memory his vigorous manhood and early struggles.

"All is well that ends well." And so this last act of the play when he has invited his friends and neighbors in to invoice his personal assets and parcel them out to those whose bids are last proclaimed, should be his best act, businesslike in its appointments, generous in its hospitality and cheerful in its results.

The farm sale should be well considered and not decided upon as to an early date on the impulse of the moment.

Time, preparation and systematic arrangements are requisites of a successful farm sale. The farm animals should be brought into sale form by liberal feeding and kindly handling. "As charity covers a multitude of sins," so fat and condition, cover the defects and angularity of animals.

The blind man, when told of the beautiful horse on the street, said, "It is a fat horse." At the time of sale each animal should be under the restraint of the enclosure or halter. Selling an animal on the run means less price every time.

Hogs for breeding purposes should be separated in small pens, from one to three in each pen. Dairy cattle should be sold singly and warranted to have good udders. Young cattle parceled as to age and sex. Feeding cattle as to uniformity of size and quality. Arrange the farm machinery methodically so as to reach in selling the best of the kind first. Have every part and attachment, whether shovel, sickle or canvas, with the machine to which it belongs. In the sale of grain give as many pounds for the bushel as your nearest market place exacts, for a less number of pounds to the bushel or a higher rate of interest than prevails in the locality will be regarded as an arbitrary condition imposed and will lose you bidders.

The next important step is to get your sale before the public, and to do this you must subsidize the printer. Advertise in all the local papers and have your bills printed upon good, tough paper or cardboard. Make them good size, attractive and in keeping with the offering at your sale.

Particularize and especially the animals of breeding and the articles of merit. If the cows are fresh milkers, say so. If the machinery is new, say so. If the horse has weight or speed, say how much. Claim your date early and post your bills—at every cross road, bill board and postoffice in the vicinity about ten days before the sale. Personally superintend the posting, talk your sale and interest your neighbors and get them out. Neither your popularity, the ability of the auctioneer or the quality of your goods can make the sale a success. You must have the crowd.

Having proceeded thus far, employ as auctioneer a man of character and of a good reputation in the territory of his sales. A man of such general knowledge of the farm that he knows the quality and value of the thing offered, quick to discern, a judge of men, a good bump of mirthfulness, and of ready speech to urge the lagging bidder.

Now put the sale absolutely into his hands, for the experience of the auctioneer, such as above described, will be of greater value than the disconnected knowledge you possess of an auction sale.

Your place from start to finish should be at his elbow to answer the questions of bidders, direct the attendants who bring out the stock, and see that nothing is omitted from the sale.

Let the auctioneer do the talking, as your praise of the thing offered will be regarded by bidders as the testimony of an interested witness and may have the undesired effect. Answer all inquiries promptly, intelligently and honestly relating to the animal or article then on the block, but excuse yourself from the questioner who wishes to learn the history of the antecedent of his purchase. Your time intelligently given to the business of the sale day will bring you a good dividend. Having secured a clerk familiar with the names, faces and financial standing of purchasers you will then relieve the sale of many interruptions and yourself the unpleasant duty of being the financial man of the occasion.

He will make the settlements and secure better notes without your aid or interference. Have your notes made payable at your bank; the cost of collection will be small and the punctuality of payment will more than compensate the bank charges.

The farm sales in a given territory aggregate during the year a large sum of money and are entitled to a more comprehensive paper than I have been able to prepare. The old primitive methods are giving way and in their place are now seen the modern arrangements of the fine stock sale so far as applicable. The disadvantage of the outdoor inclement weather can be ameliorated by a good lunch put up in individual packages and accompanied by warm coffee.

Each animal or article cannot be brought into a sale ring, but intelligent management can bring the sale into small compass. The bidders and buyers when once bunched and giving attention to the auctioneer should not be jumped from place to place and given opportunity to drop into groups, talk politics and neglect the sale.

Permit no eating booths, beer stands or fakir games upon the premises. It is a business day at the farm and one thing at a time is enough. Preserve your equilibrium whether the prices paid are remunerative or not. Countenance no by-bidding and exercise your right to one bid with great prudence and care. Strive to avoid the incidents and contingencies that attract the attention of bidders from the auctioneer and necessarily injure the sale.

WALLACE: Is it better to have your sale notes without interest if paid when due, and if not, so much interest from date? or to have them bear, say, 6 per cent interest from date?

MCNEIL: In my judgment it is better for the seller to have them draw interest.

Chair called for Col. Welcome Mowry.

COLONEL MOWRY: I always supposed that at the first meeting a man was present he should be allowed to be silent. I supposed for this reason, I was to remain quiet. I am familiar with this subject, having followed it for a great many years, and agree with everything said in that paper. I also agree that the sale notes should draw interest. It is a more honorable way to conduct sales than to make your notes without interest but to draw interest if not paid at maturity. There might something happen to a man so he could not get the money just when the note was due and yet could pay for the time he held it after maturity. Now in arranging a stock sale a great many things should be taken into consideration. I was much pleased with what was said about selecting an auctioneer. As a rule, an auctioneer should be a man of truth and veracity, and one that the people have confidence in, or else he would not be a success. What was said in the paper about having the machinery out where it can be seen, is also of great advantage. I have conducted sales where I had to go from one corner to another and the machinery was half hid from view, while if it could have been rolled out, we could have gotten all it was worth. I do not know why I was called out to give my experience in this kind of a meeting.

NORTON: The custom in thoroughbred stock sales is to sell for cash or sixty or ninety days, as the time agreed upon. In our town and two or three points in our county, we have what we call our monthly sales, where there is seating for two or three hundred people under cover, and we sell horses, sheep and cattle and call them monthly sales. They are not always held every month during the busy season. If you try this, you will find it a good plan. If you look over your farm and find you have not sufficient horses or machinery to make a sale, you can put them in these monthly combination sales and pay a commission of about 3 per cent to the secretary, and he pays for advertising and posting bills, etc., and we find it very profitable and satisfactory.

Adjourned to the Agricultural hall, where Professor Craig gave an interesting talk upon stock judging, using horses illustrating the different types as subjects from which he talked.

After this address the chair called for a paper by Hon. L. S. Coffin.

Mr. Coffin read the following paper:

THE EDUCATION OF THE IOWA FARM BOY AND THE FARM GIRL.

BY HON. L. S. COFFIN, FORT DODGE.

Iowa is most emphatically an agricultural state. It is a state of farmers. I know of no state in this broad union which can lay claim to any one specialty or industry, no matter what—be it manufacturing, mining, commercial or lumbering—with such distinct and exact truthfulness, as true to name, as can this state to the name of an agricultural state. Farming here overshadows all other industries. While we have more or less of manufacturing in some of our larger towns, still the capital employed in such industries is as but a drop in the bucket to that in farming, and the number of our inhabitants engaged in such manufactories is but a very small part of Iowa's population.

Hence, accepting the premises as correct, we at once see the vast importance of the subject assigned me, viz.: "The Education of the Iowa Farm Boy and the Farm Girl." "Really, Mr. President, I shrink from the task, and as I catch a slight glimpse of the wide field and the enormous harvest that is sure to be, I cry out, in spirit, "Who is sufficient for these things?" and, taking the information of the Great Teacher, I pray with all my soul to the Lord of the harvest to send, not reapers only, but teachers, wise and earnest. To-day Iowa, our own proud Iowa, is, in more senses than one, at once the pride and envy of every other state. Iowa stands high.

In the great marts of the world, Iowa is known as the leading producing state of the substantial means of subsistence. At home and abroad she is acknowledged by many as a state without a peer for farm products. Her people take no second place, either, for intelligence, morality, sobriety, energy, enterprise, and thrift. No state can show such a large percentage of her population as owners of good and comfortable homes. In a great national convention not long since were gathered scholars, editors, statesmen, presidents of colleges and universities, and thinking men from every part of the union, at Saratoga. The chairman of a committee of twenty-one, Chancellor McCracken, of New York, in remarks preliminary to making the report of his committee, speaking of our duty to the inhabitants of the islands of the distant sea which were to be our proteges, said if we, as a nation, should follow the course outlined in the resolutions he was to report from his committee of twenty-one, then these islands would not follow sham, when only one in eight or ten could read, but would pattern after some of our American states, such as Iowa, where a case of illiteracy was as rare as a case of yellow fever, and as much dreaded by the better and larger class of its citizens.

Here was the voluntary praise of a leading and distinguished citizen of another and great state—yes, even the Empire state.

Well might the poet again write, and truthfully, of Iowa:

Grandly in her ample lap,
Are annual harvests heaped sublime;
Earth bears not on her proudest map
A fatter soil, a fairer clime.
Her hands are strong, her fame secure,
Her praise on lips whose praise is dear
Her heart, her hope, and purpose pure,
And God in all her landscapes near.

Thus much to show what the world thinks of us, to enforce what I may say of the importance of maintaining this high standing, so that will always be true these words: "Her fame secure, and her praise on lips whose praise is dear."

The vast majority of the boys and girls in Iowa to-day are on farms. The very best place, too, to make grand men and noble women of the very boys and girls.

But between the boy and the grand man, between the girl and the noble woman, lie critical years. If it is true that the boy is father to the grand man, and the girl is mother to the noble woman, these results are not by accident. The growth into grand men and noble women must be reinforced and directed by the generation that precedes them.

The honor and high destiny of Iowa rests not so much with the boys and girls on the farms in Iowa to-day as it does with the farmer fathers and farmer mothers of these boys and girls. You and I are holding the reins just now, and as we drive to-day so these boys and girls will both drive and ride by and by.

Do we as farmers realize as we should, not only our responsibility for the education of the farmers' children, but our power and our right which comes from our power to do this? We are in the majority. We can, if we will, control legislation. Legislation controls appropriations of the taxes you and I pay. While I dislike to even seem to array one class of citizens against another, still it is only seeming, and not real, when we farmers look facts squarely in the face—then use them. We must look after our own highest interests, or they will be neglected.

All intelligent men admit that in a farming state like ours the farmers pay the larger amount of the taxes, and more than their share, too. Personal property, that so largely escapes the assessor in towns and cities cannot be hidden away from the assessor in rural districts. We can't hide our acres, we can't hide our steers in the feeding lot, nor the hogs that follow them. The assessor counts them if he feels we are a little forgetful. Now, then, we have the majority of the boys and girls, we pay the majority of the money, and we have the majority of the votes. Let us begin to day to put in practice that old and much used slang expression, "You pays yer money an' you takes yer choice." I am ready here and now to say with quite a full realization of what may be showered down upon my head by those who are not on the farm, but my choice for the money I "pays" is to have it go, by far the larger part, for the education of the Iowa farm boy and the farm girl. As a rule, intelligence is the key to success. Our best farm writers are constantly telling us to mix brains with our fertilizers on

the farm. Unless these brains are trained and enlightened one might in very deed let his brains go into the soil for all the good they might be as an intelligent factor in farming. I go further than just paying my money and letting others choose for me. I will put my own choice into practical shape—upon it will count—before I “pays” my money. No man shall have my vote for legislative work and power that has not brains enough and honesty enough to recognize the overwhelming power and rights of the farmers of Iowa. I say it, and I say it intelligently and boldly, the leading school in Iowa should and must and shall be, God and my brother farmers helping me, the State College of Agriculture and Mechanic Arts. This grand school right here that welcomes the stock breeders’ annual meeting is the farmers’ school. I am proud of it, but I am not yet satisfied with it. Here should be accommodations for 2,000 students, at least, and it is for us, the farmers, to say the word and the appropriation will be made to furnish the accommodations. Once let the mere politicians know that we, the farmers, are a unit on this matter, and everyone will tumble over others to take off his hat to the farmer, and do his bidding.

The trouble is, we are cowards. While we may need lawyers, we need something more than these. When we farmers learn not to go to law, but to settle our differences by arbitration among ourselves, we shall find very little use for law or lawyers. Neither shall we need such a great array of doctors as are annually sent out from our universities, when we and our children learn more of the laws of our physical nature and the laws of health as taught by schools like this. We would not, by direct word or even intimation, say anything derogatory to our great State University, which the farmers of this state freely helped to build up by the taxes we have paid. Iowa needs all her great institutions of learning, and more than we now have. But, as we farmers of the state are in reality footing the greater part of the bills, and as we want to send some of our children to the State University, we think we have a right to have a voice as to the moral influence that shall surround our boys and girls while at school there. Hence, we expect of our coming legislature that a law be enacted making it unlawful for intoxicating liquors to be sold as a beverage inside of a five-mile limit of the university, and that unless the good citizens of Iowa City see that the saloons are banished from their town, we shall ask of and instruct the representatives of our several districts to refuse appropriating to the university.

I, for one, honor and respect an able, learned, honest lawyer. I love and admire a tender-hearted, conscientious and skilled doctor. But Iowa needs more intelligent farmers, a thousandfold more, than she does either lawyers or doctors, and, God helping me, I will do what I can to change the tide and get it flowing where it rightfully belongs. I say it again, and I mean it, with a terrible emphasis, and I think I have the majority of our farmers with me, this college must maintain a leading rank among the schools of Iowa. It must have most liberal appropriations, and we have the moral and legal right to demand this, for we are the ones who “pay the freight.”

Farmers of Iowa, what say you? Shall Iowa still stand at the head? Shall the present or future farm boy be selected to be the second man in influence in the council chambers of the greatest nation on earth, as our own brave Dave Henderson—a once Iowa farmer boy—is to-day? This great

responsibility is upon you and me. The only safety of our state—yes, the only safety of this mighty nation—is the proper education of the farm boy and the farm girl.

It is admitted everywhere, in town, in city, and in country, by those whose opinion is of worth, that the farmers of the nation are the great sheet anchors for the safety and stability of our government. Shall they, then, not be educated? We can get along if there are no lawyers; we can manage to live a few years if the doctors fail, but the farmer cannot be spared. Drop him out and the world dies. Shall the most important factor in the whole fabric of society and existence be ignored and his training and education be left to chance and haphazard?

You see, I am in dead earnest. While I have always been in favor of this, and like schools, for farmer boys and girls, I not long since received a new baptism and inspiration in this direction. Shall I tell you how and why? I saw that picture of the “man with a hoe.” “Great God,” I cried, “is that the penalty thou metest out for lack of educating the farm boy and girl? Are my children’s children to come to that unless furnished with opportunities for education?”

Oh, how my blood did boil with hot indignation as I realized the damnable insult of the artist to link that “thing,” that horrible “thing” with a hoe, to the farm, and to farmers by that hoe. That hoe belongs to the farm, but that awful “thing” that held it is not and must never be found on Iowa farms.

How long, oh, how long, farmers of Iowa, shall we bow down to party and boss rule? Our eyes blinded, not only to our own individual interests, the highest good of the Iowa farm boy and farm girl, but blinded also to the highest good of our state; yes, and more blinded to the highest patriotism, the best good of our nation.

Think of it, and let the thought crimson our cheeks with shame. The estimate is that, take it the nation over, about 70 per cent of the population are on farms. If that is true of the nation at large, what must be the proportion here in Iowa, an agricultural state? I have not the figures to show the exact percentage of our farming population, but it cannot be less than eighty, if not ninety. But, put it at eighty. That is, four out of every five of the inhabitants of Iowa are on the farm. One in town or city to four on the farm. Now put on your thinking caps for a little while and let me lead your thoughts. What does the one city chap do with the four farmers? He selects the man he wants to be in office and then he leads his four farmers up to the polls and votes them for his man. Rank bossism. That man goes to Des Moines and votes away the taxes his four farmer men pay, just as this one town chap directs, and we dare not say our souls are our own. That, again, is bossism. This legislator we were led up to the polls to elect piles upon us more taxes and still we do not kick, for this city chap tells us that is what we elected him to do. That, again, is bossism. Do any of us have any idea of the amount of unnecessary taxes which have been thus heaped upon the farmers’ backs by the manipulation of this one-fifth part of our population, this city chap, this boss we all love and fear?

Let me give you a few pointers. We have to-day in our poorhouses, our reform schools, institution for the feeble-minded, insane asylums and penitentiaries, over 6,000 of our citizens, sent there because of the liquor traffic. This is bossism. I take only those who were led to crime, insanity

and idiocy by rum, who would to-day, in all probability, be good, useful citizens had we no saloons nor saloon drug stores. You and I are taxed to the tune of over \$2,000,000 every biennial period that we should not be taxed for, because that one chap dominates four of us farmers. That is boss rule. The town fellow makes you and me pay the bills. That is bossism, you know. But this is only a part. What would those 6,000 persons in these institutions be worth to the state if they had not been led into crime, insanity and pauperism by liquor? The courts make \$5,000 a basis for a man's worth as a producing factor. Here, then, in addition to over \$2,000,000 in taxes, you and I pay to maintain these unfortunates, \$30,000,000, an investment entirely blotted out.

Still, with all this staring us in the face, we let this one town chap lead by the nose every one of us four farmers to do his dirty work, we so love to be bossed. But to come to the milk of the cocoanut I wish to crack. Suppose, for once, we just rise up in our might and power as we really have it, if we will only use it, and say that, by the Eternal, this thing must stop, and we will turn the tide. This enormous sum which we pay in these totally unnecessary taxes shall be turned to institutions of learning like this, for the education of the Iowa farm boy and the farm girl.

Oh, the future of this already grand state, when once its farmers assert themselves and banish forever from its borders these hell-holes that make criminals and lunatics and idiots and paupers of the farmers' children, and, instead, send them to the highest possible institution of learning, which we could easily sustain when once the awful burden and cost of the liquor traffic is turned into the educational channels. Farmers, of Iowa, again I appeal to you. You have the power—will you rise up in the majesty of your numbers and show the world that we are here in Iowa for something higher and grander than to raise corn and fat hogs and steers—to be the banner state in the production of all these things, and also to produce the grandest men and the noblest women the world has yet seen out of the Iowa arm boy and farm girl.

Oh, let there be one state, and let that be our own Iowa, where its intelligent farmers have arisen in their might and have stamped boss rule down into the depth of hades, never more to be resurrected to curse us again as now!

Shame, oh shame, on us, farmers of Iowa! that have so supinely allowed ourselves to be led around by bossism until the blood of thousands of the citizens of this state stain the skirts of our garments.

Hear ye not the shriek of that poor maniac mother in yonder asylum, crazed by grief because her darling son in drunken rage killed her daughter—his sister? Made drunk from the rum you and I allowed to be sold in some cursed mulct saloon, or worse, drug store. "Woe, woe, unto him who putteth the bottle to his neighbor's lips." You and I have done this. Instead of sending our boys and girls to schools like this, we, by bowing down to bossism, have been sending them by scores to insane asylums, penitentiaries, etc., at a cost many times more than to send them here to school.

Oh, for a revival of the spirit of 1776! "We will have no masters." We, the people, are the rulers. Every man in an official position, from the road boss to the president, is our servant, and we are the masters.

Down with the bosses! Up with the people! Then will the farmers of Iowa educate the farm boy and the farm girl.

Adjourned until 7:30 P. M.

WEDNESDAY EVENING, 7:30 O'CLOCK.

Meeting called to order at 7:30 by the president.

CHAIR: We have a topic left over from this afternoon and we will begin with that to-night. You all know what the gentleman from Jefferson has done for the swine industry and how he has helped to improve the stock breeding interests of Iowa. He has honored us with some thoughts for the occasion and we will now have his paper.

The following paper was read by D. L. Howard:

PRINCIPAL POINTS IN THE CARE AND MANAGEMENT OF SWINE.

BY D. L. HOWARD, JEFFERSON.

In all the departments of life—in the advancement of science, in the evolution of man and matter, two conditions are especially noticeable.

First—What might be termed the "Mount of Transfiguration," wherein we seem to sail on easy seas. Prospects are bright, business is rushing, prices are high, profits are great, and everything points to greater prosperity. We see nothing before us but sunshine and pleasant, refreshing showers. I think it is a blessing we do not appreciate probably as much as we should—this something in our make-up that makes it possible for us to get upon the heights. 'Tis then, however, that our selfish human nature begins to develop. It is then and there that we are ready to build a "Tabernacle to our Idols."

Second—The darkness of the shadows of the valley—when comes gluttoned business interests. Prospects are dark, business is stagnant, prices are low and profits turn to losses, the clouds are heavy and the blackness of the whirlwind of ruin seems about to engulf us. It is then, also, that we are blessed with memory and hope—memory of the brightness we have seen, and hope for the future.

The American people are not so constituted as to permit adversity to cause them to sit with folded hands. But the lights and shadows—the prosperity and adversity—make us a stronger people and better men.

It seems but a short time, and really is but a few years since the interest manifested in the Improved Stock Breeders' Association of Iowa was very light—when it took drumming and punching and coaxing and urging to get out enough to one of these meetings to drown the echoes in the building in which it was held.

Then is when the price of a calf would but little more than pay for the feed its dam would eat; when the price of the colt would not cover the cost of feed three years, let alone five, when he would be old enough for market. Still, there were some who, remembering the lights of the past, staid by the cow and took care that she could chew her cud in comfort during the storms of winter and the heat of summer; and they patted the old mare on the neck even though her foal brought but \$30 while the bicycle brought \$100. And to-day this "bike," although it was said it had relegated the horse to a dream of the past, is bringing the \$30 and the old mare's foal the \$100.

I suppose you wonder what all this has to do with my subject. Well, I do not know myself, and when I was asked to prepare a paper on "The Principal Points in the Care and Management of Swine," I felt as though I hardly knew what to say, and it seemed to me that with the enthusiasm manifested among the cattlemen the hog man would feel a little lonesome at the present time, and I wondered if this gathering would really care a fig whether hog was mentioned at all or not. So my mind went wandering over the past and I could not refrain from putting down a few of my thoughts.

There is one condition that always exists when any line of stock brings a high figure, and that is that every breeder is seeking to introduce into his herd the very best blood his means will afford. So the high prices that may obtain for a period assists the breeder and feeder to stem more easily the tides of adversity and to be the better equipped to take advantage of the good prices when they come again, by having animals that are better money makers in the feed yard and more desirable purchases in the sale ring.

