Reports of the Kansas State Board of Agriculture

Section 27, Pages 781 - 810

These reports by the State Board of Agriculture include the proceedings of the board, reports for the previous year, maps of counties, abstracts of counties, miscellaneous articles, and reports of agricultural societies, the state fair, state and county statistics, agricultural industries and products, the agricultural college, and the Kansas Academy of Science. The annual reports began in 1872 and were succeeded by biennial reports beginning in 1877-78. Volume numbers were discontinued with the 1953-1956 report; the last being volume 44. From 1953 to 1976 the reports drop "biennial" from the title. Annual reports begin again from 1976 to 1984, except 1982-1983 which is biennial. The dates for each report reflects the reporting year and not the publication date, which was usually a year later. The title of each report reflects the form given on the title page. Only volumes 1 (1872), 2 (1873), 3 (1874), 4 (1875), the centennial edition (1875), 5 (1876), 6 (1877-1878), 7 (1879-1880), 10 (1885-1886), 11 (1887-1888), 13 (1891-1892), and 14 (1893-1894) are currently available.

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Prof. Riley agrees with Dr. Skinner as to the facts mentioned in this paragraph, but not as to the conclusions which he deduces. He says:

"It is a notorious fact that chinch bugs do not all mature at once, and if they took wing only when making their courtships, some of them would be flying during a period of several weeks; and, as will be shown presently, there exists a dimorphous, short-winged form of the chinch bug, which cannot possibly take any such aerial love trips. It seems more agreeable to analogy that they take wing only when they have become so unduly numerous that they are instinctively aware that they must either emigrate or starve. Be this, however, as it may, the fact of their being, as a general rule, unwilling to use their wings is well known to every practical farmer."

Prof. Riley, in the same report, relates the following, which shows how they *have been* "out-flanked, headed off and conquered:"

"The thing has been effectually done during the past season, by Mr. Davis, Supervisor of the town of Scott, Ogle county, Ill. This gentleman had a corn field of a hundred acres, growing along side of an extensive field of small grain. The bugs had finished up the latter, and were preparing to attack the former, when the owner, being of an ingenious turn, hit upon a happy plan for circumventing them. He surrounded the corn with a barrier of pine boards, set up edgewise, and partly buried in the ground to keep them in position. Outside of this fence deep holes were dug, about ten feet apart. The upper edge of the board was kept constantly moist with a coat of coal tar, which was renewed every day. The bugs, according to their regular tactics, advanced to the assault in solid columns, swarming by millions, and hiding the ground. They easily ascended the boards, but were unable to cross the belt of the coal tar. Sometimes they crowded upon one another so as to bridge over the barrier, but such places were immediately covered with a new coating. The invaders were in a worse quandary than that of Butler and Weitzel, at Fort Fisher, and in that state of mind crept backward and forward until they tumbled into the deep holes aforesaid. They were soon filled, and the swarming myriads were shoveled out of them literally by wagon-loads, at the rate of thirty or forty bushels a day, and buried up in other holes, dug for the purpose, as required.

"This may seem incredible to persons unacquainted with the little pests; but no one who has seen the countless myriads which cover the earth as harvest approaches, will feel inclined to dispute the statement. It is an unimpeachable fact. The process was repeated till only three or four bushels could be shoveled out of the holes, when it was abandoned. The crop was completely protected, and yielded bountifully."

The burning of the prairie grass in the fall, in the vicinity of their operations, is said by those who have tried it to be an effectual mode of destroying myriads of them.

RYE.

Comparative statement showing the yield of Rye in the Western States named, and the average yield for nine years.

Year.	Kentucky.	Ohio.....	Illinois	Missouri ...	Iowa.....	Nebraska..	Kansas.....
Report of 1864.....	13.2	12.2	15	15.6	15	16	17
Report of 1865.....	9	12.5	16.6	16.6	18.6	18	23
Report of 1866.....	9 3	10.8	15.6	19.8	19.3	26	26.4
Report of 1867.....	10.7	13.4	15	16.2	19.4	25.2	20.3
Report of 1868.....	11.5	13.6	16.2	18.5	19	18 3	20.8
Report of 1869.....	11.2	14.8	14.4	16.9	16.1	19.4	25.8
Report of 1870.....	12.1	13.8	16.4	15.6	17.6	23.7	20.8
Report of 1871.....	9.4	14.5	17.8	17.1	19.9	18	19
Report of 1872.....	15.1	11.2	18.1	16	19.5	15.5	17.5
Average yield for nine years.....	11.2	12.9	16.1	16.9	18.2	20	21.1

The number of bushels of rye produced in Kansas in 1860 was 3,833; in 1870, 85,207 bushels; in 1873, 301,957 bushels.*

CORN.

The returns of 1872 show the aggregate number of bushels to have been 45,667,451, one of the largest, most alarming, and yet most beneficial results ever known in the State; *alarming*, because corn was crowned "king," and was well-nigh the ruination of the average farmer; *beneficial*, because when farmers found the supply so far exceeded the demand for home consumption, that in some parts of the State it could only be utilized for fuel, and would not bear transportation to a distant market, they realized as they could not have realized in any other way—through their purse strings—the absolute necessity of turning their attention to a more diversified industry. This they have done with most beneficial results, as will be seen under the head of "Castor Beans, Cotton, Flax, Hemp and Tobacco."

Owing to the excessive rains in the spring of 1873, which prevented proper tillage, and which was followed by a severe drought during the formation of the ears, the reduction in the State, as compared with the crop of last year, is from 20 to 50 per cent., an average of about 35 per cent. This reduces the corn crop of 1873 to about 29,683,843 bushels; but the old crop of 1872 on hand amounts to 7,769,475 bushels, subdivided among the counties as follows:

Statement showing the number of bushels of old Corn on hand on the 1st day of March, 1873.

County.	No. Bush. on hand.	County.	No. Bush. on hand.	County.	No. Bush. on hand.
Allen	68,716	Greenwood	74,532	Ottawa	89,760
Anderson	92,551	*Harper		*Pawnee	
Atchison	291,611	*Harvey		*Phillips	
*Barbour		Howard	81,271	Pottawatomie	326,260
Barton	125	Jackson	369,783	Reno	1,628
*Billings		Jefferson	296,055	Republic	106,230
Bourbon	301,673	Jewell	7,578	Rice	3,302
Brown	511,419	Johnson	471,301	Riley	112,940
Butler	62,766	Labette	148,969	*Rooks	
*Comanche		Leavenworth	182,871	*Russell	
Chase	23,618	Lincoln	3,297	Saline	58,570
Cherokee	2,610	Linn	404,146	Sedgwick	29,715
Clay	83,810	Lyon	102,667	Shawnee	417,622
Cloud	42,103	Marion	5,768	Smith	1,200
Coffey	116,123	Marshall	286,720	Sumner	11,285
Cowley	59,074	McPherson	25,979	Wabaunsee	112,343
Crawford	123,094	Miami	437,527	*Wallace	
Davis	53,193	Mitchell	8,975	Washington	86,435
Dickinson	21,454	Montgomery	73,338	Wilson	88,644
Doniphan	443,575	Morris	44,807	Woodson	47,057
Douglas	34,625	Nemaha	246,242	Wyandotte	72,218
*Ellis		Neosho	157,464		
Ellsworth	5,614	*Ness		Total	7,769,475
*Ford		Osage	219,896		
Franklin	213,530	Osborne	3,795		

*No report.

While the supply has been so far reduced as to bring remunerative prices to the farmer, it will still be ample until the harvest of 1874.

The lessons of the last few years have been pointed, severe, and easy of comprehension. There has been too much corn for the amount of stock. There should never be a bushel of corn exported except in the condensed form of beef and pork. Then the fertility of the soil will be maintained,

* Returns of 1873 are estimated from assessors' returns of crop sowed in 1872 and harvested in 1873. The rest are compiled from reports of Commissioner of Agriculture, Washington, D. C.

the product bear transportation to a distant market, and the problem whether farming will pay in Kansas, solved in the affirmative.

The following table, compiled from the report of the Commissioner of Agriculture, Washington, D. C., gives the comparative yield of corn in Western States named, and average for nine years:

	Kentucky.	Ohio	Illinois	Missouri.	Iowa	Nebraska.	Kansas
Report of 1864	28.5	31.5	33	26.8	36.6	28.5	25
Report of 1865	34	41.5	35.2	39.6	42	46.5	41.2
Report of 1866	31.8	38	31.6	30.8	31.5	29.3	34.2
Report of 1867	24.7	28.7	23.8	27.2	33.8	36	38.6
Report of 1868	32.7	34	34.2	30.3	37	22.9	18
Report of 1869	25	30.1	23.2	30.6	33.2	42.2	48.4
Report of 1870	32.1	39	35.2	31.4	32	29.9	28
Report of 1871	27.3	38.5	38.3	38	42.5	41.5	40
Report of 1872	24.7	28.7	23.8	27.2	33.8	36	38.6
Average yield	28.9	34.4	30.9	31.3	36.7	34.7	34.6

With the luxuriant growth of native nutritious grasses, so abundant in Kansas; with timothy, clover and blue-grass taking kindly wherever they have been tried; with the power to grow an abundance of corn, the question of profitable stock raising in Kansas is in no manner problematical.

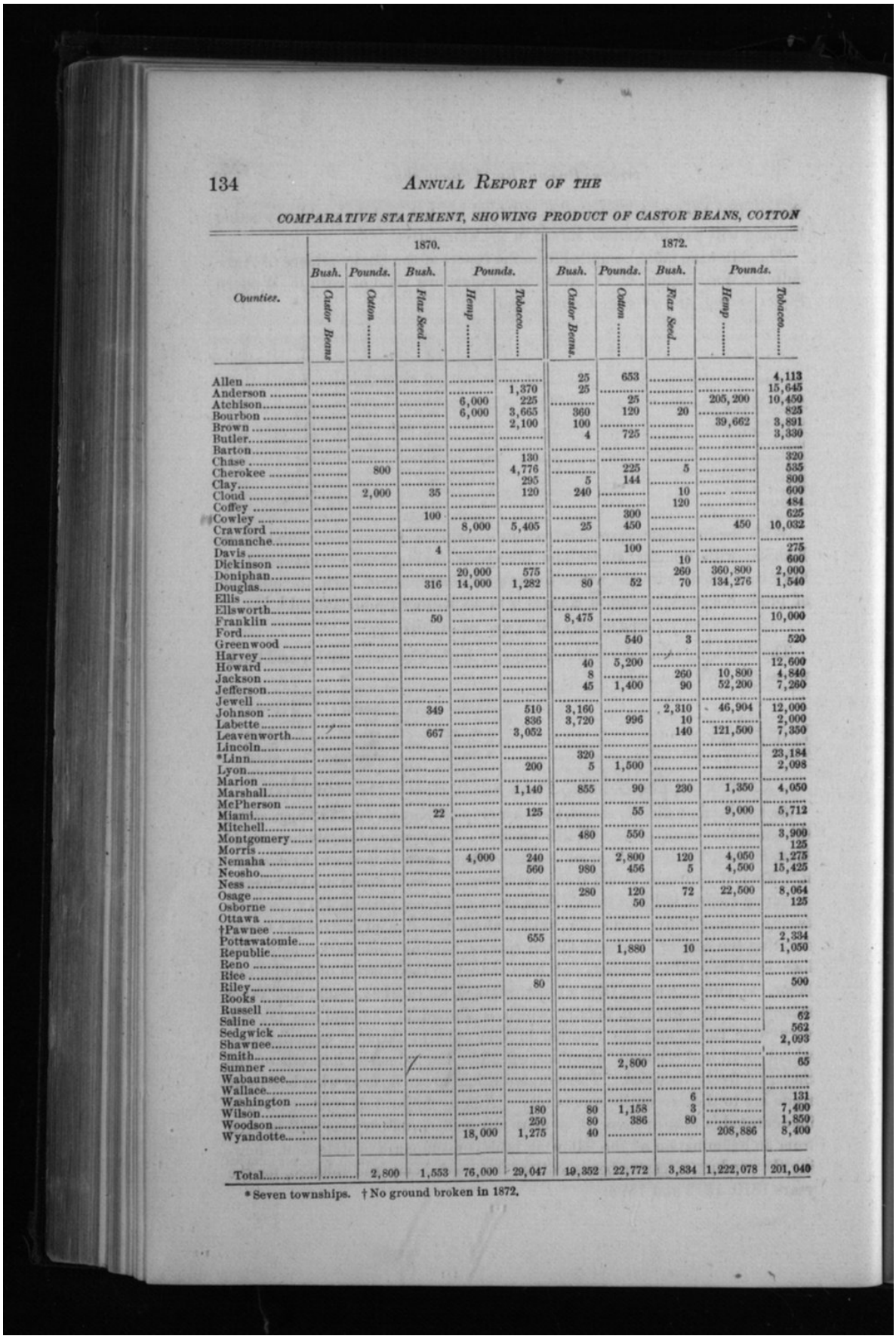
OATS, BARLEY AND BUCKWHEAT.

The following table shows the number of bushels of oats, barley and buckwheat for 1870 and 1873:

	Oats.	Barley.	Buckwheat.
For the year 1870	4,097,925	98,405	27,826
For the year 1873	9,337,581	508,002	76,929
Gain from 1872 to 1873	5,239,656	409,597	49,103

CASTOR BEANS, COTTON, FLAX SEED, HEMP AND TOBACCO.

As has been previously stated, the corn crop of Kansas for 1872 aggregated the enormous sum of 45,667,451 bushels. Ever since the settlement of Kansas, corn has been the great staple, without sufficient stock to consume it. Even if railroads would transport it free of cost, it would not bear transportation twenty miles to them. The average market price in 1872 was from twenty to twenty-five cents per bushel along the line of railroads, barely covering the cost of production; the cost of hauling and marketing a dead loss. While public attention has been called to the relation of capital and labor, to public wrongs, official malfeasance, to railroad, bank, and other monopolies, the spirit of inquiry which is abroad in the land has taken a very wide range, and has resulted in very efficient farmers' organizations, where social and economic questions, affecting the industrial interests of the State, are freely discussed. These organizations are to farmers what boards of trade are to the mercantile community. Among the *business reforms* already inaugurated is that in favor of a more diversified industry, as will be seen from an examination of the following table, or comparative statement, showing the product of castor beans, cotton, flax seed, hemp and tobacco, for the years 1870, 1872 and 1873:



COMPARATIVE STATEMENT, SHOWING PRODUCT OF CASTOR BEANS, COTTON

Counties.	1870.					1872.				
	Bush.	Pounds.	Bush.	Pounds.		Bush.	Pounds.	Bush.	Pounds.	
	Castor Beans.	Cotton	Flax Seed	Hemp	Tobacco	Castor Beans.	Cotton	Flax Seed	Hemp	Tobacco
Allen						25	653			4,113
Anderson					1,370	25				15,645
Atchison				6,000	225		25		205,200	10,450
Bourbon				6,000	3,665	360	120	20		825
Brown					2,100	100			39,662	3,891
Butler						4	725			3,330
Barton										
Chase					130					320
Cherokee		800			4,776		225	5		535
Clay					295	5	144			800
Cloud		2,000	35		120	240		10		600
Coffey								120		484
Cowley			100				300			625
Crawford				8,000	5,405	25	450		450	10,032
Comanche										
Davis			4				100			275
Dickinson								10		600
Doniphan				20,000	575			260	360,800	2,000
Douglas			316	14,000	1,282	80	52	70	134,276	1,540
Ellis										
Ellsworth										
Franklin			50			8,475				10,000
Ford										
Greenwood							540	3		520
Harvey										
Howard						40	5,200			12,600
Jackson						8		260	10,800	4,840
Jefferson						45	1,400	90	52,200	7,260
Jewell										
Johnson			349		510	3,160		2,310	46,904	12,000
Labette					836	3,720	996	10		2,000
Leavenworth			667		3,052			140	121,500	7,350
Lincoln										
*Linn						320				23,184
Lyon					200	5	1,500			2,098
Marion										
Marshall					1,140	855	90	230	1,350	4,050
McPherson										
Miami			22		125		55		9,000	5,712
Mitchell										
Montgomery						480	550			3,900
Morris										125
Nemaha				4,000	240		2,800	120	4,050	1,275
Neosho					560	980	456	5	4,500	15,425
Ness										
Osage						280	120	72	22,500	8,064
Osborne							50			125
Ottawa										
†Pawnee										
Pottawatomie					655					2,334
Republic							1,880	10		1,050
Reno										
Rice										
Riley					80					500
Rooks										
Russell										
Saline										62
Sedgwick										562
Shawnee										2,093
Smith										
Sumner							2,800			65
Wabaunsee										
Wallace										
Washington								6		131
Wilson					180	80	1,158	3		7,400
Woodson					250	80	386	80		1,859
Wyandotte				18,000	1,275	40			208,886	8,400
Total		2,800	1,553	76,000	29,047	19,352	22,772	3,834	1,222,078	201,040

*Seven townships. †No ground broken in 1872.

