

Twelfth biennial report of the Kansas State Board of Agriculture, 1899-1900

Section 1, Pages 1 - 30

This biennial report from the Kansas State Board of Agriculture includes information on dairying, road construction, livestock, and other agricultural topics. Also covered are county statistics for population, acreages, productions, livestock, assessed valuation of property, and a listing of churches for each county.

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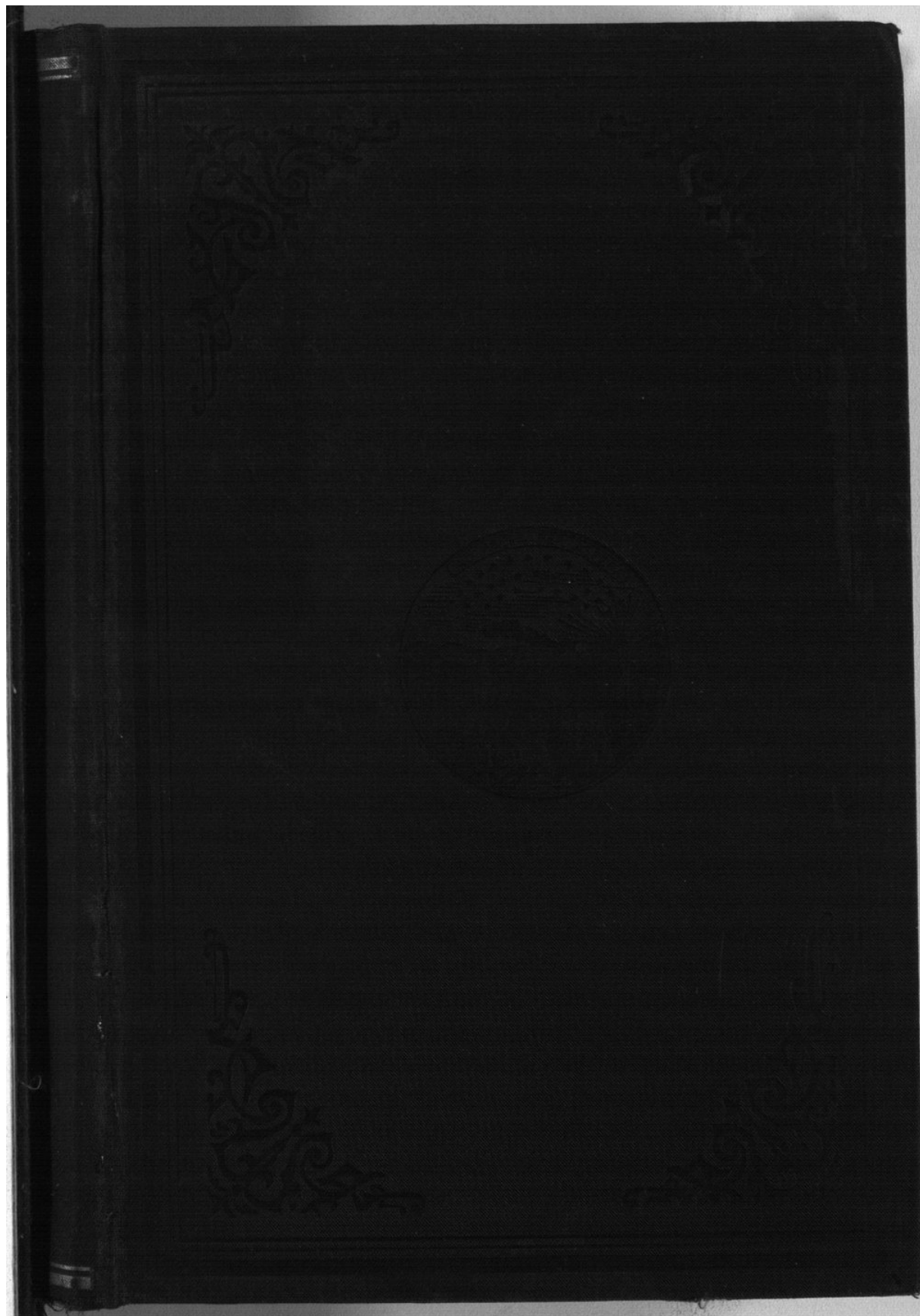
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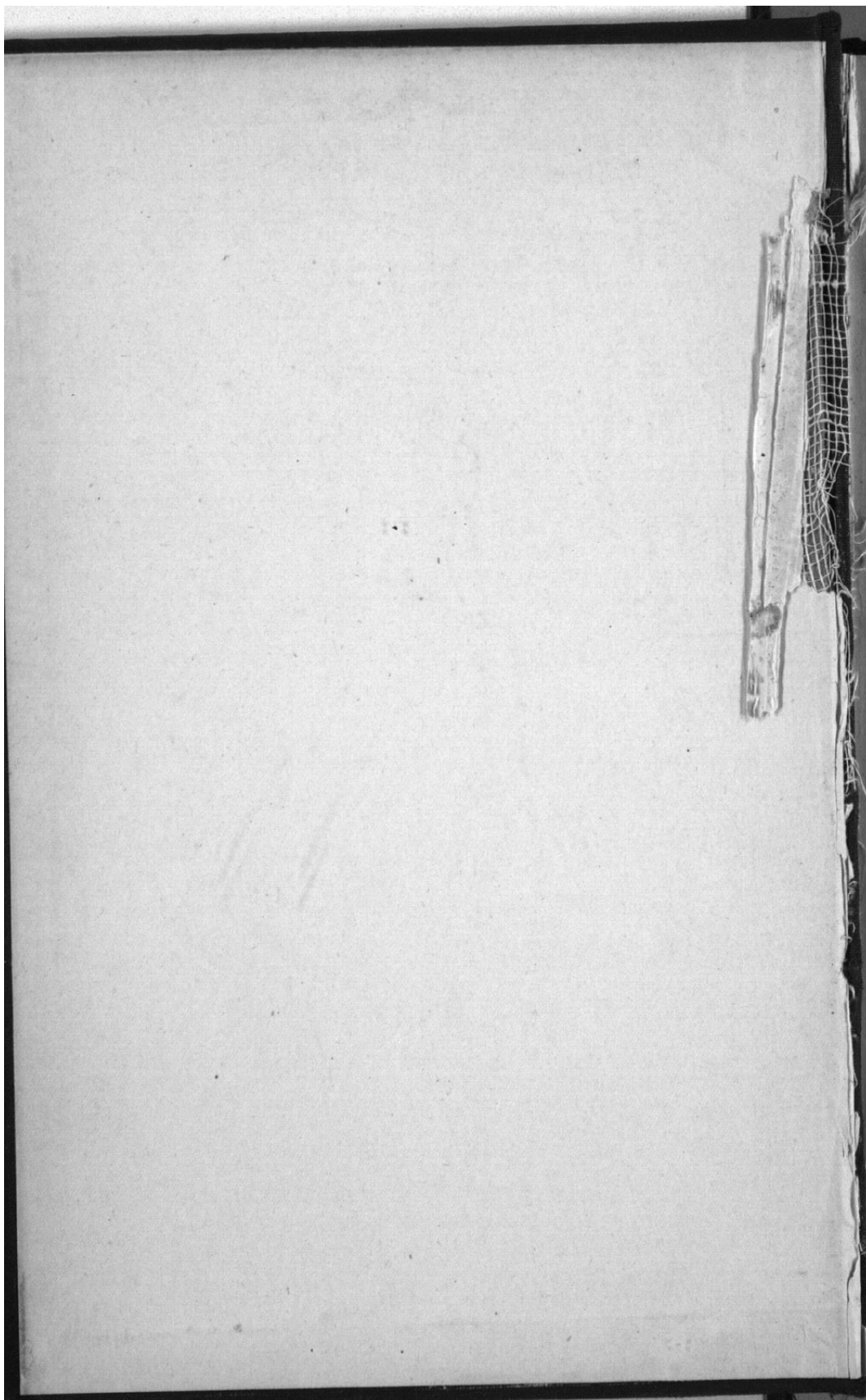