The swine industry is just now recovering from a serious condition of constipation. I think there is no class of men that are more enthusiastic than the swine raisers—and it takes a good deal to discourage them, but unprofitable prices, with the depletion of the herd occasionally with disease, will do it. Hence you will see why I should wonder whether or not the grunt of the hog could be heard here among the enthusiastic bellowing of the cow and the joyous neighing of the old mare. But he grunts just the same, and with the rising ground in front of him the satisfaction of the grunt portends a brighter outlook and an altitude where the microbes of a business disintegration are not so plenty. Right here let me quote from an interesting article recently from the pen of D. P. McCracken. He says: "The hog insure to return better than his cost; his is the only meat product that improves by curing, and goes without roasting, tinning or hermetically sealing, utterly defying the microbes and the elements. The war of the rebellion was put down on coffee, crackers and pork, and no department heads were sawn off on account of the particular condition of the pork, although there should doubtless have been more system in the packing and labeling, the more readily to have distinguished between simple bosom and bosom *a la* mammary gland."

Much has been written and said in detail on the care of the hog, from the care of the boar and sow, to the care of the newly farrowed pig until the time he or she is at the head of some herd or is the mother of a lively squealing family. So we will dispense with detail not only for the above

reason, but also for the reason that this gathering is made up of men too well acquainted with detail for me to add to their knowledge.

There are to my mind three principal points in the management of swine, namely: Breeding, individuality and intelligent care.

Breeding.—In the selection of a boar or a sow as an addition to a herd as much care should be exercised as though you were selecting a bull to head your herd of cows, or a stallion to raise a colt from.

There are certain blood lines that has made the hog famous. Certain lines of breeding has entered into the make-up of the great hogs and herds of the day, and it is as safe to stay by these breeding lines, whether for the show ring or feed yard, as it is to stay by certain lines of breeding in cattle for certain results. The feeder of hogs for the block may ask what has this to do with my business. It has a great deal.

Breeding has developed the hog to less shrinkage from live weight to the block, and has also developed his growth to produce a larger amount of the higher priced cuts than formerly. Hence adding to the value of the live weight, and the fact that certain lines of breeding have been followed closely by the best breeders of swine for the last 15 years is why you have a feeding animal that returns the largest percentage of profit for the feed consumed.

Individuality.—In the selection of a sire or a dam it is just as essential to secure a good individual as to get the desired blood lines. If we are seeking to secure a sire by correspondence we necessarily study the breeding first. If a personal selection, we are attracted by the individual first and look into the breeding afterwards. To the breeder of registered swine the qualities of the animal must be considered in connection with the blood lines he is after, and it does not matter how good the animal, if he is not bred to suit the buyer's purpose, he is rejected. The raiser of hogs for the feed yard does not always use this care in selecting sires for his herd of hogs. He will scour the country over for a bull to top his herd of grade cows, and will get what he wants even if he pays \$150 to \$300 for a bull calf 12 to 14 months of age. Who says he is not wise in this? Why does he do it? Because he makes money by so doing. This same party, though, will think he cannot afford to pay over \$15 for a boar pig 8 months of age for service in his sow herd, and will actually buy a pig not worth \$8 and pay \$15 for it, or what is worse, swap with a neighbor for some cross-bred conglomeration of tailings rather than to pay \$25 to \$40 for an animal that actually has individual quality. The get of the first will bear no resemblance to one another. While the pig with quality and breeding will sire a uniformity of style and conformation, better feeders and better sellers.

A car lot of steers, uniform in style, size and markings, with broad backs, heavy quarters and deep sides, will outsell a mixed lot, will they not? So it is with hogs. A car lot of even, compact, well-quartered, well-arched, broad-backed, deep-bodied hogs will outsell any mixed mess of the descendants of the cross-bred scrub. I do not wonder that Moses despised the hog if he was anything like a bunch one occasionally sees in lots on some farms.

Intelligent care.—The care of the hog has as much to do in growth and profit as any other one thing, and I am not right sure but it embraces about as much as all else combined. The very best of care will not make an extra

good animal out of the scrub; but this kind of care will be appreciated by the well bred animal and will return a neat profit to the feeder. It is a well known fact that in the evolution of the hog, as well as other animals, as much has depended on intelligent care and feeding as in mating.

It is as necessary to keep a boar strong and vigorous by sufficient exercise and proper feeding as it is to have a horse well legged up and strong in wind when you want to make a hard drive. It is also just as necessary that the sow should have plenty of exercise, a well balanced food and comfortable quarters. The trouble with sows usually after they are two years old is that they will not take exercise enough unless they are compelled to. To overcome this have the sleeping quarters some distance from your feeding place. The growth of the pig from farrowing time up depends largely on the condition of the dam. If her condition is such that the pig gets a good start in life it is much easier to grow a profitable hog. If for some reason the mother's milk does not agree with the pig, or she does not give sufficient to develop a healthy growth in the pig you are up against a harder proposition. One hardly ever finds two sows that require just the same amount and kind of feed to produce the right flow of milk. So, then, to get a nice, even growth in a bunch of pigs while depending largely on the dam, requires care, watchfulness and vigilance. It has always seemed easier to me to feed a bunch of pigs after they could do without the dam than before. The trouble with many feeders is that they feed by spurts. That is, they are diligent for awhile, but by and by they get careless and do not seem to realize that as the frame of the animal grows the amount of the feed should increase. The man that grudgingly measures out the feed to his pigs will never raise a profitable hog. I was on a farm recently where the owner had ninety head of spring pigs that would average 200 pounds or better. These animals were well bred and well cared for. Just a mile from this farmer I was on another farm. Here were about sixty head of spring pigs. This farmer bred to anything, just so he could get it cheap, and the pigs did not look as though they had ever had a square meal, and pretty nearly every color you could think of was represented. There was not one in the bunch that I could not have taken by the hind legs and tossed sixteen feet from me. I do not know what they would weigh, but it seemed to me that one of them would hardly move the beam of the ordinary farm scale. This was to me a practical object lesson of intelligent care and carelessness.

With all our care, however, we make many mistakes, mistakes in mating and mistakes in feed and care. But in spite of mistakes, where vigilance has been the watchword improvements have come.

If a feeder starts out to feed a bunch of steers for the market for six months, he watches carefully every day. He does not expect to feed carefully for a week and then let the steers shift for themselves the next week. No, he watches each day's feed, knowing well that the care of the steer each day returns a profit or a loss.

So with the same care given to the pig as he grows from day to day will come the profit, just as surely as the feeder uses his intelligence in connection with his feed.

So then in the selection of an animal see that he is well bred and individually a good animal, and of the right conformation if possible to mate with the balance of your herd.

In the purchase of an animal do not let a dollar close to your nose, attract your attention so that you cannot see a twenty-dollar gold piece ten feet away. Be constant in care, using your mind in connection with your muscle and the hog will return you a profit.

CHAIRMAN: This paper is now open for discussion. What is your pleasure?

TOYNE: What is the best breed of hogs for the general farmer to use?

HOWARD: I do not know that I can answer that question and say what is the best. Some can do better with one kind and some with another. The most profitable breed is the one you like and can raise the best. I believe Brother Toyne knows that I am a Poland China breeder.

HAKES: I would like to ask if those Tamworths Curtiss showed us here on the farm were the hogs Moses had?

CURTISS: There have been a good many questions asked about Tamworth hogs that I can not answer, but they are here to speak for themselves. They are here on their merits and we have been studying them. You may think sometimes that we are slow with our experiments, but we want to take time to publish substantiated results. I think we will have results that will be of interest to you. They will help the farmers to settle these questions. There is merit in all these good breeds of hogs, and all if properly handled will make money. It is generally conceded that there is more of a demand for leaner pork product than there was some years ago. I do not mean that we are getting to the Tamworths, but I think that they have merit. We have never sent out one that did not give good results so far as my knowledge goes. I would like you to look them over. I think we have some that would interest you.

BARCLAY: I have been trying to find out if Professor Curtiss knows which side of the fence these hogs are on. I have not been able to get him to answer that question.

WALLACE: Is it not true that we have been getting the bacon hogs in the bacon belt and the lard hogs in the lard belt? In Minnesota and Wisconsin and the countries where they can not grow corn, they feed on oats, skim milk and clover and it develops a hog with more lean meat. I was up in Minnesota last summer and went out to a farm where they were feeding hogs on peas. They were Poland Chinas. If you would take the Poland China hair off and put Tamworth hair on, they would do for Tamworths. I noticed a good litter of

Tamworths here last summer. One of them was taking on fat forming proportions and if put in a Jersey Red pen, I believe you would think it was a Jersey Red. After we have kept the Tamworths here awhile if you take the hair off I do not believe even Howard could tell which was a Jersey Red and which was a Poland China. The environment fixes everything. I believe this bacon hog question will settle itself. The climate will ordain. In the latitude of Minnesota and Wisconsin we will find the bacon hog. Down here we will find the lard hog. I do not know what hog we will find in the south. I saw a great many hogs when I was down in Texas and they were the meanest hogs I ever saw. Some of them were Jersey Red. The next meanest were the Poland China. I went out to look at a farm one day when I was there and I found the man of the house had gone fishing. While I was there I thought I would get acquainted with the women. I like to talk with ladies when there are no men about. I noticed a dog there and I asked one of the women if it was a hound dog. She said it was. I asked if it chased wild hogs. She said, "No, the hogs chased the dog." That when they wanted any pork one of the men got on a horse and took the dog and set it on a hog. The hog would take after the dog and run it until it got into the yard and then they would shut the gate. They made the pens so the dogs could jump out but the hogs could not.

CURTISS: Mr. Wallace has opened up a question that we have some records on and I think they will upset some of his theories, in reference to this bacon belt. We have had a number of special agricultural belts in this country. The first dairy belt was east of the Allegheny. It has changed until now the dairy belt is all over Iowa. Then we have had the blue grass belt. We are continually breaking over these lines. The corn belt will be an important factor in fixing the bacon belt. I saw this summer hundreds of thousands of pounds of American pork grown from the corn belt states shipped to England and then to Dublin. It is American bacon and it is carried there and then brought back to be sold as Irish bacon. I was in Canada not long ago at the fat stock show. They made quite a study of the bacon hog there and there were packers there from Toronto. They had some hogs killed and hung up and the packers talked to the farmers. They demonstrated the fact that the best bacon was made from a ration consisting of one-half corn. There is no better feed in the world for bacon

products than corn, particularly when combined with the products of the dairy. A year ago last October we took a Tamworth fed on the same ration that our Poland Chinas were fed, that is one-half corn. We sent this hog to Omaha and won first for bacon hog. I think we can produce a good bacon hog here in the corn belt.

WALLACE: Can we do this as cheap as we can produce the lard hog?

CURTISS: It does not make much difference in the expense. The poorest breeds have little advantage, considered from the standpoint of the amount of feed. The Poland China has little, if any, over the Tamworth. As far as we have investigated, we have come to the conclusion that the bacon hog is produced at about the same expense.

WALLACE: Don't you think the lard hog will be raised here and the bacon hog in Canada?

CURTISS: The Canadians have made a reputation on their bacon; 90 per cent of it has not been made from peas; the Canadians are not filling the demand. Iowa has twice as many hogs as the Dominion of Canada. They are making headway over there, but they cannot supply the foreign trade in bacon. We are sending it there; we are not getting as much for it as we might.

LEFEBURE: If a hog is lean, is it not more free from disease?

CURTISS: I think it is true that they have more vitality. I do not believe that there is such a thing as a cholera-proof hog. I have never discovered any.

CHAIR: We will now have music by the mandolin club.

CHAIR: We have with us to-night a farmer from Illinois who always knows what he is talking about; we will now listen to Mr. A. M. Caldwell. The subject is, "The Tendency of the Boys on the Farm to Go to the City, and What Shall the Farmers Do About It?"

CALDWELL: Truly music hath powers to charm the ear. I have listened with pleasure to the music to-night, and in connection with my topic it takes me back to days of my childhood, when we had no such music in the farm home. But I shall not love my mother less because she did not play; neither shall I love my daughter more because she does. This is a day of purposes in all things. Just why our secretary should sandwich the boy between the hogs and the dogs, I do not understand. I do not think he meant any disrespect to the dog, for

I am sure there are those here who love the dog. I do not think he meant any disrespect to the boy. I am here to defend the boy; I believe I can speak to the boy from a boy's standpoint. And let me say for the benefit of my friend Tomson, who tried to make us believe he was 18 years old and that I was ashamed of my age, that it was a long time ago when I was a boy. But though the time when I was a boy is long past, the things that occurred then are as vivid as though they were but yesterday. I know all about the perplexities of a boy on the farm. I know their cares and sorrows and joys. I know the things that used to perplex me. Boys are only men grown taller, or I should say, men are boys grown taller. I remember when a boy I thought when I got to be 21 years old, there would be a great change take place in me. I went to bed the evening before my 21st birthday thinking that the next morning I would be a different fellow, but I woke up the same fellow. By and by when the time came that I was to be married, I thought I would be a different fellow after I was married; but I was the same identical fellow afterwards that I was before. I am over 50 years old now, and except that my arm does not move up and down quite as rapidly as it used to, I see no difference. Things that I loved when a boy, I still love; things I hated when a boy, I still hate. I do not know what you imagined I was going to say to-night on the subject you gave me. Perhaps you thought I would make a political speech; if I was a politician I would try and see what a wonderful speech I could make and how little I could say. A good many of our boys go to the towns, and then they say the cities are taking all of our boys, and because of all this the world is going to the dogs. I want to say to you that I am not a calamity howler. I have too much confidence in the American people to believe this world will ever go to the dogs. I do not care anything about the cries of unjust legislation or anything of that kind. The boys have always gone to the cities, and I am here to say to you that they always will, or a certain portion of them. I have only two remedies to offer. I have something to offer for the boy who stays on the farm, and something to offer for the boy who leaves the farm. To the boy who stays on the farm I want to say that his relief will not come by legislation. The price of corn will not be raised by acts of congress. The relief that will come will be in better farming, in better methods of stock

raising and all that kind of thing. It is possible for the prairies of Illinois and Iowa to produce twice the amount of corn and oats that they do to-day. What we want is more intelligent farming, better selection of seeds, better selection of farm machinery, and your relief will come in this way and not by acts of legislation. The sun shines or does not shine, no matter what the tariff is; we are all subject to the same laws, and God Almighty does not favor one man more than his neighbor; we are all on a level. I have no patience with the idea that fate singles out one man and makes him more prosperous than another. There is no such a thing as luck; a man makes his own luck. I remember hearing an old darkey once say that he generally had good luck with his potatoes when he hoed them well. That is my idea of luck. Then again, if there is a farmer here whose sole object is to raise more corn to feed more hogs, to buy more land to raise more corn to feed more hogs, and that to the exclusion of everything else in life, let me beg of you to go home and turn over a new leaf. That is one of the reasons why the boys leave the farm. The boy on the farm likes enjoyment as well as anybody. I am not here to advocate that the boys should have all the time to raise Cain that they want, but I am here to say that sixteen hours a day out of 365 in the year is enough to make a boy leave the farm. On the other hand, I do not think I am Pharisaical when I say that I thank my Heavenly Father that when a boy, my father insisted that I should work, and because of that fact I grew up not to dread work. If there is a lazy boy here or a lazy man, may God pity him. It is harder for him to do what little work he has to do than for the man who is not lazy to work from sun up to sun down. I believe, as a rule, that farmers work too long hours. I do not believe it is necessary for a man to get up at 3:30 to do a day's work. Many a time have I got up at 3:30; I got up rubbing my eyes and swearing that when I got to be 21 I would never get up when I was sleepy and go to bed when I was not. I believe that anybody can do a reasonable day's work and get up at 5 o'clock in the morning and work until 11:30; commence again at 1:30 and work until sun down. I remember I used to think sometimes that the sun would never go down. So I say I believe one cause that the boys leave the farm is that they have to work too long hours. Then, there is a class of boys that leave the farm that we might call "smart fellows." They think they will show the older men all about it.

But I am talking of boys that leave the farm to really better their condition. Another reason why boys leave the farm I think is because of the lack of sufficient remuneration. I do not think the boys are paid enough, and I think the farmers probably more than any other class of individuals have curtailed this. But what shall I say of the boy that leaves home? Shall I say to him, "Go back and be a consolation to your father and mother in their last days?" I read of the men who have moved the world, that have filled the president's chair, etc., and I find that a large number of them were farmer boys and came from the humbler walks of life. So I say, "Go, and may Heaven's blessing go with you." They will meet with foes on every hand. Then it is the duty of every father to so arm them that they may meet and combat with the foes with which they may come in contact. The free school system has come down so that every boy and girl in this land can have an education that will fit them to go out in the world. It is the duty of every father to see that the schools in his district are the best possible. I do not know whether you have men in Iowa who are finding fault with the school tax or not. We have in our country; they claim that it is a burden. While it is true that the school tax in our state is large, yet there is no tax I pay that makes me as good returns as my school tax, and I would be willing that the tax should be doubled. I am glad there is a schoolhouse every few miles in Iowa. Go back home and make these schools as effective as possible, so that your boys may be better able to fight life's battles. Why was it that the American people fought in the recent war as no other nation fought? Because these men that manned these guns were the best educated that ever shot a gun. There was a great deal of speculation at the time the Maine was blown up what the outcome of the war would be. We all know its results. There is another thing that I would teach the boy, and that is to be unhesitatingly honest. Not because he is afraid to do wrong, but because it is right. Then having been armed with education and adorned with morality, then crown him with Christianity, and he is nearer God-like than anything on earth. With education, honesty and integrity, let him go where he will, he will take care of himself. Do not think from this that the boy on the farm does not need education. Far from that. The time has gone by when the boy without education on the farm can compete with the boy who has. A good deal has been said

about the good old times and the good old things that we enjoyed long ago, and I love them. A few weeks ago I went through the town where I was born, and what memories passed through my mind as I thought of father and mother, brothers and sisters gathered around the old hearthstone! While I loved the old home, I thought of another home, where sits the mother of my children, and I love the new home better. While I would not dispense with old things, I would call your attention to newer and better things. Provide your children with education and just as much college education as possible. Let me say to you in conclusion that in my opinion the highest ambition that any boy can have is not to pile up wealth, but to so live that when the final hour shall come, he can say, and his neighbors can say, that the world was made better because he lived.

HITT: Mr. Caldwell in speaking of his 21st birthday reminded me of a story I heard once of a young boy who thought the same as Mr. Caldwell. He went to bed on the evening before his 21st birthday as usual and along towards morning the family was aroused by a great deal of noise in the boy's room. They all went to the door and the boy called out that there was a man in the house. They said "where" and he said "here."

CALDWELL: I would like to ask Mr. Hitt if he was the fellow?

SULLIVAN: How would you teach your boy to be honest?

CALDWELL: I would teach him to be honest by being honest myself.

SULLIVAN: I have boys and I find the best way to teach them to be honest is to trust them. Trust him and he will trust people in general. I think the boys will have more manhood about them if trusted.

CALDWELL: Mr. Sullivan speaks my sentiments exactly. I always taught my boys when they did wrong to own up to it. I taught them to despise a liar. I always trusted my boys and I knew they never lied to me.

AVERY: Have you any of your boys with you on the farm?

CALDWELL: One of them is in college; the rest are with me.

CHAIR: I was glad to hear the good talk from Mr. Caldwell. We will now have some music by the mandolin club.

CHAIR: The next on the program is a paper by Mr. Howat.

Mr. Howat is kept at home by illness, but he has sent his paper and we will have it read by Mr. Edgerton.

Mr. Edgerton read the following paper:

DOGS.

JOHN HOWAT, WELTON.

It may seem at first sight rather a strange subject to discuss at such a time and place, but the question is a live one, very much alive at times. I will not "down" at command. We remember in those school book days how all dogs were brave and heroic, always figuring as the chief actors in the saving of life. This is very nice and as it should be. This would be a wicked world if it there were not some redeeming features to offset some of its happenings, and so it no doubt is in the dog world; the general cussedness of the family is lessened in the eyes of the onlooker by the heroic deeds of a few. There are "dogs" and *dogs*, but most good dogs are like the good Indians—"dead Indians."

Linnaeus classes dogs, wolves, jackals, foxes and hyenas as the same family; later naturalists leave out the foxes and hyenas. Col. Hamilton Smith arranges the domestic dog in six groups or sections; Mr. Richardson, in three groups. Fitzinger says fourteen kinds of dogs can be distinguished in the Roman and Greek records, and of the Egyptian, seven kinds. Darwin, in his origin of species, says, "Savages now sometimes cross their dogs with wild canine animals to improve the breed."

This is the first instance the writer has any knowledge of where breeding back to the original stock or crossing on wild animals in their native state was done for improvement. However, we observe they were savages who did it, but we further observe that savages or not they knew that when their dogs (usually their chief wealth) degenerated, they could be improved by breeding on better stock. We suppose that following this plan has led up to the present status of the Iowa Improved Stock Breeders' association.

All naturalists tell us the dog is a wild animal or is the product of wild animals. It may be said that so are all of our domestic animals. But the laws of Iowa to-day class dogs as wild animals. Section 457 of the revised code read, "It shall be the duty of every assessor of the state at the time of listing property in his district, to list each dog over three months of age in the name of the owner thereof without affixing any value thereto." Here is a case of an animal taxed yet without value. We doubt whether a suit for damage against the owner of a dog would stand in law. We doubt whether a suit against a man for killing a dog would stand in law. The law says they are without value. Section 458 of the revised code says 50 cents shall be the tax on each male dog, and \$2 on each female dog, to be paid into the general county fund.

We would like to know why such a distinction should be made. We can see no reasonable explanation. We give here the assessors' returns to the county auditor of our home county (Clinton), the best county in Iowa:

ASSESSORS' RETURNS TO AUDITOR OF CLINTON COUNTY, IOWA.