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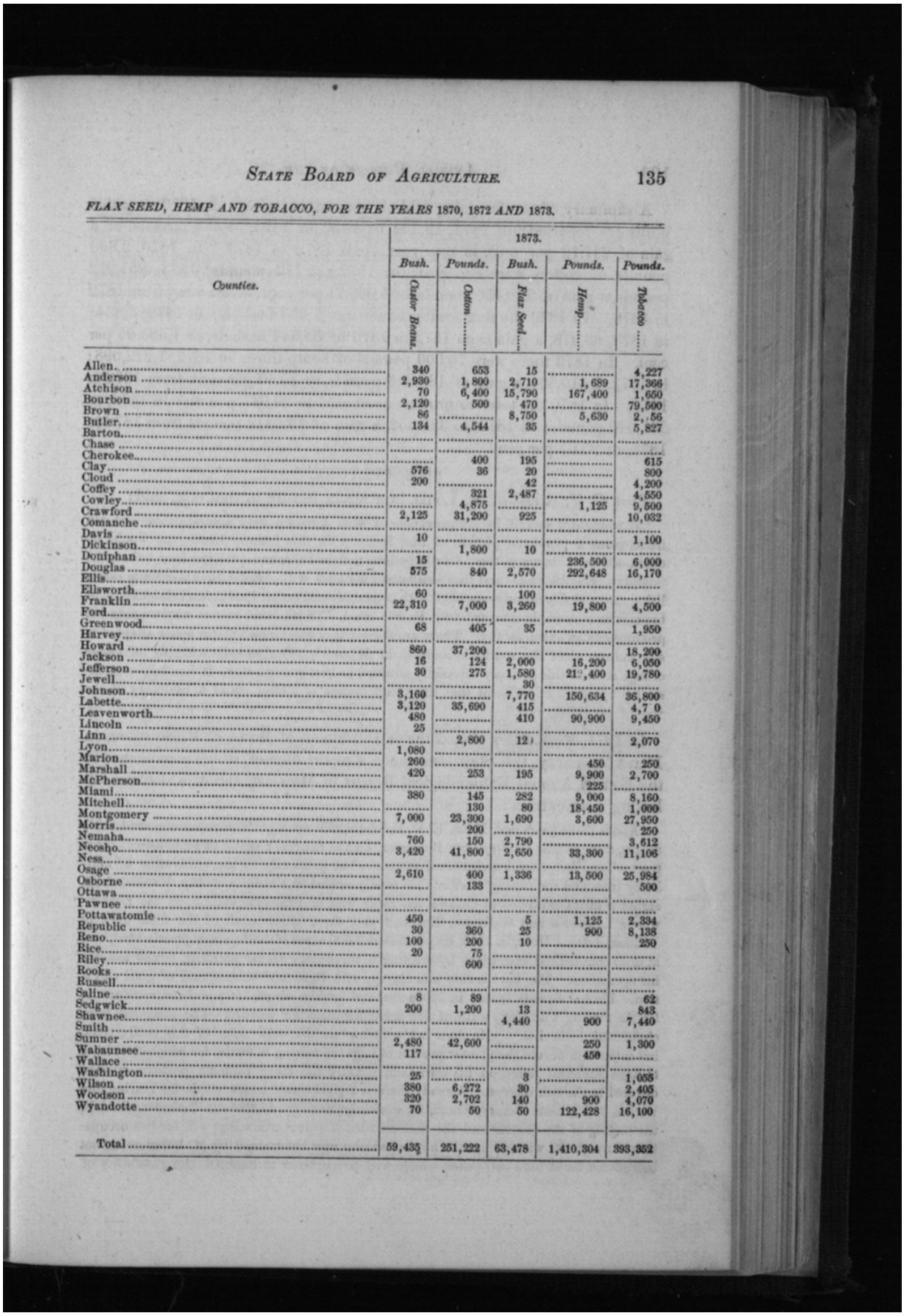


FLAX SEED, HEMP AND TOBACCO, FOR THE YEARS 1870, 1872 AND 1873.

Counties.	1873. Bush. Castor Beans.	Pounds. Cotton	Bush. Flax Seed	Pounds. Hemp	Pounds. Tobacco
Allen	340	653	15		4,227
Anderson	2,930	1,800	2,710	1,689	17,366
Atchison	70	6,400	15,790	167,400	1,650
Bourbon	2,120	500	470		79,500
Brown	86		8,750	5,630	2,.56
Butler	134	4,544	35		5,827
Barton					
Chase					
Cherokee		400	195		615
Clay	576	36	20		800
Cloud	200		42		4,200
Coffey		321	2,487		4,550
Cowley		4,875		1,125	9,500
Crawford	2,125	31,200	925		10,032
Comanche					
Davis	10				1,100
Dickinson		1,800	10		
Doniphan	15			236,500	6,000
Douglas	575	840	2,570	292,648	16,170
Ellis					
Ellsworth	60		100		
Franklin	22,310	7,000	3,260	19,800	4,500
Ford					
Greenwood	68	405	35		1,950
Harvey					
Howard	860	37,200			18,200
Jackson	16	124	2,000	16,200	6,050
Jefferson	30	275	1,580	212,400	19,780
Jewell			30		
Johnson	3,160		7,770	150,634	36,800
Labette	3,120	35,690	415		4,7 0
Leavenworth	480		410	90,900	9,450
Lincoln	25				
Linn		2,800	12		2,070
Lyon	1,080				
Marion	260			450	250
Marshall	420	253	195	9,900	2,700
McPherson				225	
Miami	380	145	282	9,000	8,160
Mitchell		130	80	18,450	1,000
Montgomery	7,000	23,300	1,690	3,600	27,950
Morris		200			250
Nemaha	760	150	2,790		3,612
Neosho	3,420	41,800	2,650	33,300	11,106
Ness					
Osage	2,610	400	1,336	13,500	25,984
Osborne		133			500
Ottawa					
Pawnee					
Pottawatomie	450		5	1,125	2,334
Republic	30	360	25	900	8,138
Reno	100	200	10		250
Rice	20	75			
Riley		600			
Rooks					
Russell					
Saline	8	89			62
Sedgwick	200	1,200	13		843
Shawnee			4,440	900	7,440
Smith					
Sumner	2,480	42,600		250	1,300
Wabaunsee	117			450	
Wallace					
Washington	25		3		1,055
Wilson	380	6,272	30		2,405
Woodson	320	2,702	140	900	4,070
Wyandotte	70	50	50	122,428	16,100
Total	59,435	251,222	63,478	1,410,304	393,352

A summary of the foregoing table is very encouraging. In 1870 no castor beans are reported; in 1872, 19,352 bushels; in 1873, 59,435 bushels, or a gain of 207.12 per cent. in one year, from 1872 to 1873. In 1870, 2,800 pounds of cotton were reported; in 1872, 22,772 pounds; 1873, 251,222 pounds, a gain of 228,450 pounds, or 1,003.21 per cent. in one year, from 1872 to 1873. In 1870 the flax seed product was 1,553 bushels; in 1872, 3,834; in 1873, 63,478, a gain from 1872 to 1873 of 59,644 bushels, or 1,555.65 per cent. In 1870 there were 76,000 pounds of hemp fibre; in 1872, 1,222,098; in 1873, 1,410,304, a gain of 188,226 pounds, or 15.40 per cent. from 1872 to 1873. In 1870 the tobacco product amounted to 29,047 pounds; in 1872, to 201,040 pounds; in 1873, to 393,352, a gain of 192,312 pounds from 1872 to 1873, or 95.65 per cent.

SILK CULTURE.

Prof. C. V. Riley, of St. Louis, in a recent lecture in that city, said:

"If to-night I should, in my prevision of what America is to accomplish in the silk trade, paint a prophetic picture of that industry in this country hence, you would no doubt call me a dreamer, too. I fully believe that in 1973, and perhaps long before, the Southern Atlantic States and the Southwestern States will abound in silk-reeling establishments, and silk factories supplied with cocoons reared on all lands round about them, or brought at reasonable rates from the Pacific coast. There is no reason why we may not produce silk as cheap as any. There are few parts of the United States better adapted to silk culture than the southern counties in Missouri. The abundant supply of Osage orange renders this industry especially adapted to that section, since it has been demonstrated by actual experiment that the Osage orange is almost equal to mulberry in the way of providing food."

In 1871, Prof. Riley visited the establishment of Mons. E. V. Boissiere, in Franklin county, this State, and made a report thereof, which is published in the Fourth Annual Entomological Report of Missouri, and of which the following is an extract:

"About three years ago, Mons. E. V. Boissiere, a French philanthropist of considerable means, came to this country from Bordeaux, for the express purpose of purchasing a large tract of land for general agricultural purposes, but primarily for the cultivation of mulberry trees and the raising of silk. He finally settled in Franklin county, Kansas, about eighteen miles southwest of Ottawa, ten miles west of Princeton station, on the Leavenworth, Lawrence and Galveston Railroad, and three miles south of the little town of Williamsburg. Here, in 1869, he purchased 3,500 acres of undulating prairie land, and at once commenced operations by erecting a three-story frame building, 50x30 feet, for his operatives. The land is rich and clayey, with limestone subsoil, and of good elevation. He has already fenced in 360 acres, and broken about 150; and contracts are let for the fencing with stone walls of 160 acres, intended for pasture. The place has been christened 'Silkville.' He does not contemplate the cultivation of this entire tract, but intends to devote the greater portion of it to the raising of cattle, for which he wishes to have sufficient range on his own land. Only the more valuable portions will be devoted to the silk interest. Already there is a good stable, a few sheds for rearing the worms, and a stone factory, 83x28, for working the silk. If the silk business succeeds, the reeling of the cocoons and the manufacture of velvet trimmings will furnish occupation through the winter; but the hope of success now entertained by M. Boissiere cannot be realized for at least two years, which will be required to establish the possibility of

profitably raising the worms, and to await the growth of the trees. Meanwhile, to avoid any chance of failure, he intends to embark in several industries which have received no attention in that part of the country, and which will give employment to the operatives, and may be carried on entirely from the products of the farm. Of such industries, he mentions more especially broom-making; the preservation of meat in tin cans; the manufacture and refining of sorghum syrup, of castor oil, potato starch, morocco leather, and dark-headed matches, which have nothing poisonous about them, and cannot be ignited except on the box containing them.

"There are already planted 8,000 mulberry trees, which have made a wonderful growth, and there are 2,500 fine young trees in nursery to be set out. There is also a young orchard of 900 apple trees and 2,000 peach trees, and 1,000 Concord grape vines; and belts of black locust, black walnut and ailantus will be planted the coming spring.

"The fore part of last November, I paid M. Boissiere a visit, as I was interested in this novel enterprise just started in a neighboring State. I found him sitting at an immense table with all the operatives, partaking in common of a plain but substantial meal. He is a bachelor of some sixty years of age; a philanthropic, intelligent man — a man of plain habits, and with such broad democratic views that he originally came to this country in sheer disgust of Napoleon III. He is fully imbued with the fact that there should be no conflict between capital and labor, and intends to make the colony self-supporting, but to form eventually a co-operative society, with an equitable distribution of profits, mutual guarantees, association of families, integral education and unity of interests — something after the plan proposed by Mr. E. T. Grant, in a work on co-operation, issued from the office of the New York *Tribune*. So soon as the organization is effected, he intends to donate to the association all the capital invested by himself up to that time, reserving only the right of as many votes as the capital will represent."

The following is the statement of Mons. Boissiere to Mr. Allen, the assessor of Williamsburg township, the current year:

"Since my report to A. M. Blair, Esq., dated Oct. 26th last, and published in the Kansas Agricultural Report for 1872, page 221, I have continued the manufacture of silk velvet ribbons about in the same manner as therein stated. I have now three looms in good working order, but since the addition of the third loom, I have not increased the working force, namely, two men, three women, and a part of the time a young girl. I have not yet succeeded in effecting sales of the finished fabrics without increasing expenses nearly equal to the profits.

"My experience in rearing silk worms the present season, I report as follows: Early in March last I received from the Agricultural Bureau, at Washington, a parcel consisting of three cards of Japanese eggs, and some time later, a second parcel, of three similar cards. Both parcels were laid away in a cellar as soon as received, where they were kept until the proper season for hatching. The eggs which came last were, however, partly hatched when received, and when they were put to hatch (May 14th), all that then hatched died immediately, and one-third of them never hatched at all. This parcel of eggs therefore proved a total failure. The parcel of eggs first received passed through the process of hatching from the 16th to the 19th of May, but two-thirds of them failed to hatch, so that I had Japanese worms only from the remaining third, which I estimated at about one-third of an ounce. The earliest hatched completed their first moulting May 23, at 1 A. M., and those hatched later, at 6 P. M., of the same day, after about eighteen hours sleep in each case. They appeared sound and healthy from the first. They were fed with the young leaves of the white mulberry, cut fine with a sharp knife, and the quantity was graduated with a view to equalize, as far as possible, the growth of the different parcels of worms. The second moulting followed three days after the first, the worms all passing through it at nearly the same time. The third moulting was completed

May 30th, and the fourth and last, June 4th, the worms still appearing in good condition. Leaves for feeding were not cut up after the first meal following the third moulting, except for the meal next preceding and that next following the fourth moulting. Previously to the third moulting, the worms were fed six times a day. They began spinning June 10th, and were all spinning June 11th; the result was twelve pounds of cocoons, much smaller than those produced by French worms, but apparently of excellent quality.

"The eggs were hatched in a wooden box, warmed by heated bricks to a temperature varying from 64° to 80° Fahrenheit, then put around a stove, and kept at a temperature from 76° to 80°. Artificial heat was discontinued two days after the second moulting, and the worms were kept in a room varying between 62° in the morning, to 80° at 2 P. M. Thunder showers, which are supposed to affect growing silk worms injuriously, were frequent during this period. From the first to the last the eggs and worms were in charge of an *experienced* French silk grower. I was even less successful than last year with three varieties of French worms, subjected to the same treatment as these Japanese worms. Some of the latter happened to get mixed with the French worms, and became, like them, diseased, as if by contagion, a fact which indicates that the failure of the French worms is due to some inherited malady, and not to any peculiarity of the Kansas climate.

"Yours respectfully, E. V. BOISSIERE."

LIVE STOCK.

