

Estimated income.....	25000 00
Amount required above income.....	\$24150 00
For two years.....	48300 00
To which should be added the cost for fence around park	1000 00
And the cost of new roof for the south building.....	3000 00
Total amount of appropriation recommended for the University for the next two years.....	\$52,300 00

HISTORICAL SOCIETY.

In the Historical Rooms the Committee found much to excite their curiosity and interest. The object of the organization is one that should be encouraged, viz : The collection of material illustrative of the early history of the State, to preserve the memory of the early pioneers, to secure facts relative to the history of our Indian tribes, and to aid in developing the history of Iowa. Societies of this character having little or no source of revenue, rely, for perpetuation and success upon the charity of their patrons, and public aid. The Society has collected a mass of publications, books, and pamphlets, which should be properly bound and preserved. The cases and cabinets containing the collections of rare and curious books, specimens, and antiquities are unglazed and unpainted, in which condition they are not only unseemly, but their contents liable to loss and decay. And in many other respects, the condition and usefulness of the rooms and collection could be increased by proper application of a small additional appropriation. Your committee recommend an appropriation of one thousand dollars per annum, for the next two years.

All of which is most respectfully submitted.

J. D. MILES,

On part of the Senate.

KNUT E. BERGH,

B. J. HALL,

On part of the House.

REPORT OF THE SECRETARY

OF THE

IOWA STATE

AGRICULTURAL SOCIETY,

FOR THE YEAR 1871.

J. M. SHAFFER, SECRETARY.

DES MOINES :

G. W. EDWARDS, STATE PRINTER.
1872.

SECRETARY'S REPORT.

To the Honorable, the General Assembly of the State of Iowa:

In accordance with the provisions of section 1703, Revision of 1860, the Board of Directors of the Iowa State Agricultural Society have the honor to present the following general review of the condition of agriculture throughout the State for the year 1871:

Hereto appended are the proceedings of the September meeting at Cedar Rapids, and the January meeting at Des Moines; detailed reports of Treasurer and Secretary, showing financial operations during the year; reports of awarding committees at the State Fair; abstracts of reports of county and district agricultural societies; essays on various subjects; reports of discussions; and as an appendix the annual report of the State Horticultural Society. The volume will occupy about 500 pages; and like its predecessors, since 1862, it is compiled from the writings of Iowa people, and for this reason, we claim for it, especial value and importance as reflecting our own varied industries; and as furnishing experience applicable to our own wants and capacities.

The highest sentiments of gratitude to the Almighty Father, "from whom cometh down every good and every perfect gift," should swell all hearts, for the abundant and general prosperity which has prevailed. Destructive storms have been confined to a very limited area; a remarkable gradual awakening from the death of winter, to the life of spring; a regular succession of genial influences in the summer; and a fall of unprecedented mildness conspired to the accomplishment of results of the most desirable character. Peace and plenty crown the year with joy and gladness; and the prophetic dreams of our people have been more than realized. The onward

march in wealth and greatness, has not only not been retarded but has been accelerated to a degree, astonishing even to ourselves, who have been accustomed to mark the progress of our loved and highly favored State.

Contrast our condition with Persia, where gaunt famine stalked abroad, and the consequent pestilence numbered her victims by thousands; compare our peaceful homes with the fields of France, not yet recovered from the tramp of contending armies, and the desolations of war; or with those luckless dwellers in India, where thousands of lives were lost and millions of property swept away by remorseless floods; or coming close to our doors, contrast our happy lot with our neighbors in Wisconsin, who were visited by the fire fiend, and over whose fair bosom the flames leaped, licking up whole homes and forests, and laying in ashes, untold values, the accumulation of years of toil and care. Or with Arkansas, where the pioneers, overtaken by the unexpected approach of winter, suffer, and starve, and freeze; and thousand of cattle die for lack of food. And as we think on these pictures, thus faintly outlined, let us not forget that sublime adjuration: "Behold the goodness and severity of God."

The following epitome will be illustrated in this report, and the papers thereto appended:

1st, an increase in the average of the cereals, with improved quality and increased quantity of corn, wheat, oats, and barley; 2d, marked improvement in farm stock; and a perceptibly growing attention to sheep; 3d, greater faith in the culture of Chinese sugar cane, and increase in the quantity of its products; 4th, a larger tendency to a varied system of husbandry; 5th, more systematic utilization of fertilizers; 6th, the best crop of tame grasses for several years; 7th, we recur with pride to advancement in all the departments of taste and refinement, exhibited in fruits, flowers, ornamentation of farms, and homes, and most commendable progress in the architecture of the buildings in country and city.

On the other hand, must be recorded, 1st—very serious losses from disease among hogs and cattle; and about the usual annual destruction of sheep by dogs; 2d, losses to spring wheat and other growing crops, to maples, and to fruit and fruit trees, from the incursions of insects; 3d, the too general practice of a system of credit, whereby

the farmer speculates on his prospects, pays high rates of interest, or pays dear for his purchases, and consequently finds his bank balance too often on the wrong side of the ledger.

Iowa, with 30,909,771 acres of land, assessed in 1868, and with but 9,396,467 acres under cultivation in 1870, has before her a future of the grandest hopes, and loftiest possibilities. Rich in her soil, rich in her minerals, rich in forests and streams, rich in the thrift and intelligence of her people; keeping pace with the spirit of the age; backward in no effort or enterprise, promising to develop her hidden treasures; lacking no essential element of progress, she presents a picture of which every one of her sons is justly proud. As such she offers a home to the densely crowded countries of the East, where her people, with honest purpose and industry may secure a competence. And it is gratifying to observe with what facility all nationalities glide into the spirit of the people; how they become accustomed to our laws and usages; how they are incorporated with the general body; how they are assimilated with us; and forgetting the rivers and mountains, and views, and cities of their former homes, join in singing the praises of their adopted State.

THE WEATHER.

The following brief notes and records will indicate the meteorological conditions which all seemed to conspire to make the year fruitful:

APRIL.

5th. At Fort Dodge, mercury at 88 deg.; (same date, fourteen years ago, it was at 15 deg. below zero.) 21st. Snow at Keokuk. 25th. Frost at Cedar Rapids. 11th. Cold and stormy; heavy frost the night before. 28th. Corn planting commenced at Cedar Rapids. 21st. The frost was pretty generally over the State; proved to be beneficial to the fruit, pruning out some of it, but giving a yield in quality unsurpassed.

Highest temperature, 95 deg.; lowest, 24 deg.; average, 51 deg.; rain fell, 2.94.

MAY.

4th. At Des Moines, plenty of rain, grasses, spring grains, foliage, and blossoms, beautiful and thriving; rains interfered with corn

planting and gardening. 9th. Hail storm in Wayne county, in one township doing damage to the crops. 26th. Same at Keokuk; Des Moines county, severe hail storm in Augusta township damaging the fields and houses. 16th. At Clarinda, covered the ground two inches.

Highest temperature, 98 deg.; lowest, 33 deg.; average, 64 deg.; rain fell, 2.47.

JUNE.

9th. Hail storm at Iowa City, injuring the crops. 18th. A violent storm of rain and wind struck near the northwestern corner of the State, and passing through a narrow strip of country did much damage to crops, buildings, etc., in the counties of Greene and Boone, and in a southwest direction, crossing the Mississippi, in Des Moines county.

Highest temperature, 102 deg.; lowest, 50 deg.; average, 71 deg.; rain, 3.10.

JULY.

Hail storm. 1st. At State Center and Red Oak, the one in Montgomery and the other in Story county. 8th. At Ames. 22d. At Atlantic, Cass county, and Council Bluffs. About the 31st, Woodbury county. 27th. Eastern half of Mills county. These did considerable injury. In many instances, gardens and whole fields of grain were destroyed. 21st. Slight frost in Johnson county. 31st. Drought in Delaware county; streams very low; at West Union, ground dry at the depth of two feet; Mississippi lowest ever known.

Highest temperature, 102 deg.; lowest, 50 deg.; average, 70 deg.; rain, 3.51.

AUGUST.

21st. At Guttenburg, was the first rain to soak the ground. 31st. Frost at Independence, Rockford, Ames, and Boonesboro; no damage from it. The August average at the latter place for eighteen years previous was 67 deg., this year 71 deg.

Highest temperature, 105 deg.; lowest, 40 deg.; average, 72 deg.; rain, 4.69.

SEPTEMBER.

Frost at Algona, 28th and 30th; at Council Bluffs, 26th, 27th, and 28th. At Independence, no rain; streams very low; wells dry; this drought prevailed all over the Northwest and was the source of much anxiety. Stock, in some instances, had to be driven long distance to water, and in other cases, ordinary work was suspended in order to dig wells to save them from perishing. All the springs and very many of the streams have dried up, a thing before unknown in the history of the county.

In 1868, rain fall was 5.08 inch.; in 1869, 5.26; in 1870, 6.47; in 1871, 0.97 inch., for ten months ending October 1st.

Highest temperature, 94 deg.; lowest, 26 deg.; average, 60 deg.; rain fall, 0.97.

NOVEMBER.

1st. Ice an inch thick at Fairfield; several inches of snow at Mo. Valley. 7th. Snow at Ft. Dodge; 5 inches at Mason City. The winter fairly set in, in Southern Iowa, Nov. 14th, freezing the ground solid. 22d. Thermometer at 12 deg.; on the 29th, 12 deg. below zero.