TOWNSHIPS AND CITIES.	Males.	Females.
Berlin	69	9
Bloomfield	56	---
Delmar city	7	1
Brookfield	70	2
Camanche	33	1
Camanche city	30	4
Center	110	3
Clinton city	156	6
Clinton, Chaney district	41	---
Deep Creek	96	---
De Witt	130	7
De Witt city	61	4
Eden	66	11
Elk River	150	4
Hampshire	121	3
Liberty	58	1
Lincoln	70	3
Lyons city	170	6
Olive	84	2
Calamus city	17	3
Orange	75	6
Grand Mound city	12	7
Sharon	101	4
Spring Rock	88	1
Wheatland city	36	4
Spring Valley	46	3
Washington	10	---
Waterford	39	---
Welton	102	4
Low Moor city	6	2
Totals	2110	101

Section 707 of the code, in defining the powers of cities, says: "They shall have power to restrain, regulate, license or prohibit the running at large of dogs within their limits, and to require them to be kept upon the premises of the owners thereof, unless licensed to run at large, and to provide for the destruction thereof when found at large contrary to and in violation of the provisions of any ordinances or by-laws passed pursuant to the power herein granted."

We would like to know by what special dispensation the resident of a city should have so much benevolence shown him while the stockman has to fight his way against the night prowling varmints. Some such provision should be injected into the state dog law to make it of any effect.

All dogs are not bad dogs. Many a good dog has been spoiled for want of having some sense knocked into it, just as many a young man has gone to the bow-wows for want of having had his unmentionables warmed by his parents. Education is training or getting the mind to take hold of certain truths; or, in other words, we train a man's mind in certain channels until his life is biased by his training and his manner of life has become a

habit. So it is with dogs. A dog carefully bred, carefully trained, until the habit of obedience has become its rule of life, and you have a dog that its owner does not put a cash value upon, and he does not begrudge to pay a good round tax, and does not enjoy having the laws of his state define it as an animal without value. As an illustration of what care and skill can do for a dog we append hereto an account of a dog trial in Scotland in October last:

COLLIE DOG TRIALS AT NEW CUMNOCK.

The annual collie dog trial was held on the farm of Brockloch, about four miles from New Cumnock, on Saturday, in fine weather. This was the sixth event under the present management, and it was the most successful in respect of the large entry, the excellent work accomplished, and, not least, the enjoyment from the spectators' point of view. The event is, perhaps, the most important of its kind in Scotland. It is conducted by a committee of a dozen gentlemen, together with the enthusiastic and pains-taking secretary, Mr. Robert Mitchell, to whose efforts the success of Saturday's trials was largely due.

The scene of the trial is perfectly adapted for the purpose, and the farmer, Mr. John Stewart, is deserving of thanks for his generosity in giving the use of the ground, and also for providing the sheep. The course was on the undulating face of a hill, the spectators standing on the opposite face, where they commanded an excellent view of the whole operations. The test was of a severe character, and well calculated to try the stamina of the best-trained shepherds' collies. The course extended to about half a mile, and it frequently happened that the dog was as far away from his master as three-quarters of a mile and also out of sight, for the shepherd had to stand half way down the face of the hill which the spectators occupied, and he was not allowed to move beyond the very limited area of a few feet. The buchts where the sheep were confined were near the top of the hill facing the spectators, and at a signal from the secretary the attendants let four sheep out and conducted them through two posts fifty yards distant. The dog was then sent off by the shepherd (half a mile away) to find them, and though he was aware of the direction he was unable to see them from where he was stationed. Having found the sheep the dog had then to bring them (1) on the left side of a single flag; (2) through between two flags fifteen yards apart; (3) between another set of flags a similar distance apart, but placed at right angles to the last set; (4) through a third set at the foot of the hill, and over a burn; and (5) up the hill in the face of the spectators, and between a fourth set of poles; and (6) to divide the sheep into lots of two.

The judges were Mr. Gemmel, Garpel, Muirkirk, and Mr. Campbell, Brockloch, Carspharlin, and their decisions, determined as they were by points, gave general satisfaction. The total possible was 47, points being given for running out, 6; second, first turn, 5; third, bringing, 10; fourth, general work, 12; and fifth, command, 14. The time was taken when the dog left till the sheep were shed (this part of the work being attended to by Mr. James Wilson, Ashmuck, and Mr. G. Paterson, Coalcreoch). For this a time limit of twenty minutes was allowed, and dogs were restricted to eight minutes for finding—a provision, quite a proper

one, which proved a stumbling-block to several of the dogs. Where the work was accomplished with unusual expedition additional points were allowed.

Thirty-two dogs were entered, as compared with nineteen last year, and there was only a single absentee.

The following statement shows the points gained by the most successful competitors. Seventeen dogs were marked "no use," either from failure to find the sheep or proving helpless with them when found.

"Maid," 2½ years (owner, Ben. Murray, Dunside, New Cumnock), 45 points. Time, 12½ minutes. This dog was very cautious, and made full points except for running out, where two points were deducted, and was in good command.

"Blake," 9 years (owner, John Lambie, Clockluie, New Cumnock), 47 points. Time, 8 minutes. This dog made the possible; and proved a capital worker, making a good display from start to finish.

"Daur," 2 years (owner, John Paterson, Meiklehill, New Cumnock), 47 points. Time, 8 minutes. This young dog made an excellent performance, and scored full points. It was a grand worker, though the judges on this trial considered that it was scarcely as good in command as "Blake," though they did not see their way to deduct any points.

"Lock," 3½ years (owner, John Hastings, Glenwhargen, Penpont), 45 points. 11 minutes. This was the winner on the last two occasions. It made the cleverest run out of any, but had the misfortune to take the sheep low at the first, and missed the first flag. At the third set of flags it displayed a bit of clever manipulation. The sheep were almost past on the wrong side, but the dog got round them, and brought them correctly though. At the shedding one of the sheep ran against him, but for this he was not accountable.

"Nell," 2 years (owner, William Bruges, Dalpig, New Cumnock), 47 points. Time, 9½ minutes. This black and tan dog got her sheep well up the hill and brought them on cleverly to the third flags, where a good deal of manoeuvring resulted from the sheep passing on the wrong side in the first instance. The dog, however, proved equal to the occasion, and taking them back, fetched them through, a good proof of her capabilities.

"Buff," 2 years (owner, Robert M'Morran, Marbrack, Carsphairn), 45 points. Time, 11 minutes. This turned out one of the best hunts of the day, the dog only getting the sheep a long distance away. It, however, brought them too far down the face of the hill, and just missed the first flag by a few feet. The dog was thoroughly in command, but ran just a little too wide. At the second post it looked as if the sheep would take the wrong side, but with some clever manipulation they were brought safely between the posts. The dog was a good worker and received able handling from its master. Even after the long hunt, the sheep were quite fresh.

The judges prescribed a second test for the six first dogs, and this was of an even more severe character than the first one. "Blake" and "Daur" again tied at 48. "Nell" and "Maid" failed altogether. "Lock" made 47, and "Buff" made the maximum. In a third test "Daur" accomplished his work without a single mistake and beat "Blake," taking first prize. The successful performance was heartily cheered by the spectators.

The committee and a few others were hospitably entertained to tea by Mr. Stewart.

Were such an exhibition given at the state fair it would be more attractive than a whole drove of driving elk. But where are the dogs? The superintendent of sheep proposed such a trial, but the project would not warrant any action.

In conclusion, we have but this to say: The live stock interests of the state need more protection from dogs than we now have. Any man owning valuable stock knows this. The Iowa Sheep Breeders, at their meeting last April, appointed a legislative committee of three, of which Theo. F. Getchell, of Des Moines, is chairman, to work for a new dog law, and we believe the stock breeders of the state can in no better way further the interests they represent than by an open resolution and co-operation with the committee above mentioned.

In the opinion of the writer we should have a law making the tax on dogs \$2.50, male and female alike. When the tax is paid the owner should be given a tag to be worn on the dog, any dog seen without the tag to be subject to be killed by any one. Any dog found on the premises of any person unaccompanied by his owner or member of the family may be shot or killed by the owner of the premises where the trespass is committed. The tax collected on dogs to be turned into a domestic animal fund, to be paid to owners of stock killed by dogs. We believe a law is forthcoming, but it should be modeled to the taste of the men who own the stock that needs protection.

CHAIR: This paper is now open for discussion. If there is nothing to be said we will have some music.

Music.

CHAIR: The next on the program is a paper by Mr. McMillan. Mr. McMillan is not with us and has not sent a paper, so we will have to dispense with that part of the program. It is getting late, and the next thing in order is a motion to adjourn until 9 o'clock in the morning, when I hope we will all meet promptly.

Adjournment.

THURSDAY MORNING, 9 O'CLOCK.

Meeting called to order by the president.

CHAIR: We will change the program a little and have first a talk by Professor Craig, of the department of horticulture, on "Farm Crops and Their Enemies."

CRAIG: The professor has said I am of the department of horticulture. I expect you will wonder what that has to do with the department of stock raising and breeding. I presume

I am put up here as an advertisement that we have a department of horticulture, but I hope I can say something that will be of interest to you. I think there are certain enemies that are common to both industries. I have with me some charts that I think will help me out in my talk. I suppose you have all noticed that the man who carries the most scenery always has the poorest show. I think you will find that to be my case this morning, but perhaps we can get some good out of this talk. My chart shows the classification of the enemies common to both grain and orchard crops. We have two classes of enemies to deal with. The first class is the insect class and the second class is the disease class.

In the case of the insect class the farmer wants to know how to treat a certain insect. One of the first things to know is to ascertain the characteristics or make-up of that insect. The insect class may be subdivided in two classes, and this division is based on the manner in which they take their food. You all know how a mosquito presents his bill. He belongs to a certain class. This class we dominate as the sucking class. Then we have another class that we call the biting or chewing class. Under this class we have the potato beetle, the cut worm, and the apple worm. I make this classification because the methods of treating the two are different.

In the sucking class we have the bug, plant lice, and horn fly, the latter of which I have not had a very intimate acquaintance with, but perhaps some of you have. There are two remedies for these classes of insects. In the case of the sucking insect a poison laid on the surface would be of little service. The insect goes below that. Paris green is the best and cheapest remedy.

The sucking insects breathe through holes in their sides. The way to kill them is by choking them. You can do this by using oil. The cheapest oil is kerosene. It will emulsify when mixed with water as a mechanical mixture. You can emulsify coal oil with water by dissolving soap with it and then add a good amount of coal oil to the soap, then add the proper amount of water that makes the emulsion. This solution will keep as long as you like:

KEROSENE EMULSION.

Kerosene.....	2 gallons
Water	1 gallon
Soap	1 pound

Another class is the parasites. In this we have the most serious class of fungous diseases. It is said that over 10 per cent of the crops of the country are lost through insects. I think more than that proportion is lost through the depredations of fungous diseases. These parasites take from the plant the prepared food and use it for themselves. They are very simple in their operation. They have a very simple way of reproducing themselves. They are reproduced from year to year by spores. It is our business to see that they are destroyed. We must not plant potatoes with scab. They will be reproduced. We must not allow mummified plums to hang on our trees in the fall. We must not plant smutty oats or barley seed. The germs are there that will make bad results next year.

All these fungous diseases can be destroyed by copper salt remedies. It should be dissolved in water and used in definite quantities.

TRIGG: What can be done for a cow to keep the flies from biting? I do not mean the horn fly. I mean the common one that bites the cow and makes the man swear.

CRAIG: I think any greasy substance applied to the hair will keep them from biting.

TRIGG: Is not the remedy worse than the disease?

CRAIG: Kerosene emulsion is not bad. It is applied thinly on the hair.

COFFIN: I want to know something about this white worm that has come into our blue grass pastures and kills the roots. I want to learn something about them.

CRAIG: I will have to refer you to the entomologist. I think Professor Osborn could tell you something on that subject. I think that breaking up the pastures would perhaps be the best remedy.

WALLACE: I would take the rings out of the hogs' noses and turn them in.

QUERY: In the case of calves infected with lice, what kind of an application would you make?

CRAIG: I would rub a kerosene emulsion on with a cloth.

BROCKWAY: I have tried spraying with oil with very poor results. It was not at all effective with me. I find the oil evaporates.

CRAIG: I feel that I am better posted on horticulture than on some of these subjects. If there is any one here that is interested in fruit I will be glad to help them in any way I can.

CHAIR: We will now close this discussion. The next will be a talk by Professor Eckles on "Experimentation With Good and Bad Cultures in Butter-making."

PROFESSOR ECKLES: You all of course know that a great change has taken place in recent years in dairying. The present system of making butter is very different from what it used to be. One thing that is very noticeable now is that the markets are demanding a better quality of butter. The surplus butter of Iowa now goes to the cities. The buyers there are very discriminating, more so than in the local markets. It has to be up to a certain standard. The question of the proper flavor is now of the most importance. It is about one-half. It is now arranged on the score-card that from 45 to 50 per cent is flavor. The question of the proper flavor has been very puzzling to the dairymen. It is really a very difficult matter to get the butter to the right test every time; it varies so much. There has been a great deal of speculation about this butter flavor. Without going into details I will say that we have come to the conclusion that the flavor of butter does not depend upon the feed the cow gets. It does not depend, either, upon the temperature of the churn. The butter flavor is a product of the fermentation of the cream, or souring of the cream. There are a variety of fermentations that take place. The fermentations are caused by a small kind of plant known as bacteria. There are germs that produce a bad flavor and those that produce a good one. The germs that produce a bad flavor are those associated with dirt, filth, etc. Whenever there is a small quantity of dust gets into the milk a large number of bacteria is added. Under the modern system of creamery management we use a means of adding the right kind of fermentation, and this gives us the same butter flavor all the time. This element is called a "starter."

TRIGG: Suppose your cream is defective; can you put a "starter" into it and reform it?

ECKLES: To a certain extent we can, but we cannot remove the germ entirely.

HENDERSON: In pasteurizing can you destroy the germs entirely?

ECKLES: Yes. By heating the cream to 158° for twenty minutes' time it purifies the cream and kills the germs. Take cream that is flavored right and it gives a good result.

CALDWELL: Did you say that what a cow eats has little to do with the flavor of butter?

ECKLES: Yes; that was what I said.

CALDWELL: I have always noticed that when our cows got into the cabbage it made my wife mad and we always had bad butter.

ECKLES: Of course, I know there are a few vegetables that will affect the taste of the butter, but not what we term the flavor.

CHAIR: Cotton Mather used to say that "cleanliness was next to Godliness." I think that in butter-making cleanliness is next to success as well as Godliness. We will now pass on to the next subject, which is a paper by Professor Edgerton on "Soil Moisture and Fertility."

Mr. Edgerton read the following paper:

SOIL MOISTURE AND FERTILITY.

BY J. J. EDGERTON, AMES.

This is a very extensive subject, and in the brief time allotted for its discussion it will only be possible to touch upon a few of the more important points connected with one of its many phases. So I will endeavor to confine myself mainly to the relation which vegetable matter in a soil bears to its fertility and moisture content.

We will first consider briefly the effect of vegetable matter upon the fertility of a soil. In referring to the sale of crops from the farm it is customary to speak of selling so many pounds of plant food that should be returned to the soil as though this were the only evil resulting from this practice. This evil is, however, very small compared with others that result from the continual production and sale of grain crops. For, when we consider that for every pound of mineral matter removed from the soil by a crop of grain, from five to seven pounds are lost through the percolating waters, we can readily see that the return to the soil of all the plant food taken up by the crop would only replace from 15 to 20 per cent of what had been removed therefrom during that season.

You may well ask what supplies this enormous waste? The answer is very simple, and to find it we have but to study nature's methods of soil formation. All of our soils have originated from the rock masses of the earth's surface. One of the chief agents in the decomposition of these

rocks was the growth and decomposition of vegetation. The decomposition of vegetable matter in the soil, with the resulting organic acids, heat, etc., has a very powerful action in decomposing the inert mineral matters of the soil. The mechanical condition given the soil by the partially decomposed vegetable matter also aids very materially the action of the other elements.

In the eastern states, where they expend annually some \$35,000,000 for commercial fertilizers, they have discovered that if barnyard manure is mixed with these partly insoluble fertilizers, they will be rendered much more soluble. But they seem slow in comprehending that this vegetable matter, if applied to the soil, will have the same action upon the same kind of insoluble compounds that are already there.

In a recent experiment to determine the extent of this action, two boxes were filled with soil identically the same, except that to one was added 20 per cent of its weight in cow manure. These boxes were treated exactly alike for twelve months, the soil receiving an occasional stirring. At the end of this period an analysis showed an increase of 30 per cent in the soluble plant food of the soil to which manure was added, after making allowance for what was contained in the manure; while that which received no manure showed a loss in soluble plant food of 4.36 per cent.

Professor Snyder, of Minnesota, has done quite extensive work in the way of collecting and analyzing soils that have been cropped in various ways, and he finds that a native prairie soil contains about twice as much vegetable matter and three to five times as much of the more important elements of plant food, in a soluble form, as adjacent soils that have been continuously cropped with grain for fifteen to twenty years; while many that had been under cultivation for much longer periods, but which had been allowed to produce an occasional crop of timothy and clover and had an occasional dressing of manure were in a condition almost equal to the native soils.

One particular instance may be cited of two adjoining farms, each under cultivation for thirty-five years, and originally practically alike. One has received frequent dressings of manure and has produced wheat, corn, oats, timothy and clover in rotation and shows no apparent decline in fertility. The other has grown grain continuously without receiving any manure or vegetable matter in any form. During the first few years heavy crops were raised, but during the past few years the yields have been very low, especially in dry years. The producing power of this piece of land has been reduced 68 per cent.

Another neighboring farm under cultivation for forty-two years, that received a systematic rotation and every five years a dressing of manure at the rate of ten tons per acre was in even better condition than the first one above mentioned. The effect of vegetable matter upon the moisture content of soil is equally as great and of no less importance. In this connection it has a two-fold effect—that of increasing the power of the soil to hold water by capillary attraction, which is the water used by field crops, and at the same time increases the readiness with which the excess of moisture will percolate away. On land that is at all fine, as the vegetable becomes more reduced, the land becomes more solid, more inclined to adhere in clods, and when wet, more soggy and more inclined to puddle or bake.

I call to mind a case in point: Some years ago my father purchased a piece of land of a man who was regarded by his neighbors as being incurably lazy. There was a certain field upon this farm, originally very productive, that had been continuously grain-cropped until the vegetable content was very much reduced and upon which had recently been placed what manure had to be moved in order to allow passage in and out of the stable. In order to avoid any undue exertion this manure had not been scattered but each load dumped in a heap by itself. The result was a few spots exceedingly rich in vegetable matter. The contrast was almost equal to that of an oasis in a desert. After heavy rains the manured portions would be in a fit condition for cultivation while water would still be standing on the other soil all about them. And when the other would get ready to work it would be heavy and solid and would not stir up into a nice mulch, while these spots would be as loose and light as an ash heap. The plants on the manured portion would be of a rich, dark green color, stocky and vigorous, while those beside them on the unmanured portion would be pale, slender and often sickly in appearance.

The greater length of time taken for the excess of water to percolate away is a loss, not only in time, which the farmer should have the use of in his fight with the weeds, but also in its greater injury to the growing crop, as none of our cultivated crops will thrive or even live very long in a saturated soil. A native soil will retain about 20 per cent more water than one that has been continuously grain-cropped for fifteen or twenty years.

In an experiment where one-half of a sandy knoll was manured and the other not, the manured portion contained nearly 25 per cent more water during six weeks' drouth than the unmanured portion, and at harvest time the corn on the manured portion was fully two feet the taller.

CORNFIELD NO. 1, TAKEN NOVEMBER 29, 1899.

1. 11.69 per cent; vegetable matter, 6 per cent; fat, 35.69 to 55.5 per cent.
 2. 9.89 per cent; vegetable matter, 2 per cent; fat, 54 per cent.
 3. 9.95 per cent; vegetable matter, 1 per cent; fat, 50.5 per cent.
 4. 11.13 per cent; vegetable matter, .5 per cent; fat, 56.5 per cent.
- Average, 10.665 to 11.93 per cent; vegetable matter, 2.375 per cent; fat, 58.12 per cent.

CORNFIELD NO. 2, NOVEMBER 29, 1899.

1. 17.80 per cent; vegetable matter, 7 per cent; fat, 74 per cent.
 2. 16.24 per cent; vegetable matter, 6 per cent; fat, 67.5 per cent.
 3. 17.44 per cent; vegetable matter, 3 per cent; fat, 72.5 per cent.
 4. 18.87 per cent; vegetable matter, 2 per cent; fat, 67 per cent.
 - 4½. 18.81 per cent.
- Average 17.83 to 21.7 per cent; vegetable matter, 4.5 per cent; fat, 70.25 per cent.

CORNFIELD NO. 3, NOVEMBER 29, 1899.

1. 18.93 per cent.
 2. 17.28 per cent.
 3. 15.05 per cent.
 4. 12.06 per cent.
 - 4½. 13.16 per cent.
- Average 15.296 to 18.05 per cent.

Difference between No. 1 and No. 2 9.77 per cent, or nearly twice what was used in irrigation the past season. No. 2 contains nearly twice as much vegetable matter. No. 3, intermediate, nearer No. 2.

PUMP HOUSE PASTURE, DECEMBER, 1899.

1. 66.65 per cent; vegetable matter, 53 per cent.
 2. 61.98 per cent; vegetable matter, 36 per cent.
 3. 60.78 per cent; vegetable matter, 15 per cent.
- Average 62.8 per cent; vegetable matter, 34.86 per cent.
Vegetable matter eight times as much as No. 2.
Sample from ditch, upper two feet, 66.56 per cent.
Vegetable matter, 57 per cent.
Lower part, 25.42 per cent.
Vegetable matter, 8 per cent.
Vegetable matter of surface part 64 per cent greater than pump house sample.

In another experiment to determine the effect upon evaporation, a difference in the rate of evaporation was observed equal to one ton of water per acre per day in favor of the manured portion.

Owing to the uncertainty of our rainfall in regard to time, the capacity of a soil to absorb and retain water for the use of crops is very important. A certain amount of moisture is necessary before the sap will move and any growth take place. And the nearer the moisture content becomes reduced to this point, the less rapidly will growth take place. The variation of only a few per cent in the amount of moisture retained may mean the difference between a good crop and an almost total failure. During the past season which enjoyed a fairly good distribution of moisture, we were able by the addition to a corn crop when the ears were forming, of four inches of water to the soil, to change the yield of corn from 68 to 91.5 bushels per acre. This amount of water is equivalent to a little over 5 per cent of moisture in the first four feet of soil.