The following table shows the number and value of farm animals, by counties, estimated from assessors' returns, monthly reports, and other reliable sources; also the aggregate in 1870–3, with actual and per cent. gain in three years:

Counties.	No. of Horses.	No. of Mules & Asses.	No. of Cattle.	No. of Sheep.	No. of Swine.	Value of Horses.	Value of Mules & Asses.	Value of Cattle.	Val. of Sheep.	Value of Swine.
Allen	2,440	250	10,725	389	7,219	$143,960	$19,175	$225,225	$ 910	$39,704
Anderson	3,013	238	12,488	1,688	5,330	177,767	18,207	262,248	3,903	29,315
Atchison	4,938	825	29,637	558	13,102	291,342	63,112	622,377	1,306	72,061
Bourbon	6,758	751	24,330	1,268	12,976	398,722	57,452	510,930	2,967	71,368
Brown	4,998	394	15,294	1,675	18,428	294,882	30,141	321,174	3,920	101,354
Butler	2,228	326	8,978	354	3,024	131,452	24,939	188,538	828	16,632
Barton	95	14	325	.....	32	5,605	1,071	6,825	.....	176
Chase	2,029	125	7,590	1,038	891	119,711	9,562	159,390	2,429	4,901
Cherokee	4,246	509	12,689	248	2,851	250,514	38,939	266,469	580	15,681
Clay	1,864	128	6,151	240	3,125	109,976	9,792	129,171	562	17,187
Cloud	1,931	341	6,875	324	2,707	113,929	26,086	144,375	758	14,888
Coffey	3,575	278	9,801	2,076	5,590	210,925	21,267	205,821	4,858	30,745
Cowley	3,704	561	12,650	766	4,512	218,536	42,917	265,650	1,792	24,816
Crawford	3,349	372	13,961	1,008	9,044	197,591	28,458	293,181	3,359	49,742
Comanche	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davis	1,497	80	6,810	66	1,062	88,323	6,120	143,010	154	5,841
Dickinson	3,230	162	7,643	739	2,306	190,570	12,393	160,503	1,729	12,683
Doniphan	4,324	854	11,671	1,172	24,465	255,116	65,331	245,091	2,742	134,557
Douglas	6,874	411	19,153	647	20,690	405,566	31,442	402,213	1,514	113,795
Ellis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ellsworth	848	143	3,458	.....	941	50,032	10,940	72,618	.....	5,176
Franklin	4,527	299	15,560	1,980	15,014	267,093	22,873	326,760	4,633	82,577
Ford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greenwood	2,929	172	16,205	866	4,180	172,811	13,158	340,305	2,026	22,990
Harvey	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Howard	3,538	531	15,686	2,623	10,156	208,742	40,622	329,406	6,138	55,858
Jackson	3,849	327	12,275	752	6,587	227,091	25,015	257,775	1,760	36,228
Jefferson	6,544	632	18,218	1,411	20,741	386,096	48,348	382,578	3,302	114,076
Jewell	1,328	174	9,977	509	1,659	78,352	13,311	209,517	1,191	9,124
Johnson	5,471	865	16,563	577	21,995	322,789	66,172	347,823	1,350	120,973
Labette	3,838	464	13,753	865	11,479	226,442	35,496	288,813	2,024	63,134
Leavenworth	4,337	799	14,046	1,310	20,586	255,883	61,123	294,966	3,065	113,223
Lincoln	450	40	4,125	981	327	26,550	3,060	86,625	2,295	1,798
Linn	6,575	574	16,250	.....	.....	387,925	43,911	341,250	.....	.....
Lyon	5,570	200	20,789	1,303	5,163	328,630	15,300	436,569	3,049	28,396
Marion	1,393	104	4,833	264	1,033	82,187	7,956	101,493	618	5,681
Marshall	2,788	175	10,042	1,366	6,644	164,492	13,388	210,882	3,196	36,542

Valuation of Farm Animals—Concluded.

Counties.	No. of Horses.	Mules & Asses.	No. of Cattle.	No. of Sheep.	No. of Swine.	Value of Horses.	Value of Mules & Asses.	Value of Cattle.	Val. of Sheep.	Value of Swine.
McPherson	605	54	3,835	220	853	$35,695	$4,131	$80,535	$515	$4,691
Miami	5,8·9	544	19,549	2,319	18,851	347,451	41,616	410,529	5,426	103,681
Mitchell	1,354	204	5,772	227	1,115	79,886	15,606	121,212	531	6,133
Montgomery	3,581	546	13,721	1,042	13,758	211,279	41,769	288,141	2,438	75,669
Morris	1,325	155	5,716	741	1,956	78,175	11,858	120,036	1,734	10,758
Nemaha	4,086	146	13,952	1,969	7,153	241,074	10,710	292,992	4,607	39,341
Neosho	4,315	464	15,465	623	1,492	254,585	35,496	3:4,765	1,458	8,206
Ness	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osage	4,993	225	19,402	624	10,798	294,587	17,212	407,442	1,460	59,389
Osborne	799	153	2,583	169	480	47,141	11,704	54,243	395	2,640
Ottawa	1,500	248	10,572	48	2,133	88,500	18,972	222,012	112	11,731
Pawnee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phillips	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pottawatomie	5,040	214	17,182	3,312	7,082	297,360	16,371	360,822	7,750	38,951
Republic	2,322	237	4,682	72	3,336	X136,998	18,130	98,322	168	18,348
Reno	553	114	1,306	5	378	32,627	8,721	27,426	12	2,079
Rice	219	35	405	.....	220	12,921	2,678	8,505	.....	1,210
Riley	2,994	195	10,234	1,630	3,783	176,646	14,918	214,914	3,814	20,806
Rooks	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Russell	378	14	1,428	2,700	74	22,302	1,071	29,988	6,318	407
Saline	2,185	187	8,672	137	2,320	128,915	14,305	182,112	320	12,760
Sedgwick	639	196	3,791	.....	1,178	37,701	14,994	79,611	.....	6,479
Shawnee	5,802	445	24,665	141	13,002	342,318	34,042	517,965	330	71,511
Smith	695	97	1,230	.....	536	41,005	7,420	25,830	.....	2,948
Sumner	1,333	288	3,054	39	1,654	78,647	22,032	64,134	91	9,097
Wabaunsee	2,534	114	10,166	.....	3,339	149,506	8,721	213,486	.....	18,365
Wallace	375	.....	1,125	.....	235	22,125	.....	23,625	.....	1,293
Washington	1,157	117	3,262	157	2,396	68,263	8,950	68,502	367	13,178
Wilson	2,546	223	10,316	1,606	6,187	150,214	17,059	216,636	3,758	34,028
Woodson	2,004	147	8,193	4,006	2,765	118,236	11,245	172,053	9,374	15,207
Wyandotte	1,860	342	5,192	336	9,768	109,740	26,163	109,032	786	53,724

Recapitulation.

	Horses.		Mules and Asses.		Cattle.		Sheep.		Swine.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Total in 1873	176,161	$10,393,499	17,816	$1,362,971	634,021	$13,314,441	51,166	$119,728	380,701	$2,093,852
Total in 1870	117,786	8,634,891	11,786	1,014,125	373,967	10,227,997	109,088	230,174	206,587	1,456,438
Gain in 3 yrs.	58,375	$1,758,608	6,030	$348,846	260,054	$3,086,444	.....	.....	174,114	$637,414
Decrease	.....	.....	.....	.....	.....	.....	57,922	$110,446	.....	.....
P. cent. gain.	49.56	20.3	51	34.3	69.5	30.1	Dec. 53	D. 47.98	84.2	43.7

CONDITION OF FARM ANIMALS.

The winter of 1872–3 was the most severe ever known in the State. There were many cases of criminal negligence, which caused considerable loss of cattle on the plains, in the western part of the State. Herds of Texas cattle were exposed to the severity of the winter, and left to shift for themselves. Streams were frozen, and the poor creatures probably suffered more for want of water than anything else. This is what some call "stock raising" in Western Kansas, and they measure the adaptability of the State for raising stock by their own failures. Another class of "stock growers" place sole reliance upon Short-horn bulls and mowing machines. Nearly all the losses reported are the result of neglect and exposure—starvation and thirst. The idea that farm animals can thrive upon the plains, without care and protection, is an error. In a few sheltered localities, where water can be procured, they may do so; but they are exceptional cases. For legitimate stock raising, there is no better State than Kansas, the very best evidence of which

is the story of the foregoing table. No other State can make a more hopeful xhibit. The condition of farm animals has been good throughout the State. Mortality from disease has been very light.

SHEEP HUSBANDRY.

According to the census of 1870, the number of sheep in the State was 109,088. The estimate from the assessors' returns of 1873 is 51,116, a decrease of 57,922 in three years, or 53 per cent. These figures will astonish most sheep-raisers in the State. Assessors have in many counties neglected to "list" most of the flocks. Thus, in Sumner county only thirty-nine head of sheep are enumerated. An intelligent farmer of that county reports over 600, in small flocks of from thirty to fifty each. That there has been a depletion of large flocks through wanton neglect and exposure, and a merciless abandonment to be the prey of wolves and vagabond dogs, there is no doubt. Neither pecuniary considerations nor the instincts of humanity have been sufficient to induce careful and humane treatment. Of all domestic animals in the State, cattle and sheep have suffered the most.

Letters have been addressed to gentlemen in various parts of the State who are largely engaged in this important industry, and of answers received the following are samples:

JEFFERSON COUNTY, KANSAS, Dec. 22, 1873.

ALFRED GRAY, ESQ.—*Dear Sir:* I am in receipt of yours of the 15th inst., and contents noted. I am well pleased that you take such an interest in the improvement of sheep husbandry in this State. I wish to inform you that from my own experience since I came to the State, I have come to the conclusion that sheep raising in Kansas will not pay, and the decrease can be very easily accounted for. In the first place, I am bound in honor to state that there is no other State in the Union more adapted to the raising of all kinds of sheep than this, and I doubt there being any stock raised in the State that will pay as large a percentage. You seem to be doubtful of the decrease. I am not, in the least. The principal cause of this lamentable fact is their destruction by wolves and dogs. If the Legislature would enact a law offering a good bounty for killing wolves, and placing a heavy tax on dogs, wolves would soon disappear, and Kansas would become the best sheep-raising State in the West. More taxes would be raised from sheep than would be paid for the destruction of wolves after the first year.

I imported in 1869 one hundred and fifty of the best long-wool sheep, Cotswold and Leicester breeds. I am thus far well pleased with the climate and health of sheep, but with the best of care they are now reduced in number by wolves and dogs to seventy. They come even to my yards and stables and attack them. If I had not brought my sheep dogs from Canada to stay by them at night, I would not have any left. Rather a poor prospect for an investment of twenty-five hundred dollars in gold. I would suggest to the honorable Board of Agriculture to recommend to the State Legislature a bill providing for a bounty, payable in taxes at the county offices, for killing such animals. If such a bill was passed, every citizen could have the benefit of cheap mutton, and then the wool to make clothing. You request me to ascertain, if possible, the number of sheep in the county. That I am unable to do correctly, but in all this section of Douglas and Leavenworth counties seemingly all had to go out of sheep-raising for the reasons above stated. I am, sir, your obedient servant, JAS. O'NEILL.

NEWBURG, WABAUNSEE COUNTY, KANSAS, December 26, 1873.

ALFRED GRAY, ESQ., *Secretary of State Board of Agriculture:* Your letter of Decem-

ber 15th is before me, and I will most respectfully give you all the information I can about sheep husbandry. I have been in the business about twenty years. My experience has been confined to the Merinoes, Cotswolds and Bakewell Leicesters. I have bred them pure; I have also crossed the Merino ewe with the Cotswold ram, with the best results. The cross retains the large frame of the Cotswold, and will mature early, and shear a heavy fleece. My average has been about eleven pounds, of a very desirable class of wool, for which I have always found a ready sale at the highest market price, since coming to this State—never less than fifty cents per pound. I find them a strong, healthy sheep, and well adapted to the State of Kansas. With ordinary care we need not lose more than five per cent. of the lambs when young, as they are very strong and full of vitality. My lambs at six months old will weigh about one hundred pounds. The lambs are dropped about the beginning of March; this gives me a chance to wean them about the first of August, and gives the ewes a chance to flesh up to go through the coming winter. I would sooner take care of one lamb in the spring than a small lamb and a weak ewe through a long winter, which is apt to be the case where lambs are not dropped until the month of May.

Kansas as a State is well adapted to sheep husbandry, and in Wabaunsee county I can raise wool and mutton for fifty per cent. less than I can in the State of Ohio; but, as in other localities, we need protection from the worthless curs. In my four years' experience in Wabaunsee county, I have not had a sheep killed by dogs or wolves. As near as I can inform you, we have about 1,500 sheep in this county, and if the number has not increased since 1870, the grade has been greatly improved. Yours, truly,

RICHARD J. STEPHENSON.

WAKEFIELD, CLAY COUNTY, KANSAS, December 24, 1873.

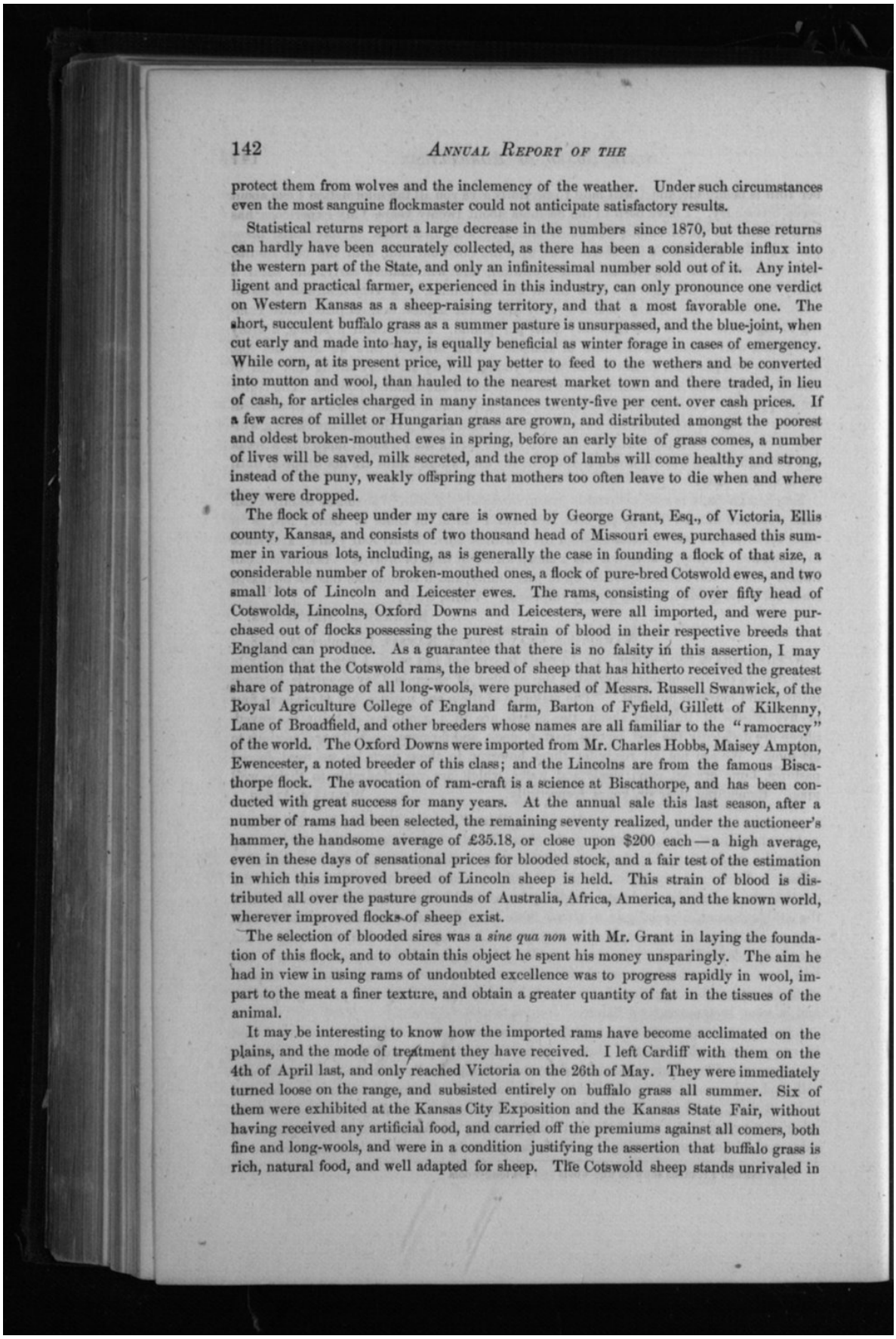
ALFRED GRAY, ESQ.—*Dear Sir:* In reply to yours of last week, I beg respectfully to state that, to the best of our knowledge, the number of sheep in Clay county is between thirteen and fourteen hundred. *The majority of them are natives, but as we have four or five classes of imported sheep, the breeds are in a good way of being improved. Sheep are decidedly the best paying part of stock, and farmers generally are anxious to get some. We are not all ready for them, however, in these parts, as we need fenced pastures, tame grasses, good shade and water, which are very desirable to thrive well upon. Remaining, dear sir, yours, respectfully, WILLIAM ALSOP.

VICTORIA, ELLIS COUNTY, KANSAS, Dec. 28, 1873.

ALFRED GRAY, ESQ., *Secretary of the State Board of Agriculture—Dear Sir:* Sheep husbandry, under favorable circumstances and proper management, is the most lucrative pursuit a farmer can engage in. It gives a quicker return for money invested than the cattle trade, and can be conducted with very little hired labor—an overwhelming item to the arable farmer, especially in a virgin State like Kansas, where that article is both scarce and dear at the time it is most required. An impression that this State is not peculiarly adapted for sheep has been rapidly gaining ground of late years among a certain class of men who have watched the dispersion of several small flocks by experimenters, without investigating the causes of their attempt at sheep-craft proving a partial, and in some instances a total failure.