These conditions made the harvest two or three weeks earlier than usual, greatly retarded fall plowing, and the early setting in of winter left thousands of acres of corn in the fields ungathered.

DECEMBER.

22d. Southern Iowa was visited by a tremendous rain continuing twelve hours. This froze to the trees, breaking off numerous branches, in many instances splitting the trees to the roots. The night was followed by a very cold and stormy day, the thermometer sinking to zero. The question is, shall this sleet, in obedience to the wise saws of our grandmothers, kill all the fruit? Sleet continued until the 29th, with very cold weather.

We here subjoin meteorological tables showing the highest, lowest, and average temperature and rain fall in inches, for the first nine months of 1868, '69, '70, and 1871:

1868.	Highest temperature.	Lowest temperature.	Average temperature.	Rain fall in inches.
January.....	48°	26	10.2	0.75
February.....	63	37	20.7	0.75
March.....	84	8	40.0	4.74
April.....	80	12	42.8	3.74
May.....	90	36	61.8	5.60
June.....	100	45	69.9	4.57
July.....	105	53	80.8	4.08
August.....	97	44	68.2	2.93
September.....	87	26	65.3	5.08
Total.....				32.35

1869.	Highest temperature.	Lowest temperature.	Average temperature.	Rain fall in inches.
January.....	54°	24	22.3	1.83
February.....	68	21	23.2	2.61
March.....	72	21	26.4	0.85
April.....	82	14	44.7	2.66
May.....	91	33	57.1	4.58
June.....	93	35	66.4	7.42
July.....	95	51	71.1	7.80
August.....	98	50	71.9	7.55
September.....	89	28	61.6	5.26
Total.....				49.56

1870.	Highest temperature.	Lowest temperature.	Average temperature.	Rain fall in inches.
January.....	54°	19	25.4	2.21
February.....	65	18	24.0	0.36
March.....	60	19	27.4	3.64
April.....	90	17	51.1	0.67
May.....	91	39	65.7	3.18
June.....	103	35	71.9	1.07
July.....	105	50	77.6	3.72
August.....	99	42	69.5	4.95
September.....	90	47	65.5	6.47
Total.....				26.27

1871.	Highest temperature.	Lowest temperature.	Average temperature.	Rain fall in inches.
January.....	65°	14	20.7	1.28
February.....	69	30	25.7	2.60
March.....	82	4	37.7	2.28
April.....	95	24	51.9	2.94
May.....	98	33	64.8	2.47
June.....	102	50	71.3	3.10
July.....	102	50	70.0	3.51
August.....	105	49	72.0	4.69
September.....	94	26	60.0	0.97
Total.....				23.84

STORM SIGNAL SERVICE.

The officers having the Storm Signal Service in charge have addressed the Society with a view of utilizing their observations and weather probabilities in connection with agriculture, and a committee has been raised to confer with the War Department in relation to it.

CATTLE.

The counties, with but a single exception, report improvements in cattle, by means of the introduction of well recognized breeds, and a general interest in their care—the adoption of the best methods of raising them; the importance and value of crossing with the common stock, and the great profit that accrues to the farmer from judicious handling, feeding, and preparation for market. Hon. M. W. Robinson, of Polk county, (whose communication will be found in full in the appendix,) furnishes the following generalizations: 1st. That cattle have advanced to a degree of superiority hitherto unattained. 2d. That all humane and economical breeders provide, adequate shelter during the inclement seasons. 3d. The Durham, crossed with the native, Devon or Hereford, makes the most profitable cattle. 4th. There is but little difference in the several breeds as to milking qualities, and for use in the yoke. 5th. There is imperative necessity for more general improvement in cattle, by

reason of the vast numbers of Cherokee or Texas cattle, which annually reach the north to be fed for the butcher. Iowa farmers must as a measure of self-preservation, make a *better article* of beef, or turn their lands into wheat fields, even should Iowa beef demand a higher price than the inferior Texas beef.

The following table shows the number of cattle of all ages, number of milk cows, and of work oxen:

Year.	No. of Cattle.	No. of Milch Cows.	No. of Oxen.
1864.....	901831	310137	37717
1866.....	956169	326559	27246
1868.....	2108667	367602	26726
1870.....	614366	396801	22058

The following table shows the number of cattle exported from Iowa through the sources named:

RAILROADS.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.
B. & M. R.....	35200	31630	31308	24518	24849	28711	38680	48968
C. R. I. & P.....	22470	21591	21500	20021	22515	25267	29211	.....
Ills Cent.....	8250	7680	4706	2540	4523	8206	12761	10583
C. & N. W.....	.....	19265	19698	14375	28996	13851	24498	25006
C. B. & Q.....	.....	.....	.....	3392	1910	2026	5404	.....
M. & St. P.....	.....	.....	.....	.....	.....	1839	4331	2321
D. V.....	.....	.....	.....	.....	.....	10241	14016	9637
D. & S. W.....	.....	.....	.....	.....	.....	.....	2088	2142
S. C. & P.....	.....	.....	.....	.....	.....	.....	1264	1527
Totals.....	65940	80166	77212	64846	82821	90141	129253	.....

Receipt of cattle at Chicago, with prices:

1867.....	326826	\$ 2 50 to \$ 7 00	Average, \$ 4 75
1868.....	323850	3 00 to 7 50	" 5 25
1869.....	399913	3 50 to 7 62½	" 5 56
1870.....	532964	2 75 to 7 50	" 5 12
1871.....	543050	3 00 to 6 50	" 4 75

The following specific statements are added: doubtless other counties had similar experiences. In April, a farmer shipped from Muscatine county, 29 head, averaging 1454 lbs.; price, \$6.20. Marion county, 50 head of three years old, average 1470 lbs.; 5 months feeding added 340 lbs. to each. Madison county shipped 150; average 1502 lbs.

HOGS.

This year is signalized as the epoch of a mania for hogs. Every county rings the changes on fancy breeds of every description. Importations have been made from distant States, and even from across the Atlantic; while many have been exported for breeding purposes. Enormous prices are paid for procreative animals; and all over the State have sprung up breeds of all the favorite varieties. Much good has resulted from these efforts; and the hog crop is not only the largest in numbers, but the best in quality that ever found its way to market from Iowa. One great advantage of this diffusion of blooded swine, may be found in the greater care or feeding, and skill in management. The time of maturity is shortened, and less grain is required to feed these breeds, than the apocryphal hazel-splitter. In former years, hogs were mostly shipped east in certain winter months; now they form almost a continuous stream during the entire year. The low price and great abundance of corn, and the unusual amount of mart, enabled the farmers to put their stock in the best possible condition in the early fall and winter months.

The profits are fair, even at the low price of 3 to 4 cents which have ruled this season, against 8 or 10 cents a year ago. And because of this decline in price, some are ready to say that hog-raising is unprofitable, and propose to abandon it or to greatly reduce their herds. No policy could be more mistaken; it is the dictate of sound prudence to maintain the purity of the blood; to continue the same watchful care in management, and to remit no effort in preparing the very best meat that may find its way to an eastern market. It will be sure to win in the long run. Because wool fell in price at the close of the war, farmers neglected the flocks, gave them over to diseases and dogs, sold them for their pelts, and to-day many are regretting their folly, and are looking once again for their fleecy flocks. So may it happen by the unwise abandonment of hogs. For here comes from San Francisco, a telegraph dispatch, dated June 10th, "a train of cars loaded with live hogs, reached here from Iowa to-day. More have been ordered. They sold at 7½ cents, live weight." This was the first event of the kind. Here is opened up to us a new market; and should freight

admit it (and why not?) the tide may turn from Chicago, and find its way to the Pacific; or we can have a stream flowing both ways, and can supply both the East and West.

A few instances of the quality of the hogs are mentioned, because the figures are exact. In Page county, 1200 were shipped in one lot, averaging 375 pounds. In Scott county, in March, four car loads were sold; 80 of the lot weighed 500 each, at 12 months old; 95, ten months old, averaged 250 pounds; and like examples are frequent everywhere.

The following table shows exports of live hogs for the years specified and by the sources named :

LIVE HOGS EXPORTED.

RAILROADS.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.
B. & M. R.	148,246	45,442	90,510	115,400	144,386	182,943	137,380	215,863
C., R. I. & P.	84,600	44,230	54,181	131,802	131,944	125,965	136,131	.....
Ills Cent.	26,715	18,480	12,950	7,900	17,320	42,437	35,528	56,582
C. & N. W. ....	.....	41,340	56,075	64,470	126,385	61,253	105,835	111,353
M. & St. P. ....	.....	.....	.....	.....	4,744	10,613	7,476	3,085
D. V. ....	.....	.....	.....	.....	.....	145,367	70,650	122,059
D. & S. W. ....	.....	.....	.....	.....	.....	.....	11,070	29,230
S. C. & P. ....	.....	.....	.....	.....	.....	.....	373	4,391
Totals	259,561	149,482	213,716	318,872	424,771	568,583	504,443	485,571

The following gives dressed hogs, pork, and lard, shipped from Iowa in 1871, compared with 1870 :

RAILROADS.	1870.			1871.		
	Dressed Hogs.	Pork, lbs.	Lard, lbs.	Dressed Hogs.	Pork, lbs.	Lard, lbs.
B. & M. R.	169,851	137,652	303,972	253,720	2,078,610	763,750
C. & N. W.	2,515,420	112,820	56,410	3,112,870	\$ 172,920	3
C., R. I. & P.	4,196,080	300,800	1,635,340	.....	.....	.....
C. B. & Q.	441,044	1,264,999	* 864,808	.....	.....	.....
Ills Cent.	8,008,500	559,000	409,070	10,113,500	.....	.....
M. & St. P.	1,988,890	2,800	55,250	5,981,720	1,694	118,420
D. V. ....	.....	1,497,457	† 334,828	.....	1,161,710	902,589
D. & S. W. ....	.....	2,213,579	.....	.....	† 2,633,858	.....
Totals	17,350,485	6,089,107	3,669,678	.....	.....	.....