In conclusion it may be said: That the term "worn out land" is a delusion. Lands cease to be productive because their content of plant food in a soluble form has been reduced, and they can readily be reclaimed by the application of a sufficient amount of vegetable matter to decompose the insoluble plant food fast enough for the needs of the crops, and it is certainly far more economical to cultivate and grow fertility than to purchase it, and not only is this kind of fertility more economical, but it is far more lasting in its effects.

Very frequently the decline in productive power may be due as much to the lessened capacity of the soil to retain moisture as to a reduction of soluble plant food, without the aid of which the richest soil in the world has no crop producing power.

COWNIE: I understood you to say worn out land was a delusion and a snare. I would like to ask if you are a Christian Scientist?

EDGERTON: I think there is no soil anywhere but has plant food in it.

WALLACE: This is the most important subject we have touched on. There is not a worn out field in the state of Iowa.

LEONARD: I wonder if we realize what we are doing. The state of Iowa is selling real estate as fast as it can. Our real estate will soon all be sold to the east. I think if we would put our land down in blue grass and clover we would have better returns; but if we keep on as we are doing now, in fifty years hence we cannot raise 50 per cent of what we are raising to day. We will have exhausted the land and will have to raise sheep.

CONVERSE: In the country where I live we have clover and keep cows. If we cannot keep our farms up without sheep, I will have to get some. Will not cows do the same as sheep?

WEST: In eastern Iowa our land will produce greater crops of corn than it did thirty years ago. I think we can keep on increasing the yield.

NORTON: I heard the governor of Massachusetts say that one-third of the land there had gone back; that it was not under cultivation at all. The thing for us to do is to send some of our Iowa boys back there and make good farms out of it.

CHAIR: We will now listen to a talk by Professor McKay on "Recent Phases of Cheese-Making."

PROFESSOR MCKAY: The man that comes with the basket is always welcome. I am pleased to meet with you to-day. It is now conceded that every good race of people should be provided with good food, and that the food we eat has a great effect on the people. It is true that man cannot live on a coarse diet, such as hay and straw, but the cow can use these and transform them into butter, milk and cream. Milk is the right kind of food for man. In butter we have every element of milk, and besides that salt and water. But man cannot live on butter alone. In cheese we have an element that will sustain life. It combines protein, carbon and hydrogen. England imports thousands of pounds of cheese. Most of this comes from Canada. We can make as good cheese here as any place in the world. The conditions are the same here as elsewhere. We have been conducting a series of experiments in curing cheese. One of the experiments we made was to bring some of the green Canadian cheese here to the experiment station to be cured. Afterwards it was sent back to Canada and placed alongside of the cheese that had been cured over there, and the cheese that was cured here was equal in every way to the cheese cured there. We found our best cheese made here

scored as high as the best Canadian cheese. Some say our climate is too dry for cheese. We have been using artificial moisture, and add it to our curing rooms. The making of fine cheese rests here. You must have the milk in perfect condition. You must have a curing room that you can vary the temperature under right conditions. In cheese-making the milk should be cooled as soon as drawn from the cow. In milk there are dissolved gases. We aerate the milk to remove these odors. We must get the farmers educated in the way of taking care of their milk to make good cheese.

TRIGG: Why is it the English people live on cheese and the American people use it only as an appetizer?

MCKAY: The English people use it when properly cured. It is a food. We use it in an indigestible state. We cater to the demand here.

CHAIR: We have with us to-day a member of the board of control and an all-around farmer. We will now have an address by Mr. John Cownie.

COWNIE: *Fellow Members of the Improved Stock Breeders' Association:* I assure you that it gives me great pleasure to stand before you to-day. Only day before yesterday it became my duty to criticise the management of some of our state farms. I saw by the newspapers the next morning that I was roughly handled. Some of those newspaper men thought they knew more about farming than I did. I have chosen for my subject to speak to you to-day one that I am sure can be appreciated at the present time—"The Cow and Her Son." I have not honored the heifer, for if she does well she will be a cow some day. And it is no slight to the heifer. A few years ago I was addressing a farmers' institute in regard to the importance of breeding to secure success on an Iowa farm. My subject was beef cattle, their breeding and feeding. At that time there was a cloud over the cattle industry. They were selling low. I made the assertion at that farmers' institute, as I have done scores of times, that the day was not far distant when well-bred and well-fattened cattle would sell in Chicago at \$7 a hundred. An old farmer got up to instill a little party politics into the meeting. He said that time would never come until we got the free and unlimited coinage of silver. Well, that time has come and I am still alive. Cattle are bringing that price in Chicago. Some are bringing only \$5.50. Now the question in my mind is this: Why, in heaven's name, are there

any cattle selling for \$5.50? Why is it that they are not all bringing \$7 a hundred? I have been telling the farmers of Iowa in institutes for years that there is no need for a man to have a mortgage on his farm if he will breed well and feed well. The man who is always complaining of hard times and who has a mortgage on his farm is the one that raises scrubs. I remember once of going on a fox hunt. I was not invited but I went just the same. This was not a fox hunt where you sprinkle paper along the way. This was a fox hunt with a live fox. We saw the men and hounds start out. We took after them. We were a little bit behind. The men on horseback got there first. When we got there the fox had been caught by the hounds and the tail was cut off and it was carried away. We could not even find a trace where the fox had been. The farmers of Iowa as a class are in the very same condition as we were. When high prices came in regard to beef cattle, those mounted on good horses were at the death. Those on foot were away behind. To-day most of our Iowa farmers are on foot. It is very hard to convince the great majority of Iowa farmers that there is any merit in blood. No farmer will admit that his cattle are not as good as any other cattle, even though they are the poorest scrubs in the country. I want to emphasize this point. The time has gone past and will never again return when it will pay to breed scrub cattle in Iowa. If the farmers of Iowa could only realize that their success depends upon breeding only from pure bred animals, especially as far as males are concerned, thousands of dollars would be added to the state every year. One of the first of my acts would be, if I was a member of the legislature, to introduce a bill making it a criminal offense to raise a single scrub in Iowa. I would make it compulsory to raise only pure bred animals. It would add thousands of dollars to the worth of this state, but I would not want to appear before a farmers' institute again. Had this law been enacted twenty-five years ago, instead of scrub cattle as to-day, we would have cattle that no state in the union could compete with. We have not had the improvement in cattle that we have had in swine for the reason that it has been more difficult and required a larger outlay to secure well bred animals. During the seasons of 1895 and 1896, at the time of the excessive drouths, a large number of cattle were shipped to market. We depend upon the ranges for feeders. Thousands of cattle have been brought to Iowa to be fed. These range

cattle men have realized far better than the average Iowa farmer that it was necessary to breed pure bred bulls. Western range cattle are far superior to the common cattle on our Iowa farms. I saw in the stock yards at Omaha some western cattle just from the ranch. Every one were whitefaces. You could not go into the state of Iowa and pick up 150 feeders such as these ranch cattle. It is an unfortunate condition of affairs that the Iowa farmer does not realize the importance of breeding pure bred animals. I received a letter day before yesterday from a farmer who wished to invest in a pure bred bull. I receive a great many such letters. This farmer said: "I have been watching the sales of cattle and have read of the high prices secured. I feed a good many cattle and I shipped some last week to Chicago and the sale was very satisfactory." He said he wanted to buy a pure bred bull and wanted me to recommend some certain breed. He wanted to know which one I preferred. For the life of me I could not answer. I think in all sincerity that I do not know which is the best breed for beef. I have tried all of them and I like them all. I never could stand in any meeting and hear any one find objections to any of these breeds without wanting to reply, but I am no friend of the scrub. The Shorthorn, Polled Angus and Hereford would give results crossed on such grades as we have in the state of Iowa that would make the breeding of cattle profitable business. It is no use taking your time talking about these things—all of you realize these things; but instead of an audience like this I wish I could have the farmers of Iowa gathered before me and I would just like to dwell upon the fact that well bred cattle are bringing such high prices in the Chicago market. I would like to talk to those who do not realize the importance of breeding to secure beef. I would just like to rub it into them, and make them understand the fact that breeding must be combined with feeding to make the best results for the farmers in the state. I see in the audience here a gentleman who has been going over the state buying and shipping to western ranchmen some of our best bulls. I would like to prevent this. I would like to have him tied up. There is not a single bull shipped from this state but should find a home here. We need them as bad as they do. We should have them here. Sometimes I think a little legislating would be a good thing. If we could have a law enacted that would prevent the shipping of any bulls from this state, and a law

requiring every farmer to buy a good one, I think it would be a good thing. This is not crankyism on my part. We have room for every bull that is produced in Iowa upon our own farms. I trust the day is not far distant when we will find a pure bred bull on every Iowa farm, and then with good feeding we can secure the highest price on the Chicago markets. I wish to say, and I say it with all earnestness, that now is the time to bring this matter before the farmers of Iowa, when cattle are high. Now is the time for the farmer to improve his herd.

CHAIR: We will adjourn now and meet again at 1:30 this afternoon.

Adjourned.

THURSDAY AFTERNOON, 1:30 O'CLOCK.

Meeting called to order at 1:30.

CHAIR: The first on the program will be a paper by Professor Pammel on "The Range Problem."

Professor Pammel read the following paper:

THE RANGE PROBLEM.

BY PROF. L. H. PAMMEL, AMES, IOWA.

The importance of Iowa as an agricultural state rests largely on the production of hay and grass. The hay crop of this state has a value not far from \$25,000,000. The pasture crop is probably equal to this or greater. Directly as well as indirectly the growing of grasses for meadow and pasture purposes supports a large part of our rural population. The subject of grass lands and ranges has always been an important factor in the stability of business in a country. Professor Brewer* says, "It is the most conservative of industries."

From the very nature of this industry it must be so, and this fact necessarily and inevitably influences the business stability of a country or community where grass lands exist. Before the settlement of Iowa began the greater portion was one vast meadow in which most valuable native grasses flourished. The grasses were excellent. It was an ideal land for the

*Report of Connecticut Board of Agriculture, 1895: 35.

herdsman. Hay was cut in abundance everywhere. As late as 1890 the making of wild hay formed an extensive and leading industry in north-west Iowa.

The forage question of Iowa to-day is very different from what it was fifteen years ago. To-day there are but small areas of unbroken sod. The wild prairie has almost ceased to be a factor in the production of hay. The extensive prairies have given way to cultivated fields and pastures. The same conditions prevail east of the Mississippi, and nearly the entire section east of the Missouri excepting western Minnesota and the Dakotas. The prairies are practically confined to the Dakotas, western Minnesota, Nebraska, Kansas, Oklahoma, Indian Territory, and Texas, and even here many of the richest of the prairies are being converted into wheat, corn, and cotton fields.

The ranges remaining in the states of Colorado, Wyoming, Montana and other states and territories of the west are rapidly deteriorating. In this territory many valuable forage plants thrive although under adverse climatic conditions. Not many years ago they supported a large number of cattle, but the conditions of our western ranges have materially changed. The valuable grasses have been killed in many cases. During the early days of our great west people traveled by caravan, wagons drawn by horses and cattle, and they subsisted entirely upon the forage found along the routes of travel. The perennial grasses were abundant everywhere. The whole west was a great open pasture, unstocked save for the herds of buffalo, deer and antelope. Many of the regions which were covered with this luxuriant growth of vegetation are now almost barren. Professor Brewer, in a letter to the writer recently, notes the great changes that have taken place since the Union Pacific railroad was built. Then he found a luxuriant growth of grass everywhere, but to-day the conditions are as I have indicated above. This transformation has taken place in a comparatively few years. A serious problem confronts the rangers of the west and has had its influence on the stock markets of this country.

As I have said before, the world has not produced better grasses than those occurring upon our native sod and upon the plains of the west. In nutritiousness and in quality these grasses are unsurpassed. Of these grasses mention need only be made of the western wild wheat, *Agropyron spicatum*, Gamma grass, *Bouteloua oligostachya*, and Buffalo grass, *Buchloe dactyloides*. It may be surprising to learn that all of these grasses are indigenous to parts of Iowa although there are ranchers who think that their western wheat grass is indigenous only to Montana. As a matter of fact, however, this grass covers a greater area on the plains and yields more fodder than any other grass of that section. It occurs from Minnesota southwest through Iowa to Arizona, and is the main stay-by of the ranchman, not only for pasture purposes but for hay.

The ranges will never again retain their primitive condition unless a different system of cropping is carried on, and the west no longer is the important factor in competing with beef and mutton that it formerly was. Our western ranges may, however, be made profitable and support a very large population if an intelligent system of rotation and better husbandry is practiced. Now the range grasses, and that applies to many of the best pasture grasses of this state, can only develop after a long period of years.

It takes years for a meadow or pasture to reach its most productive capacity. Permanent pastures, if well handled, continue to grow better from year to year. Indeed, they are better after the lapse of fifty years than at twenty-five; better after the lapse of 100 years than at fifty. Professor Brewer again says, "It is nearly forty years since I was in England but I well remember that English farmers told me that a pasture or meadow had to be at least twenty-five years old to be good and was not really excellent until the third or fourth rental, forty-two or sixty-three years. There was no other one feature in English scenery that so impressed me as the English turf, whether seen in the pastures or in the parks and lawns. Many of the parks are, in fact, pastures. One sees sheep everywhere, even in the play grounds of the colleges and schools. One sees flocks of sheep kept there for the benefit of the turf. When Connecticut public opinion protects sheep on the Yale athletic fields from dogs, then all of Connecticut will be able to grow more of the mutton it consumes and the state will be richer by many millions of dollars." Precisely the same conditions prevail in this state. Our native sod and blue stem becomes more valuable the older it is. The same is true of the native sod in the ranges of the west. This native sod at one time not only contained a large number of species of different grasses all rich in nutrient qualities, but produced as bountiful crops as any pastures east of the Mississippi, forming a great source of revenue. It was a magnificent legacy left to the farmers and ranchers. Jared Smith says of the one, "It produces food for millions of cattle." Of the other he says, "It proved the golden possibility of the soil, that it would bring forth bountiful harvest." The same condition prevails in Texas.* Millions of acres of fine prairies are covered with the most bountiful of range grasses. When the railroads were opened large tracts of land were thrown open for settlement. Enormous speculations were made. Herds of cattle and flocks of sheep changed hands at fabulous prices.

Men of every class were eager to go into the cattle business. In a short time every acre of free land was stocked beyond its capacity. Thousands of cattle and sheep were crowded on the ranges where half the number was too many. Grasses were entirely consumed. Their very roots were trampled into the ground and destroyed. In their eagerness to get something for nothing speculators did not hesitate to do permanent injury if not totally ruin one of the finest range districts in America. From that day to the present time little effort has been made to protect the pastures and again cover them with the rich vegetation of former days. It is not too late to arrest the evil, but no time is to be lost. The range problem is national in its scope and something must be done before it is too late. Happily, however, the state of Iowa is in a region with sufficient rainfall to insure permanent meadows and pastures of the more improved cultivated grasses, but as in other parts of the country, there is a tendency to overstock the pasture, with the inevitable result that weeds soon choke out the better grasses. The era is at hand when we must begin to select grasses of particular merit, not by sowing or planting particular varieties, but by taking the best forms of particular species. This must be done by breeding and selection. We all know that blue grass varies greatly. By increas-

*Bentley, Bull. U. S. Dept. Agr., Div. Agrost. 10:2.

ing the grass and hay crops, though it be only a small percentage, the aggregate wealth of the state will be greatly enhanced. We must breed grasses to eliminate fungus diseases as far as possible.

WALLACE: Do you think it possible to cultivate in certain sections our big blue stem? If so, how can we get the seed?

PAMMEL: We get them by propagating or cutting. Get root-cuttings. It makes a fine hay. The people in western Iowa prize it very highly.

CHAIR: We will now have a paper by Dr. Repp on "Ounces of Prevention in the Care of Domestic Animals."

DR. REPP: I want to say at the start that this is one of the most important subjects that has come before us. Those who are not here will miss it. I am going to show you what you would have missed. I had not time to prepare any material or demonstrations. Instead of that I will read about 5,000 pages of manuscript:

OUNCES OF PREVENTION IN CARING FOR DOMESTIC ANIMALS.

JOHN J. REPP, V. M. D., VETERINARIAN TO EXPERIMENT STATION, AMES, IOWA.

We have in the trite, but true, apothegm "an ounce of prevention is worth a pound of cure" a commercial paradox. That the thing which is easiest to obtain should outvalue that which is most difficult is not in accord with our ideas of value. When we say an ounce of gold is worth two pounds of silver we base our estimate of value upon the ratio of the ease with which we obtain these metals. This is the commercial view of it. It was with a different view of the subject than this that the sage remark referred to was made. Indeed, when we place prevention and cure side by side and consider each as a factor in the saving of our live stock the former is of incomparably more value than the latter. Where cure saves its tens prevention saves its thousands; where cure is powerless prevention is all-powerful. Fortunately the class of diseases most difficult of cure are the ones most easily prevented, while those most difficult of prevention are most readily cured. The reason for this is apparent. The disease most unyielding to curative measures are the more violent forms of infectious diseases, as anthrax, blackleg, tetanus, tuberculosis, malignant oedema, hog cholera, swine plague, fowl cholera, distemper of dogs, contagious pneumonia of horses, pleuro-pneumonia of cattle. But, fortunately, we know that each of these diseases is due to a specific cause—namely, a germ—and to that only. Knowing this and being familiar with the character of the causal agent we have before us the plain indications for the prevention of these diseases.

On the other hand, as a rule, the diseases most amenable to treatment are those which are non-infectious, as coryza, laryngitis, bronchitis, pneumonia, stomatitis, pharyngitis, gastro-intestinal catarrh, cystitis, eczema, etc. But the causes of each of these diseases are so manifold that it is with the utmost difficulty that we guard against them.

Let us look for a few minutes at what preventive medicine has accomplished. In the human family in our own country smallpox, yellow fever, and Asiatic cholera at one time ran wild. Within recent years, under the beneficent influence of our knowledge of bacteriology and the lessons it has taught us, these diseases are seldom heard of. Where deaths used to be numbered by the thousands, we can now count them on our finger tips. Twenty-five years ago, the report of the appearance of smallpox, such as we recently had from Storm Lake and other points in this state, would have rightfully created widespread consternation. Now we are not warranted in being alarmed, for we may be sure that the disease will be properly confined if all will do as well as they know. Thus it is with yellow fever. When a focus of the disease is reported to the surgeon-general he at once sends a Guiteras and a Carter who, with their skill, grapple with the monster, now no longer invisible to their eyes of science, and throttle it with an iron hand.

We need have no fear of bubonic plague, even though there are cases of it on Swinburne Island, New York harbor, and others coming on cargoes of coffee from Brazil, if Dr. Doty has the courage of his convictions and burns up the coffee instead of permitting it to land and disseminate the dread disease throughout the country. So it is with the infectious diseases of man.

In the field of veterinary medicine the activity has been equally great and in many instances greater. The work of prevention of disease in the domestic animals by vaccination antedates similar efforts in human medicine by a number of years, practical inoculation against rinderpest having been practiced as early as 1744, while it was not practiced against smallpox until 1798. Application has also been made to a great number of diseases. Successful preventive vaccination has been practiced in such diseases of domestic animals as anthrax, blackleg, chicken cholera, roup, tetanus, rabies, and with a measure of success in contagious pleuro-pneumonia of cattle, Texas fever, rinderpest, hog cholera and swine plague. In case of the latter four the developments are too recent to give us a definite idea of their efficacy, but it is to be inferred that they will be fruitful of much good. By the excellent methods of protective inoculation against blackleg discovered by Arloing, Cornevin and Thomas, of Lyons, France, in 1881, and modified by Kitt, of Munich, and Salmon, of the United States, the mortality from this dread disease has been reduced from 12 to 20 per cent in the non-inoculated to .2-1 per cent in those protected, thus making the disease but 1-25 to 1-20 as formidable as before. Animals so protected can graze with impunity over pastures infected by the bacillus of blackleg, whereas cattle not so protected contract the disease and die. Many thousands of cattle have been thus protected in the United States, leading to a saving of hundreds of thousands of dollars' worth of valuable cattle.

In case of the dread disease, anthrax, fatal to man as well as to all the domestic species, the immortal Pasteur gave to the world in 1882 a method

of preventive inoculation which has been of inestimable value. In France, between 1882 and 1893, in 3,250,000 of sheep and 438,000 cattle the fatalities were reduced from 10 per cent to less than 1 per cent in the sheep, and from 5 per cent to 1-3 per cent in the cattle. In Russia the results were even better, the loss being reduced from 30 per cent to 4-5 per cent. A striking illustration of the benefits of protective vaccination against anthrax is seen in the initial experiment with Pasteur's method in Australia in 1882. On September 4th of that year twenty sheep were vaccinated. On the 4th of November these twenty sheep were placed in a yard with nineteen unvaccinated sheep, and the entire thirty-nine were then inoculated with two drops of blood from a sheep just dead from anthrax. Within a period averaging forty-eight hours the entire nineteen unvaccinated ones died, while the twenty vaccinated sheep "walked among the dead, eating contaminated food unhurt, and in perfect health."

Tetanus, or lockjaw, can be absolutely prevented by protective inoculation.

But sanitary police measures are equally efficient and much more valuable as a means of prevention than vaccination, because they are universally applicable. These methods are compulsory notification by stock owners and veterinarians; various forms of isolation, including sequestration, cantonment, quarantine, restriction of emigration, suppression of public grazing, change of pasture, taxation, muzzling and tying dogs; occision, or slaughter; disinfection. By proficient execution of these measures infectious and parasitic diseases of all kinds in a short time could be stamped out. Contagious pleuro-pneumonia of cattle was introduced into the United States in 1842. In 1887 purchase and slaughter of sick and exposed animals was begun and in five years time the disease was exterminated. This disease first appeared in England in 1735, 165 years ago. The English extemporized with it until 1890, when they adopted the stamping out method in use in the United States. In 1890 there were 591 cattle affected, and in 1897 but 46. Without these radical measures the disease would still be devastating our herds.