I have probed this matter thoroughly in the western part of the State, and found that in every unsuccessful effort at sheep raising, the fault lay in negligent and injudicious management. The sheep were allowed to roam unrestrainedly over the prairie, and only collected and counted once a fortnight, or when an unusually large number were observed to be missing; and I have known one part of a flock to be found forty miles west and the other part twenty miles east of their grazing grounds. A fence-board corral, open on all sides, and without any covering over-head, has generally been the only shelter erected to

*The assessor's returns show 86 fine-wools and 154 long-wools.



protect them from wolves and the inclemency of the weather. Under such circumstances even the most sanguine flockmaster could not anticipate satisfactory results.

Statistical returns report a large decrease in the numbers since 1870, but these returns can hardly have been accurately collected, as there has been a considerable influx into the western part of the State, and only an infinitessimal number sold out of it. Any intelligent and practical farmer, experienced in this industry, can only pronounce one verdict on Western Kansas as a sheep-raising territory, and that a most favorable one. The short, succulent buffalo grass as a summer pasture is unsurpassed, and the blue-joint, when cut early and made into hay, is equally beneficial as winter forage in cases of emergency. While corn, at its present price, will pay better to feed to the wethers and be converted into mutton and wool, than hauled to the nearest market town and there traded, in lieu of cash, for articles charged in many instances twenty-five per cent. over cash prices. If a few acres of millet or Hungarian grass are grown, and distributed amongst the poorest and oldest broken-mouthed ewes in spring, before an early bite of grass comes, a number of lives will be saved, milk secreted, and the crop of lambs will come healthy and strong, instead of the puny, weakly offspring that mothers too often leave to die when and where they were dropped.

The flock of sheep under my care is owned by George Grant, Esq., of Victoria, Ellis county, Kansas, and consists of two thousand head of Missouri ewes, purchased this summer in various lots, including, as is generally the case in founding a flock of that size, a considerable number of broken-mouthed ones, a flock of pure-bred Cotswold ewes, and two small lots of Lincoln and Leicester ewes. The rams, consisting of over fifty head of Cotswolds, Lincolns, Oxford Downs and Leicesters, were all imported, and were purchased out of flocks possessing the purest strain of blood in their respective breeds that England can produce. As a guarantee that there is no falsity in this assertion, I may mention that the Cotswold rams, the breed of sheep that has hitherto received the greatest share of patronage of all long-wools, were purchased of Messrs. Russell Swanwick, of the Royal Agriculture College of England farm, Barton of Fyfield, Gillett of Kilkenny, Lane of Broadfield, and other breeders whose names are all familiar to the "ramocracy" of the world. The Oxford Downs were imported from Mr. Charles Hobbs, Maisey Ampton, Ewencester, a noted breeder of this class; and the Lincolns are from the famous Biscathorpe flock. The avocation of ram-craft is a science at Biscathorpe, and has been conducted with great success for many years. At the annual sale this last season, after a number of rams had been selected, the remaining seventy realized, under the auctioneer's hammer, the handsome average of £35.18, or close upon $200 each—a high average, even in these days of sensational prices for blooded stock, and a fair test of the estimation in which this improved breed of Lincoln sheep is held. This strain of blood is distributed all over the pasture grounds of Australia, Africa, America, and the known world, wherever improved flocks of sheep exist.

The selection of blooded sires was a *sine qua non* with Mr. Grant in laying the foundation of this flock, and to obtain this object he spent his money unsparingly. The aim he had in view in using rams of undoubted excellence was to progress rapidly in wool, impart to the meat a finer texture, and obtain a greater quantity of fat in the tissues of the animal.

It may be interesting to know how the imported rams have become acclimated on the plains, and the mode of treatment they have received. I left Cardiff with them on the 4th of April last, and only reached Victoria on the 26th of May. They were immediately turned loose on the range, and subsisted entirely on buffalo grass all summer. Six of them were exhibited at the Kansas City Exposition and the Kansas State Fair, without having received any artificial food, and carried off the premiums against all comers, both fine and long-wools, and were in a condition justifying the assertion that buffalo grass is rich, natural food, and well adapted for sheep. The Cotswold sheep stands unrivaled in

the opinion of many flock owners, as the most valuable long-wooled sheep, either for crossing purposes or used as a pure-bred, possessing true form and quality, with fleeces heavy enough to satisfy any glutton for wool.

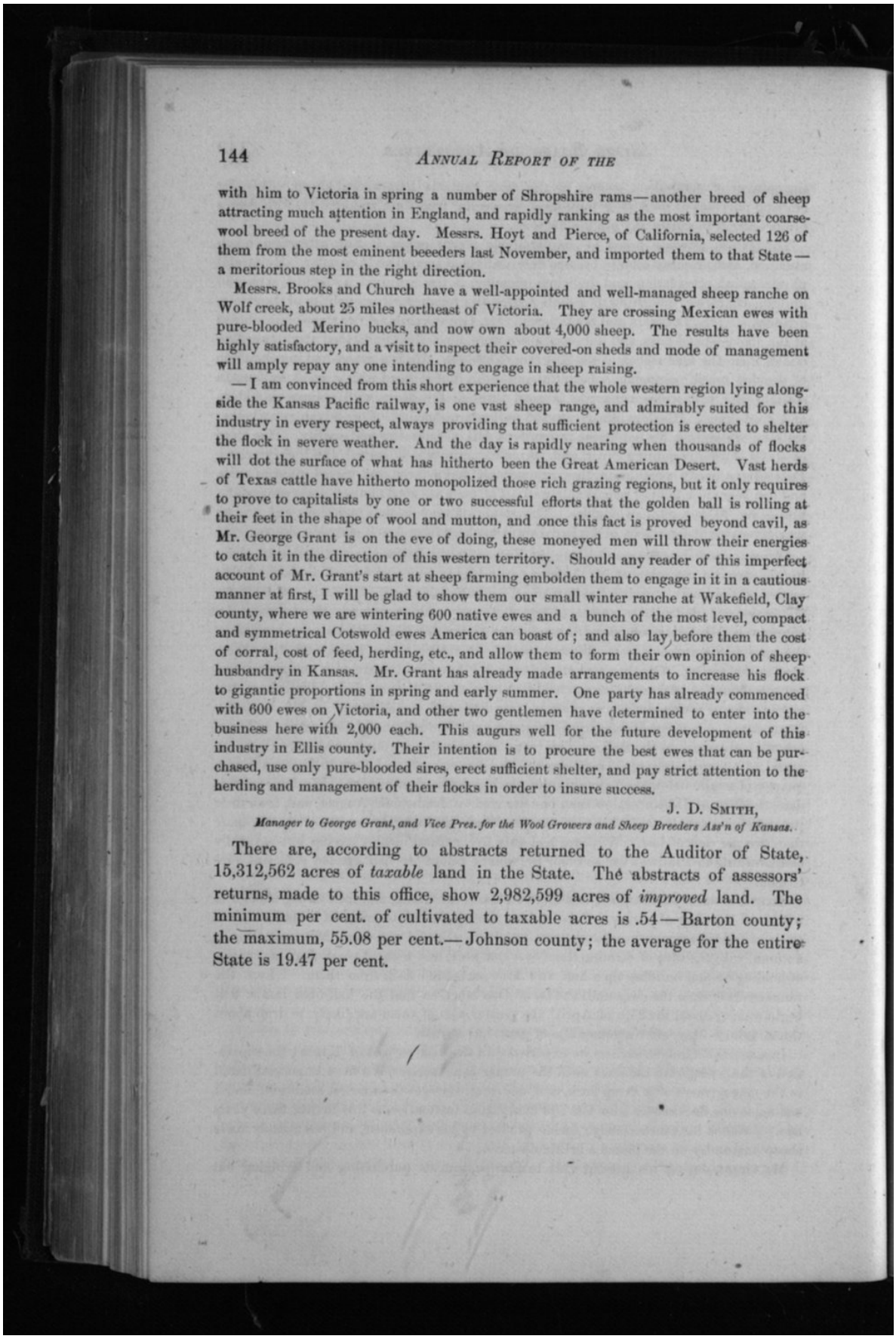
The Oxford Down, a breed of comparatively recent origin, is now attracting much attention, and promises soon to become deservedly and increasingly popular. By careful physiological observation, and judicious crossing, it has acquired a distinct type and uniform character, inheriting to a high degree the many sterling qualities of its primogenitors, *i. e.*, the Cotswold and Southdown. Mr. Grant exhibited two rams of this breed at the above-named fairs, and the committee were for a time undecided about awarding one of them the blue ribbon as the best ram exhibited. He is a grand-looking shearling of decided merit, possessing a beautiful uniformly tinted head with a good top-knot, a straight back with well-sprung ribs, is good through the heart, with oblique shoulders, and good loins. His legs are clean and well apart, showing off to advantage whether walking or standing, his handsome proportions, full of symmetry and quality. This breed of sheep is rapidly gaining favor, and becoming more widely spread and highly prized. Possessing a hardy constitution, they are suitable for a large and varied range of soils, and can bear close folding remarkably well. The ewes are good mothers and very prolific, producing 40 per cent. of doubles. The staple of wool is fine and close, and it is no uncommon event for a flock of Oxford Downs to shear from 6 to 8 pounds a fleece.

Owing to inefficient fireguards along the Kansas Pacific Railway (a matter that is receiving the prompt attention of Mr. Dorrance, the highly esteemed superintendent of that section of the road), a prairie fire burned off a considerable tract of country, valuable for winterage, and destroyed a portion of hay that was partially secured. Under these circumstances, Mr. Grant considered it prudent to winter this season where a greater part of the ewes were purchased, some distance east of the future sheep range, and drive them west in the spring. On this acount, the corrals I have erected are only temporary, and not so substantial as those to be erected at Victoria. Still, every individual sheep has ample room to rest under cover, without crowding, and are sheltered in all directions from storms. A never-failing supply of water runs through one of the corrals, and is of essential advantage to the flocks. This water issues from a spring immediately above the corral, at a temperature of fifty-six degrees, and has never been known to freeze over one-quarter of a mile below the fountain-head, during the hardest winter. We have at this date, the 27th of December, less than one per cent. of deaths since August, and, from their present appearance, I am in hopes of carrying them through the winter with not more than two per cent of loss. We have had only five natural deaths, having lost seven by overcrowding in a railway car and four by wolves before we had erected sufficient protection.

Sixty-four ewes have lambed, and fifty-two lambs are living, and look strong enough to withstand the rigor of winter. This lambing during the winter months is another great cause of failure among speculators who purchase a lot of run-down Missouri ewes in autumn, with the idea of farming them over one year, and without possessing the tenacity of holding on and building up a half and three parts bred flock from them. I kept the rams separate from the ewes until the 1st of December, so that the half-bred lambs will begin coming about the 25th of April; the greater part of them are likely to drop about the middle of May, after a young bite of grass has started.

In a variable climate, such as we experience in the western part of Kansas, the separation of the bucks from the ewes until the proper time arrives, is a most important detail in the management of a sheep flock, and one that deserves the strictest attention; and I can name one flockmaster who lost 700 lambs from inattention to this matter three years ago. I visited his ranche lately; he has profited by his experience, and has already made sheep husbandry on the plains a brilliant success.

Mr. Grant, during his present visit to Europe, intends purchasing and bringing out



with him to Victoria in spring a number of Shropshire rams—another breed of sheep attracting much attention in England, and rapidly ranking as the most important coarse-wool breed of the present day. Messrs. Hoyt and Pierce, of California, selected 126 of them from the most eminent beeeders last November, and imported them to that State—a meritorious step in the right direction.

Messrs. Brooks and Church have a well-appointed and well-managed sheep ranche on Wolf creek, about 25 miles northeast of Victoria. They are crossing Mexican ewes with pure-blooded Merino bucks, and now own about 4,000 sheep. The results have been highly satisfactory, and a visit to inspect their covered-on sheds and mode of management will amply repay any one intending to engage in sheep raising.

—I am convinced from this short experience that the whole western region lying alongside the Kansas Pacific railway, is one vast sheep range, and admirably suited for this industry in every respect, always providing that sufficient protection is erected to shelter the flock in severe weather. And the day is rapidly nearing when thousands of flocks will dot the surface of what has hitherto been the Great American Desert. Vast herds of Texas cattle have hitherto monopolized those rich grazing regions, but it only requires to prove to capitalists by one or two successful efforts that the golden ball is rolling at their feet in the shape of wool and mutton, and once this fact is proved beyond cavil, as Mr. George Grant is on the eve of doing, these moneyed men will throw their energies to catch it in the direction of this western territory. Should any reader of this imperfect account of Mr. Grant's start at sheep farming embolden them to engage in it in a cautious manner at first, I will be glad to show them our small winter ranche at Wakefield, Clay county, where we are wintering 600 native ewes and a bunch of the most level, compact and symmetrical Cotswold ewes America can boast of; and also lay before them the cost of corral, cost of feed, herding, etc., and allow them to form their own opinion of sheep husbandry in Kansas. Mr. Grant has already made arrangements to increase his flock to gigantic proportions in spring and early summer. One party has already commenced with 600 ewes on Victoria, and other two gentlemen have determined to enter into the business here with 2,000 each. This augurs well for the future development of this industry in Ellis county. Their intention is to procure the best ewes that can be purchased, use only pure-blooded sires, erect sufficient shelter, and pay strict attention to the herding and management of their flocks in order to insure success.

J. D. SMITH,
Manager to George Grant, and Vice Pres. for the Wool Growers and Sheep Breeders Ass'n of Kansas.

There are, according to abstracts returned to the Auditor of State, 15,312,562 acres of *taxable* land in the State. The abstracts of assessors' returns, made to this office, show 2,982,599 acres of *improved* land. The minimum per cent. of cultivated to taxable acres is .54—Barton county; the maximum, 55.08 per cent.—Johnson county; the average for the entire State is 19.47 per cent.

Table showing the number of taxable and cultivated Acres in Kansas by counties, and the per cent. of cultivated to taxable Acres.