* Packed meats included.

† Dressed.

‡ Beef and tallow included.

§ Lard and pork.

The following table shows receipts of live and dressed hogs, pork, and lard, with prices of live hogs at Chicago, for the years named :

YEAR.	No. live hogs.	Price.	No. Dressed hogs.	Pork, bbls.	Lard, lbs.
1868.	1,688,189	.....	270,860	47,510	10,053,531
1869.	1,667,085	* \$9.00	205,416	42,556	6,732,892
1870.	1,693,158	* 6.00	229,317	52,570	7,648,440
1871.	2,380,083	* 4.33	259,206	67,746	19,892,117

SHEEP.

A prominent sheep-raiser in Mahaska county writes: "Applications for fine sheep are more numerous the past three months than they were in three years before. Six years ago we had 120,000; now, not over 20,000; but sheep are again the subject of inquiry, care, and attention. Taking ten years together, sheep have paid a larger profit than any other kind of farm stock. The accursed dogs, it seems cannot be legalized out of existence; but a liberal burning of gunpowder, in the hands of every sheep-grower, would save many valuable flocks."

Says the "Wool Circular: " "Sheep husbandry is a necessity. There is no substitute for the animal with the "golden hoof"—none which can so cheaply supply the elementary wants of a dense population. France has as many sheep as souls in the empire. England could not part with her sheep—the meat, wool, hides, and manure they yield; and while we are glad to see large flocks transferred to the sparsely populated regions of the West, the older States, whose lands have lost their virgin freshness and fertility, can ill afford to submit to farther reduction. The great bulk of the best wool grown in the world is grown in small flocks, in the midst of the most densely populated regions. On the whole, therefore, we look to the future of the woolen industry hopefully, and with abiding confidence."

The following table, compiled from official sources, showing numbers of sheep in Iowa, pounds of wool shorn, and exports and imports, will indicate the status of this industry for the years specified :

* Average.

YEARS.	Number in Iowa.	Lbs. wool shorn.	Exports.	Imports.
1862.....	399938	1429209	.....	.....
1863.....	.....	.....	6298	70118
1864.....	.....	.....	16585	159519
1865.....	.....	.....	20755	33116
1866.....	1708958	5323385	52589	5972
1867.....	.....	.....	39461	4368
1868.....	2370106	4479934	48464	3688
1869.....	.....	.....	57825	1871
1870.....	855493	2967043	78165	2726
1871*.....	1250000	3074674	58055	3423

In 1867, the exports of wool were 2,059,167 pounds; in 1868, 2,061,739 pounds; in 1869, 2,056,526 pounds; in 1870, 5,891,102 pounds.

The following table indicates exports of sheep and wool; also sheep carried west, in 1871:

RAILROADS.	Lbs. of wool.	Number East.	Number West.
B. & M. R.....	+8227065	39160	1942
C. & N. W.....	1058300	4245	228
C. R. I. & P.....	.....	.....	.....
Illinois Central.....	218100	1423	.....
M. & St. P.....	82880	395	1123
D. V.....	411194	14245	139
Total.....	9779439	58055	3422

The decrease in sheep between 1868 and 1870, is 1,414,613. But the reaction in their favor begun in the last named year; and the interest gained steadily.

Taking the State and United States census as a basis, it will be safe to place the numbers at nearly a million and a half, and allowing for balances kept over in 1870, for a better market in 1871, the shipment of wool must have been nearly or quite 5,000,000 pounds. The shipments from ascertained sources reach 3,074,674 pounds.

DOGS.

We have the usual accounts of the killing of sheep by dogs. Wisconsin heard the cry of her wool-growers, and imposed a tax of

*Returns on this line partial.

†Of the 8,227,065 pounds of wool carried east by the B. & M. Railroad, 6,704,765 pounds were from California, etc., and 1,522,300 from stations in Iowa.

\$2 on each dog, and made the owner thereof responsible for injuries to man or beast. The law became operative March 15th, and it will be a sad comment on the times, if it, like laws of similar character elsewhere in the United States, should fail to accomplish its three-fold object, namely, to protect sheep, to give a certain kind of protection to a dog esteemed valuable, and to rid the land of the presence of the tens of thousands of utterly worthless and injurious mongrels that prowl about everywhere. In England, where sheep-raising is an imperative necessity, and where also dogs are kept for use and protection, for sport or for a luxury, each one is taxed five shillings; and the revenue is annually \$13,750,000. The Evangelist, a religious paper at Oskaloosa, asserts that the dogs are a heavier tax on the resources of the people, than is the support of the ministry.

Iowa had in 1864, 86,060 dogs; these increased to 125,207 in 1860, and to 147,623 in 1868. We have learned, alas! of no epidemic to diminish the number, and of no natural or unnatural causes to prevent their increase. So that there are now not less than 170,256 dogs. A tax would reduce this number fifty per cent, at least, and so much would be saved in the expense of keeping them; so much less would the sheep be worried and killed; so much more would the wool-grower be encouraged; and so much less the risk of hydrophobia—that terrible disease, accounts of which occasionally thrills us with horror. But, can a law be passed that will be executed? It has been tried and proved a stupendous failure; and a like result would be apt to follow a second attempt, until farmers rise up en masse, and demand that the country be freed from the nuisance. Some of the cities enforce laws taxing dogs, and besides affording a comfortable revenue, it sifts out the half-starved and vicious hounds that prey upon the flocks.

WHEAT.

The yield of spring wheat in 1870 was 28,708,312 bushels, and of fall wheat, 727,380 bushels, making a total of 29,435,692 bushels, being three millions more than the estimate for the year. Allowing for a loss of 2,000,000 bushels from chinch-bug, storms, and ordinary sources, and adding the usual increase of acreage, we can safely

place the crop of the present year at 30,000,000 bushels. Many counties report the yield of fall wheat at 35 to 45 bushels per acre. New fall wheat was shipped from Louisa county, June 30th, an earlier date that has perhaps ever been known; price, \$1.10. June 5th, new spring wheat was contracted for in Bremer county at 90 cents. For the fifty days preceding Dec. 5th, the Decorah mills shipped 5,500 barrels of flour, besides supplying the local trade. The weather was very propitious during harvest, and the grain was secured in the best possible condition. For some months the several railroads have been taxed to their utmost capacity to carry off the surplus, and there are untold quantities awaiting shipment in every part of the State. The winter wheat was of very superior quality, and the yield unusually large. These grand crops, one after another, can not last forever, for they will eventually exhaust the soil of the necessary elements, without a more general observance of rotation, fertilization, drainage, and other appliances known to husbandry. It is important that frequent exchanges of seed be made, bringing from north to south, and returning in a few years, and trading with different States and localities. Above all, the seed must be thoroughly clean. It must have no mixture of foreign seeds, as oats, rye, etc., and it should be winnowed and cleaned until not a single grain of light, shrivelled, or imperfect grain is found in the lot. The Arnautka, Tanzelle, and other varieties from the Department of Agriculture, do not meet the expectations of the farmers. Many are now experimenting with Fultz—a new variety.

Great Britain received from the United States for eight months ending August 1st, 5,619,861 cwt., or 38 per cent of the entire importation; and of flour, 1,156,672 cwt., or over 50 per cent of the importation. These figures represent 12,258,118 bushels, not as large a quantity as Iowa ships eastward annually. Perhaps not 15 per cent of the grain leaving Chicago crosses the Atlantic: the balance supplies the wants of the people at the east of us, and the demand is mostly for American consumption. The value of European shipments of wheat, the first six months of 1871, is \$21,223,475, an insignificant sum when compared to the whole crop of the Northwest.

The following tables, showing exports of wheat for the years named, will serve as an index of the importance of the wheat crop:

RAILROADS.	Bush. 1868	Bush. 1869	Bush. 1870	Bush. 1871
B. & M. R.	302818	147547	667120	775606
C. & N. W.	3102735	2769102	4920636	4769598
C. R. I. & P.	1742127	1594616	2496979	3112230
Ills. Cent.	1955290	3310060	3661100	3112230
C. B. & Q.	73511	.....	311461	.....
D. & St. P.	1046694	1465302	2165573	1926224
D. V.	3078	490126	525233	616963
D. & S. W. ....	.....	.....	369333	340800
S. C. & P. ....	.....	.....	195607	242158
Totals	8836243	9776753	15311842	.....

Receipts and prices in Chicago :

YEAR.	No. of Bushels.	Price.
1863	13,540,256	\$1 94
1869	16,666,156	1 18
1870	17,351,575	1 79
1871	13,569,851	1 19

OATS.

This cereal was unusually fine in quality, and unprecedented in quantity. The Polish, Potato, Excelsior, White Schenel, and other new kinds, have been a valuable acquisition. The following table indicates the average and product for the years named :

YEAR.	Acres.	Bushels.	Average.
1862	336,137	7,582,060	22.5
1864	577,540	15,928,777	27.7
1866	504,362	15,861,494	31.3
1868	657,007	18,596,625	28.3
1870	700,000*	21,005,142	30.