By taxation, muzzling, and confining of dogs rabies among this species has been reduced in Bavaria from 821 in 1873 to 11 in 1885. In Saxony from 287 in 1866 to 16 in 1885. In Middlesex and Surrey counties, including London, Eng., during 1896, when the muzzling order was put into effect, the number of cases was reduced from 46 in January to 8 in December of that year. By the well-organized and well-executed plans of Bang in Denmark and Pearson in Pennsylvania it has been shown that tuberculosis of cattle can be greatly repressed and finally completely eradicated. In Pennsylvania where only the worst herds are tested the number found affected in tested herds has been reduced from 25 per cent in 1896 to 11.6 per cent in 1899. It is believed that not more than 2½ per cent of all cattle in that state are tuberculous at this time. In the Thurebylille herd in Denmark Bang, by means of tuberculin diagnosis, separation, and feeding calves on sterile milk, or milk from sound cows, obtained these results: In April, 1892, there were 131 tuberculous cattle and 77 healthy in this herd. In 1897 there were 45 tuberculous cattle and 157 sound ones. And this with the loss of only a few animals by condemnation. Similar results were obtained in a large herd in Jutland.

On account of the imperial laws for the regulation of epizootic diseases the number of cases of glanders in Prussia decreased from 2,740 cases in 1877 to 1,176 in 1886. No case of glanders has appeared in the army horses of Great Britain since October, 1888, because of the rigid veterinary inspection maintained in the English army. In the army of the United States, which until very recently was almost entirely without such inspection, during the late war with Spain the horses and mules were decimated by this disease. Among the breeders of Great Britain where the laws are confessedly inadequate there has been an increase in cases of glanders from 946 cases in 1885 to 1,677 cases in 1897.

I do not have time to go into a discussion of what may be done toward prevention of non-infectious and non-parasitic diseases by the adoption of approved methods of feeding, stabling, exercise, etc.

Seeing, then, the great benefits to be derived from a careful application of the various preventive measures, is it not strange that breeders everywhere do not inform themselves in this regard and make use of the means so readily employed? When there is an outbreak of disease the local veterinarian should be called into consultation and his advice acted upon. How many farmers are penny-wise and pound-foolish in this respect! How much better to pay the veterinarian a few dollars for advice as to how to keep one's stock healthy than to lose hundreds of dollars worth of valuable stock because of the lack of this advice! The veterinarian can be much more useful to the community in which he practices by keeping animals well than he can by treating those which are sick. Nine-tenths of the stock losses could be prevented if a competent veterinarian's advice would be sought and carefully followed. Stock breeders should obtain information in reference to methods of prevention, and it is the veterinarian who is best qualified to give it. The veterinarian is presumably the expert on these subjects. They are in part what he has spent his time and money in learning. He should have ready in his mind, or know where to find instantly the information which the breeder seeks, or at least should seek. When the advice of the veterinarian is sought the breeder should not restrain himself from putting his hand into his pocket and making recompense for the words of advice, the same as he would do if it were for so much medicine or so much professional service rendered on account of a sick animal. The breeder must not suppose that the veterinarian will take the time and make the effort to give up for the benefit of others the knowledge which it has cost him so much to gain without equitable reward for his pains. As well ask a laborer to give up for nothing so much muscular exertion in the harvest field. If the breeder does not know, and I fear that in many cases he does not, the value to a community of a skillful and educated veterinarian in the prevention of disease it is now time that he be finding out. The veterinarian can give him in fifteen minutes what he may grope for elsewhere in vain for as many weeks.

That veterinary medicine has done much for the stock breeder is evidenced by the fact that before the founding of the first veterinary school, which was done at Lyons, France, in 1762, the losses from many diseases were vastly greater than they are now, as witness a few figures: Up to the end of the eighteenth century 30,000,000 head of cattle died of rinderpest in Germany. From the beginning of the nineteenth century it gradually

declined, except a mild outbreak at the time of the Franco-Prussian war, until now the disease does not exist there at all. We have similar statistics regarding other diseases. Hence stock breeders should favor the dissemination of education in veterinary medicine. They should also take active steps toward obtaining legislative enactment looking toward the suppression and prevention of diseases of the domestic animals.

Instead of standing idly by or giving up in despair when our flocks or herds are attacked by disease let us arouse ourselves and make battle against it.

CHAIR: Are there any questions to ask?

CALDWELL: Did you say you could prevent cholera by inoculation?

REPP: Our experiments have failed.

COWNIE: I think hogs would be higher to-day if it were not for the fact that we have hog cholera. There would be more pork eaten. People over the state have heard of the hog cholera and they are afraid to buy the pork and eat it. It helps the beef market.

HOWARD: I think Mr. Cownie's position is right in regard to the price of pork product when we have hog cholera and when we do not have it. Look up statistics and it will prove that in all times when the price of pork products were low these times have been preceded by hog cholera. The price is the lowest when the cholera is the worst. The reason is that three-fourths of the consumption drops off. During the fall season, when cooler weather sets in, you will see that the butcher slaughters four hogs to one beef. You find this especially where there are lots of laborers.

CALDWELL: When a man thinks he has tuberculosis in his herd would you recommend him to call in a veterinary?

REPP: That is a matter of conscience entirely.

QUERY: Do you think it is on the increase?

REPP: In states where they make a special effort to stamp it out it is on the decrease.

WALLACE: Suppose a farmer had 100 head of cattle and that he had reason to suspect there was tuberculosis in it, what would you advise him to do?

REPP: If he called me I would give him all the information I could on the subject, and then let him do as he pleased.

WALLACE: Suppose you were the farmer, what would you do?

REPP: I am not in the cattle business.

WALLACE: I know what I would do. I would send for Dr. Repp, and if any of them were manifestly dyspeptic I would take them down to the river and kill them.

COFFIN: Is there not a great deal less of tuberculosis to-day in Iowa among cattle than five years ago?

REPP: I do not know. I have not the statistics.

WALLACE: What do you know about tuberculosis outside of breeding herds and dairying herds? Is there really any disease worth talking about if cattle are kept well and have plenty of fresh air and exercise?

REPP: They are more apt to have it if kept in illy ventilated stables, but we have found that they have it when they are allowed to run at large.

WALLACE: Have you ever tried to get track of how it is brought in?

REPP: Little is known about range cattle and few tests have been made, but we have found that 20 per cent of the cattle brought into the slaughter houses have tuberculosis.

STALKER: I was just going to make a few remarks on the question of loss to the owner of cattle by reason of inspection of diseased animals. I have had a great deal of experience. We did not use to know anything about this disease. If we had known what we now know, we would have been able to have weeded it out. Every breeder would have sacrificed his animals. It would have been a serious loss at the time but in the end it would have been the best thing. I made an investigation of a herd not long ago. The man had lost a number of cattle. I made inquiry and found out where the trouble began. He had purchased an infected animal and put it with a healthy herd. This had been the case in almost every instance. I think it would pay if all the unhealthy ones were sacrificed. The healthy ones would bring that much more.

BARCLAY: How can you find out what cattle are affected with tuberculosis?

STALKER: The only method is by the application of the tuberculin test.

BARCLAY: You say you used to inspect cattle long ago before this test was discovered. How could you tell then?

STALKER: Just by the simple methods of examination: the general condition of the animal, cough, emaciation, etc.

BARCLAY: Is not that the only true test to-day?

STALKER: In a good many cases the disease has not developed enough so that you can tell it without the aid of something more delicate than the eye, finger, etc.

BARCLAY: The point is this: we know that under the present condition of things the tuberculin test is not fair. Not one-half the tests that are made will show the reaction that will prove that the animal is affected with tuberculosis.

STALKER: I think that that is the fault of the methods they employ. It is not surprising that a great many of the conditions are overlooked. In making these tests you must take every precaution. It is not always a question of the test but the manner in which it is applied. I have applied it to a thousand individuals. I have been very careful in observing every detail.

BARCLAY: Is it not a fact that if a person wished to be a little dishonest he could do so in this way: He could get his cattle in a barn and apply the tuberculin test. He could in a short time call in a veterinarian and have him make the test? Would it not show that they were clear of tuberculosis? There would be no reaction on the second test.

STALKER: There are a thousand opportunities for the practice of frauds. I want to say that I do not think it necessary to apply the test to all the cattle in the state, but where a man knows the disease is in his herd, I think it is the best thing he can do.

REPP: I want to say that in over 500 cattle slaughtered in Pennsylvania, in only two cases we failed to find tuberculosis. I think the tuberculin test has not failed in more than one case out of a thousand when properly applied. It may be there and you cannot see it with the eye, but you can tell it with the tuberculin test. It does not fail in more than one case out of a thousand. I challenge any one to the contrary.

CHAIR: We will now close the discussion and have a paper by one of the standbys of the association, Mr. Brockway.

Mr. Brockway read the following paper:

ADVANCE IN FARM METHODS IN IOWA.

BY E. F. BROCKWAY, IOWA CITY.

To the man who can remember plowing with a cast iron plow on Iowa's prairies, beginning in the year 1846, about the time our state began doing business for itself, there has been progress all along the line. And the man that has kept step has often been ridiculed as a head farmer, a crank. Well do I remember when all the grain was cut with the cradle and raked and bound by hand; when all the hay was cut with a scythe and raked by hand. There is a rear guard of farmers yet who have not got beyond the pitchfork period of hay making, and in general work follow the routine of farm work much as their fathers taught them. There is no field in art or science, or in any profession, where the field is so broad and the possibilities so great as in the field of agriculture. But to succeed it requires both brain and culture. The machinery used to-day on the farm, to be handled with success, must be controlled and used by a machinist. Science and philosophy must be the constant guide even of the plowboy. The tools of the farm to-day are delicate and even wonderful specimens of workmanship, and if handled by a dull, uncultured brain, are recklessly ruined. There has been great progress in the brain culture of farm management in the last fifty-three years, and there is infinitely more needed to produce the best results with our rich prairie farms.

To begin with the home, it means something more than a place to stay while raising hogs and corn year after year. Good citizens are more easily and certainly produced in surroundings beautiful, cleanly and healthful. I am glad to say such homes are now scattered all over Iowa, and the farmers who live in those homes have libraries, pictures, daily papers and magazines and time to read them, and even the audacity to think for themselves, and even criticize the president, his cabinet, the house and senate, and may even aspire to be lawmakers, or to cross the seas to look for better stock and examine the culture of crops in other lands. You ask, what has that to do with advance in farm methods? Well, this kind of a man is the kind of a man to lead; he thinks and is known as a thinker. As the years go by he is the man to introduce good stock and new methods. His first home may have been a log cabin; the home of his old age he enjoys because he has kept in the advance; it has all the modern improvements, and he knows a good thing when he sees it. All his surroundings grow more beautiful as the years go by.

Rotation of crops keeps all the acres as productive as when new, and with the best of stock there is profit, for all the produce is fed on the farm, with no needless waste. There is no good thing this man's city cousins enjoy that he thinks too good for his family. Around this home there is an abundance of choice fruit and flowers. Industry is taught here as well as economy, yet enough of help is employed that life is not one of drudgery.

Such a man as this will always find plenty of room at the top, broad fields of it; in fact, agriculture of to-day finds more room at the top than any other occupation and the man I have described will get there, and his entire family will be with him, and their neighbors with less natural talent and culture will be helped upward by them into God's clearer sunlight of intelligence for he has truly been a neighbor and a model to the poor German or Bohemian or less fortunate one beside him; his cheerful words and ready hand has led them in kindly sympathy. Iowa has whole regiments of such farmers and we need many more who will teach by example. No machinery is too good for this man. The boys soon learn to think the finest cattle, hogs, horses and sheep are none too good for the old farm. Great possibilities lay in the path of higher agriculture with all conveniences of the city and the real beauty and freedom of country life. A good water supply with sufficient purpose for house, garden, fruit, flowers and lawn and all stock purposes is an absolute necessity.

On the model farm the owner will go down deep for the water, where it is pure as crystal and nothing from the surface will ever reach it. This model farmer will keep in advance not alone in best stock and tools and best methods, but he will bring the daily mail to his door with the best magazines and literature, and will keep in touch with the world and his neighbors and the markets. When telephones will work by using wire fences or laying a wire along the hedge, using poles only at road crossings, there is no excuse for not having one. We may hope for the solution of the good road problem by the electric railroad, as the light rails and cheap grade is cheaper than macadam where rock is scarce, and when these roads become feeders to the county seat, connecting with the railroad system and reaching out within short distances of each farm, making regular trips, the dread and discomfort of the mud road in great measure will have passed away.

The manufacture of sugar from beets in the near future will add great prosperity to agriculture. And then we have the promise that at no distant day the corn stalks of the farm will almost equal in value the corn crop, instead of being burned as now or allowed to go to waste as the cotton seed was a short time ago. When all the products of the Iowa farm are properly utilized, corn-raising will be even better than gold-mining, and the price of a gold mine will be asked as the price of each good farm. The advance has been truly great in the last fifty years, but when we reach near enough to the top to look out on those broad, illimitable fields, there is room for us all and our children's children. In the higher and intense agriculture there is greater profit, comfort, intelligence, ease, pleasure, joy. This is *real* life—this clear upper air of advance agriculture. The town and city life is really artificial, an every day Fourth of July of which we soon tire. But a trip to the city, the busy marts of the world, or in summer to clear, cool lakes beside snow-clad mountains, or in winter to the sunny southlands for a short time, then back to the old home again with its sunshine, its shades, its fruit and flowers, and all seems more bright than ever. So much I have said for the farmer who stands in the advance as the Great Father would have him to do, ever climbing, ever at the front and sure of the promise that he shall "be fed with the finest of the wheat."

CHAIR: When a man has wheels in his feet it is a good thing. It is better than if he had wheels in his head. Mr. E. M. Wentworth has both. He uses them in going over the country a good deal. He will now read us a paper.

Mr. Wentworth read the following paper:

"Hoss," or horse? is a question that is puzzling many a prospective breeder, who sees in the present revival of that industry an opportunity to pleasantly and profitably employ a part of his capital and genius.

James Russell Lowell says, "Not failure, but low aim is crime," and the man embarking in the breeding industry must have the patience and perseverance of true genius to win success; he must be a close observer to avoid the failures of others; he must be a student to know his own weakness, to measure his own strength; he must study the markets, familiarize himself with "supply and demand," get acquainted with his animals' individuality and inheritance. Your program has at its head the truism "blood will tell," the leaven of lineage, the aristocracy of ancestry. Once mastered the world acknowledges your genius, the goddess Success crowns your efforts.

'Twas Ralph Waldo Emerson, the Yankee philosopher, whose precept "Hitch your wagon to a star," voices the aspiration of every genuine horseman and furnished a "Star Pointer" that should entitle him to a life membership in the Iowa Improved Stock Breeders' association.

The gist of the quotations, Mr. President, is the establishment of a standard in its best and broadest sense, an ideal if you please, then bend all your energy and ability to achieve it.

I like the good old-fashioned way of our ancestors (Puritan or Cavalier "We are all Yankees now") when the swain before telling his sweetheart he could not live without her, not only studied her individuality but hunted up her family history in his effort to ascertain that he could live with her, well aware if there was an "outcross" or a "yellow streak" therein 'twould surely "crop out" whenever the load became heavy in double harness.

To the credit of that sweetheart be it said she also was posted and from those marriages sprung the sturdy citizenship whose stalwart manhood is the pride, as is the sweet womanhood the glory of the nation.

Last spring I had the honor of meeting with a similar association in a New England state, at which time a discussion on the value of blood lines in breeding brought forth the statement from a gentleman of wealth and national reputation that "the Durham cattle and Morgan horse never had a rival."

I am aware there are in Iowa those who make oath to the truth of the first part of the statement, and in the short time at my disposal 'twill be my pleasure to pay tribute to the best of my ability to the Morgan horse.

Old Justin Morgan was foaled over a century ago, during the administration of Washington, reared among the hills of Yankee lands, where neighbors were few and villages far between; the mill was a day's journey, the market a week's.

Those old time Yankees were a tireless people of iron will, rugged constitution; muscles like tempered steel, always on edge. Their "strenuous life" meant the survival of the fittest—man or beast. In such environ-

ment a fit companion of such men was the beginning of the family renowned to this day and generation for its style, speed and strength, its courage, intelligence, and endurance, whose labors and triumphs have kept pace with the progress of the century, have held the skirmish line of civilization. They came with the pioneer to the western reserve; they pulled the lumber for church and school and home; they drew the doctor's "one-hoss shay." The preacher found an ideal co-laborer in the faithful, trusty Morgan; none so brave at the head of the regiment; none so proud, so gentle, bearing beauty's saddle; none so adaptable, so adequate to the performance of every duty.

Every outpost of civilization has been the field of a Morgan's duty, every county from Maine to the Missouri the scene of a Morgan triumph, to be lovingly recalled around the evening fireside when "we live in memory once again the days of long ago." Truly we love them for the record they have made, rivaling the Hambletonian in speed, the Norman in strength, the high-acting Hackney or the smooth-moving Coach on highway or in show ring.

They are the ideal cavalry mounts—strong-backed, deep-bodied, sturdy-limbed, well-boned, active, alert, intelligent. We all remember, and our blood bounds at the recollection, the nation remembers and patriotism illumines every eye, the record-breaking, history-making, victory-achieving ride of Sheridan on the Black Hawk's "Rienzi," fired by the blood of old Justice Morgan, to "Winchester, twenty miles away."

Age does not wither nor time destroy the virtues of the Morgan, their vigor and virility were the resultants of their environment and education, foaled under the steadfast light of the Polar star, raised in the cool, clear atmosphere of New England hills, refreshed by the purest water from boiling spring or mountain brook, fed from the sweetest of clover pastures, grown on oats and aftermath, well-bred, well-fed—it yet remained for that tireless, nervous Yankee, by that most sensitive of transmitters, the horseman's hand on leathern line, to impart through bit to brain their chiefest characteristic—the tenacity, the courage to do or die, the get-there-ative-ness in which they stand pre-eminent.

No load too big, no road too long, no horse so fast but our fathers determined to breed a stronger, faster, better; thus, the rivalries of a century made an indelible impression upon the character and intelligence of both Morgan and master, horse and man, in the evolution of "Hoss to Horse."

CHAIR: If there is no discussion on this paper we will pass on. The next on the program is a paper by Mr. S. A. Converse. Mr. Converse read the following paper:

THE RAISING OF THE CALF.

BY S. A. CONVERSE, CRESCO.

At the risk of seeming contradictory, I will say my subject is an old one and yet it is a new one. It is an old one because it has been labored with almost from the earliest history of mankind. It is a new one because I am to take the new-born calf to raise. Let me here say that I shall not advance a theory and endeavor to sustain it in a long-spun article, but shall endeavor very briefly to tell what methods or practices have given me the best results. Nor will I speak of a method that will apply to one particular breed only; but the method advised will, in a general way, apply to all breeds of cattle, yet perhaps will more fully apply to the general purpose breeds.

There is no period in the life of cattle when a *little* neglect will do such great injury as during the first few months of the calf's life. Scrub the calf and you have a scrub always. If you must neglect some of your cattle, let it fall upon the older ones instead of the calf. Pinch the calf and it will pinch you during the remainder of its life. Some forty years ago, at the old home, we let the cow raise most of the calves, only milking a few cows for the family supply of milk and butter. But most of the neighbors, having only a few cows each, raised the calves by hand. Calves all came early in the spring and were fed on skim milk; sweet, generally, but sometimes sour; generally warmed, but sometimes cold, and a little wild hay given as a relish. When grass came they were turned out on the open prairie. If that were all fenced, then the roadsides were good enough for the calf. If they came home at night they got some milk, sweet or sour, warm or cold, as was convenient. Soon they declined to put in an appearance at night for the *feast* that awaited them, and had wandered so far that they were not easily found, and when found a day or two following, they were alive and well, and left to feed and were occasionally driven up during the summer. When the round-up came at closing in of winter the calves were nearly all found and *looked* larger than they did in the spring, and were nearly as heavy as they were when turned out to grass. Real nice, puddy little fellows—looked like a sunfish just ready to spawn. How nice! Could those calves ever be anything but scrubs? Any wonder that this whole state was covered with scrubs? I am sorry to say that there are still some calves raised in that way.

Some twenty years since we commenced raising calves by hand, ten, twenty, thirty, forty and more in a year. At first milk was set in pans until ready to skim and then the milk warmed and fed. To help out the milk we tried bran, shorts, middling, ground corn and oats, barley, oil meal, shelled corn, and whole oats. Sometimes one or two kinds for a whole season, sometimes a mixture. Sometimes we had sour milk, but if warmed when

fed we could use it very well. Sometimes in hurry of field work we had not time to warm it, and fed a mess cold. Found this a mistake. Better let the calf go without a feed than to change off from warm milk to a cold feed. Then came the deep setting of milk in water. This was an improvement because our milk was always sweet. After years of experiment, we have for the past twelve or fifteen years followed about this method: The calf may be left with the dam for the first day or two, then taught to drink from a pail. Feed the milk of the dam for the first few days. Feed whole milk the first three to five weeks, then mix with skim milk more and more, and less and less of whole milk until at six or eight weeks it is all skim milk. The quantity of whole or skim milk should depend some on the seeming needs of the calf, but not over three to five quarts at a feed morning and evening, the milk being warm when fed. *Never* a feed of cold milk. This is continued five or six months or longer if we have milk. Calves are kept in a pen in the barn. Stanchions of right size are built along one side of the pen, and when the calf is a few days old it is always there with head through stanchion as soon as feed time comes, and the pail of milk is set down in trough, which is built along in front of stanchions, stanchions are closed and calves kept tied for an hour. After milk is fed the pail is removed, as soon as the milk is drank, and a handful of shelled corn and oats placed in trough in front of each calf. Grain feed is commenced as soon as they will eat any. We prefer a mixture of feeds. A good mixture is one-half the measure shelled corn, one-fourth oats and one-fourth bran and oil meal. Twice as much bulk of bran as oil meal. The amount to feed during the first year is easy to measure. Feed just all that the calf will eat. If I were compelled to choose any one kind of feed, it would be shelled corn for the first year. Don't grind corn or oats for the calf. Better unground. Calves run out in the sun and fresh air every day, and in pasture when there is grass. Provide a little clean hay always within reach of the calf. This is imperative. The calf must have some rough feed to form its cud. Several times I have seen a bunch of calves a few weeks old, get sick with bowel troubles and go down, and some die, and all seem to be going with an epidemic or contagious disease. A close watch revealed that they were chewing at the few straws of bedding that happened to protrude from the closely packed mass under them, and they would chew and pull up the straws until they were actually eating straws that were reeking with their own filth. Clean hay was provided and they let go of the filth and slowly recovered and no more epidemic or contagion was suffered.