Counties.	No. of Acres Taxable....	No. of Acres under Cultivation....	Per Cent. of cultivated to taxable Acs.	Counties.	No. of Acres Taxable....	No. of Acres under Cultivation....	Per Cent. of cultivated to taxable Acs
Allen	294,036	63,197	21.50	Marion	477,510	16,800	3.52
Anderson	327,033	45,921	14.04	Marshall	415,906	42,430	10.20
Atchison	269,243	85,652	31.81	McPherson	116,352	8,968	7.70
Billings	800	.....	.....	Miami	363,501	135,109	37.16
Barton	180,139	986	.54	Mitchell	35,884	15,385	42.81
Bourbon	375,675	118,720	31.52	Montgomery	321,439	87,976	27.36
Brown	327,617	126,863	38.72	Morris	233,401	27,363	11.72
Butler	449,927	37,616	8.36	Nemaha	420,435	70,175	16.68
Chase	369,952	15,258	4.12	Neosho	360,384	111,436	30.92
Cherokee	367,498	22,819	6.20	Osage	383,191	85,573	22.33
Clay	140,768	28,140	12.88	Osborne	16,830	8,271	49.14
Cloud	80,263	28,936	36.05	Ottawa	158,809	16,702	10.51
Coffey	373,852	44,247	11.83	Pawnee	224,640	.....	.....
Cowley	217,590	30,905	14.20	Phillips	3,680	.....	.....
Crawford	353,427	76,316	21.31	Pottawatomie	241,737	73,878	30.56
Davis	105,647	18,710	17.72	Reno	294,718	8,503	2.92
Dickinson	179,345	31,355	17.48	Republic	79,782	39,282	49.23
Doniphan	235,133	110,770	47.11	Rice	172,327	4,311	2.50
Douglas	290,953	143,293	49.24	Riley	175,907	38,776	22.04
Ellis	29,557	.....	.....	Rooks	640	.....	.....
Ellsworth	10,923	4,732	43.32	Russell	22,160	538	2.42
Franklin	342,560	103,135	30.11	Saline	292,035	24,330	8.61
Greenwood	501,045	35,669	7.12	Shawnee	264,782	82,304	31.08
Harvey	186,439	.....	.....	Sedgwick	270,817	7,011	2.58
Howard	248,761	56,507	22.71	Sumner	132,587	12,997	9.80
Jackson	271,553	63,957	23.55	Smith	8,795	5,823	66.21
Jefferson	350,488	116,626	33.26	Wabaunsee	242,289	30,930	12.76
Jewell	40,051	16,058	40.09	Washington	201,848	25,204	12.48
Johnson	258,654	142,476	55.08	Wilson	288,061	66,252	22.99
Labette	366,223	83,585	22.82	Woodson	234,146	57,867	24.71
Leavenworth	282,318	97,060	34.38	Wyandotte	90,201	34,719	38.49
Lincoln	135,358	5,406	3.99				
*Linn	370,880	53,791	14.50	Total	15,312,562	2,982,599	19.47
Lyon	431,350	64,218	14.88				

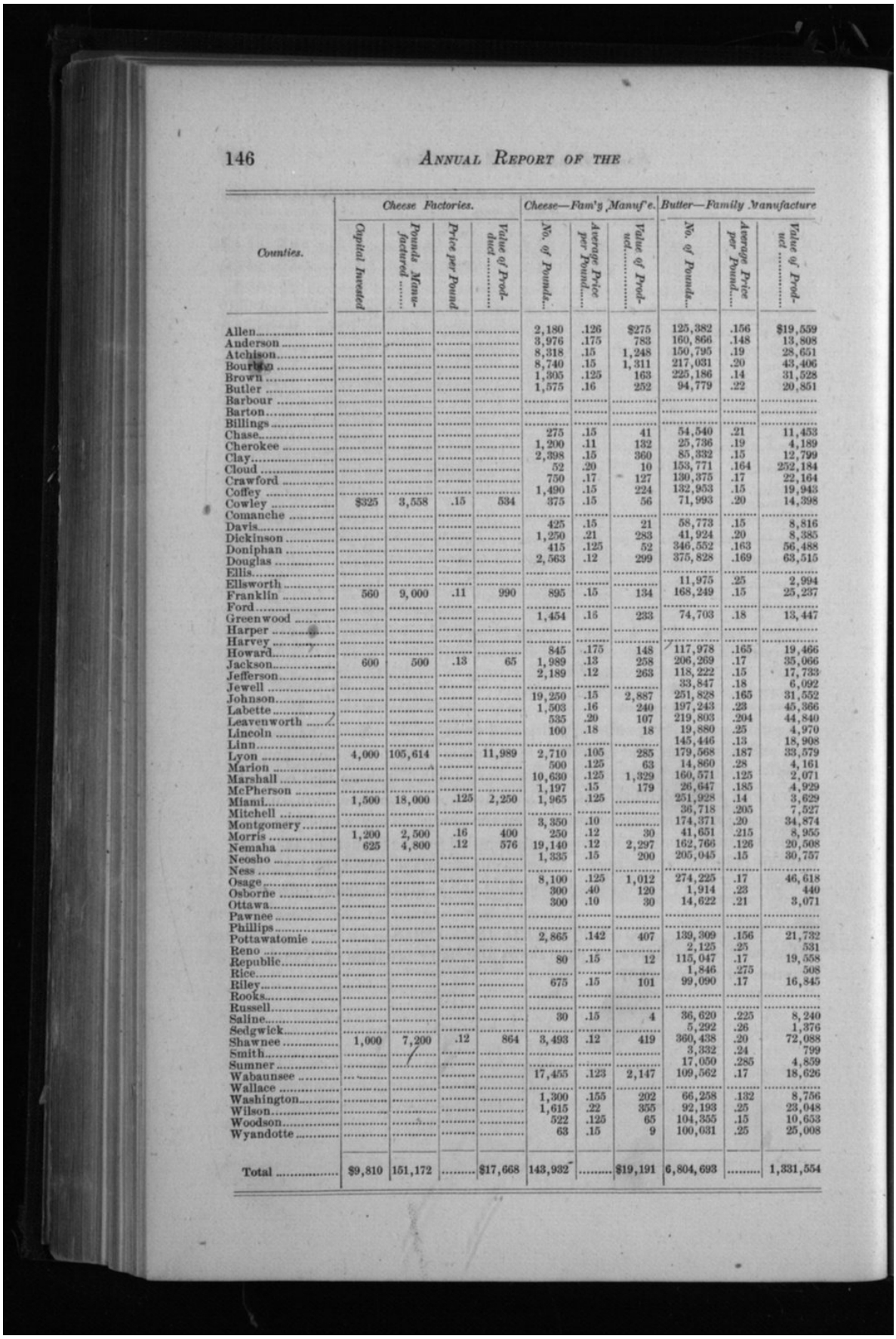
*Only seven townships reported.

Assuming the average size of cultivated farms in Kansas to be one hundred and sixty acres, and each farm to maintain from fifty to one hundred sheep—an average of seventy-five—we have 1,398,075 sheep that could be grown with a very trifling cost. What they would consume, both summer and winter, would mostly be lost without the sheep. They would pay taxes and clothe each family—no small consideration for the farmers of the State. But this industry must struggle at great disadvantage unless, by legislative enactment, a heavy tax is placed upon dogs and a liberal bounty offered for wolves.

DAIRY PRODUCTS OF KANSAS.

The table on the following page shows the dairy products of Kansas, by counties, for the year 1873:

Reports of the Kansas State Board of Agriculture



Counties.	Cheese Factories.				Cheese—Fam'y Manuf'e.			Butter—Family Manufacture		
	Capital Invested	Pounds Manufactured	Price per Pound	Value of Product	No. of Pounds	Average Price per Pound	Value of Product	No. of Pounds	Average Price per Pound	Value of Product
Allen					2,180	.126	$275	125,382	.156	$19,559
Anderson					3,976	.175	783	160,866	.148	13,808
Atchison					8,318	.15	1,248	150,795	.19	28,651
Bourbon					8,740	.15	1,311	217,031	.20	43,406
Brown					1,305	.125	163	225,186	.14	31,528
Butler					1,575	.16	252	94,779	.22	20,851
Barbour										
Barton										
Billings										
Chase					275	.15	41	54,540	.21	11,453
Cherokee					1,200	.11	132	25,736	.19	4,189
Clay					2,398	.15	360	85,332	.15	12,799
Cloud					52	.20	10	153,771	.164	252,184
Crawford					750	.17	127	130,375	.17	22,164
Coffey					1,490	.15	224	132,953	.15	19,943
Cowley	$325	3,558	.15	534	375	.15	56	71,993	.20	14,398
Comanche										
Davis					425	.15	21	58,773	.15	8,816
Dickinson					1,250	.21	283	41,924	.20	8,385
Doniphan					415	.125	52	346,552	.163	56,488
Douglas					2,563	.12	299	375,828	.169	63,515
Ellis										
Ellsworth								11,975	.25	2,994
Franklin	560	9,000	.11	990	895	.15	134	168,249	.15	25,237
Ford										
Greenwood					1,454	.15	233	74,703	.18	13,447
Harper										
Harvey										
Howard					845	.175	148	117,978	.165	19,466
Jackson	600	500	.13	65	1,989	.13	258	206,269	.17	35,066
Jefferson					2,189	.12	263	118,222	.15	17,733
Jewell								33,847	.18	6,092
Johnson					19,250	.15	2,887	251,828	.165	31,552
Labette					1,503	.16	240	197,243	.23	45,366
Leavenworth					535	.20	107	219,803	.204	44,840
Lincoln					100	.18	18	19,880	.25	4,970
Linn								145,446	.13	18,908
Lyon	4,000	105,614		11,989	2,710	.105	285	179,568	.187	33,579
Marion					500	.125	63	14,860	.28	4,161
Marshall					10,630	.125	1,329	160,571	.125	2,071
McPherson					1,197	.15	179	26,647	.185	4,929
Miami	1,500	18,000	.125	2,250	1,965	.125		251,928	.14	3,629
Mitchell								36,718	.205	7,527
Montgomery					3,350	.10		174,371	.20	34,874
Morris	1,200	2,500	.16	400	250	.12	30	41,651	.215	8,955
Nemaha	625	4,800	.12	576	19,140	.12	2,297	162,766	.126	20,508
Neosho					1,335	.15	200	205,045	.15	30,757
Ness										
Osage					8,100	.125	1,012	274,225	.17	46,618
Osborne					300	.40	120	1,914	.23	440
Ottawa					300	.10	30	14,622	.21	3,071
Pawnee										
Phillips										
Pottawatomie					2,865	.142	407	139,309	.156	21,732
Reno								2,125	.25	531
Republic					80	.15	12	115,047	.17	19,558
Rice								1,846	.275	508
Riley					675	.15	101	99,090	.17	16,845
Rooks										
Russell										
Saline					30	.15	4	36,620	.225	8,240
Sedgwick								5,292	.26	1,376
Shawnee	1,000	7,200	.12	864	3,493	.12	419	360,438	.20	72,088
Smith								3,332	.24	799
Sumner								17,050	.285	4,859
Wabaunsee					17,455	.123	2,147	109,562	.17	18,626
Wallace										
Washington					1,300	.155	202	66,258	.132	8,756
Wilson					1,615	.22	355	92,193	.25	23,048
Woodson					522	.125	65	104,355	.15	10,653
Wyandotte					63	.15	9	100,031	.25	25,008
Total	$9,810	151,172	.....	$17,668	143,932	.....	$19,191	6,804,693	.....	1,331,554

Since the foregoing table was compiled, several companies have been formed in different parts of the State, for the manufactory of cheese under what is known as the "associated dairying" system. A lively interest is manifested throughout the State in this industry, and it bids fair to become one of the most important.

In 1860 the amount of butter produced was 1,093,497 pounds; in 1870, 5,022,758 pounds; in 1873, 6,804,693 pounds. In 1860 the amount of cheese produced in the State was 29,045 pounds; in 1870, 226,607 pounds; in 1873, 295,019 pounds.

Hon. X. A. Willard, of Little Falls, N. Y., President of the New York State Dairymen's Association, writes under date of January 1, 1874:

"I was through your State last summer, being one of the editorial party making an excursion to the South and West. I was particularly pleased with the Arkansas and Neosho valleys, and am fully satisfied you have large tracts of land adapted to dairying."

By permission of Mr. Willard, an address on "Associated Dairying," delivered before the Maine State Board of Agriculture—replete with valuable suggestions—will be found in another part of this Report.

In answer to letters of inquiry, the following are among the answers received:

AMERICUS, KANSAS, Dec. 19, 1873.

Secretary of State Board of Agriculture: The following is a report of the Americus Cheese Factory of S. C. James & Co., viz.: Capital invested in factory, $3,000; in milk the past season, (the milk was bought and paid for monthly at 80 cents per 100 lbs. by the company,) $5,400; for diary supplies, boxes and labor, $2,600. Kind of cows, common native. The average milk per cow is small, on account of the calves sucking part or all the time. While the average per cow was only $14.40, some of the patrons' cows averaged $25.00 per head for six months. Some of the patrons were inexperienced in the dairy business, and bought any kind of a cow, whether she had any milking properties or not. The night's milk is cooled by the patrons at home, and delivered at the same time as the morning's milk, but in separate cans. The mode of manufacture is nearly the same as generally used in Herkimer and Oneida counties, New York. Total number of cows, 375; total pounds of milk, 671,975; average milk per cow, 1,800; average cheese per cow, 185; milk for a pound of cured cheese, 9.74; total number of cheese, 1,843; total pounds of cheese, 69,276; average weight of cheese, 37½ lbs.; average price per pound at factory, 13⅓ cents. Yours, respectfully, S. C. JAMES, *Secretary.*

CENTRALIA, KANSAS, Dec. 30, 1873.

Secretary State Board of Agriculture: Your letter of inquiry was duly received, but not intentionally overlooked until this late day. Will answer your inquiries, but it may be too late to be of much use to you. Cheese manufactured, 74,000 pounds; capital invested, $3,000; number of cows, 500. Commenced June 1st; closed Oct. 25. Milk furnished by patrons, and cheese manufactured and cured fit for market for 2¼c. per pound. The outlay to patrons was the furnishing their carrying cans and pails. Nothing but tin used in the hauling of milk. Cheese made once a day. Some delivered milk noon and evening. The milk was all weighed in a receiving can, set on scales; runs from can through entering gate and conductor, into a cloth strainer, over vat. Two vats used; capacity, 5,500 pounds each. Cold water used under the milk, which cooled the milk to 74°. It was then heated by steam to 84°, color and rennet added to coagulate in twenty minutes. It then stood one hour from time of adding rennet, when it was cut lengthwise of vat; stood fifteen

minutes; crosswise the same, with Young's patent perpendicular curd knife; then cut lengthwise with a horizontal knife; stirred up, and steam applied, and temperature raised to 98° or 100°. When sufficiently cooked, it was dipped to a curd sink, drained and salted; 2½ pounds of salt to 1,000 pounds of milk; put to press; one-half hour, taken out, and bandage put on; pressed again some eighteen hours, then removed, both ends oiled, and placed in curing room. Takes from twenty to thirty-five days, at a temperature of 75° to 80° to cure fit to market. Cheese brought from ten to fourteen cents per pound. Delivered at depot, average of about twelve cents.

E. A. WAIT,
Proprietor and Manufacturer.

BEE CULTURE.

The following table shows the number of colonies each of Italian and native bees on the first of March, 1873, and the number of pounds of honey and wax produced in 1872:

Counties.	*Product.*
ATCHISON.	
Number of stands native bees	546
Number of stands Italian bees	30
Number of pounds honey	10,993
Number of pounds wax	200
ANDERSON.	
Number of stands native bees	283
Number of stands Italian bees	2
Number of pounds honey	3,249
Number of pounds wax	229
ALLEN.	
Number of stands native bees	349
Number of stands Italian bees	.....
Number of pounds honey	2,961
Number of pounds wax	149
BUTLER.	
Number of stands native bees	8
Number of stands Italian bees	.....
Number of pounds honey	30
Number of pounds wax	.....
BOURBON.	
Number of stands native bees	870
Number of stands Italian bees	8
Number of pounds honey	11,352
Number of pounds wax	235
BROWN.	
Number of stands native bees	291
Number of stands Italian bees	3
Number of pounds honey	3,088
Number of pounds wax	152
CHASE.	
Number of stands native bees	3
Number of stands Italian bees	.....
Number of pounds honey	.....
Number of pounds wax	.....
CLAY.	
Number of stands native bees	4
Number of stands Italian bees	.....
Number of pounds honey	12
Number of pounds wax	.....
CHEROKEE.	
Number of stands native bees	87
Number of stands Italian bees	.....
Number of pounds honey	415
Number of pounds wax	2
CRAWFORD.	
Number of stands native bees	177
Number of stands Italian bees	38
Number of pounds honey	1,665
Number of pounds wax	25
DOUGLAS.	
Number of stands native bees	907
Number of stands Italian bees	48

County.	*Product.*
DOUGLAS — *Concluded.*	
Number of pounds honey	9,384
Number of pounds wax	84
DONIPHAN.	
Number of stands native bees	826
Number of stands Italian bees	24
Number of pounds honey	9,795
Number of pounds wax	380
FRANKLIN.	
Number of stands native bees	486
Number of stands Italian bees	2
Number of pounds honey	5,331
Number of pounds wax	93
HOWARD.	
Number of stands native bees	13
Number of stands Italian bees	26
Number of pounds honey	50
Number of pounds wax	5
GEEENWOOD.	
Number of stands native bees	39
Number of stands Italian bees	.....
Number of pounds honey	394
Number of pounds wax	5
JOHNSON.	
Number of stands native bees	1,148
Number of stands Italian bees	25
Number of pounds honey	11,384
Number of pounds wax	167
JEFFERSON.	
Number of stands native bees	2,707
Number of stands Italian bees	911
Number of pounds honey	12,611
Number of pounds wax	250
JACKSON.	
Number of stands native bees	301
Number of stands Italian bees	20
Number of pounds honey	6,139
Number of pounds wax	78
LEAVENWORTH.	
Number of stands native bees	1,108
Number of stands Italian bees	184
Number of pounds honey	12,815
Number of pounds wax	674
LYON.	
Number of stands native bees	127
Number of stands Italian bees	133
Number of pounds honey	2,225
Number of pounds wax	38
MIAMI.	
Number of stands native bees	911
Number of stands Italian bees	51
Number of pounds honey	8,756
Number of pounds wax	310