Twelve counties report the crop at 60 bushels; 23 counties at 50; 10 at 45; 12 at 40; 13 at 35; 4 at 30; and 2 at 25 bushels per acre. The general average from these estimates, is within a fraction of 46 bushels; or 15 bushels higher than any yield heretofore

*Estimated.

obtained. An average of 45 bushels, with estimated area in 1870, makes the product 31,500,000 bushels. There were shipped east in 1870, by the several railroads, 1,383,195 bushels or about one-fifteenth of the crop.

RYE AND BARLEY.

The area planted steadily increases. Nearly every town of any considerable pretensions has a brewery, where large quantities of barley are consumed in the manufacture of beer; yet the supply is not nearly equal to the demand. It is a profitable crop; usually commanding a fair price; and the quality, though not so good as that of California or Canada, is equal to any grown elsewhere in the same latitude. A comparative table on this subject is appended:

RYE.			BARLEY.		
YEAR.	Acres.	Bushels.	YEAR.	Acres.	Bushels.
1862	36963	474675	1862	18679	385067
1864	48992	662388	1864	51814	950696
1866	35604	492284	1866	48013	1197729
1868	37971	496347	1868	49607	1144454
1870	*42000	505807	1870	*52000	1960779

FLAX.

In 1868, there were raised 96,305 bushels of flax-seed; in 1870, 88,621; and the same year are reported 695,518 pounds of flax. There are numerous mills for the manufacture of linseed oil, that do a large business, and it is found remunerative. Capt. W. H. Fyffe, Secretary of the Johnson County Agricultural Society, furnishes the following statistics of flax:

YEAR.	Bushels	Price.	Value.	Products of the State.
1868	33773	\$ 1.70	\$ 54,414.10	96395 bushels.
1870	21737	1.75	38 039.75	88621 "
1871	37035	1.45	53,773.25	*100000 "

*Estimated.

These figures indicate that Johnson county produces nearly one-third of the entire crop of the State. We condense from a well digested article in the Iowa City Press, of December 18th: The crop began to receive very general attention after the establishment of an oil mill. It has steadily advanced in favor, until it is a recognized element in the rotation of crops; the yield per acre of seed, is as great as that of wheat, and the price is always higher. It is easily raised and harvested, and is ready for market at a time when the farmer is at loss what to sell, to raise money to pay expenses of the oat and wheat harvest. Moreover, the lint now in active demand, sells for enough to pay all expenses, and a good rent besides, leaving the seed clear profit. Of the crop of 1871, 300 tons of the straw had been brought in; and the lint mill is ready for more. We earnestly hope that our farmers will give increased attention to this crop, that they may supply the local oil mill with seed, and the lint mill with fibre, sufficient to keep both employed the year round.

In Poweshiek county, ten bushels of seed on twenty acres, cleared \$470; and a local paper published, some time ago, an extended list of farmers in Benton and Black Hawk counties, who had planted largely, as much as two hundred acres each; and from these and other tokens, it is safe to add that the crop of the present year is the largest ever sown, and will yield over 100,000 bushels of seed. Monroe county had 1,000 acres in flax. At Des Moines there are mills for the manufacture of oil and fibre; during the year 28,000 bushels of seed were consumed, and about 150 tons of straw will be turned into fibre. The breadth of flax in this section will be largely increased in 1872.

The following table shows receipts of corn, oats, rye, and barley at Chicago, with prices for the year named:

YEAR.	Corn bush.	Price.	Oats bush.	Price.	Rye bush.	Price.	Barley b's.	Price.
1868 ..	25396523	.....	14849476	.....	1367441	.....	1510719	.....
1869 ..	23337704	70 cts.	10117854	42 cts	799397	66 cts.	1358032	70 cts
1870 ..	19531596	48 "	10475451	39 "	1076320	72 "	3274579	80 "
1871 ..	41402041	42 "	13244565	29 "	1848593	63 "	3395000	61 "

CORN.

The favorable season for the planting, growing and maturing of the crop, assures the largest and best yield ever had in the State. This grain is the most valuable to us of all the farm products. It furnishes food for the hundreds of thousands of hogs and cattle that annually find their way to market; that form so large a proportion of the daily food of our own people; that pay debts, build houses, extend the area of farms, and that contribute to the thousands of luxuries and elegancies that mark the homes of the people. Unlike wheat and oats, which are shipped by millions of bushels, very little comparatively, of this crop is exported in kind. Every county reporting represents corn as better in quality, and exceeding in quantity per acre that of any previous year—the lowest average given being 35 bushels; the majority report 50, while several give sixty to seventy-five bushels. There is no single instance of failure, or of a decrease in the yield. The corn came up with great uniformity, and during the whole process of growth, there were no injurious influences to operate against it. The home price, even convenient to a home market, will hardly exceed an average of twenty-five cents per bushel; and in some sections, it is so abundant and cheap, that it has been used as fuel, it being regarded more economical than coal or wood.

"Heap high the farmer's wintry hoard,
Heap high the golden corn;
No richer gift has autumn poured
From her lavish horn."

It seems almost sacrilegious to devote the subject of so sublime a verse, to such base uses.

Let us compare the crops of corn in the past :

YEAR.	ACRES.	BUSHEL.	AVERAGE.
1862.....	1,733,503	63,883,916	39
1864.....	1,727,777	48,471,133	28
1866.....	1,992,326	56,928,938	29
1868.....	2,058,339	76,507,575	37
1870.....	*2,500,000	68,935,065	*40

* Estimated.

Estimating the area at 2,500,000 acres, or nearly one fourth of all the land in cultivation, and the yield at 40 bushels, the product in 1871 will be 100,000,000 bushels. The shipments east in 1870, through ascertained sources, were 3,340,784 bushels, or about one-twenty-third part of the crop. Iowa, Illinois, and Missouri raised two-fifths of all the corn in the United States. Missouri had forty-six bushels to the inhabitant; Illinois, forty-seven bushels; and, taking exact figures of 1870, Iowa had within a fraction of fifty-nine bushels.

EXPORTS OF CORN BY RAIL IN 1870 AND 1871.

RAILROADS.	1870.	1871.
B. & M. R.	671,507	1,352,434
Ill. Cent.		104,480
C. & N. W.	940,436	1,460,411
C., B., & Q.	145,068	
M. & St. P.	52	10,180
D. V.	338,647	759,211
D. & S. W.	39,296	60,000
C., R. L. & P.	1,133,420	
S. C. & P.	72,358	125,808
Totals	3,340,784	

SORGHUM.

At the usual rate, as governed by statistics, the people of Iowa consumed in 1870, 2,979,480 gallons of molasses, and 30,986,592 pounds of sugar. There was made of sorghum syrup 1,218,638 gallons, and of sugar 16,500 pounds; maple sugar, 1,332,332 pounds, and maple syrup, 227,800 gallons. This leaves a deficiency of but 428,510 gallons of syrup to be supplied. The sugar reaches 1,348,832 pounds, leaving a balance against us of 29,637,760 pounds.

Thirty-four counties report a splendid crop, averaging from one hundred to three hundred gallons per acre; thirty-one counties say but little is raised, but regard it as a sure and remunerative crop;—while only five counties speak of it as neglected. These five counties had, in 1868, 125,292 gallons, and the reports must be accepted with a grain of allowance, for, everywhere it is steadily gaining in favor, and will continue to do so as a better knowledge of varieties, culture

and manufacture is disseminated. As the farmer begins to understand and apply the best methods of culture, and of reducing the cane, so the greater attention is paid to it.

The selection of proper seed, and thorough cultivation, are the first elements of success; then plenty of dry fuel, pure water, adequate machinery, protection from storms and rains of all machinery, the mills, evaporators, pans, vessels, &c., so that the operators can pursue the work when it is once commenced, without interruption, to completion. Counting all the expenses, it can be demonstrated that sorghum yields a larger profit than any crop that can be raised in Iowa. For example: A farmer at Dexter made three thousand gallons of syrup; one month's work for four men and four horses; realized eight hundred and twenty-five dollars.

To illustrate the magnitude of this interest, we subjoin a table showing product of molasses and sugar in Iowa for the years named.

Years.	No. of Acres.	Gallons of Syrup	Pounds of Sugar.	Average No. Gallons Syrup per Acre.
1858.....	.....	410776	.....	.....
1862.....	36667	3443396	21469	94
1864.....	21452	1543605	8986	72
1866.....	25796	2094557	14697	82
1868.....	26243	2592393	.....	99
1870.....	*27000	2979480	16500	110

It is safe to estimate the yield of syrup the past year at 3,500,500 gallons, and this may be increased indefinitely until large quantities may be exported. There is no reason, except lack of effort, why this should not be done within a very few years. The discouragements and failures have been numerous, but they have not resulted from any want of adaptability of the Chinese sugar cane to the soil and climate, but to deterioration from mixture of seed, lack of faith in the value of the product, and, above all, want of patience and care in working the crop after it was grown. Consider for a moment, that the first seed brought to the State was in 1855, through the Department of Agriculture, by this Society, and that seven years thereafter the product of syrup was nearly three and a-half millions of gallons. We undertake to say, that in the entire history of the sugar product of the world, no such grand result has been accomplished.

* Estimated.