During the past six years a No. 3 hand separator has stood in one end of our barn, near the calf pens, and the milk is skimmed as soon as milking is done and at once fed to the calf, followed with grain feed as above stated, grain always fed dry. My hand separator is so great an improvement that I believe no farmer can afford to do without one, if he is milking six or eight cows. Get you a hand separator, and don't wait until you can get a power to run it. It is easy hand work to run them. I have, in a limited way, tried letting the cow raise the calf; also have let the calf do its own milking night and morning, carefully stripping what the young calf could not take. After all experiments made, we concluded that we know of no better or more profitable method for the general farmer to pursue in raising the calf than as given above. Under this method we

Improved the common scrub stock. We made the Shorthorn cross and continued to improve the cross breeds, and since we have bred pedigreed cattle. I am safe in saying we have steadily improved their size and quality. They are all raised by hand in this way, show cattle and all. The herds that we showed last year at the Trans-Mississippi exposition and this year at large fairs were, with two exceptions, all raised in this manner, by hand. It is not claimed that this is the only way to raise good calves; but it is claimed that it is a safe and practical way to raise good calves and easily within reach of every farmer who raises calves at all; and there is no excuse for any farmer who raises scrub calves. If there is \$1 of profit to the farmer who raises a half-fed, half-neglected scrub calf, there is just as surely \$2 profit if that same calf is well raised, whether it be of this breed or that, or if it be a mongrel or of common stock. But there is one thing that you must give the calf: it is your constant care and attention 365 days in the year. It will not thrive and grow upon neglect. "Eternal vigilance" is the price of a good calf.

TRIGG: Did you say you preferred corn over any other feed?

CONVERSE: If I were obliged to choose for the first year's feed I would choose shelled corn. I use some oats, some bran, and some oil meal.

JOHNSTON: Suppose your calf was born in the spring of the year, would you start it on grass, or would you combine the feed?

CONVERSE: If it was a steer and I wanted to make the most money out of it I would pop it right through with the best feed I could get into it.

QUERY: Do you think that oats make more growth and less fat?

CONVERSE: I believe the first year, if the grain feed is nearly all corn, you will get a good growth as well as fat. Nature's feed for the calf is the whole milk which is rich in fat.

QUERY: Do you think it will injure the heifer?

CONVERSE: I have not found that it will.

QUERY: If you allowed the calf to run with the dam, or get its mother's milk, would you then use corn for feed?

CONVERSE: If it was a steer and I was getting it ready for the market I would. My idea is if you are fitting a steer for the market the quicker you get it ready the more you make out of it.

QUERY: Do you feed the same ratio of feed when running with the dam?

CONVERSE: My father used to feed more corn when they were not running with the dam. We allowed calves to run with the cows in those early days. I do not practice it now.

WILEY: I believe I understood you to say that your young calves were turned on grass. Would you turn young calves right out on grass in May and June and give them their milk besides?

CONVERSE: I let my calves run out all summer to grass. I like to have them out in the sunshine and green fields.

WILEY: Do you not think they would be better in a shed with fresh hay than out in the sun with the flies?

CONVERSE: Calves kept in all summer are, perhaps, a little fatter, but I believe in sunlight and fresh air. I like it for myself, and I think it is better for the calf.

WILEY: I think this milk and pasture grass is pretty washy feed.

CONVERSE: They seem to thrive on it, but they may not look so well.

REPP: I want to say just a word about calf cholera. It is known as dysentery. There are two forms of this disease in calves. The second form is more like indigestion and is brought about by improper feeding and exposure. Some good authorities say this is produced by a germ. It affects the calf in the form of dysentery. It seems too late to begin with the calf. You have to begin with the cow before the calf is born. We want to make some investigation about this disease in the coming season. We want to know whether the calf dysentery that is in this country is produced by the same bacillus that produced it abroad. We want to outline some plan of treatment to prevent this disease. I want to say to you, gentlemen, that I will be very much indebted to you if you will write me when you have your first case of dysentery. I want to try and do something in regard to it. I won't promise you that I will cure this disease, but I am going to do my best, and I think I can do something.

BROCKWAY: I have had considerable experience in raising calves; have raised sometimes forty in a season. I raise nothing but Shorthorns. I let them run with the cow a few days, then I let them run out on the lawn. They run there and suck the cows nights and mornings. Then I place oats and shelled corn where they can get at it. I have always had good success.

CHAIR: Mr. Shambaugh is not with us to-day, but we have with us a man who understands the topic and he will now give us a paper on the subject of "Practical Cattle feeding."

MR. WALLACE: I am glad to be with you to-day, gentlemen, and hear some of the experiences of the fine stock breeders. My experience has been mostly with the breeders at the stock yards. I was glad to be here yesterday and hear my friend Coffin say what he did. I have learned to love him for what he has done in Iowa and for what he has done for humanity. He said what he did boldly. There were many things he said which he would not have said if he had had political aspirations. It did me good to hear his talk. I liked what our president said, also. Friend Coffin said something about the farmers not being represented; that there were so many bosses. I think the farmers are represented about as largely as they deserve. If they want to be represented they must do something to be worthy of respect. There are farmers who announce themselves as candidates for office, and some of their neighbor farmers will not be charitable enough to help them along; they will vote for some lawyer at the county seat instead. They must stand by each other if they want help in that line. But I was to talk on practical cattle feeding. There is not much sentiment about cattle feeding. It is simply a money making business. I do not have very much sentiment about me, yet I hate to see a good steer killed. I think the world would be better, if we allowed a little more sentiment to be mixed with our business. It is not my purpose to discuss breeds. I am glad to get any breed that is the right kind. There is quite a rage now for Whitefaces. For my part I do not believe in the color craze for the exclusion of quality. I have been in the business for a number of years, and I used to teach school and buy cattle as a side line to make some money. I think I know something about a steer that will make a good feeder, but there are many things we know that we cannot describe. It is hard to get a good bunch of feeders at any of the yards. We have to look to the range country for our feeders. I cannot go into a dairy country and buy a good bunch of steers. I have found the worst kind of scrubby stock where separators were used. I usually pass these kinds of calves up when I see they are separator calves. It seems as though all the good qualities had been separated from them. I have great difficulty in convincing men that they ought to buy good sires. They are very

obstinate about this. If you would travel over the country very much you would notice this to be the case. Hundreds and hundreds of these farmers would surprise their neighbors if they bought a thoroughbred sire. They are scrub men. I may be too enthusiastic on this subject, but I am in the steer business. I would advise every farmer to purchase a good sire. I respect you men because you are engaged in the business you are. It seems to me now that the sun is shining on your business. It is more profitable than it was. The western men are buying your sires and are using them. I had some cattle on the range for a few years. I thought I could keep them cheaper out there. I found when I got there that I was not congenial company with these gentlemen there. They did not like the class of stock I had. Now as to feeding cattle, I would say, feed them until they are fat. I have fed oil meal, cotton seed meal and shelled corn. I know something about the feed on which a steer does the best. I have become somewhat tired of fooling with grinding, except when I have plenty of leisure. As a rule, we feed ear corn slightly broken. I feed from two to three pounds of oil meal to a steer a day for a short time before they are ready for market. I would advise using cotton seed oil very sparingly. Over-feeding will produce bad results. I want to say before I close my remarks that I like to come in contact with men who have at heart the improvement of the stock interests of Iowa. I hope, gentlemen, that you may all take new courage and go on in this work.

BARCLAY: I want to relate a little circumstance. About sixteen years ago I was in Marshalltown making a sale. I was in a fix. I had more young bulls than the farmers in that part of Iowa wanted. Mr. Wallace saw the fix I was in and he came to me and said he would trade me some steers for those bulls. I went with him and looked at the steers. After looking over the steers I made up my mind that they were worth about \$30 per head. He gave me three steers each for my bulls. I took them home and kept them for several weeks. One day a man came and offered me \$34 a head for them. I sold them right away. That is the kind of a friend I like.

WALLACE: There was a little something in it for me at the same time.

BARCLAY: Yes, but in helping yourself you helped me.

WALLACE: I want to ask you farmers and stock breeders if there is anything I can do for you in the legislature. I find

conditions very favorable down there. I find the lawyers will do most anything reasonable I ask them. They come to me about things and think I ought to know. They are very charitable in these matters. They are willing to give the farmers what they want. I have not found them unreasonable at all. I was surprised at the concessions they make.

AVERY: I would like to ask if Mr. Wallace has ever tried gluten meal in the place of oil meal, that is, from the starch factory?

WALLACE: I have never had any experience with it. I will tell you something that I do know. I find that these mills are all taking the cereal products out of it before shipping it to the feeders, so that meal would not be very beneficial to feed.

CHAIR: We will now take up Mr. Packard's paper.
Mr. Packard read the following paper:

THE QUESTION OF FORAGE.

HON. S. B. PACKARD, MARSHALLTOWN.

Pasture grass and clover hay are the most generally approved forage for their respective seasons of use. It is, however, the cheapest and best forage crops that are needed to secure a good margin of profit to the stock breeder and feeder whose product is handled and priced by the dressed beef and export syndicates.

Under entirely favorable conditions two acres of pasture grass are required for the consumption of each horse or cow pastured and with droughty conditions, another acre will be required to give sufficient feed. The cost of this amount of feed, considering the amount of land used is easily estimated and needs no far attention.

The alternative is in the production of soiling crops where one of the acres used for pasture will produce rye, millet, clover and corn fodder for summer feed in abundance for the whole grazing season with considerable remaining for the support of an animal through the winter. Clover hay when considered in connection with its soil invigorating properties thus being required in crop rotation must be esteemed and regarded as useful and cheap at the cost of its production. Next in value come the two standard crops of corn and oats.

Here we have two crops of which only two-thirds of the amount and value produced are utilized. The cornstalks are left in the field to invite animals to brush about during autumn and winter and to part with whatever of summer fat they may have accumulated and the younger ones to starve for need of nutritious food. To a like extent the oat straw stack is wasted for the lack of care.

Were the corn cut and shocked in proper season and the oats harvested a trifle earlier in aid of a better and more palatable straw and the stacks properly made and covered with slough hay over one-third of both crops would be added to the forage supply over the present wasteful method.

The analysis of corn fodder by the Agricultural department at Washington shows it to contain a greater amount of digestible ingredients than timothy hay. In one ton of stover there are 964.9 pounds which are digestible and in a ton of timothy there are 938.2 pounds digestible.

Stewart's table gives the digestible quantity at 954 pounds in stover a trifle less than the department's analysis and the same authority gives the digestible ingredients in a ton of oat straw a total of 844 pounds and in average meadow hay a total of 948 pounds to the ton, showing the oat straw to have eight-ninths of the value of meadow hay.

The comparative values of these forages do not indicate those values always when fed as independent rations, but it demonstrates their feeding value in connection with other fodders. For example, a ton of clover and a ton of oat straw as a mixture would be a trifle better feed than two tons of average meadow hay.

The next forage in point of value to the cost of its production I shall place millet hay. This is a crop usually disgraced in name as a "catch crop," though in point of value as a forage it is superior to timothy in nutrients, and when corn stover and oat straw are deficient it is strong and is quite a saver of grain when fed with those fodders. The time of sowing as well as the season of harvest makes it a desirable crop to raise in rotation.

Timothy, even, when well set with a good stand is not a profitable crop, and when considered with its uncertainties in seeding and the difficulties in securing a good stand, it becomes one of the crops that costs more than it is worth. Enough to supply the work horses during the spring work and a little to offer the calves when learning to eat seems to me to be as much as should be provided for use on the stock farm.

With corn, oats, clover, millet, and wheat and rye straw coarse forage and bedding will be had in abundance. The principal grains needed are corn and oats, and the proportion about an equal acreage for those breeding and rearing stock, and wheat should be grown to exchange for bran in most liberal quantities. For stock feeding and dairy operations corn, oats, and bran satisfy fully the needs for grain with coarse forage. Oats should be the leading grain given to young stock.

All dry forage can be more economically expended if ground or cut before feeding; but whether profitable to do this will depend on circumstances. If one has more shocked corn than required it will not pay to husk the corn or cut the fodder. If contrary conditions exist it will pay to do both. Corn can be ground profitably when it is to be fed to cattle where the excrement is not immediately within the reach of hogs.

Oats are said to have nine and one-half per centum of indigestible fiber while oatmeal has less than one per centum of fiber. All the forages mentioned contain very valuable fertilizing properties, and the stock farm where they are consumed and the manure saved will never lack for a prolific soil in the production of these crops.

No value should be placed upon a corn stalk field left to wither and bleach after the husking has been done. After the scattered corn has been picked up (and this operation, unless carefully attended to, will do more harm than good, from an over-supply taken by the cattle) there remains an insufficient amount of nutritious food to support cattle, and may be dangerous unless the stock has access to grass or are supplied with other succulent feed. A winter blue grass lot in reach of shelter will be useful in connection with cold weather feeding before snow comes or after it goes for stock cattle and horses.

Much of the good results obtainable with an abundant supply of forage will depend on the methods of feeding, which subject does not belong to the topic given me, so has no place in this paper.

CHAIR: The paper is now open for discussion.

QUERY: What variety of clover do you grow?

PACKARD: The common red clover.

WEST: What way do you feed your fodder?

PACKARD: I feed corn and fodder together.

WEST: Do you get two tons to the acre of digestible food?

PACKARD: Certainly not; there is not that much in clover.

BARCLAY: I am interested in this subject of corn fodder. I have come to the conclusion that an acre of good corn fodder is worth more than an acre of hay. Some think it is a rough feed for cattle, but I think it is equal to any hay I ever used. This fall I have cut and shredded seventy acres of corn fodder. I have it in the barn to-day. My clover got killed last winter. I plowed the ground up and put in corn and think it was a good investment. I raised sixty bushels of corn, and it was just as good feed as I would have had with clover hay.

COWNIE: Do you shred your fodder?

BARCLAY: I prefer shredding. It is in better form for use and the stock use it to better advantage. I keep it in the barn.

WALLACE: What is the cost?

BARCLAY: I have not gone far enough to know. I shred with a McCormick shredder. It cost me \$175. It will take all the corn fodder we can get to it with three teams. It husks the corn and separates the weed seed from the shelled corn. This makes excellent chicken feed. We run from seven in the morning to six at night, and employ a feeder and one man for each of the three teams.

BROCKWAY: I agree with Mr. Barclay about corn fodder, but I think shredding is expensive. My way is to feed husked corn in boxes. I think that in feeding husked corn there seems to be a necessity for something else. I think it is expensive to

shred it, and I think it is more apt to become injured by heat. I like fodder.

CHAIR: We will now take up the topic that Mr. Curtiss was to discuss, "Observation of Different Types of Dairy Animals."

Professor Curtiss then gave a very interesting and instructive talk upon this subject, which was illustrated by charts. These charts formed the principal points of interest and value in the talk, consequently it cannot be given in a report of this nature so as to be of interest to those not at the meeting.

CHAIR: The next will be the report of the secretary.

Mr. McFadden read the following report:

SECRETARY AND TREASURER'S REPORT FOR THE YEAR ENDING DECEMBER 12, 1899.

To the Members of the Iowa Improved Stock Breeders' Association:

GENTLEMEN—The following is a financial report for the past year:

December 13, 1898, enrollment at Iowa City meeting.....	\$95.00
December 14th, overdraft to date.....	\$ 8.15
December 14th, expenses at Iowa City.....	2.25
February 20, 1899, paid stenographer.....	30.00
March 13th, express on package to Governor Shaw.....	.10
October 1st, drayage on proceedings.....	.25
October 1st, postage on proceedings.....	5.70
December 2d, sending programs (postage).....	1.60
December 2d, message from Beardshear.....	.40
December 12th, programs and envelopes.....	4.00
December 12th, postage to date.....	2.00
December 12th, secretary's salary for 1899.....	25.00
Balance December 12, 1899.....	15.55
Total.....	\$95.00

Respectfully submitted,

W. M. McFADDEN.

CHAIR: What shall we do with this report?

It was moved and seconded that the report be adopted.

Motion carried.

CHAIR: The next is the report of the committee on location.

MR. BENNETT: Your committee on location would respectfully recommend Mt. Vernon as the next place of meeting.

It was moved and seconded that this recommendation be accepted.

Motion carried.

CHAIR: We will now have the report of the committee on officers.

Mr. Tomson read the following report:

OFFICERS.

President.....C. F. CURTISS
Secretary-Treasurer.....W. M. McFADDEN

VICE-PRESIDENTS.

O. G. HENDERSON.....Central City
H. D. PARSONS.....Newton
H. G. McMILLAN.....Rock Rapids
S. A. CONVERSE.....Cresco
M. D. CLARK.....Mt. Vernon
JNO. HOWAT.....Welton
CHAS. ESCHER, JR.....Botna
F. F. LUTHER.....Grand Junction
J. P. MANATREY.....Fairfield
J. W. STRIBLING.....Earlham
T. D. BROOKS.....Hedrick

C. S. BARCLAY,
R. J. JOHNSTON,
J. W. WADSWORTH,
HENRY WALLACE,
F. D. TOMSON,
Committee.

Moved and seconded that the report be accepted.

Motion carried.

CHAIR: The next will be the report of the committee on resolutions.

Governor Packard read the following report:

REPORT OF COMMITTEE ON RESOLUTIONS.

WHEREAS, The greatly increased interest awakened in the breeding of improved live stock in Iowa occasions our congratulations, that the exhibition of pure breeding and fat stock contributes to more widely advertise the high and superior character of the herds and flocks of our state, therefore be it

Resolved, That we heartily commend to the support of the breeders of the state the proposed international live stock exposition at Chicago in December, 1900. Be it further

Resolved, That we also commend to the generous support of our stock people the annual state fair held at Des Moines under the management of the State Agricultural society, and recommend to the management of the next state fair the offer of liberal premiums in the stock classes, as is consistent with their duties,

We note with pride the large attendance of students and the marked growth of the Iowa State College of Agriculture and the Mechanic Arts in all its departments, the efficiency and the scope of its work in animal husbandry, in agriculture and dairying.

We believe the time has come when the state must give more liberal support to the college immediately and allow it to grow in accord with the great and urgent demands now upon it. While commending to the careful consideration of the incoming legislature all the askings of the board of trustees of the college, we especially emphasize the requests for additional support funds, a house for the president, the horse barn and stock pavilion, and for the purchase of improved live stock for the experiment station.

Resolved, That the thanks of this society are tendered to the Hon. James Wilson, secretary of agriculture, a highly esteemed member of this association, for his successful efforts in extending the markets for our products in foreign countries, also in the care exercised through his orders for the protection of our stock from disease and in experiments in aid of prevention through scientific means, and we congratulate ourselves that Iowa is greatly honored and our country most efficiently served by our distinguished farmer, the secretary of agriculture. Be it further

Resolved, That we tender our thanks to the college faculty and the citizens of Ames for their very generous hospitality in making our visit one of pleasure while attending our sessions, and we anticipate to a much greater degree this pleasure when this evening, Deo volente, we meet them about their hospitable board at the banquet. Be it further

Resolved, That a standing committee of three members be appointed by President Beardshear to consider and to advise with the members of the next general assembly concerning legislation affecting the interests of the improved stock breeders of Iowa, especially should any radical legislation be contemplated concerning infectious diseases of live stock. Be it further

Resolved, That our thanks are due and are hereby tendered to President Beardshear and Secretary McFadden and the other officers of this association for their painstaking and successful work in connection with the arrangement and holding of this, the twenty-sixth, and one of the most successful, of the annual meetings.

L. B. PACKARD,
Chairman.

CHAIR: You have now the report of the committee. What is your pleasure?

It was moved and seconded that the report be accepted.

Motion carried.

BARCLAY: A little matter came up yesterday that I believe should be taken some notice of to day. This is in regard to becoming a member of the National association. The meeting will be held at Ft. Worth, Texas, next January. I think we should be a member of this association.

WENTWORTH: What is necessary in order to become a member?

BARCLAY: The fee to become a member is \$10. I move that this association become a member of the National association.

WALLACE: I second the motion.

CONVERSE: I would like to ask if this is the association that was started in Chicago some years ago?

BARCLAY: No, this is not the one.

CONVERSE: There was one started in Chicago and another one in Denver about the same time. I noticed in one of the papers lately that the organization in Chicago had united with the Denver association. Is not this the same thing?

BARCLAY: This is an entirely different organization.

WALLACE: I want to say that this association that meets at Ft. Worth is the largest and by far the strongest association of live stock men in the world. Its aim is the promotion of the live stock industry. I believe it would be to the interest of this association to belong to the National association and be represented at its meeting by one of our men. It makes the bond of fellowship national.

The motion was made and carried that the Iowa Improved Stock Breeders' association become a member of the National association.

BARCLAY: What is the basis of representation?

SECRETARY: We are entitled to more than one representative, I think.

The motion was made that the president and secretary be the representatives at this meeting, and that in case of their failure to attend they delegate some one to go.

Motion seconded and carried.

H. WALLACE: I think there is one thing we lack in these meetings. I do not see why the ladies cannot attend just as well as the gentlemen. They say at Mt. Vernon they want the men to bring their wives. I want to make the suggestion that the ladies be invited. There was never an institute that was perfect unless it had a woman in it.

CHAIR: This is a very good idea, and we will hope to see the ladies out at our next meeting. I want to present to you now your new president, one of our own family, Professor Curtiss.