Counties.	Product.
LABETTE.	
Number of stands native bees	187
Number of stands Italian bees	2
Number of pounds honey	1,572
Number of pounds wax	15
MARSHALL.	
Number of stands native bees	7
Number of stands Italian bees	13
Number of pounds honey	450
Number of pounds wax	3
MORRIS.	
Number of stands native bees	5
Number of stands Italian bees	4
Number of pounds honey	145
Number of pounds wax	.....
MONTGOMERY.	
Number of stands native bees	160
Number of stands Italian bees	1
Number of pounds honey	1,131
Number of pounds wax	51
NEMAHA.	
Number of stands native bees	12
Number of stands Italian bees	6
Number of pounds honey	1,702
Number of pounds wax	37
NEOSHO.	
Number of stands native bees	325
Number of stands Italian bees	3
Number of pounds honey	2,740
Number of pounds wax	99
OSAGE.	
Number of stands native bees	146
Number of stands Italian bees	16
Number of pounds honey	1,988
Number of pounds wax	67
POTTAWATOMIE.	
Number of stands native bees	26
Number of stands Italian bees	2
POTTAWATOMIE — *Concluded.*	
Number of pounds honey	320
Number of pounds wax	2
RENO.	
Number of stands native bees	4
Number of stands Italian bees	1
Number of pounds honey	.....
Number of pounds wax	.....
SHAWNEE.	
Number of stands native bees	239
Number of stands Italian bees	7
Number of pounds honey	4,338
Number of pounds wax	76
WOODSON.	
Number of stands native bees	175
Number of stands Italian bees	.....
Number of pounds honey	2,087
Number of pounds wax	26
WASHINGTON.	
Number of stands native bees	.....
Number of stands Italian bees	5
Number of pounds honey	200
Number of pounds wax	.....
WYANDOTTE.	
Number of stands native bees	610
Number of stands Italian bees	9
Number of pounds honey	4,396
Number of pounds wax	192
WABAUNSEE.	
Number of stands native bees	18
Number of stands Italian bees	.....
Number of pounds honey	182
Number of pounds wax	.....
WILSON.	
Number of stands native bees	140
Number of stands Italian bees	60
Number of pounds honey	1,384
Number of pounds wax	42

AGGREGATE IN STATE.	Product.
Number of stands native bees	13,245
Number of stands Italian bees	1,640
Number of pounds honey	135,384
Number of pounds wax	3,686

According to the census returns of 1860, the number of pounds of wax returned was 1,181; in 1870, 2,208; in 1872, 3,686. The number of pounds of honey returned in 1860 was 16,944; in 1870, 110,827; in 1872, 135,384. In 1873, 14,885 colonies of bees are reported, 13,245 of which are Italian and 1,640 native.

SOURCES OF BEST QUALITY OF HONEY.—Allen county reports "sunflowers, and weeds and flowers generally," to be the best sources of honey in that county. Twelve counties report buckwheat; six counties report white clover; three counties report linden. Linden, sumac, white elder, and smartweed appear in the majority of the reports. Eighteen counties report having the common hive in use. Among the patent hives mentioned are: "The Buckeye," "Langstroth's," "Keith's," "Hoosier," "Diamond," "Quinby," "King's," "Box," "Reid & Stagg's." The movable frame in some form is used in most cases. Buckwheat, clover, and basswood are reported as giving the greatest yield of honey. Fifteen counties omit any of the above items in their reports.

ORCHARDS, NURSERIES, AND VINEYARDS.

The following statement shows the amount of capital invested in nurseries, orchards and vineyards, on the first day of March, 1873, and the products of orchards and vineyards in 1872:

Counties.	Investm.	Product.
ATCHISON.		
Nurseries—Capital invested	$8,950	
Orchards—Bushels produced		21,175
Capital invested	62,231	
Vineyards—Capital invested	9,266	
Average pounds grapes per acre		1,967
Gallons wine produced		1,369
ANDERSON.		
Nurseries—Capital invested	8,423	
Orchards—Bushels produced		13,762
Capital invested	26,573	
Vineyards—Capital invested	2,347	
Average pounds grapes per acre		2,502
Gallons wine produced		100
ALLEN.		
Nurseries—Capital invested	2,532	
Orchards—Bushels produced		44,660
Capital invested	45,991	
Vineyards—Capital invested	6,772	
Average pounds grapes per acre		1,178
Gallons wine produced		126
BOURBON.		
Nurseries—Capital invested	3,806	
Orchards—Bushels produced		58,682
Capital invested	67,506	
Vineyards—Capital invested	9,801	
Average pounds grapes per acre		4,037
Gallons wine produced		.....
BROWN.		
Nurseries—Capital invested	2,810	
Orchards—Bushels produced		16,026
Capital invested	82,104	
Vineyards—Capital invested	2,419	
Average pounds grapes per acre		2,240
Gallons wine produced		8
BUTLER.		
Nurseries—Capital invested	3,459	
Orchards—Bushels produced		243
Capital invested	16,957	
Vineyards—Capital invested	948	
Average pounds grapes per acre		1,500
Gallons wine produced		.....
CHASE.		
Nurseries—Capital invested	25	
Orchards—Bushels produced		4,245
Capital invested	17,069	
Vineyards—Capital invested	702	
Average pounds grapes per acre		2,026
Gallons wine produced		7
CHEROKEE.		
Nurseries—Capital invested	1,000	
Orchards—Bushels produced		2,703
Capital invested	2,885	
Vineyards—Capital invested	1,200	
Average pounds grapes per acre		2,333
Gallons wine produced		21
CLAY.		
Nurseries—Capital invested	170	
Orchards—Bushels produced		594
Capital invested	8,208	
Vineyards—Capital invested	280	
Average pounds grapes per acre		.....
Gallons wine produced		.....
CRAWFORD.		
Nurseries—Capital invested	3,680	
Orchards—Bushels produced		8,487
Capital invested	32,402	
Vineyards—Capital invested	1,784	
Average pounds grapes per acre		1,762
Gallons wine produced		.....

Counties.	Investm.	Product.
CLOUD.		
Nurseries—Capital invested	$1,822	
Orchards—Bushels produced		89
Capital invested	8,259	
Vineyards—Capital invested	290	
Average pounds grapes per acre		.....
Gallons wine produced		.....
DOUGLAS.		
Nurseries—Capital invested	28,326	
Orchards—Bushels produced		60,082
Capital invested	99,135	
Vineyards—Capital invested	22,489	
Average pounds grapes per acre		2,992
Gallons wine produced		5,104
DONIPHAN.		
Nurseries—Capital invested	26,310	
Orchards—Bushels produced		27,264
Capital invested	34,358	
Vineyards—Capital invested	26,822	
Average pounds grapes per acre		962
Gallons wine produced		15,917
DAVIS.		
Nurseries—Capital invested	3,670	
Orchards—Bushels produced		1,378
Capital invested	11,039	
Vineyards—Capital invested	1,063	
Average pounds grapes per acre		100
Gallons wine produced		.....
DICKINSON.		
Nurseries—Capital invested	4,000	
Orchards—Bushels produced		1,597
Capital invested	103,354	
Vineyards—Capital invested	241	
Average pounds grapes per acre		2,400
Gallons wine produced		.....
ELLSWORTH.		
Nurseries—Capital invested	.....	
Orchards—Bushels produced		200
Capital invested	559	
Vineyards—Capital invested	.....	
Average pounds grapes per acre		.....
Gallons wine produced		.....
FRANKLIN.		
Nurseries—Capital invested	11,275	
Orchards—Bushels produced		33,497
Capital invested	57,106	
Vineyards—Capital invested	7,916	
Average pounds grapes per acre		1,455
Gallons wine produced		893
GREENWOOD.		
Nurseries—Capital invested	1,207	
Orchards—Bushels produced		15,581
Capital invested	21,634	
Vineyards—Capital invested	980	
Average pounds grapes per acre		1,243
Gallons wine produced		.....
HOWARD.		
Nurseries—Capital invested	579	
Orchards—Bushels produced		1,413
Capital invested	15,645	
Vineyards—Capital invested	1,197	
Average pounds grapes per acre		225
Gallons wine produced		14
JOHNSON.		
Nurseries—Capital invested	8,060	
Orchards—Bushels produced		32,760
Capital invested	59,578	
Vineyards—Capital invested	6,443	
Average pounds grapes per acre		2,657
Gallons wine produced		1,944

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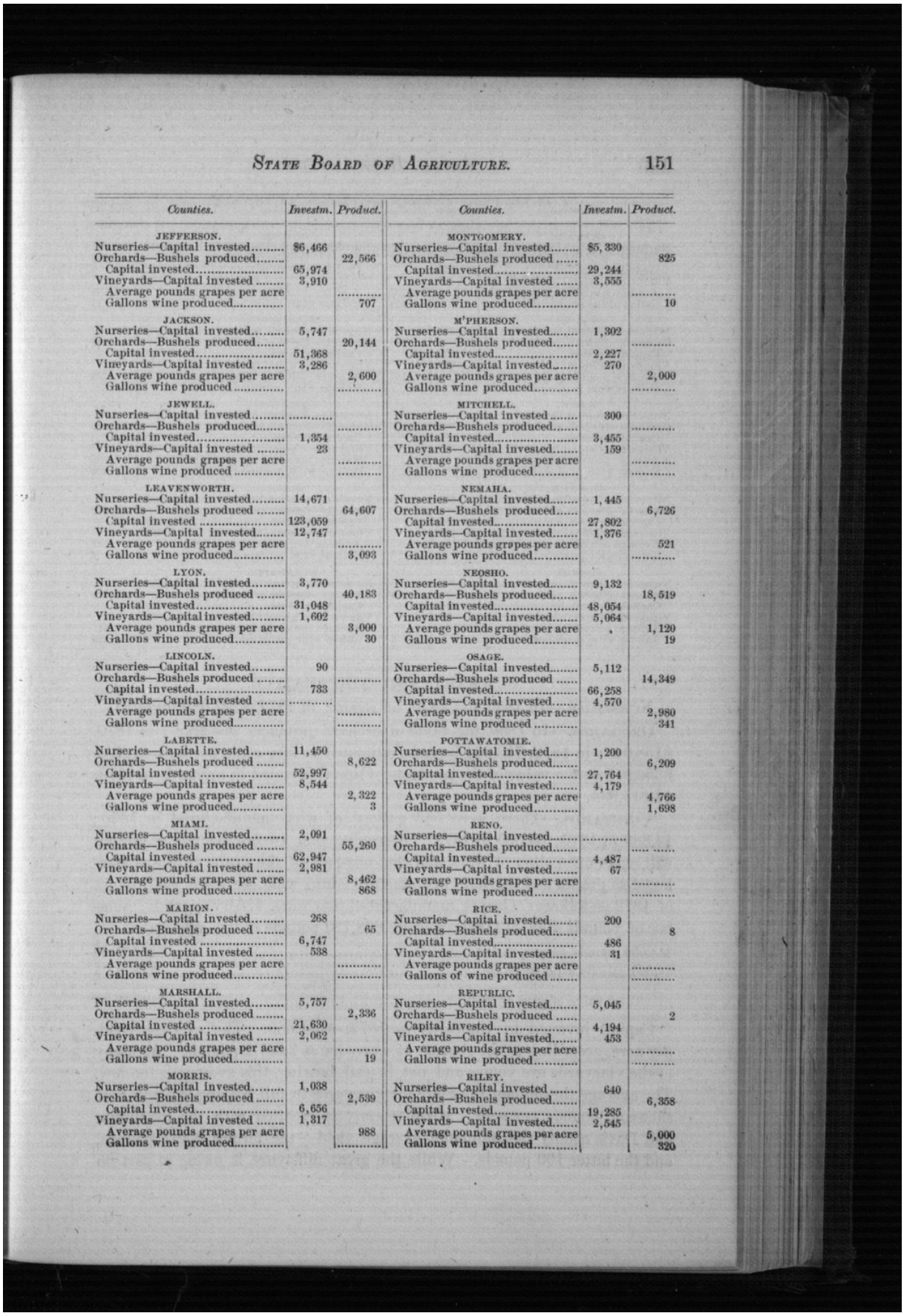


Counties.	Investm.	Product.
JEFFERSON.		
Nurseries—Capital invested	$6,466	
Orchards—Bushels produced		22,566
Capital invested	65,974	
Vineyards—Capital invested	3,910	
Average pounds grapes per acre		.....
Gallons wine produced		707
JACKSON.		
Nurseries—Capital invested	5,747	
Orchards—Bushels produced		20,144
Capital invested	51,368	
Vineyards—Capital invested	3,286	
Average pounds grapes per acre		2,600
Gallons wine produced		.....
JEWELL.		
Nurseries—Capital invested	.....	
Orchards—Bushels produced		.....
Capital invested	1,354	
Vineyards—Capital invested	23	
Average pounds grapes per acre		.....
Gallons wine produced		.....
LEAVENWORTH.		
Nurseries—Capital invested	14,671	
Orchards—Bushels produced		64,607
Capital invested	123,059	
Vineyards—Capital invested	12,747	
Average pounds grapes per acre		.....
Gallons wine produced		3,093
LYON.		
Nurseries—Capital invested	3,770	
Orchards—Bushels produced		40,183
Capital invested	31,048	
Vineyards—Capital invested	1,602	
Average pounds grapes per acre		3,000
Gallons wine produced		30
LINCOLN.		
Nurseries—Capital invested	90	
Orchards—Bushels produced		.....
Capital invested	733	
Vineyards—Capital invested	.....	
Average pounds grapes per acre		.....
Gallons wine produced		.....
LABETTE.		
Nurseries—Capital invested	11,450	
Orchards—Bushels produced		8,622
Capital invested	52,997	
Vineyards—Capital invested	8,544	
Average pounds grapes per acre		2,322
Gallons wine produced		3
MIAMI.		
Nurseries—Capital invested	2,091	
Orchards—Bushels produced		55,260
Capital invested	62,947	
Vineyards—Capital invested	2,981	
Average pounds grapes per acre		8,462
Gallons wine produced		868
MARION.		
Nurseries—Capital invested	268	
Orchards—Bushels produced		65
Capital invested	6,747	
Vineyards—Capital invested	538	
Average pounds grapes per acre		.....
Gallons wine produced		.....
MARSHALL.		
Nurseries—Capital invested	5,757	
Orchards—Bushels produced		2,336
Capital invested	21,630	
Vineyards—Capital invested	2,062	
Average pounds grapes per acre		.....
Gallons wine produced		19
MORRIS.		
Nurseries—Capital invested	1,038	
Orchards—Bushels produced		2,539
Capital invested	6,656	
Vineyards—Capital invested	1,317	
Average pounds grapes per acre		988
Gallons wine produced		.....