Can sugar, a good marketable article, fit for ordinary uses, be made in paying quantities? Unhesitatingly, we answer, yes! The product this year, with methods which have been tried, and found successful could have been made to yield 14,000,000 lbs. The fifteen hogsheads reported in 1870 by the U. S. census, in very rare cases was the result of carefully conducted processes; but doubtless the accidental and unexpected granulation in syrup made for ordinary use, and we are told that the Louisiana factors were many years—nearly forty—in supplying a sugar in quantities sufficient to make any impression on the markets of the world. We confidently recommend systematic effort, and judicious employment of capital in this direction.

The importations from Cuba alone, the first six months of the present year were 348,303 tons.

The following analysis will indicate the comparative value of different sugar cane:

	Guadeloupe by Dupuy.	Martinique by Peligot.	Louisiana by Avignon.	Sorghum by Smith.	Sorghum by Lawrence.
Sugar.....	17.8	18	13.391	12.	14.5
Woody Fibre.....	.....	.....	.....	.....	.....
Albumen, Salts, &c.	10.2	9.9	9.880	12.4	12.5
Water.....	72.	72.1	76.729	75.6	73.
	100	100	100	100	100

This analysis shows beyond controversy that the Chinese sugar-cane will afford sugar, when operators are prepared to extract it.

ARTIFICIAL TIMBER.

Four years ago the legislature passed an act, exempting from taxation a certain sum of money on the total valuation, provided a certain area of timber, orchard, or hedge has been planted and cultivated. The law is too cumbersome; it is loaded down with so many things to do before exemption is made that it is practically a failure. The four years' experience with it has not accomplished what was fondly hoped by its originators. It is submitted that the simplest form of legislation, and one promising the best results, is to offer a direct bounty in cash to the cultivator of a given area of artificial

timber, a few years would so thoroughly satisfy every one of the benefit of arboriculture, that the bounty would be no longer needed as a stimulus,

Efforts to discover how many took advantage of these provisions, with a view to estimate the average of artificial timber, and the increase over the past years, have been unavailing. Either the law is but imperfectly known to the people, or they are indifferent to avail themselves of its benefits; but, in general terms, it may be stated that tree planting—for shade, fuel, ornamentation, and protection—orchards of fruit, and hedges, have received more attention in 1871 than in any previous year.

One person in Appanoose county planted 30,000 trees, and another in Lyon county, 250,000. Osceola county contains 276,480 acres, and it is said there is not a tree in it. For the encouragement of many who are fast settling up this treeless region, let it be recorded that in Monona county, maple trees were grown from the seed in seven years large enough to make three ten-foot rails each, with 4,000 trees to the acre. Larch will grow much taller, and nearly as large in the same period. They have been grown in Marion county, 35 inches in circumference, 18 inches from the ground, in eight years planting, and they grow as rapidly as the soft maple.

The necessity for careful preservation of existing forests and for the growth of new ones, in addition to the general facts and figures and arguments repeated over and over again in former reports, gains force and urgency from the losses in the pine regions north, by fire the past season; \$20,000,000 were burned up in Chicago; but that is a drop in the bucket to the tens of thousands of acres of timber licked up by fire in Michigan, Wisconsin, Minnesota, and West Ontario. Now, it has been asserted that these timber lands, vast as they were, would not furnish the country more than twenty years supply, at the present rapid rate of consumption, and says a writer, "the havoc made by axe and saw, marvelous as it was, has been rendered utterly insignificant in comparison with the fierce wrath of the forest flames, which have destroyed more timber in a month than all the mills in the West could sift through their saws in five years." We quote once more: "If we would leave to posterity a green and fruitful country, if we would enjoy and be willing that

our children should enjoy a climate characterized generally by rain-falls, frequent, gentle, refreshing, such as agriculture delights in, seldom dangerous, terrific or devastating, and if we would have on our farms sufficient timber land to supply ourselves and our non-farming neighbors with fuel, lumber, and fencing material, let us preserve our forests. If we have destroyed them or have not preserved them, let us begin at once to restore them and plant where they have never existed. But, if we prefer the brown and barren to the green and beautiful; if we desire fewer gentle rain-falls, and more freshets interspersing long droughts, damaging to crops by their excess when they come, as well as destructive to property and perilous to life; if we really sigh for long unbroken courses of wind to sweep over our dwellings and crops the year round, then down with the forests and plant no more trees."

To encourage this important interest, this Society has offered a premium of \$1,000, payable in 1881, for the best ten acres of artificial timber. Competitors will be required to make a report at least once a year, giving the condition of the grove at the several dates, with the whole process of care and culture. These reports, with a description of the locality, soil, exposure, kinds of trees, where obtained, etc., promise to be a valuable addition to our collected experience.

	1866.			1868.			1869.			1870.			1871.		
	Feet of lum-ber.	Shingles and lath.		Feet of lum-ber.	Shingles and lath.		Feet of lum-ber.	Shingles and lath.		Feet of lum-ber.	Shingles and lath.		Feet of lum-ber.	Shingles and lath.	
C. & M.	2415866	4928750		95241423			61063217			31794000			24197000		
D. & S. W.	4518796	4519233		10283094	29816500		24983917	42928500		62577702	55400000		3753000	3025500	
D. & S. C.	15962866	18752800		47508000	43400000		57451000	64385000		44647892	61060000		65791513	67051700	
C. & N. W.	33910449			2718019	3600000		1294236	4703000		64690120	50190610		53444475	40657500	
B. & N. R.	10073800	11167000		4738000			6905000			67564322	13559000				
C. & M. & P.	12037310	11111000					13709011	10598778		7304745	1860500				
C. & B. & S.	1962165	5114000													
C. & B. & S.															
M. & S. V.															
D. & M. V.															

RAILROADS.

THE POTATO BEETLE AND THE POTATO.

Late in April and early in May, accounts come of the appearance of the Colorado Potato Beetle, in nearly every portion of the State. They were very numerous and destructive in many of the northern counties—more so than in the southern. They promise to remain with us, and commit their ravages for an indefinite period. It is, perhaps, the single instance of an insect, traveling “by regular stages” from west to east. It is not deemed necessary to repeat their oft-written history here; nor to recount the remedies proposed for their extermination; nor to excite the question whether or not they are poisonous to the human system. But it may be advised that each farmer, as a duty to himself and his neighbor, use all known appliances to assist in their utter destruction. A certain amount of vigilance will soon rid us of this pest. Above all, let great care be taken that the insects which prey upon the potato beetle, be spared; for they are the best friends of the potato-grower. In defiance of their attacks, the crop of potatoes was the largest and best ever raised in Iowa; they are a drug in the market, and the price is nominal, yet this vegetable, entering so largely into the food of the people, must not be neglected *for fear of the attack of insects*. In 1870, there were harvested 5,914,626 bushels, or over five bushels to the inhabitant. In that year were many partial failures from drouth, from the beetle, &c. This year there have been no really unfavorable reports, and the crop may be safely estimated at seven and a-half millions of bushels.

While on this subject, let it be mentioned that our enterprising farmers and gardeners have introduced not less than two hundred varieties of this vegetable; some are making new varieties, and experiments are being tried to test the value of each. So, that instead of two or three kinds of twenty years ago, there can be an election as to earliness of maturity, size, flavor, color, marketing qualities, &c. A reference to the abstract of county societies will indicate the interest taken in this branch of agriculture. The quantity shipped south is very large; for instance, 100,000 bushels were sent south from Ottumwa alone in April and May.

THE SEVENTEEN-YEAR LOCUSTS.

About June 1st, as predicted, this insect made its appearance in Muscatine, Clinton, Jackson, Linn, Dubuque, and other counties at the north east, in countless thousands. Hon. Suel Foster wrote at Muscatine, June 10th, that one-half of his trees were killed, and the balance of his orchard badly injured. He noticed them stinging even the bodies of the small trees, whereas their habit is to pierce the small terminal branches only. Mr. Foster's loss is one thousand dollars; a gentleman in Linn estimates his loss at five thousand dollars. A visit through part of the territory named, in June, indicated that very many of the young trees in forests and orchards were stung to death, and many were badly damaged. But in September very few were found which had not quite recovered, and were looking fresh and green.

MAPLE-TREE LOUSE

In June, at Davenport, says a writer "Those pests suddenly made their appearance among the trees of the city and vicinity; and unless something is done to stop their ravages, many of them will be totally destroyed. Many of the lower branches are fairly white with their silky nests and white bodies. They bore into the branches which lets the sap run out. The tree soon feels the effect of this drain; and its leaves begin to wilt and it dies." Failing to receive specimens, it is quite impossible to determine what this sudden incursion might have been. Its depredations were local, and here is a general summing up from a fruit raiser on Muscatine Island: "A light green worm is eating the strawberries; squash bugs are at work on melon vines; cut-worms are destroying the corn; speckled flies are eating the grape leaves, and black worms are eating the bloom; and worst of all the Colorado beetle is ravaging the potato vines." All this on June 6th.

CHINCH-BUG.

From May 24th to June 25th, numerous accounts were published of the appearance of the chinch-bug. Twenty-one counties report the spring wheat as a failure—or almost an entire failure—or crop greatly

lessened from this cause. Fields in Washington county were plowed up; so in Appanoose, Monroe, Montgomery, Clinton, Madison, &c., and we may infer that no part of the State south of a line drawn between Jackson and Monona counties escaped the ravages of this pest; Appanoose county reports its loss at \$50,000. There seems, as yet, no adequate remedy for this growing evil.

THE ARMY WORM.