CURTISS: I will say that this is a complete surprise to me. I do not have a speech to make, but there are a few things I want to say. I want to talk to you about the college and the

needs of the college. We have found that it is impossible to properly train young men and educate them in the right methods of raising live stock unless we have live stock of the highest types as examples. It is an intellectual impossibility to train them right unless they have the best class of animals as models. There are a number of breeds that we do not have represented here. We want to get these. We want to improve the standard of what we have. There is a wrong impression about this feature of our work. People say we have unlimited means here. As a matter of fact hundreds of men are spending more money every year for the improvement of one breed than we have spent for the improvement of all. We cannot educate the boys with scrub cattle. We must have the best in order to teach them in the right way. We want every herd and flock good enough to put at the head of the best herds in Iowa. We do not want to encroach on the stock breeders' province. We want these simply for instruction. I thank you.

Meeting adjourned.

APPENDIX

NINETEENTH ANNUAL MEETING
OF THE
Iowa Shorthorn Breeders' Association

HELD AT THE
IOWA AGRICULTURAL COLLEGE, AMES

DECEMBER 12 AND 13, 1899.

OFFICERS FOR 1899.

PRESIDENT.

W. W. VAUGHN.....Marion

VICE-PRESIDENTS.

J. P. MANATREY.....Fairfield

JOHN A. EVANS.....West Liberty

G. H. BURGE.....Mt. Vernon

DIRECTORS.

C. S. BARCLAY.....West Liberty

F. A. EDWARDS.....Webster City

A. DAVIDSON.....Monticello

PROGRAM.

TUESDAY, DECEMBER 12TH, 7:30 P. M.

Prayer, President Beardshear, Ames.
 Welcome, C. S. Barclay, West Liberty.
 Response, E. S. McCutcheon, Lyons.
 Annual address, Pres. W. W. Vaughn.
 Appointment of committees.
 The success of a beginner—G. H. Burge, Mt. Vernon.
 Discussion.
 Opened by F. F. Failor, Newton.
 Line-breeding compared with in-breeding—F. A. Edwards, Webster City.
 Discussion.
 Opened by W. W. Vaughn, Marion.
 The range trade and how to handle it—A. L. Harrah, Newton.
 Discussion.
 C. S. Barclay, West Liberty.

WEDNESDAY, DECEMBER 13TH, 9 A. M.

Shorthorns for milk and beef—O. H. Lyon, Rockford.
 Discussion.
 E. F. Bell, Roland.
 Shorthorns for the future—Henry Wallace, Des Moines.
 Discussion.
 S. H. Thompson, Iowa City.
 Comparison of Shorthorns of America with those on the other side of the Water—Prof. C. F. Curtiss, Ames.
 Discussion.
 George E. Ward, Hawarden.
 The cattle interests of this country and what part Shorthorns should take—B. F. Hakes, Williamsburg.
 Discussion.
 George Bellows.
 Reports of committees.

IOWA SHORTHORN BREEDERS' ASSOCIATION.

The nineteenth annual convention of the Iowa Shorthorn Breeders' association convened in the college chapel at Ames, Tuesday evening at 7:30. There were not so many present as was anticipated. The severe snowstorm that prevailed throughout northern and eastern Iowa the day previous, undoubtedly kept many breeders away. All parts of the state were represented, and it was evident that those present were keenly alive to promote the best interests of their favorite breed.

The college people were very cordial in their welcome, and spared no pains to have the visitors see the buildings, apparatus and stock on the college farm.

The program provided that Mr. C. S. Barclay, West Liberty, should deliver the address of welcome. Owing to his absence Pres. W. M. Beardshear, of the agricultural college, was pressed into service, and in his characteristically earnest and interestingly impressive manner he welcomed the association to the agricultural college and Ames. He expressed himself as always being glad to welcome such organizations at the college, but did not like to be called upon as a substitute, and was certain that Mr. Barclay had some good reason for not being present. He continued by assuring the association that it gave him special pleasure to welcome them at the college, and regretted that they should see it in the lonely condition in which the season's vacation of 700 students left it, otherwise they would be given the welcome such as only the minds and hearts of that vast army of students could accord. Representing these students, and speaking for himself as well, he assured all a most hearty welcome expressed in the friendly and brotherly spirit of co-laborers in the field of education and improvement. He voiced a responsive sentiment when he declared that the organization was composed of a progressive class of citizens whose to-day's best would not contentedly let that stand for next year's best nor even to-morrow's best. He emphasized the fact that the members of the Iowa Shorthorn Breeders' associ-

ation, and the faculty of the agricultural college were mutually interested in the promotion of all things that would be helpful in the great work of improvement of domestic animals. This work calls for the very best within the possibilities of both our minds and hearts and we get more out of it than the mere accumulation of dollars, and the greater reward is the seed corn of happiness, joy and contentment.

In continuation he earnestly declared if he was back to 19 years of age and knew what could be gotten out of a calling such as that of an improved stock breeder he would choose that as his life work, and would be happy as he improved in education to improve the cattle about and by him. He spoke of the independence which well-kept animals bring their owners, and which results in contentment of home and cheerfulness about the fireside when the cattle are warmly and comfortably housed.

By this time all appreciated that the president of the agricultural college was an ardent lover and student of both human and animal life, and that his very soul was in touch with the things calculated to elevate and improve the conditions of both.

Concluding, he welcomed the association to inspect the college buildings, the barns, the stock and equipments, and urged that they stay as long as they could, that they would come again next year and as often thereafter as they could, and that they would always find the latch-string out.

Mr. B. H. Hakes, of Thornburg, was called upon to respond to the address of welcome, which was also quite unexpected to him. However, he briefly thanked President Beardshear for the generous welcome the association had been given, and assured the association that he enjoyed the companionship and affiliation of such men and that his love for Shorthorns was always increased by attending such meetings.

The annual address of the president, Mr. W. W. Vaughn, was then delivered, as follows:

PRESIDENT'S ADDRESS.

Gentlemen of the Shorthorn Breeders' association of the state of Iowa:

As breeders of the most popular breed of cattle in this the grandest cattle growing state in the union, we must acknowledge this closing year of the nineteenth century a most successful one.

The cereal crops on the average were abundant in quantity and good in quality. The freezing out of the clover plant last winter necessitated the breaking up of many meadows, and left others with a thin stand of grasses

thus reducing the quantity of hay, but under the favorable weather of the harvest season the crop was matured and gathered in prime condition. This supplemented by an abundance of rich and nutritious corn fodder, and the long continued mildness of the autumn weather leaving all outside picking, such as aftermath, cornstalks and winter blue grass available, has removed all danger of a forage famine.

The extreme severity of the late winter, and the cold and dampness of the backward spring, made it difficult to keep the herds comfortable or properly care for the increase. The hornfly, during the summer months, continues, by his increasing numbers and persistence, to prove a formidable adversary, while calf cholera, chronic abortion, pink eye, tuberculosis and kindred evils, must occasionally be reckoned with as disturbing elements to our prosperity. We should be thankful that no serious or widespread malady has attacked our herds, and that the general health of the cattle stock of the state is good. The times for which during the past years of depression in the cattle industry the hopeful hoped for and the desponding despaired of have fully arrived, and leave little to be desired in the way of values for well-bred cattle. The demands for the increase of our herds, as well as the prices obtainable, which leave a handsome profit above the cost of production, are or should be thoroughly satisfactory to every breeder. The year throughout has been one of high prices for beef from well bred cattle well matured, and we note with satisfaction that over 70 per cent of the high-class beef is produced from animals carrying a greater or less amount of Shorthorn blood. Within our state during the past year we claim the distinction of having produced and sold more pure bred breeding animals of the Shorthorn breed, and at better prices than any other state; of having sold and bought the highest priced male and female; of having made the highest average at a public sale; and of having furnished the largest number of pure-bred bulls for use on the ranges. Through our enterprising and energetic middlemen, as well as breeders who sell to ranchmen direct, we have the range trade well in hand. There will in time spring up a demand for pure-bred breeding stock for our newly acquired governmental possessions, and Iowa breeders should look well to it that we get our share of that trade.

Renewed interest is being taken in making exhibits at state and local fairs. We should feel proud of the number and quality of Shorthorns shown by Iowa breeders at our last state fair, and rejoice that most of the prizes in classes, as well as what should be the most coveted of all prizes, that for herd, especially when bred by exhibitor, were captured by Iowa breeders; and we trust the high rank taken this year may be maintained in the state as well as the international shows projected next year.

While we are proud of the achievements of the past, and satisfied with the conditions of the present, there are many hopeful signs of greater prosperity in the future. The almost wholesale abandonment of the use of the mixed bred and grade sire by the average farmer, and the founding of pure bred herds by the more enterprising and intelligent, argues well, not only for the future of the breeder's business, but for the rapid improvement in quality of the general cattle stock of the state as well. We all will welcome the speedy return of the conditions when Iowa feed lots can be filled with high grade feeders, bred and raised on Iowa soil, instead of having to bring them from the western ranges.

There is, too, among breeders, as well as those starting herds, an ever increasing tendency towards making quality, which should mean an inherited adaptability in type to the demand of the highest-priced beef market; the first consideration, and of making special lines of breeding, considered fashionable or fancy, the popularity or disrepute of remote ancestors; the color of the hair or style of horn, and such like personal fancies, are secondary or unimportant. The milking qualities of the breed are claiming increased attention, and many breeders are commendably enthusiastic in developing their herds along those lines, for the dual purpose cow has been proven to be a practical possibility, and she usually is highly tintured with Shorthorn blood.

To the older breeders, who have witnessed the ups and downs of many years, and withstood the discouragements of the years of dullness and depression, we congratulate you on your zeal and fortitude and bid you now reap the full reward of pleasure and profit from your business. To the younger breeders and those starting herds, we bid you welcome, believing there is no business that offers better returns in glory and gold for time, money and labor, intelligently and enthusiastically expended, than in breeding and raising pure bred Shorthorns in the state of Iowa.

THE SECRETARY'S REPORT AND APPOINTMENT OF COMMITTEES.

The report of the secretary, Mr. J. R. Crawford, of Newton, dealt with the situation of affairs concerning the Shorthorn breeders' cottage, located at the Iowa state fair grounds, and showed that he had had it moved nearer the show ring and repaired at a cost of \$159.43; that the officers of the association had settled Mr. C. W. Norton's claim against the cottage, of \$100, by giving their individual note for the amount. On motion of Mr. Manatrey, of Fairfield, a committee on the president's and secretary's report was appointed, consisting of Wallace, Burge and Sheehan. President Vaughn then appointed the following committees: On resolutions, Bellows, I. C. James, and H. C. Brown; on location for next meeting, McKeever, Crawford and Harrah; on officers for ensuing year, Parsons and Hakes.

Following the appointment of the standing committees Mr. G. H. Burge, of Mt. Vernon, Iowa, read an interesting paper, which was in turn followed by much valuable discussion on "The Success of a Beginner."

THE SUCCESS OF A BEGINNER.

BY G. H. BURGE.

It takes but little time to find out our fitness for a calling, and about fifteen minutes as an essayist convinced me that I was better fitted to feed a corn sheller than push a quill. My journalistic qualifications are about as great as my mechanical ability. I being early entrusted with the running of the farm machinery of the more complex sort, such as the axe, the rake and the hoe; in fact, one of the earliest "pats on the back" that I remember was given me by my father for the skill I employed in hanging a hoe.

The success of the man starting in the breeding of Shorthorns may be likened to a lot of boys who start to learn to swim. Hundreds of them go to pool, pond or creek each spring, but how few keep on till they learn to swim? Of those who do, do so from continued effort—continued effort is enthusiasm—enthusiasm means success.

The man who succeeds as a breeder has the type of cattle he expects to raise fixed in his mind before he makes his first purchase; then he buys his cows and gets a bull that in his judgment will supply the points deficient in the cows. The produce are the fruits of his judgment, and on these calves and their descendants will he be reckoned as a breeder—not on the original purchase.

He may have been fortunate in securing good individuals when he bought. That simply displayed good business ability, one of the important factors in a successful career needed in the disposing of the stock as well as the buying. To be a good seller one should know what an animal is worth, price it and stay by the price. As years go by and people find that your judgment is good they will pay for it. You can't get pay for some one else's skill, so don't add it to the actual value of the calf. Experience counts in the cattle business as in any other.

A man is accounted successful if he is making money. That is one of the factors which we can settle very easily whether we are or not. But whether we are making progress towards our ideal is sometimes hard to determine. It is like the swimmer when he has started across a broad river. The other shore is clear to be seen, and a spot is marked at which he expects to land. The start is easy, but there will be a time when he seems not to be making any progress and it is then the heart begins to fail. The way to find out whether you are progressing or not is to look back at the starting point occasionally and as you see it get farther away you know you are nearing the goal, that you are not standing still and that ultimate success will crown your efforts.

It is said that a prophet is not without honor save in his own country. But a breeder who cannot command the trade of part of his neighborhood

and strives not for the well wishes of his community is of short life. The local fair should be patronized. The criticism here is usually severe, but oftentimes beneficial, and you will find out from public opinion—free—the merits and deficiencies of your stock.

It is a very good thing (as an element of success) to be a good feeder. Keep your stock so it can be told from a scrub without reading the pedigree. Men talk of points, but it is well to have the points covered with meat, not sticking through the hide.

There are a few things I wish to say farther in regard to prices that I think the beginner should remember. The largest per cent of the sales will be to the men who have grade cows and a man with ten to fifteen cows who sells some milk and butter and grows good calves can't afford to pay long prices for breeding stock; from \$75 to \$100, and in exceptional cases \$200, are his limits. At these prices a breeder can grow rich as fast as it is best for the farmer to obtain wealth, and there is nothing like the Scotch and Bates-topped American families to do it with.

Great care should be exercised in not getting overstocked. Feed the cattle as you feed the man you expect to sell to—see that they get their drinks regularly—treat them with kindness—handle them early and much. Ease in handling makes sales; quietness puts on fat, and that is what wins the ribbons.

Don't feel bad if the older breeders don't give you the recognition you think they should. They are wise enough to know that much praise is worse than none at all. Honor will come to whom honor is due. Work, wait, and when you are sure you have something good, advertise it. Advertise it well. Josh Billings said he liked a rooster for two reasons—first, because he had a crow and, second, because he had spurs to back up his crow.

So again I say that the success of a beginner depends not on what he buys, but on the product of his skill in mating. The product represents his ideal, and if his ideals are good they will be much sought after and bring him wealth and fame. Visit a dozen different herds where the men are accounted successful and you will find each herd with some characteristic not found in the other, *i. e.*, the breeder's stamp. The successful handling of stock is not so much a question of fair winds as to know how to trim your sails. It is not so much that the skies should always be clear as to have a shelter in the time of storm. Lest I take too much of your valuable time I will close with the thought of an anonymous writer:

You may reach to any place that is on Life's schedule seen
If there is fire beneath the boiler of ambition's strong machine;
You can reach the place called Plucktown at a rate of speed that's
grand
If for all the slippery places you've a good supply of sand.

The discussion was led by Mr. Sheehan, of Osage. He said: "I do not know how you old timers feel, but I am gratified and proud to hear so good a paper from a young man. There is merit in that paper. The new beginners and the young men in the business are the ones that we must depend upon to take up

and carry on the work and climb higher and higher until finally the top round may be reached."

H. C. Brown, of Humboldt, declared that the paper was a good one and had the right jingle to it. He thought that the old breeders are all beginners in that they should every day begin with increased efforts and higher ambitions.

Mr. Hakes also commended the paper.

M. D. Clark, of Mt. Vernon, thought that no one should as a beginner engage in the business of breeding Shorthorns unless he has a sufficient matured love for the cattle to take pride in their development.

Mr. S. G. Crawford, of Lohrville, said that this was the first of the association's meetings which he had attended. He thought many breeders commenced too soon; that before embarking in such a complicated and important business as breeding pedigreed Shorthorns great thought and preparation should be given the matter.

At this juncture Mr. Manatrey, of Fairfield, sprung the subject of high prices v. low prices, over which the discussion grew considerably animated. Out of this a practical suggestion was given by Mr. Sheehan. He said in order to get good prices for your stock keep it looking better than your neighbor's; then when you have a customer, after showing him your stock, hitch up your best rig and drive him to see your neighbor's cattle, and when he comes back he is convinced of the superiority of your stock and is willing to pay you a better price.

Mr. H. D. Parsons, of Newton, said that he commenced breeding twelve years ago, at which time he felt as Mr. Manatrey had just expressed himself, that he would so conduct his business by paying not to exceed \$100 for his herd bull and thereby be able to sell his surplus stock at a low price. He soon became dissatisfied with this method, and desiring to make a change, paid Mr. Harrah's expenses to a sale at Chicago that he might help him select a bull. Imp. Master of the Mint was selected, and it took \$600 to buy him. At that time he only had twenty cows on which to use him, and never more than forty. After he had used him as long as he could to advantage he was able to sell him for \$400, and was always able to get remunerative prices for his get above what his \$100 bulls had produced. He made it a point to know his cattle and had a good demand for his bulls. He is now able to show vis-

itors and customers both the dams and granddams of most all of his young stock on sale.

The next speaker was Mr. Avery, of Mason City. He said he had had charge of a herd since he was 15 years old. He had been much benefited by reading good agricultural papers. He began with only \$200 and had to work his way up gradually. He said he realized that good herd headers are not to be secured at a nominal price, but that his customers being farmers, the question with him is, will it pay to pay \$600 to \$1,000 for a bull? It is true, as a breeder grows in his business and experience he is able to get better prices. He said he should want to buy a bull soon and asked the opinion of the breeders present if he should buy a high priced one?

As the hour was growing late, further discussion of Mr. Burge's paper was postponed, and Mr. A. L. Harrah, of Newton, Iowa, read a paper on "The Range Trade and How to Handle It."

THE RANGE TRADE AND HOW TO HANDLE IT.

BY A. L. HARRAH, NEWTON.

Every breeder of Shorthorn cattle is certainly deeply interested in any information relating to the future of the cattle industry, and especially the future demand for our thoroughbred stock among western and southern ranchmen. Now I will briefly discuss the question as I understand it, relying largely upon the knowledge I have gained by coming in contact with these men in business relations. The supply of, and demand for, are the two factors that will govern the future trade. The facts are these: The supply is short, and the demand is unlimited for the best Shorthorn cattle, either male or female, we can produce. The conditions are very different from what they have ever been before. We find a universal spirit of improvement existing among ranchmen, a determination to breed the best; the result being that these men come among us and buy the best. They are preparing, and the more energetic ranchmen are already prepared, to take the very best care of their cattle. They are accepting and applying the same rules that govern the intelligent Iowa farmer, viz: Good grass, good water and abundance of it, with proper winter shelter. The losses of cattle under the old time methods of ranching are largely a thing of the past, and winter shelter, with plenty of alfalfa or wild hay, is provided on every first class ranch.

These facts apply more to the ranches in the western or more northern states. But in the matter of superior breeding and individual development we have no greater demand than comes from the state of Texas. I could elaborate on this point and tell you of sales made, but it is unnecessary. I

desire, however, to record myself as taking the ground that this great ranch trade from all quarters has been a priceless boon to every Shorthorn breeder, not only in Iowa, but in America, either directly or indirectly. Every breeder of Shorthorn cattle has been benefited by this trade. Every breeder that raised one bull or fifty bulls has found a ready market for his stock, and the stimulus has been even among the smaller breeders to improve their cattle by buying a few better females or more generally replacing their herd bull with one much better. This fact has made good prices for the ambitious breeder of Shorthorns who is making the breeding of herd headers a speciality. Allow me to remark the most hotly contested field is in the realms of fine stock breeding, where many a good man has found his Waterloo. As a matter of encouragement to all breeders, I wish to refer to Bulletin No. 1, of the National Live Stock Association of Denver, practically embracing all the ranchmen of the west, and a thoroughly reliable document. It says: "Reports coming to this office indicate that the shortage on the ranges of the west is becoming accentuated, rather than relieved."

The terrible experience of last winter has made range men timorous, and, this, with the high prices that have prevailed, has encouraged shipping to an unusual extent. As a result hundreds of range stockmen have reduced their herds to the lowest possible point, some clearing up everything, while others have shipped down to their breeding stock, even sending their yearlings to market. Many of these shippers are figuring on buying stock cattle in the spring to replenish their ranges, arguing that it is safer to sell now and avoid all risk of winter loss, and then buy back in the spring, even if they have to pay nearly as much as at present for cattle.

Again, with all the efforts of the range shippers to clear up their herds, however, shipments from the west will fall far behind the movement from the range last year. This is only another indication that the greatly discussed shortage is real, not imaginary. It is also remarkable that with the high prices and strong demand so few stockers and feeders have been sent to the country. This is explained on the part of sheep in the demand for wool, but the only explanation as regards cattle is in the shortage and high prices. Now, if this information is reliable, and we believe it is as nearly reliable as anything that has been printed, cattle growers need not worry about any over-supply for some time. This season is regarded by the Montana ranchmen as the best in the history of cattle raising in the west, because it reached every man in the business. The prosperous cattle trade of the '80s benefited the large dealers more especially, and in those days large shipments of 4-year-olds were made, and some 5-year-olds. The *Rocky Mountain Husbandman*, speaking on this question, says: "We do not believe the market demand has been up to the mark reached in the '80s by any means, but we do think the beef shortage has been greater. The people of this country have not forgotten the panic of 1893, followed by the great drouth of 1894, when natural and unnatural causes combined to read the most severe lesson to this generation in the history of this country. The result is, we find people proceeding with cautious step, and with much less confidence in the reliability of affairs. You recollect when the range husbandry was regarded as a practically safe investment and cattle could be raised in Montana's valleys without purchased feed, and that all that was

necessary was to own and brand the stock and nature would do the rest, and it was true for a time. Now it is demonstrated that it was a mistake. The course of the successful ranchman is to prepare winter feed, good shelter, and fence his ranch, and while the industry may not be as profitable, its benefits are more universal." In conclusion I wish to say: To handle this ranch trade, fellow breeders, involves the same principles that every successful business man must adopt in order to make a complete success of his calling. I have never met a class of men more generous, big hearted and hospitable. Between myself and many of these sturdy cattlemen friendships, sacred and true, have been established, and I welcome them to my home, not alone for the dollars they bring, but more for the blessing that touches a man's heart when he meets his fellow on the high plane of universal good will.

The question of the range trade is a most important one, but owing to the absence of those interested the discussion was not taken up.