Counties.	Investm.	Product.
MONTGOMERY.		
Nurseries—Capital invested	$5,330	
Orchards—Bushels produced		825
Capital invested	29,244	
Vineyards—Capital invested	3,555	
Average pounds grapes per acre		.....
Gallons wine produced		10
M'PHERSON.		
Nurseries—Capital invested	1,302	
Orchards—Bushels produced		.....
Capital invested	2,227	
Vineyards—Capital invested	270	
Average pounds grapes per acre		2,000
Gallons wine produced		.....
MITCHELL.		
Nurseries—Capital invested	300	
Orchards—Bushels produced		.....
Capital invested	3,455	
Vineyards—Capital invested	159	
Average pounds grapes per acre		.....
Gallons wine produced		.....
NEMAHA.		
Nurseries—Capital invested	1,445	
Orchards—Bushels produced		6,726
Capital invested	27,802	
Vineyards—Capital invested	1,376	
Average pounds grapes per acre		521
Gallons wine produced		.....
NEOSHO.		
Nurseries—Capital invested	9,132	
Orchards—Bushels produced		18,519
Capital invested	48,054	
Vineyards—Capital invested	5,064	
Average pounds grapes per acre		1,120
Gallons wine produced		19
OSAGE.		
Nurseries—Capital invested	5,112	
Orchards—Bushels produced		14,349
Capital invested	66,258	
Vineyards—Capital invested	4,570	
Average pounds grapes per acre		2,980
Gallons wine produced		341
POTTAWATOMIE.		
Nurseries—Capital invested	1,200	
Orchards—Bushels produced		6,209
Capital invested	27,764	
Vineyards—Capital invested	4,179	
Average pounds grapes per acre		4,766
Gallons wine produced		1,698
RENO.		
Nurseries—Capital invested	.....	
Orchards—Bushels produced		....
Capital invested	4,487	
Vineyards—Capital invested	67	
Average pounds grapes per acre		.....
Gallons wine produced		.....
RICE.		
Nurseries—Capital invested	200	
Orchards—Bushels produced		8
Capital invested	486	
Vineyards—Capital invested	31	
Average pounds grapes per acre		.....
Gallons of wine produced		.....
REPUBLIC.		
Nurseries—Capital invested	5,045	
Orchards—Bushels produced		2
Capital invested	4,194	
Vineyards—Capital invested	453	
Average pounds grapes per acre		.....
Gallons wine produced		.....
RILEY.		
Nurseries—Capital invested	640	
Orchards—Bushels produced		6,358
Capital invested	19,285	
Vineyards—Capital invested	2,545	
Average pounds grapes per acre		5,000
Gallons wine produced		320

Counties.	Investm.	Product.
SHAWNEE.		
Nurseries—Capital invested	.....	
Orchards—Bushels produced		42,178
Capital invested	67,543	
Vineyards—Capital invested	7,468	
Average pounds grapes per acre		2,100
Gallons wine produced		160
SALINE.		
Nurseries—Capital invested	1,611	
Orchards—Bushels produced		280
Capital invested	2,862	
Vineyards—Capital invested	1,820	
Average pounds grapes per acre		183
Gallons wine produced		.....
SMITH.		
Nurseries—Capital invested	.....	
Orchards—Bushels produced		.....
Capital invested	18	
Vineyards—Capital invested	50	
Average pounds grapes per acre		.....
Gallons wine produced		.....
SEDGWICK.		
Nurseries—Capital invested	275	
Orchards—Bushels produced		.....
Capital invested	3,459	
Vineyards—Capital invested	101	
Average pounds grapes per acre		.....
Gallons wine produced		.....
SUMNER.		
Nurseries—Capital invested	1,500	
Orchards—Bushels produced		19
Capital invested	4,695	
Vineyards—Capital invested	17	
Average pounds grapes per acre		.....
Gallons wine produced		5
WOODSON.		
Nurseries—Capital invested	$413	
Orchards—Bushels produced		17,341
Capital invested	40,072	
Vineyards—Capital invested	3,050	
Average pounds grapes per acre		6,726
Gallons wine produced		7
WASHINGTON.		
Nurseries—Capital invested	260	
Orchards—Bushels produced		129
Capital invested	4,597	
Vineyards—Capital invested	146	
Average pounds grapes per acre		200
Gallons wine produced		.....
WABAUNSEE.		
Nurseries—Capital invested	600	
Orchards—Bushels produced		5,469
Capital invested	19,340	
Vineyards—Capital invested	555	
Average pounds grapes per acre		5,000
Gallons wine produced		400
WILSON.		
Nurseries—Capital invested	14,963	
Orchards—Bushels produced		23,072
Capital invested	124,860	
Vineyards—Capital invested	1,663	
Average pounds grapes per acre		588
Gallons wine produced		2
WYANDOTTE.		
Nurseries—Capital invested	7,200	
Orchards—Bushels produced		11,710
Capital invested	29,416	
Vineyards—Capital invested	6,739	
Average pounds grapes per acre		617
Gallon wine produced		1,320

SUMMARY AND COMPARATIVE.

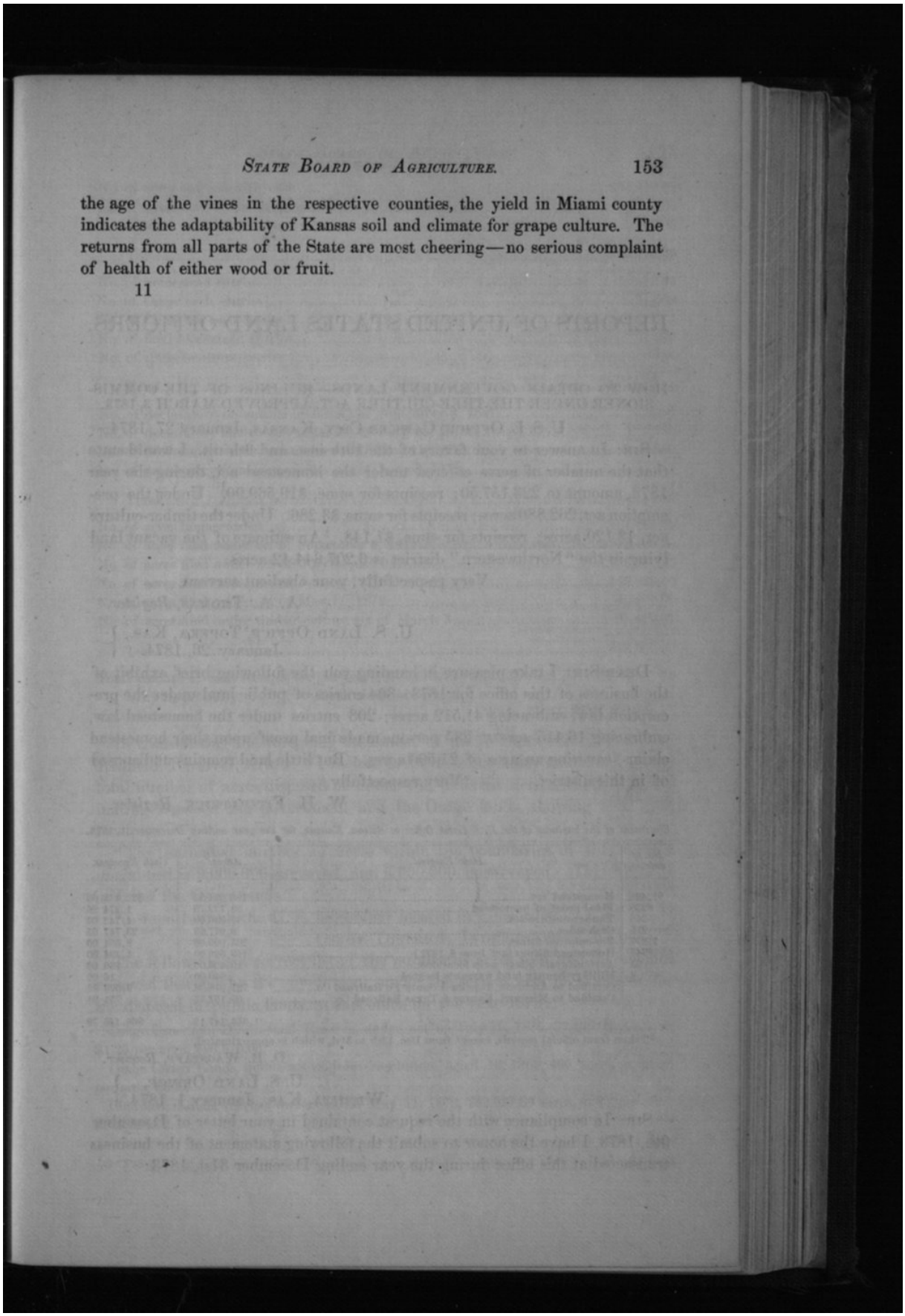
NURSERIES.—In 1860 and 1870, no report; in 1872, $227,980 invested.

ORCHARDS.—In 1860, the value of orchard products was $656; in 1870, $158,046; in 1872, 713,954 bushels, estimated at fifty cents per bushel, gives $356,977 as the value of the product. Capital invested in orchards in 1873, $1,614,934.

VINEYARDS.—There were 583 gallons of wine manufactured in 1860; 14,889 in 1870; 34,505 in 1872. Assuming that twelve pounds of grapes will make one gallon of wine, and that one-half of the grape crop was marketed as grapes and one-half manufactured into wine, we have the product of 1872 as follows: Grapes manufactured into wine, 414,060 pounds; number of pounds sold, 414,060; making 828,120 pounds in the aggregate.

414,060 pounds grapes, at 4 cts	$16,562 40
34,505 gallons wine, at 75 cts	25,878 75
Total value of crop of 1872	$42,441 15

Capital invested in vineyards in 1872, $181,689. The average yield, per acre, according to the returns of assessors, is 2,307.2 pounds. As many of the vineyards are young and not in full bearing, this average is too low. The average throughout the State for vineyards in full bearing is about four thousand pounds per acre. Miami county is credited with the maximum and Davis county the minimum average yield—the former 8,462 pounds, and the latter 100 pounds. While the great difference is owing in part to



the age of the vines in the respective counties, the yield in Miami county indicates the adaptability of Kansas soil and climate for grape culture. The returns from all parts of the State are most cheering—no serious complaint of health of either wood or fruit.

11

REPORTS OF UNITED STATES LAND OFFICERS.

HOW TO OBTAIN GOVERNMENT LANDS—RULINGS OF THE COMMISSIONER UNDER THE TREE-CULTURE ACT, APPROVED MARCH 3, 1873.

U. S. L. OFFICE, CAWKER CITY, KANSAS, January 27, 1874.

SIR: In answer to your favors of the 19th inst. and 9th ult., I would state that the number of acres entered under the homestead act, during the year 1873, amount to 223,157.50; receipts for same, $19,569.90. Under the pre-emption act, 262,880 acres; receipts for same, $3,286. Under the timber-culture act, 13,120 acres; receipts for same, $1,148. An estimate of the vacant land lying in the "Northwestern" district is 6,207,644.42 acres.

Very respectfully, your obedient servant,

A. A. THOMAS, *Register.*

U. S. LAND OFFICE, TOPEKA, KAS., January 26, 1874.

DEAR SIR: I take pleasure in handing you the following brief exhibit of the business of this office for 1873: 304 entries of public land under the pre-emption law, embracing 41,512 acres; 208 entries under the homestead law, embracing 16,415 acres. 235 persons made final proof upon their homestead claims, covering an area of 21,500 acres. But little land remains undisposed of in this district. Very respectfully,

W. H. FITZPATRICK, *Register.*

Statement of the business of the U. S. Land Office at Salina, Kansas, for the year ending December 31, 1873.

No. of entries.	*How Entered.*	*Acres.*	*Cash Receipts.*
*1,498	Homestead act	193,921.83	$22,183 05
*235	Final proof of homestead	32,172.75	1,374 26
210	Timber-culture act	33,346.00	4,742 00
216	Cash sales	6,077.63	23,747 65
1,277	Pre-emption filings	205,000.00	2,554 00
*747	Homestead filings (act June 8, 1872,)	119,520.00	1,494 00
65	Agricultural College scrip locations	10,400.00	260 00
4	Military bounty land warrants located	640.00	16 00
	Certified to Atchison, Topeka & Santa Fe Railroad Co	721,916.08	9,023 92
	Certified to Missouri, Kansas & Texas Railroad Co	60,152.83	751 91
		1,383,147.12	$66,146 79

*Taken from official records, except from Dec. 12th to 31st, which is approximated.

D. R. WAGSTAFF, *Receiver.*

U. S. LAND OFFICE, WICHITA, KAS., January 1, 1874.

SIR: In compliance with the request contained in your letter of December 9th, 1873, I have the honor to submit the following statement of the business transacted at this office during the year ending December 31st, 1873:

No. of acres entered with cash	284,410.09
No. of acres entered on final homestead	30,240.00
No. of acres entered with land warrants	760.00
Total	314,410.09
No. of homestead entries	1,164
No. of Osage cash entries	1,608
No. of Cherokee cash entries	203
No. of final homestead entries	189
No. of timber-culture entries	134
Total	3,298
No. of declaratory statements under act of September 4, 1841	1,684
No. of declaratory statements under act of July 15, 1870	1,853
No. of declaratory statements under act of May 11, 1872	340
No. of declaratory statements under act of June 8, 1872	937
Total	4,814
No. of acres homesteaded	151,123.01
No. of acres filed under act of September 4, 1841	172,400.00
No. of acres filed under act of July 15, 1870	296,480.00
No. of acres filed under act of June 8, 1872	149,920.00
No. of acres filed under act of May 11, 1872	42,240.00
No. of acres filed under timber-culture act of March 3	21,429.91
Total	833,592.92
Total amount of cash receipts for the year 1873	$470,877 79

Very respectfully, Your obedient servant,

W. S. JENKINS, *Register.*

In transmitting the foregoing statement of the Wichita office, Hon. J. C. Redfield, Receiver, writes: "I inclose herewith a summary statement, giving total number of acres disposed of under the different acts, without discriminating between the government and the Osage lands, showing total cash receipts.

"The estimated number of acres within the boundaries of this district unclaimed is 9,000,000 surveyed, and 4,000,000 unsurveyed. This estimate includes the Osage lands."

No reports from the U. S. land office located at Concordia.

OSAGE DISTRICT, INDEPENDENCE, KANSAS.

The following is a correct list of the number of acres sold, and the amount received therefor by the government, under the several acts of Congress, for the disposal of public lands, at this office for the year 1873:

Osage Trust and Diminished Reserve, under act of July 15, 1870, 77,496.02 acres, at $1.25 per acre, $96,870.03.

Osage Ceded Lands, under act of joint resolution, April 10, 1869, 400 acres, at $1.25 per acre, $500.

Cherokee Lands (Strip), under act of May 11, 1872, $63,997.36 acres, at $2 per acre, $127,994.72.

Government lands, under act of September 4, 1841, minimum and double minimum, 7,660.08 acres, amount, $10,176.90.

Homestead entries, under act of May 20, 1862, and act of June 8, 1872, 6,307.50 acres; fees, $555; commissions, $214.13.

Final homestead entries, under acts of May 20, 1862 and June 8, 1872, 26,237.14 acres; commissions, $898.58.

Located by land warrants, under act of March 3, 1855, 560 acres, at $1.25 per acre, $700.

Total, 182,658.10 acres sold; received, $237,354.36.

U. S. LAND OFFICE, INDEPENDENCE, KANSAS.

We certify this is a true statement of the lands sold under the different laws for the disposal of the public lands at this office during the year of 1873, carefully prepared by M. McEniry, a prominent land attorney of this place. Yours, etc.,

W. W. MARTIN, *Register*.
A. M. WATERS, *Receiver*.

HOW TO OBTAIN GOVERNMENT LANDS.

PRE-EMPTION.

We are indebted to the Hon. C. C. Hutchinson for the following succinct instructions for obtaining Government lands by pre-emption, citizen and soldiers' homesteads:

"Every head of a family, or widow, or single man or woman, over twenty-one years of age, being a citizen, or having filed a declaration of intention to become a citizen, can pre-empt 160 acres of Government land, inside or outside of railroad limits. The first act necessary is settlement, or the commencement of some work or improvement upon the land, and the pre-emption right dates from the first improvement or occupation of the land. Upon surveyed land a pre-emptor must, within three months of settlement, go or send to the land office in each district, pay two dollars, make a 'filing,' or written declaration of intention to pre-empt, and within thirty months from filing the land must be paid for. If within ten miles of a land-grant railroad, the price is $2.50 per acre, outside of that distance, $1.25 per acre. No one can pay for land under the pre-emption law until the claimant and family (if he has one) has actually resided upon the land at least six months, and he must not be the owner of 320 acres of land within the United States (exclusive of the pre-emption claim). No person can make a settlement or improvements upon land for another, which will hold for pre-emption. No one can hire another to live upon the land for six months in such a way as to answer the requirement of the law that the pre-emptor shall have resided upon the tract. One land warrant can be laid on a quarter-section (160 acres) in pre-empting, but if the land is $2.50 per acre, the $1.25 per acre must be paid in cash. *Soldiers* have no rights in pre-empting beyond any other person.

CITIZENS' HOMESTEADS.

"Any person qualified as above for pre-emption, can acquire by occupation and the payment of commisson and fees ($18.00 to $26.00), 160 acres of

land held at $1.25 per acre, or 80 acres of land within ten miles of a railroad, and held at $2.50 per acre. Every homestead settler, except soldiers, must in person go to the land office to make the filing, unless he is actually living on the land, and then it is allowable to make the filing before the clerk of the county within which the land is situated. The right to land under the homestead law dates from filing (not from *settlement* as under pre-emption), and then the claimant is allowed six months, within which time he must take possession of the land by occupation and improvement. Within seven years thereafter the settler must go to the land office, and prove by two witnesses that he has resided upon and cultivated the land for *five* years immediately succeeding the time of filing, and thereupon the settler is entitled to a patent. Absence from a homestead for more than six months at any one time during the five years, works a forfeiture of all right to the land, if proven to the satisfaction of the U. S. Register. Homesteads are not liable for debts contracted prior to the settlement. In case of death before title is perfected, either by pre-emption or homesteading, the rights of the deceased descend to the widow or heirs.