We have also reports of the army worm in Linn, Louisa, Washington, Appanoose and other localities indicating that they occupied a very large extent of territory. They injured many meadows—in some instances destroying the entire crop of hay. This worm moves in a line, "like a column of infantry;" and it is said if straw be thrown on the line and then fired, it will destroy the column, and in this manner a part of a field may be saved.

It is generally conceded that insects annually destroy more crops of every kind than are harvested. Perhaps they are necessary to preserve, in some way, the equilibrium in nature; or like weeds, the resultant of the curse upon the ground, they may be dispensed with, and the world may still move. The exceedingly wise legislation of two years ago, protecting the birds from indiscriminate slaughter, will serve in some measure to keep insects in check. But should not also; all the aids of science, combined with research and experience, be brought to bear, to protect if possible, the growing crops from their depredations? Illinois, Missouri, Massachusetts, and other States have an Entomologist, under the pay of the State. Shall Iowa depend for her knowledge of insects, injurious and beneficial, upon these sources? or shall she have an expert of her own to whom shall be entrusted the great interests connected with this subject? This important question, urged a year ago, with peculiar emphasis, by the State Horticultural Society, is submitted for the consideration of your honorable body.

DISEASES OF FARM STOCK.

As early as January 17th, comes a report from Davenport, that hogs were dying in great numbers from a disease marked by extreme drowsiness, followed by convulsions.

In March, that the losses were large in Appanoose county, from a new and peculiar disease known as "Black Tooth."

April 18th, in Clarke county, parties lost from forty to eighty from cholera.

March 30th, Madison county, certain portions; of sixty in one herd, only four were left, and many persons were heavy losers.

Marion county, May 13th; many hogs died, and in September and up to November, from all parts of the county there are reports of the ravages of cholera. Hundreds of fat hogs died. The disease commences with reeling and staggering, and the ears and inside portions of the legs turn purple before they die. Not one in fifty of the smaller hogs escaped in Indiana township. Some regard it as a kind of putrid fever. The loss in hogs to be shipped is thirty-five per cent.

In September, in Page county, very large numbers died. First symptoms, violent diarrhea, continuing three or four days, followed by blindness and death.

In Tama county, there were heavy losses. Disease manifests itself by a cough, after which the throat swells and suffocation takes place, or the case ends fatally in diarrhea. One account says the disease prevails to an alarming extent, most of the farmers losing from six to twelve, while others lost fifty.

In November, in Washington county, the hog cholera also carried off large numbers.

So in Jefferson, Black Hawk, Lee, Wayne, Fremont, Dallas, Jasper, Tama, Appanoose, and Bremer counties. In Lucas, many farmers lost all. No remedy has yet been found.

It is safe to presume that there were losses in other sections of the State, as well as those mentioned. In addition to the remedies already named in former reports, we have the following:

From Georgia: Soak the corn on which they are fed in a mixture of turpentine, tar, and a small quantity of camphor; proportions not given—neither the mode of dilution; it may be applied also externally. This is a certain means of arresting the disease.

From Maryland: Ten grains of calomel, ten grains of tartar emetic, in a pill; repeat in twenty-four hours. This remedy never failed.

From Kansas: Roast the dead hog and make the survivors eat it. Cured every case. Which is, "The hair of the dog cures the bite."

From Kentucky: Carbolic acid dissolved in glycerine, as a preventive; as a cure, the same substance with sulphate of soda.

These so called symptoms, observed by unprofessional men, and these so called vaunted remedies, applied in the most empirical manner, are recorded, not as a guide to the farmers of Iowa, but as an index of the gross ignorance there is, as to the cause, nature, and course of treatment of the diseases of swine. We say "*diseases*," because even the beggarly array of figures we have in possession, clearly indicate that all the hogs that die do not perish from "Hog Cholera."

Other stock is reported, in general, as healthy. The corn smut destroyed some cattle in Dallas, Black Hawk, Bremer, Harrison, Lee, Chickasaw, and Delaware counties; and, in the neighborhood of Council Bluffs many went blind, in July, and following. Perhaps neglect, exposure, insufficient or irregular feeding, &c., are the prolific causes of prostration and death.

Sheep were unusually healthy, and kept over the winter in good condition.

There is no cause assigned for the blindness in cattle above mentioned, neither is there a preventive proposed.

We submit to your honorable body, that these matters are not only proper, but important subjects of legislation. It is not necessary to refer to the large amounts expended by government in Europe and also in this country, to investigate the diseases of farm stock. They are familiar to every one, and now, the Pluro Pneumonia of cattle, the Texas fever, the abortion in cows, &c., &c., are no longer a source of especial concern.

Causes, circumstances, facts, investigations, have led to well established laws of prevention or cure, and the amounts saved to the farmer, are beyond calculation. We recommend that a commission be appointed, whose specific duty it shall be, to bring all the aids of science to the investigation of these diseases. Let them be armed with full power to travel over the State wherever summoned, and to carefully observe all the surroundings of disease, wherever it may

become prevalent. Let them note locations, manner of feeding and care, the breed, or mixture of breeds, of those attacked, &c. Careful dissections should be made; chemical tests applied, and a careful exploration even to the autopsy as have governed the investigation of enteric fever in the human subject, and divested it of its terrors.

Two, or at most three persons only, need be appointed; and the per diem while actually employed, and mileage, would be an insignificant sum, compared to the losses from diseases; and the facts and conclusions which could not fail to be reached.

The commission might, with propriety, be selected by the State Board of Agriculture, and a sufficient sum of money placed in their hands to compass the desired results. Three thousand dollars would be sufficient for the ensuing two years.

COUNTY SOCIETIES.

The following comparative table will indicate that seven new societies have been organized and in operation during the year:

	1865.	1866.	1867.	1868.	1869.	1870.	1871.
Number of Societies reporting	30	40	45	58	65	73	82
Number of Members...	7143	9270	21333	21658	24073	26907	34533
Receipts from all sources	\$ 15275	\$ 20248	\$ 25477	\$ 52470	\$ 65209	\$ 76103	\$120270
Amount paid in premiums			18180	33990	39573	58584	67597

The aggregate number of members is 7,676 greater than any previous year; the receipts \$44,167 greater, and the amount paid in premiums, \$9,013 greater. The societies keep pace with the growth of the State. In the several counties they are the farmer's festival, and are looked to with interest and expectation as a source of instruction, profit, and pleasure. The improvement in their management is perceptible, yet there is large room for making them, in every respect, far more useful. It is not necessary to consider in this place, in detail, how this may best be done; but we submit again, 1st, an energetic canvass of the county in which the society is located, making personal appeals to the farmers, manufacturers, and dealers to attend the Fair, and be represented in their several departments.

2d. Formation of Farmers' Clubs for the discussion of agricultural topics in each township, auxiliary to the society. 3d. The payment of a salary to the secretary in some slight degree, at least remunerating him for his time and labor. 4th. A better distribution of the money offered in premiums. 5th. A more judicious mingling of the amusing with the useful. 6th. Opening competition to the world.

The reports of the several secretaries are usually papers of interest and value to the county and the people. This year they are very far superior in all respects to any which have ever been submitted; and the only regret is that they must necessarily be furnished in abstracts, etc., for want of space in the annual volume of transactions.

The following abstract shows name of society, name and address of officer reporting, receipts, number of members, amount awarded in premiums, etc., for 1871:

DATE OF CERTIFI- CATE.		NAME OF COUNTY.		OFFICER REPORTING.		P. O. ADDRESS OF OFFICER REPORTING.		MEMBERS.		RECEIPTS.		PAID IN PREMIUMS.		DEBT.	
Nov. 5	23	Adair	S. C. Vance.	Greenfield	182	311	50	180	50						
Nov. 6	9	Appurroose.	J. B. Gedney.	Antenville.	385	845	00	660	50	\$608	33				
Nov. 29	19	Alamakee	C. D. Beeman.	Watson.	187	008	00	439	00	754	75				
Oct. 1	20	E. g. Col. Dist	S. L. Lucas.	Watson.	242	813	00	630	00	1700	00				
Dec. 1	21	Bremer.	C. W. McIntosh.	Willoughby	87	312	00	380	00	23	00				
Nov. 25	30	Broom.	J. B. Faxon.	Bronslough	143	575	00	500	00	1000	00				
Oct. 20	Nov.	11	Bele Plaine.	Grant Ellis.	143	575	00	500	00	1000	00				
Dec. 1	D. c.	15	Black Hawk.	C. Mahon.	185	419	00	433	00						
Nov. 2	Nov.	8	Benton.	A. W. Whitaker.	348	1135	08	1123	00	1785	00				
Nov. 7	Nov.	6	Buchanan.	Joe L. Fynee.	225	1082	00	968	00	1000	00				
Nov. 27	Dec.	9	Cedar Valley.	Ed L. Fynee.	464	1082	00								
Nov. 21	Dec.	9	Cedar Valley.	C. B. Stilson.	260	714	00	415	00						
Nov. 8	Nov.	8	Chickasaw	Geo. W. Norton.	290	714	00	415	00						
Nov. 14	Nov.	30	Chickasaw	L. J. Young.	207	689	45	325	00						
Nov. 20	Nov.	30	Chickasaw	Thos. H. Kirk.	207	689	45	325	00						
Nov. 23	Nov.	30	Clayton.	E. P. Hall.	2475	2141	85	1540	50	9000	00				
Nov. 29	Nov.	30	Crawford	R. Heflinger.	300	811	15	925	00	446	25				
Dec. 8	Dec.	9	Clin. Iowa Dist.	P. W. Bartle.	250	296	50	117	00	450	00				
Nov. 20	Dec.	2	Clarke.	W. F. Sumborn.	1619	5717	00	2758	00	1350	00				
Nov. 22	Dec.	26	Dallas.	H. C. Ayres.	336	3323	00	1068	00	1164	00				
Nov. 22	Nov.	1	Davis.	J. R. Joyce.	300	481	00	171	00	2014	00				
Nov. 28	Nov.	1	Des Moines.	Howard Willey.	300	474	75	314	00	18	25				
Nov. 6	Dec.	22	Delaware.	C. Garman.	300	1801	00	650	00	1000	00				
Nov. 10	Nov.	21	Decatur.	J. P. Lee.	1806	2321	00	2854	00						
Nov. 23	Dec.	19	Fayette	E. J. Cole.	555	500		1077	00	384	83				
Nov. 23	Nov.	11	Floyd	B. F. Conley.	255	463	40	350	00	1000	00				
Oct. 19	Oct.	19	Fremon	J. S. Root.	250	877	00	177	00	1100	00				
Nov. 26	Dec.	16	Franklin	J. A. Bodenhammer.	216	806	00	736	00	1000	00				
				S. R. Reeve.	210	442	00								
				Hampton	227	319	00	339	00						

*Organized Oct. 1871.