The appointment of the remaining committees followed and adjournment was taken.

WEDNESDAY MORNING SESSION.

About seventy-five breeders assembled in the livestock class room. The report of the committee upon the president's address and the secretary's report was made, as follows:

REPORT OF THE COMMITTEE ON THE ADDRESS OF THE PRESIDENT AND REPORT OF THE SECRETARY.

Your committee to whom was referred the address of the president and the report of the secretary beg leave to report as follows:

First.—We call special attention to that portion of the president's address which emphasizes the necessity of developing the milking as well as the beef qualities of the Shorthorn, thus fitting it to meet more fully than ever before the demands of the western farmer for a dual purpose cow.

Second.—We find from the report of the secretary that there is an indebtedness resting on the Shorthorn cottage on the state fair grounds of Des Moines of about \$260. A portion of this indebtedness is of long standing. These debts should be paid, and at once.

We, therefore, recommend that a committee of three be appointed to raise the necessary funds by subscription at this meeting, and failing in this—which the "shades of Bates and Cruickshanks forbid"—that the committee be authorized and empowered to sell the building or donate it to any other association or person that will pay off the indebtedness before taking possession. Respectfully submitted,

HENRY WALLACE,
GEO. BURGE,
DANIEL SHEEHAN.

It was voted to continue the committee to solicit subscriptions for the payment of this debt. During the time the committee was working, members were received into the association.

The committee very shortly reported subscriptions to the amount of \$175, headed by the *Homestead* subscription of \$25. The committee was further continued until the required amount shall have been raised.

The regular program was then resumed, and its topics discussed in the following order:

"Shorthorns for Milk and Beef." In the absence of Mr. O. H. Lyon, the subject was reviewed by Mr. E. F. Bell, of Roland, discussing the topic in its various phases. He maintained that the Shorthorn cow was more generally recognized as possessing milking qualities than she was in former years. The demand, he said, in most sections of the state for bulls was from this class, and he esteemed the milk and beef combination a most valuable one, insisting that if the Shorthorn was advertised as the nearest to the ideal general purpose animal it would be a great boon to the breed, and its supporters would reap greater returns for their efforts. Breeders, he said, should feel much encouraged with the present outlook and with the adaptability of the Shorthorn to the varying conditions belonging to the central west.

SHORTHORNS FOR THE FUTURE.

BY HENRY WALLACE, EDITOR OF WALLACES' FARMER.

The man who can accurately forecast the demands of the future market and can take adequate means to supply these demands, will never fail of success.

Breeders of any class of live stock who can forecast the wants of the future and can shape and adapt their favorite breed to meet these requirements will never have cause to complain of low prices. The high favor in which the Shorthorn has been held for a hundred years is due to the fact that it has in a very great measure met satisfactorily the demands of the great majority of advanced farmers. The Shorthorn is now and always has been the cow of the thrifty tenant farmer on the best lands of the British Islands, and is to-day the favorite cow of the ordinary farmer on the best lands of the United States and Canada.

It is not the cow for poor land and poor grass in any part of the world, nor is it the special purpose dairy cow in any section. Neither is the Shorthorn best adapted to hard conditions or inhuman exposure. There are

breeds that are better adapted to the production of milk and butter to the exclusion of beef; there are breeds that can successfully compete with the Shorthorn in the matter of exclusive beef production; there are breeds that can better endure hard conditions. The Shorthorn can look without envy or jealousy on any breed that can meet the farmer's wants in the extreme south or on the exposed ranges or in special purpose dairy sections. The future of the Shorthorn depends on how well she will continue to meet the wants of the tenant farmer in Great Britain, of the average farmer on the best lands of the north and west, and of the ranchman on fenced ranges where provision is made for more or less winter forage. These classes demand a type of cattle of good, even, large size, of fine quality, vigorous, and capable of enduring such exposure as is consistent with human treatment, and that can be turned to good account in the dairy as well as in the shambles.

There is no breed, on the whole, better adapted to fill these requirements than the Shorthorn wisely bred and properly handled. In a shorthorn breeders' meeting it is, perhaps, safe to say right out that none, on the whole, can fill the requirements so completely, especially if the breeders live up to their privileges as breeders and bring themselves up to the possibilities of the breed.

To fill this largest of all fields in the future as it should be filled, breeders need to retrieve if possible some of the misfortunes and correct some mistakes of the past and remove, if possible, some of the hindrances that are obviously in their way. It is a temporary misfortune for any breed to be extensively popular and for that reason widely distributed. When a breed reaches a high standard breeders are apt to claim for it all that it deserves, and sometimes more. Unthinking and inexperienced farmers, believing that "blood tells" and "like begets like," invest, and so feed and care for their purchases that deterioration of the breed becomes certain and frequently quite rapid. They expect the pedigree, or rather the heredity of which the pedigree is the witness, to work miracles. They overlook the other half of the truth that the proper environment will work wonders also, but in the line of deterioration. In other words, "blood tells" is half of the truth; the other half is "the breed goes in at the mouth."

When a breed thus becomes widely distributed and in the hands of injudicious breeders and incompetent feeders, the individuals thus abused and sinned against are taken as fit types of the breed, and it is only a question of time when these will permanently decrease its popularity and injure its usefulness.

It is a misfortune, temporarily, at least, for any breed of cattle to enjoy booms as the Shorthorns have enjoyed in the past and some other breeds are enjoying now. The inevitable result of a boom is a failure to cull out the inferior and unfit specimens. Everything is used for breeding purposes. The breeder can not bring himself to the point of turning to beef a calf which for beef purposes is worth from \$25 to \$30 but which he can sell to some inexperienced buyer for from \$75 to \$100. Hence, during all booms of all kinds of live stock the breed begins to deteriorate, while in periods of depression the standard of the breed is rapidly and certainly advanced. When a farmer can not sell inferior animals for breeding purposes, he is compelled to use them for beef production, and then we have a breed

revival or regeneration. These are misfortunes which must be met with as boom times or adversity falls upon the Shorthorn or any other breed.

Even the best breeders make mistakes, the results of which fall not upon themselves alone, but upon the breed and breeders at large. A great deal may be claimed in a quiet, unassuming way for Shorthorn breeders, but it can not truthfully be claimed that they are perfect either in moral character or breadth of view, hence jealousies arise between breeders and between strains of blood. Ephraim begins to envy Judah and Judah vexes Ephraim, and as a result the Philistines are after them instead of they after the Philistines. Bates men depreciate the Cruickshank men, and the Cruickshank men say naughty things about the Bates, and all of them talk about unfashionable pedigrees. The owners of roan cattle talk about the lack of touch in the reds, and breeders of red cattle say unpleasant things about the roans, and the result is dangerous to both. If the Shorthorn is to fill the place to which it is entitled in the future, breeders must regard every reputable breeder of Shorthorns a man worthy of their confidence and encouragement, and when a buyer has a fancy for roans which he does not have, he should say: "Well, my neighbor Jones has some excellent cattle that will suit your fancy. I will take you over and let you see them." The roan breeder should pursue the same wise policy. It is much easier and pleasanter, and on the whole more profitable, than to argue the question as to which is the better, the red or the roan. The Herefords, Polled Angus and the Galloways, the chief competitors of the Shorthorns, have each one color, that, and that only; anything else being regarded as conclusive evidence of impurity of blood. The colors of the Shorthorns are red and white, and all possible mixtures of these two, hence, there should be no discrimination on the part of Shorthorn breeders against any possible commingling of red and white. Any discrimination tends to narrow the field from which the breeder may select the best.

The best are none too plenty. They are always in short supply, and the breeder who wishes to secure the best should not be limited by any such minor matters as the color of hair. The best that can be had with any kind of hair is none too good. In some respects it is a misfortune that the Shorthorns should have so many possible combinations of color. Until human nature becomes very greatly changed, uniformity of color will tell when cattle are sold in the markets, and this must be regarded as a handicap for the Shorthorns as compared with other breeds, but it is one of those things which cannot be avoided, therefore must be endured. We must grin and bear it. We cannot afford to confine our selections to reds. Neither can we afford to discriminate against any shade of red. We should persistently call the attention of our customers to the great essential points; the massive frame, the thick rib, the broad loin, the capacity for a profitable yield of milk, and let alone minor points, such as color or particular strains and fancies in breeding which are not marked by corresponding excellence. It is always well in any line of business to keep the main things to the front, to consider well the essentials, and pass by with slight attention the non-essentials or merely fancy points.

If the Shorthorns are to fill the field indicated and meet fully and profitably these great demands that are coming upon us in the future, we must give more attention to their milking qualities. It should be conceded at

once that it is nip and tuck between the Shorthorns and three other breeds of cattle when it comes to beef production pure and simple. Where a man can afford to keep a cow a year for the chance of a calf, these breeds will give the Shorthorn breeders all they want to do. Shorthorn breeders should not conceal that these other breeds are excellent in this line, for the breed experiments and the fat stock shows demonstrate that unquestioned superiority does not lie in any of these breeds, but in the individuality of the particular animal and in the skill with which it is fed.

Neither will it be maintained that as a milk producer the Shorthorn is superior to the Jersey or Holstein. These will produce pounds of butter fat at a less expense than the Shorthorns will. The place for the Shorthorn is with the farmer who must have both beef and milk, must have them under one hide, must have milk enough to pay for his feed and care, and must have a package in the shape of a calf in which he can profitably condense the vast amount of feeds which would otherwise either go to waste on the farm or sell for less than they are really worth. Here the Shorthorn is supreme. We do not say that it would be supreme over any of the other breeds if they had been kept for generations under the same environment, natural and artificial. In other words, if they had been milked as the Shorthorns have been, they would have developed milkers. Milking capacity in excess of the demands of the calf is the result of milking and not the result of any special color or type or form. It is the milking and the feeding for milk that varies the type or form to meet the requirements of the situation. In other words, if you pray for milk by feeding and milking you can increase the amount and improve the quality slowly and gradually, from generation to generation, and in doing this you necessarily change the type and the form.

The Shorthorn has this advantage, that in England, its home, it was developed as the type of cow needed to meet the requirements of the tenant farmer whose position, financially and socially, differs but little from the eighty-acre or half-section farmer of the United States to-day, and this class of men must for a long time continue to be the chief purchasers of improved cattle. The Shorthorns of the future, therefore, have a larger constituency of purchasers than any other breed under the sun, and breeders who will take pains to develop the milking qualities, not overlooking the beef, will mould and shape the form and destinies of the Shorthorns of the future. They have this great advantage, which compensates, and more than compensates for the disadvantage of poor specimens, the result of long-continued popularity, widespread distribution, and poor breeding and poor feeding. It will more than compensate for the disadvantage of different colors and the mistakes that have been made through jealousy, rivalry, and a lack of the broader comprehension of the requirements of the situation. From this point of view no breed has a grander future before it than the old reliable Shorthorn, generous in the yield and quality of milk, bountiful in great, thick roasts and steaks for the palates of epicures, the palaces of princes and the tables of kings.

"Shorthorns for the Future" was freely discussed, bringing out expressions similar to those given by Mr. Bell. One point brought out that the Shorthorn, because of its capability as a

dual purpose animal, commands a greater variety of purchasers than other breeds; that either the beef or milk propensity may be developed. The question by Mr. A. M. Avery, of Mason City, "How Far May Either Quality be Developed Without Injury to the Other?" emphasizes the fact that there is no defined limit in the development of either or both. Mr. C. S. Barelay made the statement that while Scotch cattle are generally conceded to be the best beef types, he often found among the better examples of the type the best milkers, referring to a Duthie-bred cow, which he claimed to be his best milker and also the producer of the best beef calves.

"Comparison of Shorthorns of America With Those On the Other Side of the Water" was made by Prof. C. F. Curtiss. No more interesting topic was discussed in the session than this one, and Mr. Curtiss gave some valuable comparisons. He said in part that there was a greater difference of opinion between the supporters of the Bates and Scotch cattle in England and Scotland than is found in the United States, stating that no breeder of Scotch cattle has yet been permitted to pass upon the animals exhibited at the Royal Show. That the winner at a Royal might be easily defeated in a contest of less importance; that reversals of decision were much more frequent there at the various live stock shows than here, on account of the radical difference of opinion existing among the breeders as to the merits of the two types. Milk production in the old country is looked upon as more important, and he found among many of the best known beef herds that the females were generally large milkers. He was much disappointed with the old country herds, as most Americans are, failing to find as many animals of top quality as he had expected. He believes that the best breeders here have as good or better than the best across the water, but that for the number of herds there were more good ones there proportionately. The old country breeders are more studious and are more jealous of their reputation, and a greater tendency exists to monopolize any desired strain when once its popularity is conceded. More attention is paid to the selection of the bull than in this country, and the foundation principle of all successful breeders, line-breeding and in-breeding, as generally recognized as uniformly high excellence, is only obtained in this way. No doubt exists but that animals may be found there that will greatly benefit

the breed here, and that there are animals here that would improve the herds maintained there.

Mr. Curtiss expressed his strong faith in the Scotch Shorthorn, but believes that great care must be exercised in the continued use of the Scotch breeding, calling attention to the fact that Mr. Duthie used bulls on his Scotch cows that are not of pure Scotch breeding, and referring to a statement made by a prominent breeder of this country, who maintained that pure Scotch cows topped by Scotch bulls with an out cross was the safest course to pursue. He made a strong plea for the man who is considering the purchase of a bull to be sure and secure a good one and if necessary pay a liberal price, saying that Mr. Duthie discards fully four-fifths of the bulls he buys for use on his herds.

In the discussion that followed, Mr. W. C. McNeil, of Postville, took the ground that process of improving is very slow, and said that the young breeder and the smaller breeder cannot afford to buy the very high priced bulls, stating that he belived it a better policy to buy good, reasonably well bred bulls than those of fancy pedigree, on account of the difference in the price. Mr. Barclay tersely said, "Pay more for the bulls and not so much for the cows; my observation is that financial failures are due to lack of attention to securing the best bulls."

Mr. R. H. Hakes, of Williamsburg, Iowa, then read a thoughtful paper on the important question, "The Cattle Interests of this Country, and what Part Shorthorns Should Take."

THE CATTLE INTERESTS OF THIS COUNTRY, AND WHAT PART SHORTHORNS SHOULD TAKE.

BY R. H. HAKES, WILLIAMSBURG, IOWA.

This subject is not one of my own choosing, but nevertheless, being a Shorthorn breeder, it is, of course, to my interest to tell you about the good qualities of our breed; but first let me tell you a little of my own experience.

I commenced when young with two grade cows. I bred them to a Shorthorn bull, paying \$10 for service; got two helpers. I bred them and their increase to good registered bulls—I never used any other. In fifteen years I had a splendid dairy herd of fine large cows, which I milked, made butter and shipped it and did well. I raised their calves by hand, the male calves making splendid feeders. And in the meantime I had built up a nice bull trade with my neighbors. But my son, then a lad of 15, disliked milking, as I did myself; so I gave up dairying and commenced buying registered Shorthorns, and am still buying and raising them.

There was a young man came to our county twenty years ago and rented a 160-acre farm. He owned a team and had money to buy two grade Shorthorn cows. He milked those cows and their increase and used good Shorthorn bulls. To-day he has a splendid herd of dairy cows and owns that farm, worth \$10,000, all paid for. That was no board of trade business, but what young men of to-day can do.

Some of the good qualities of the Shorthorn breed are milk and beef, early maturity, gentleness and kindness, our bulls seldom ever being cross, as in some other breeds, and we claim the Shorthorn to be nearest a general purpose cow of any of the breeds. She can raise her own calf and do it well; and at my place many of them raise two, in order that we may have milk and butter without keeping a cow especially for that purpose.

In our country the creameries are doing a good business, and nearly all the cows are nearly all grade Shorthorns. Some think that the cattle business will soon be overdone, but I think not for a long time, for we are now many millions short of what we were ten years ago. Of course, our population is increasing, and the cow will raise but one calf a year, with a loss of from 8 to 10 per cent. Take the country over, a few years ago, the steers were kept until 3 or 4 years old. Now there is a demand for baby beef, and they are sold at from 1 to 2 years. That means that it will take more cows to furnish the same amount of beef. The ranges are crowded with settlers and the sheep men are taking their share of the pastures and corn, both on the ranges and on the farms.

There is one thing we should avoid, and that is the mixing of different breeds. A friend of mine once said to me: "How will it do to use a Short horn bull? I have used three black bulls and have some good cattle." I said, "No, for you have their type stamped, and I would not mix them." Another, with a good herd of Holsteins, asked the same question, saying, "My boys are tired of milking," but my advice was, keep your Holsteins pure, for they will have their day, or, better still, sell them and commence anew with a herd of Shorthorns. Feed them and care for them as you have your milking cows. Your boys will soon learn to love them, and when they see that there is good profit in them the question of the boys leaving the farm will be settled, and settled right.

The Herefords and Polled Angus are both selling very high, but I would not rob them of their honors or their profits, for their breeders have put forth a great effort to make their favorite breeds the very best, which we must commend. So, fellow breeders, it behooves us to be up and doing, and keep the grand old Shorthorns we love so well in the first rank, where they belong.

But a word of warning: We cannot do it by buying pedigrees at big prices without due regard to quality, for in time true worth will tell. We must make the business of mating and feeding a study, so that the animal will be worthy of the pedigree it carries.

REPORTS OF COMMITTEES.

The nominating committee reported as follows:

President, S. G. Crawford, Lohrville; Secretary and Treasurer, G. H. Burge, Mt. Vernon; Vice-Presidents, J. R. Craw-

ford, Newton; C. W. Norton, Wilton Junction; F. A. Edwards, Webster City; Directors, E. W. Edwards, Williamsburg; S. H. Thompson, Iowa City; A. M. Avery, Mason City. The report was adopted and the secretary instructed to cast the ballot of the association for the officers named.

The committee on resolutions offered the following:

RESOLUTIONS.

WHEREAS, President Beardshear and the faculty of the agricultural college, together with Director C. F. Curtiss, of the experiment station, have shown this association numerous courtesies and in many ways promoted our interests and rendered valuable assistance in making this meeting a success, therefore be it

Resolved, That they be given a vote of thanks in expression of our appreciation of the same.

WHEREAS, The citizens of Ames have demonstrated their good will for the association, and have shown their hospitality and genuine interest in us and the success of this meeting by tendering the association a cordial invitation to partake of their hospitality and good cheer at a banquet, therefore be it

Resolved, That they also be given a vote of thanks for thus materially adding to the social features of this occasion.

WHEREAS, The officers of this association have done valuable service in preparing a program and otherwise conducting the affairs of the association, therefore be it

Resolved, That they be given a vote of thanks.

WHEREAS, Mr. Wm. Cook, who for years rendered valuable services for this association in the capacity of secretary, promoting and zealously championing various projects, keeping this association in the lead of all similar state associations, and

WHEREAS, He is at this time in feeble health, therefore be it

Resolved, That in recognition of all these things it is but a fitting tribute to him that we hereby express our hearty appreciation of his past services in our behalf and that the secretary be instructed to convey to him our earnest hope for his speedy recovery.

WHEREAS, The American Shorthorn Record Association has liberally appropriated money for cash prizes to be paid at the International Exposition and various state fairs for the coming year, which should greatly encourage breeders to prepare and make exhibits creditable to the breed, therefore be it

Resolved, That this association heartily endorses this action of the Shorthorn Record Association.

WHEREAS, During the past year Divine Providence has removed from our membership by death Mr. D. M. Moninger, of Galva, and Mr. J. G. Brown, of Solon, both of whom were active members and frequent participants in the deliberations of this association, and in recognition of the very great loss the live stock interests of the country, the state, the communities in which they lived and this association has sustained, therefore be it

Resolved, That we bow ourselves in humble submission to His will who

doeth all things well, and that we extend to the families of each of the worthy gentlemen our condolence and sympathy in this their very great loss. Be it further

Resolved, That the secretary be instructed to convey a copy of these resolutions to the families of each.

THE NATIONAL LIVE STOCK ASSOCIATION.

Secretary Crawford read a letter from the Secretary of the National Live Stock Association, of Denver, urging this association to become a member of that body. After consideration the matter was deferred, to be presented before the Improved Stock Breeders' Association. The association expressed a strong sentiment in favor of united effort to place an Iowa man on the board of directors of the Shorthorn Breeders' Association. Inasmuch as Iowa has ninety members of that association and records more cattle than any other state, it is only appropriate that such action be taken, and C. S. Barclay was selected for that place, and the secretary was instructed to secure in due time proxies with a view to his election.

Meeting adjourned.

MEMBERS OF SHORTHORN BREEDERS' ASSOCIATION FOR 1899.

Thomos F. Cook, Algona.	W. M. Beardshear, Ames.
F. D. Thomson, Cedar Rapids.	Chandler Bros., Fairfield.
S. Antoine, Rock Falls.	B. H. Hakes, Williamsburg.
John Lister, Conrad.	E. F. Bell, Roland.
S. G. Crawford, Lohrville.	S. C. James, New Sharon.
C. C. Dye, Marion.	Wallace's Farmer, Des Moines.
Barnet Wilson, Earlham.	Jordan & Dunn, Central City.
A. L. Harrah, Newton.	J. P. Manatrey, Fairfield.
F. E. Mattoon, Washta.	A. Crawford, Lone Tree.
Hector Cowan, Paulina.	E. W. Edwards, Williamsburg.
E. Lefebure, Fairfax.	C. H. Brown, Dakota City.
M. D. Clark, Mt. Vernon.	C. W. Norton, Wilton Junction.
L. L. Goreham, Odebolt.	McKeever Bros., Farley.
H. D. Parsons, Newton.	G. H. Burge, Mt. Vernon.
A. J. C. Wingate, Burr Oak.	Fricke Bros., State Center.
T. A. Davenport, Cornelia.	J. E. Mann, Woodbine.
C. F. Curtiss, Ames.	J. P. Wallace, Des Moines.
W. W. Vaughn, Marion.	A. M. Avery, Mason City.
C. S. Barclay, West Liberty.	A. J. Graves & Son, Ames.
J. R. Crawford, Newton.	W. C. McNeal, Postville.
Chas. Ott, Hedrick.	

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