COMMUTING A HOMESTEAD.

"Homestead settlers may pay for their land in cash or warrants at the Government price, $1.25 or $2.50, upon making proof of actual residence and cultivation for a period of not less than six months.

SOLDIERS' HOMESTEADS.

"The foregoing regulations are strictly applicable to soldiers' homesteads, excepting:

"1st. Any soldier or sailor who served not less than ninety days 'during the recent rebellion,' and was honorably discharged and remained loyal, can homestead 160 acres, either inside or outside of the ten-mile railroad limits.

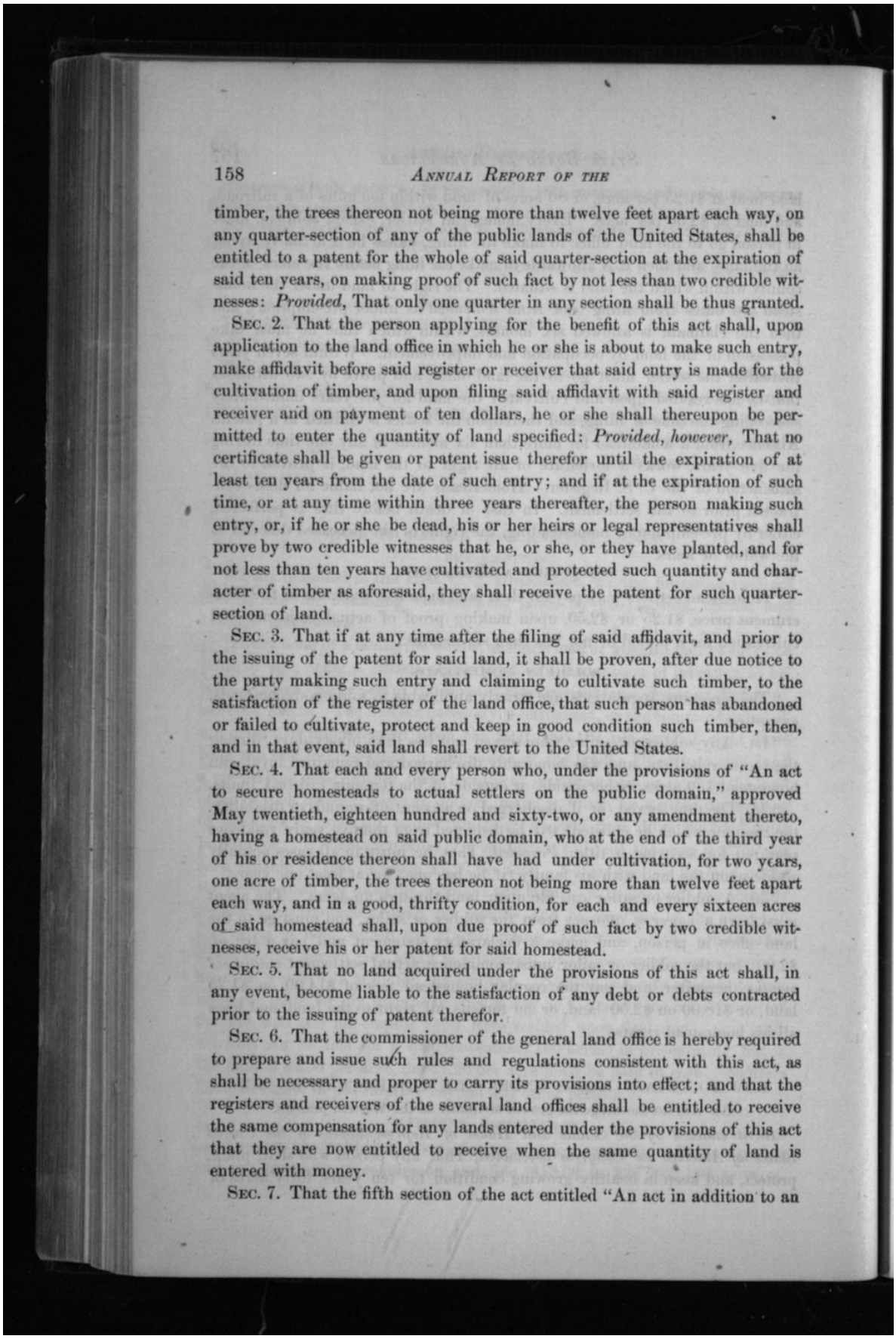
"2d. The time served (or if discharged on account of wounds or disability, the time for which he enlisted) will be deducted from the five years' residence required for securing a title: *Provided*, That he must in all cases actually reside upon the land with his family (if he has one) for at least one year.

"3d. A soldier or sailor can file upon land through an agent. The agent must have a *power of attorney* from the soldier or sailor, and must go to the land office in person, and make a declaratory statement and pay a fee of $2.00; but the soldier or sailor must commence actual settlement *within six months* thereafter, and pay the regular homestead fees of $14.00 on $1.25 land, or $18.00 on $2.50 land, or he forfeits all right to the land, and loses all his homestead rights."

HOW TO OBTAIN LANDS UNDER THE TIMBER-CULTURE ACT.

AN ACT to encourage the growth of timber on the Western prairies.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any person who shall plant, protect, and keep in healthy growing condition for ten years, forty acres of



timber, the trees thereon not being more than twelve feet apart each way, on any quarter-section of any of the public lands of the United States, shall be entitled to a patent for the whole of said quarter-section at the expiration of said ten years, on making proof of such fact by not less than two credible witnesses: *Provided*, That only one quarter in any section shall be thus granted.

SEC. 2. That the person applying for the benefit of this act shall, upon application to the land office in which he or she is about to make such entry, make affidavit before said register or receiver that said entry is made for the cultivation of timber, and upon filing said affidavit with said register and receiver and on payment of ten dollars, he or she shall thereupon be permitted to enter the quantity of land specified: *Provided, however*, That no certificate shall be given or patent issue therefor until the expiration of at least ten years from the date of such entry; and if at the expiration of such time, or at any time within three years thereafter, the person making such entry, or, if he or she be dead, his or her heirs or legal representatives shall prove by two credible witnesses that he, or she, or they have planted, and for not less than ten years have cultivated and protected such quantity and character of timber as aforesaid, they shall receive the patent for such quarter-section of land.

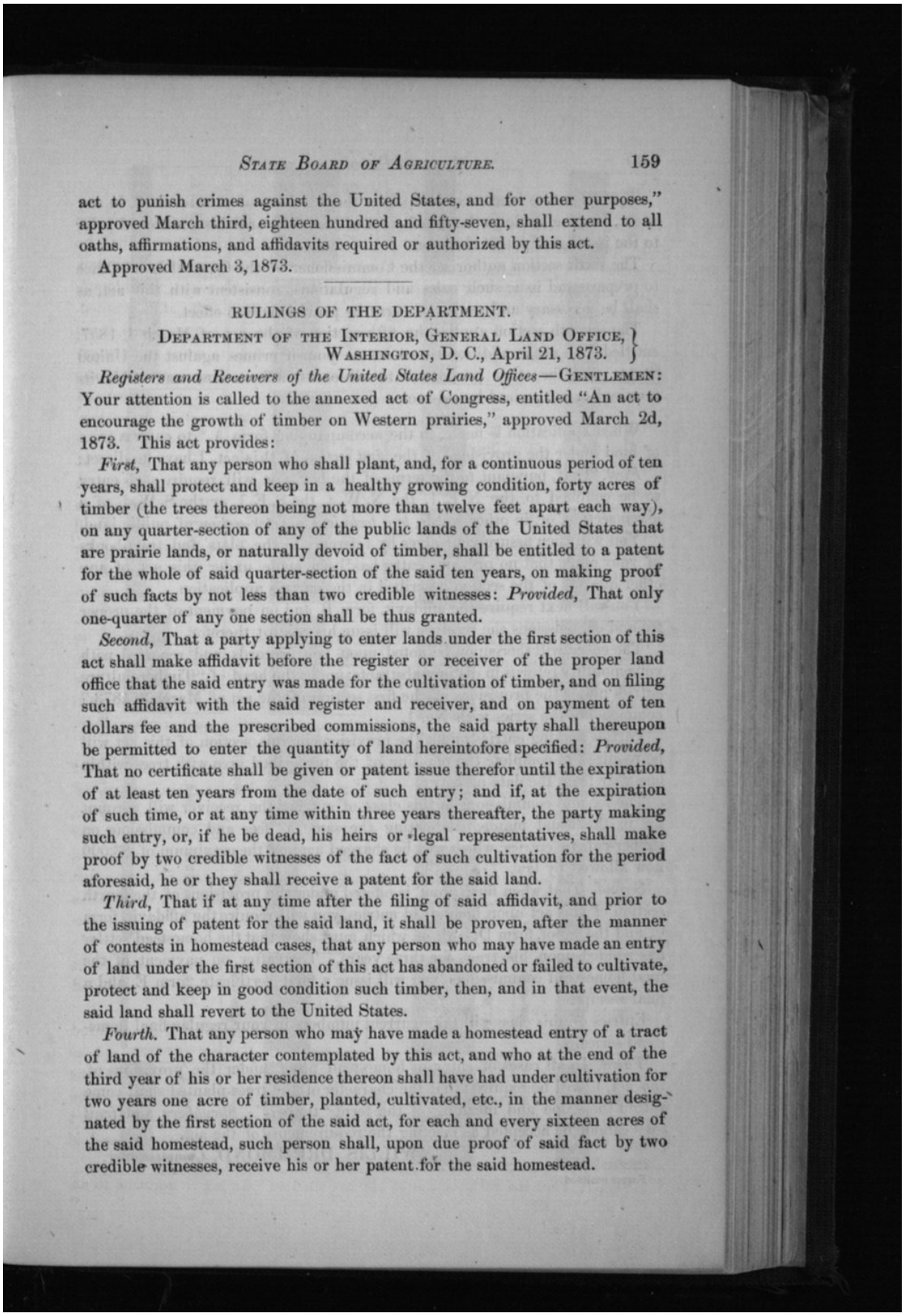
SEC. 3. That if at any time after the filing of said affidavit, and prior to the issuing of the patent for said land, it shall be proven, after due notice to the party making such entry and claiming to cultivate such timber, to the satisfaction of the register of the land office, that such person has abandoned or failed to cultivate, protect and keep in good condition such timber, then, and in that event, said land shall revert to the United States.

SEC. 4. That each and every person who, under the provisions of "An act to secure homesteads to actual settlers on the public domain," approved May twentieth, eighteen hundred and sixty-two, or any amendment thereto, having a homestead on said public domain, who at the end of the third year of his or residence thereon shall have had under cultivation, for two years, one acre of timber, the trees thereon not being more than twelve feet apart each way, and in a good, thrifty condition, for each and every sixteen acres of said homestead shall, upon due proof of such fact by two credible witnesses, receive his or her patent for said homestead.

SEC. 5. That no land acquired under the provisions of this act shall, in any event, become liable to the satisfaction of any debt or debts contracted prior to the issuing of patent therefor.

SEC. 6. That the commissioner of the general land office is hereby required to prepare and issue such rules and regulations consistent with this act, as shall be necessary and proper to carry its provisions into effect; and that the registers and receivers of the several land offices shall be entitled to receive the same compensation for any lands entered under the provisions of this act that they are now entitled to receive when the same quantity of land is entered with money.

SEC. 7. That the fifth section of the act entitled "An act in addition to an



act to punish crimes against the United States, and for other purposes," approved March third, eighteen hundred and fifty-seven, shall extend to all oaths, affirmations, and affidavits required or authorized by this act.

Approved March 3, 1873.

RULINGS OF THE DEPARTMENT.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
WASHINGTON, D. C., April 21, 1873.

Registers and Receivers of the United States Land Offices—GENTLEMEN: Your attention is called to the annexed act of Congress, entitled "An act to encourage the growth of timber on Western prairies," approved March 2d, 1873. This act provides:

First, That any person who shall plant, and, for a continuous period of ten years, shall protect and keep in a healthy growing condition, forty acres of timber (the trees thereon being not more than twelve feet apart each way), on any quarter-section of any of the public lands of the United States that are prairie lands, or naturally devoid of timber, shall be entitled to a patent for the whole of said quarter-section of the said ten years, on making proof of such facts by not less than two credible witnesses: *Provided*, That only one-quarter of any one section shall be thus granted.

Second, That a party applying to enter lands under the first section of this act shall make affidavit before the register or receiver of the proper land office that the said entry was made for the cultivation of timber, and on filing such affidavit with the said register and receiver, and on payment of ten dollars fee and the prescribed commissions, the said party shall thereupon be permitted to enter the quantity of land hereintofore specified: *Provided*, That no certificate shall be given or patent issue therefor until the expiration of at least ten years from the date of such entry; and if, at the expiration of such time, or at any time within three years thereafter, the party making such entry, or, if he be dead, his heirs or legal representatives, shall make proof by two credible witnesses of the fact of such cultivation for the period aforesaid, he or they shall receive a patent for the said land.

Third, That if at any time after the filing of said affidavit, and prior to the issuing of patent for the said land, it shall be proven, after the manner of contests in homestead cases, that any person who may have made an entry of land under the first section of this act has abandoned or failed to cultivate, protect and keep in good condition such timber, then, and in that event, the said land shall revert to the United States.

Fourth. That any person who may have made a homestead entry of a tract of land of the character contemplated by this act, and who at the end of the third year of his or her residence thereon shall have had under cultivation for two years one acre of timber, planted, cultivated, etc., in the manner designated by the first section of the said act, for each and every sixteen acres of the said homestead, such person shall, upon due proof of said fact by two credible witnesses, receive his or her patent for the said homestead.

Fifth. That no lands acquired under the provision of this act shall, in any event, become liable to the satisfaction of any debt or debts contracted prior to the issuing of patent therefor.

The sixth section authorizes the Commissioner of the General Land Office to prepare and issue such rules and regulations, consistent with this act, as shall be necessary and proper to carry its provisions into effect.

The seventh section applies the fifth section of the act of March 3, 1857, entitled "An act in addition to an act to punish crimes against the United States, and for other purposes," to all oaths, affirmations and affidavits required or authorized by this act.

When application is made, in the accompanying form A,* to enter a tract of land under the provisions of the *first section* of this act, I have to direct:

First. That, pursuant to the terms of the law, you will require such entry to be confined to the N. E. ¼, the N. W. ¼, the S. E. ¼, or the S. W. ¼, of a given section, or, in other words, *to a technical quarter-section* of public land.

You will then assure yourselves by reference to the plats and tract-books of your office that no previous entry has been made under this act of any other quarter of the section described in the party's application.

You will next require the affidavit, form B, and on payment of the proper fee and commissions the receiver will issue his receipt therefor.

The entry will thereupon be noted upon your records, and reported with your monthly returns in distinct abstracts, under the head of "Timber-culture entries under the provisions of the first section of the act of March 3, 1873," commencing the series with No. 1.

Parties making entries under the provisions of this section of this act will be required to complete the planting of the prescribed area with trees within one year from the date of entry.

The fee and commissions in this class of entries the receiver will account for in the usual manner, indicating the same as fees and commissions on timber-culture entries, which will be charged against the maximum of $3,000 now allowed by law.

Second. That when final proof is offered under the provisions of the fourth section of this act upon homestead entries, you will require the affidavit, form C, and the proof, form D, both of which must show that the homestead settler has resided upon his tract for three years. Thereafter, on payment of the final homestead commissions, you will issue a final certificate, form E, and a final receipt.

Entries of this class will take current numbers in your regular final homestead series.

Third. In all cases of entry or homestead proof, under the provisions of this act, it will be required that the character of the trees planted shall come within the scope and meaning of the term "timber." *Shrubbery* and *fruit trees* cannot be accepted as meeting the requirements of the act.

WILLIS DRUMMOND, *Commissioner.*

*Forms omitted.