SOCIETIES REPORTING—Continued.

DATE OF REPORT.	DATE OF CERTIFICATE.	NAME OF COUNTY.	OFFICER REPORTING.	POSTOFFICE ADDRESS OF OFFICER REPORTING.	NUMBER OF MEMBERS.	RECEIPTS.	PAID TO MEMBERS.	DEBT.
Nov. 15	Nov. 28	Scout	W. K. Hight	Davenport	2500	\$32,708 51	\$ 6578 00	\$ 48
Oct. 20	Nov. 4	Story	Sam. S. Scatter	Nevada	300	1150 00	600 00	120 00
Dec. 1	Dec. 27	Tama	J. L. Brackner	Tama City	2000	704 00	500 00	120 00
Dec. 8	Dec. 20	Union Ag. & S'k Asso	A. M. Carpenter	Keosauqua	3594	3594 00	3000 00	500 00
Nov. 27	Dec. 2	Union Agricul. Soc.	Jos. Beath	Keosauqua	346	812 00	657 00	330 00
Nov. 27	Dec. 9	Un. Dist. Ag. Society	James Morgan	West Liberty	230	1310 00	1150 00	1300 00
Nov. 27	Dec. 18	U. Ag. Soc. of Cedar	S. T. Bud.	Mechanicsville	161	4393 85	4138 00	2100 00
Nov. 17	Nov. 30	Union Ag. Soc. of Ackley	O. E. Davis	Alton	309	421 00	375 00	00
Nov. 14	Oct. 19	V. Ag. Soc. of Ackley	J. Seaton Kelso	Ackley	100	182 00	180 00	1150 00
Nov. 21	Nov. 30	Warren	J. O. Beiscoe	Keosauqua	206	2098 00	1000 00	600 00
Dec. 20	Nov. 30	Washington	J. C. Benson	Ottumwa	298	2098 00	1400 00	400 00
Nov. 27	Nov. 30	Wayne	M. C. Penter	Indianola	375	898 00	1000 00	500 00
Oct. 30	Nov. 8	Wilson Union	N. Grabiner	Washington	231	2300 00	1000 00	300 00
Nov. 2	Nov. 20	Winneshiek	E. E. Bacon	Corydon	275	634 00	400 00	140 00
Nov. 2	Nov. 20	Woodbury	Henry W. Bennett	Wilton	209	1505 00	1488 00	140 00
Nov. 28	Dec. 2	Woodbury	Orvig L. Wright	Sioux City	500	2971 00	844 00	1500 00
					75	1000 00	800 00	1200 00

IMMIGRATION.

The report of the Register of the Sioux City Land Office shows that in 1871, 1,947 homesteads were entered, embracing 209,968 acres; and 2,215 pre-emptions, or 221,500 acres; or actual settlers have occupied 431,648 acres hitherto wild lands; 13,148 acres have passed into the possession of actual settlers absolutely. Only a few thousand acres remain free of a claim of some sort; and it is predicted that before the close of 1872, the free lands of Iowa will be a thing of the past. Yet parties desirous of securing free homes in Iowa will have an opportunity to do so, for some time to come. There are hundreds of claims in the district which have been taken and subsequently abandoned. In April twelve car loads of Hollanders arrived in Sioux City, and in August a large number from Norway. From Wisconsin came 500 souls to form a colony in Emmet county; and ten other counties have added 500 each to their population. In four months, up to July, 2,600 newcomers settled in Clay county; 600 houses were built, and 18,000 acres of new land broken.

The sales of the Burlington and Missouri River lands, for eleven months, ending December 1st, were 39,792 acres, to 491 purchasers; being an average of 81 acres to each. None of these sales were made to speculators. Most have been sold on ten years' credit, at six per cent interest, to men who invested their actual capital in stock, buildings, and opening the farm; they expect to make the first payment, at the end of two years, by the product of the farm. These sales represent nearly five hundred families. These sales were mostly in Mills, Montgomery, Page, Adams, Taylor, Cass, and Potawattamie counties. The company still have for sale, on the same terms, 203,000 acres. No record has been kept of the nationality of purchasers. The largest quota is from Illinois, because from its proximity the vast agricultural capitalists of Iowa are there best known.

The sales of the Des Moines Valley Company were 400,000 acres. The Iowa Railroad Land Company sold to actual settlers, on the Iowa Falls & Sioux City Railroad, 35,415 acres; on the B. C. R. & M. Railroad, 41,131 acres; and on the S. C. & P., 360 acres; in all 76,906 acres.

LIBRARY.

There have been added during the year, one hundred and eighty-two bound volumes, pamphlets, and lists of premiums of other organizations; there are also received three daily, twelve weekly, and four monthly papers.

There are at the Fairfield office, the accumulation of the past three years, two hundred and twenty samples of grains and seeds, from all parts of the State. A plan has been adopted by which may be shown a sample of grain, say, of wheat from Russia, then specimens of its growth in the different sections of the State. This is but commenced; and, if parties to whom seeds are distributed would be half as careful to report results as they are anxious to secure the varieties for trial, it would form a collection of rare interest and value. Moreover, it would form a tolerably safe guide, other things being equal, as to the adaptability of any specified kind of grain to a particular locality.

The collection in the Library the representing Entomology and Ornithology of the State, is, by no means, insignificant. A little skill and labor can increase it indefinitely; already it is very attractive, and when in actual possession of the society it should be so extended as to embrace all the departments of natural history. The system of exchanges with kindred societies increases as fast as they become known, and it is the aim, to place the society in correspondence with all the recognized bodies of the kind in the land. The demand for sets of volumes of transactions, for libraries, new agricultural societies, &c., is far in excess of the supply. It would be impolitic to distribute, for some years to come, any of the earlier volumes, which have been reserved in the library. The number now ordered by law is three thousand. Your honorable body will readily observe that but a very small proportion of our people can ever have an opportunity to see a copy.

There are, perhaps, two hundred volumes of pamphlets, periodicals, reports, &c., which should be bound; and, moreover, the society should at once begin the purchase of new and valuable books, for which publishers will not exchange, that those having this vital interest in charge could keep pace with the notable advance in

agriculture and the collateral sciences. It is submitted that one thousand dollars for the purpose indicated would be a judicious expenditure.

The society congratulates itself on the near prospect of having in the "New Capitol" a suite of rooms for the appropriate uses of this department. They can be made most attractive and interesting, illustrating at a glance the products of the soil, the modifications in grains, &c., imported from other States and countries, and grown here; and any distinctive differences which may appear in products raised in the several parts of our wide domain. In a few years the stranger would find such a collection of products, objects of natural history, &c., as would serve a better text-book than a dozen volumes in arriving at a conclusion as to the character and wealth of the soil, the enemies he must subdue, and the friendly influences he must court.

THE SOCIETY'S EXHIBITION IN 1871.

The eighteenth annual fair was held September 11, 12, 13, 14, and 15, on the grounds of the Agricultural Society of Central Iowa, near the city of Cedar Rapids. The local committee to whom was assigned the duty of making the requisite preparations, immediately after securing the location, began the work with a will, and completed it with promptness and fidelity. To their labors, the society and people are indebted for a fair ground which is not surpassed, if equaled in the north-west. The committee procured fifty-five acres within one mile of the business portion of the city of Cedar Rapids, and expended \$25,000 in preparing buildings, halls, stalls, &c., for the accommodation of the fair. All the halls are of artistic appearance, built in a substantial manner, and rest on solid stone foundations. When the work was commenced, the land was covered with a dense growth of brush, and young trees; yet, in a few months, it put on the appearance of a young and thriving village; the city authorities made a splendid road to the grounds at a cost of \$4,000, and nothing was left undone to make visitors and exhibitors comfortable. The generous people of Cedar Rapids opened their doors to the stranger, extended every courtesy, and not one of the vast crowds

who flocked to the fair can have any just cause of complaint of a want of hospitable treatment.

The ladies especially deserve the thanks of the society, and the people for their efforts to make the fair successful. They decorated the halls with great taste; they were full of work, inciting each other to contribute to the departments in which they are most interested, and the result was that fine art and floral halls were very palaces of enchantment.

Situated as Cedar Rapids is, on the C. & N. W. R. R. 82 miles west of the Mississippi, and 267 east of the Missouri, and having direct connections with every part of the State and the adjoining States, by rail, the facilities for reaching the fair were numerous. The railroads of the State arranged to carry passengers at half fare, and freights exhibited, free, of which contract was faithfully performed.

These inducements called out the largest crowd to the best and largest fair ever held in Iowa. The first two days, by reason of the dust, from long protracted drought, were quite unpleasant, but on Wednesday night there was a most seasonable rain, which made everybody happy, and conspired to the success of the fair. It is gratifying to add that the local committee, the railroads, &c., in the face of these facts promise much better things in the future, alleging that "if there were any complaints, they could only spring from their want of any idea of the magnitude of an Iowa State Fair."

Let it be mentioned as an index of the character of our people, that amid the thousands assembled there was no disorder requiring the interference of the police, but on the other hand, a cheerful acquiescence in the decisions of the committees, and ready obedience to the regulations, peace, harmony, and good feeling pervaded the multitudes, and they returned to their homes satisfied, amused, and instructed.

The following table shows entries in the several departments at the fair since 1856:

ENTRIES.	1856	1857	1858	1859	1863	1864	1865	1866	1867	1868	1869	1870	1871
Cattle	145	169	146	125	84	74	67	79	94	105	129	167	244
Horses	182	196	179	156	129	150	217	176	188	140	278	247	558
Mules	14	13	30	24	28	85	23	30	12	11	34	34	50
Sheep	22	10	33	87	78	107	76	159	118	138	31	112	145
Swine	27	19	26	38	47	52	44	27	48	94	164	211	298
Implements	113	86	25	26	136	181	231	205	379	278	333	687	402
Farm products ..	106	192	130	190	128	100	151	139	251	222	415	338	706
Other classes ..	246	444	475	673	487	303	480	519	706	606	1261	1901	1679
Total	856	1120	1044	2269	1107	1052	1276	1334	1794	1596	2645	3697	4082

The following States were represented: Tennessee, Minnesota, Illinois, Nebraska, Wisconsin, Michigan, New York, Indiana, Ohio, Massachusetts, Missouri, Maine, Pennsylvania, Kentucky, California, Connecticut, Colorado, Canada West, France, and Persia.

Forty-seven counties in Iowa had articles on exhibition, as follows: Linn, Marshall, Scott, Polk, Johnson, Butler, Benton, Muscatine, Washington, Cedar, Mahaska, Woodbury, Jones, Fayette, Clinton, Chickasaw, Iowa, Floyd, Tama, Black Hawk, Buchanan, Boone, Lee, Jefferson, Poweshiek, Dubuque, Delaware, Keokuk, Hardin, Harrison, Mills, Story, Louisa, Jasper, Van Buren, Jackson, Henry, Des Moines, Webster, Lucas, Bremer, Marion, Clayton, Wapello, Pottawattamie, Crawford, and Cherokee, being an increase of eight over the Fair at Keokuk.

This schedule shows the receipts for the years specified, amount paid in premiums, and per cent of premiums paid:

RECEIPTS.

1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.
\$ 3009	\$ 3054	\$ 2843	\$ 2116	\$ 3726	\$ 2056	\$ 3576	\$ 4454	\$ 7877	\$ 8522	\$ 4400	\$ 9337	\$ 7132	\$ 13075	\$ 11287	\$ 19164
PAID IN PREMIUMS FOR THE SAME YEARS.															
1834	1679	1012	1932	2307	2055	2844	3988	5349	4188	3680	3947	4810	4775	7013	6808
PER CENT. ON PREMIUMS PAID.															
59	55	32	47	40	50	51	60	34	42	57	34	52	40	62	36

For the first time since the organization of the society, no premiums were paid on agricultural implements, except in a very few instances. This rule was adopted in response to numerous petitions of manufacturers sent the directory.

The absence of a premium and an awarding committee did not diminish the display as some feared, the entries being 402 is sufficient reason for continuing this rule, provided that always that implement and machinery, which may be thoroughly tested on the grounds should make an exception.

The offer of \$100 premium for the best collection of grains, seeds, and vegetables from any one county, has had the desired effect of bringing before the people a display of farm products rarely equaled and never surpassed anywhere; and it is but just to make honorable mention of Clayton county, represented by John Grinnell, and Jefferson county by Alexander and Joseph W. Fulton; and to express the thanks of the society to these individuals for their valuable labors in this direction.

ACKNOWLEDGMENTS.

We are indebted, and here return our thanks to the officers of the the several railroad lines for continued favors, in the preparation and furnishing of statistical tables of great value; to F. O. Walker, acting superintendent of the United States Census, for advance figures of products, etc., in 1870; to the National Department of Agriculture for monthly reports and other documents from which many interesting and important facts are condensed; and to all those who have assisted us in compiling this "General Review of the Condition of Agriculture in the State;" and to whom we have endeavored to give proper credit.

Respectfully submitted,

J. M. SHAFFER,

Secretary.

FAIRFIELD, IOWA, January 10, 1872.

UNITED STATES CENSUS.

Total white population	1,185,979
“ population	1,191,792
“ number acres of woodland	2,524,793
“ number acres unimproved land	3,620,533
“ number acres improved land	9,396,467
“ number pounds sorghum sugar	16,500
“ number gallons sorghum syrup	1,218,636
“ number gallons maple syrup	227,800
“ number pounds maple sugar	1,332,332
“ number tons hay from tame grasses	1,777,339
“ number bushels grass seed	53,432
“ number bushels clover seed	2,475
“ number bushels spring wheat harvested	28,708,312
“ number bushels winter wheat harvested	727,380
“ number bushels oats harvested	21,005,142
“ number bushels corn harvested	68,935,065
“ number bushels rye harvested	505,807
“ number bushels barley harvested	1,960,779
“ number bushels Irish potatoes harvested	5,914,620
“ number bushels sweet potatoes harvested	34,292
“ number bushels peas and beans harvested	42,313
“ number bushels flax seed harvested	88,621
“ number pounds flax	695,518
“ number bushels buckwheat	109,432
“ number pounds tobacco	71,792
Value of orchard products	\$ 1,075,169
Number of hogs, all ages	1,353,908
“ cattle, all ages	614,366
“ milch cows	396,801
“ pounds butter made	27,512,179

Number of gallons milk sold	688,800
“ pounds cheese made	1,087,741
“ work oxen	22,058
“ pounds wool shorn in 1870	2,967,043
“ sheep	855,493
“ horses of all ages	433,642
“ mules and asses of all ages	25,485
“ pounds beeswax	2,225
“ pounds honey taken	853,213
“ gallons wine	37,515
“ pounds hops raised	171,113
Value of home manufactures	\$ 521,404
Value of agricultural implements, machinery, etc.	20,509,582
Value of farm produce, including addition to stock ..	114,386,441
Value of animals slaughtered or sold for slaughter in 1870	25,781,223
Assessed value of land and town lots	226,610,638
Assessed value of personal property	75,904,780
Total assessed valuation	302,515,418
Total value of all live stock	82,987,133
Total value of forest products	1,200,468
Total value of produce of market gardens	244,963
Total amount of wages paid during the year 1870, in- cluding value of board	9,377,878
Present cash value of farms	392,662,441

REPORT OF THE COMMITTEE ON SECRETARY'S REPORT.

Believing many of the suggestions made in the Secretary's report to be of great value,, your committee recommend the society to make them available for results if possible, and, to that end, we offer the following resolutions for your consideration :

Resolved, That a committee of three be appointed to memorialize the General Assembly upon the propriety of protecting the wool-growing interests from the ravages of dogs.

Resolved, That a committee of three be appointed to present to the General Assembly the advantages of encouraging forestry, and that the State Horticultural Society be requested to co-operate by the appointment of a committee for the same purpose.

Resolved, That a committee be appointed to inquire into the expediency of asking the General Assembly to provide for the labors of a State entomologist, and to provide for intelligent inquiry respecting the diseases of live stock, and the remedies therefor.

Resolved, That the Executive Committee be, and is, hereby empowered, at discretion, to expend not exceeding three hundred dollars, for the purchase of books for the library of this society, and in binding and otherwise preserving those now in its possession.

Resolved, That the report of the Secretary be adopted as the report of the Board of Directors, being the general review of the condition of agriculture throughout the State, as required by law.

JOHN SCOTT,
A. S. WELCH,
T. A. MORGAN,
Committee.

CONTINGENT FUND

OF THE

GOVERNOR OF THE STATE OF IOWA,

FOR THE YEARS 1870 AND 1871.

STATE OF IOWA, EXECUTIVE DEPARTMENT, }
DES MOINES, Jan. 11, 1872. }

Gentlemen of the Senate and House of Representatives:

I have the honor to submit herewith a statement of the contingent fund of this office up to January 1st, 1872:

Balance in my hands, March 31st, 1870.....	\$ 29.05
Amount drawn for State treasury.....	1900.67
	<hr/>
	\$1929.72
Amount expended	\$1768.62
Balance in my hands (paid to my successor) . .	161.10—\$1929.72
Whole amount of appropriation by 13th General Assembly.....	\$2,000.00
Amount drawn as above from State treasury...	\$1900.67
Amount undrawn.....	99.33—2,000.00

Of the amount drawn from the treasury, \$860, was expended for traveling expenses; \$736 for clerk hire, and the remainder \$178.62 was paid out for various contingent expenses of the office.

Vouchers for all of these items may be found on file in this department.

SAMUEL MERRILL.