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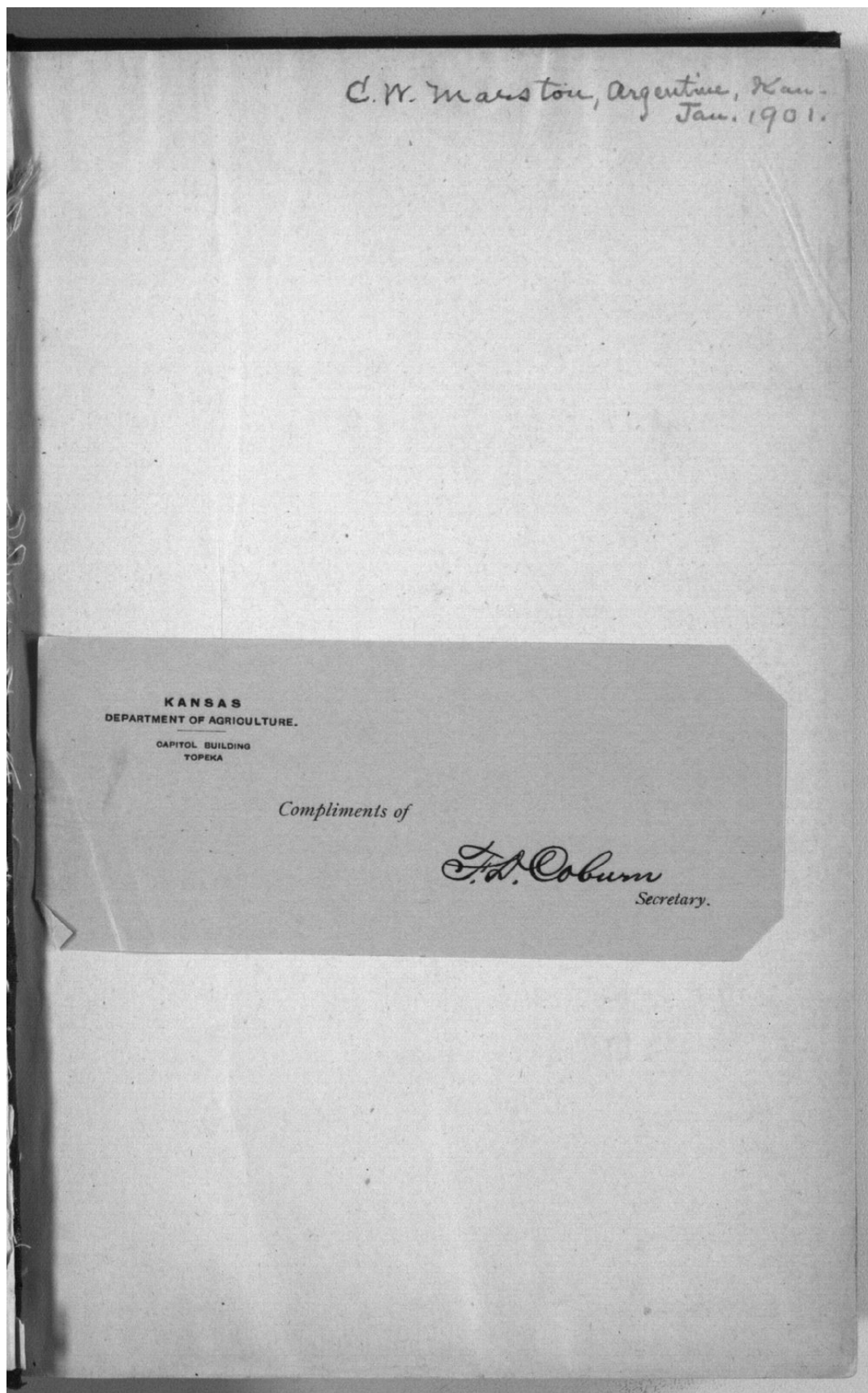


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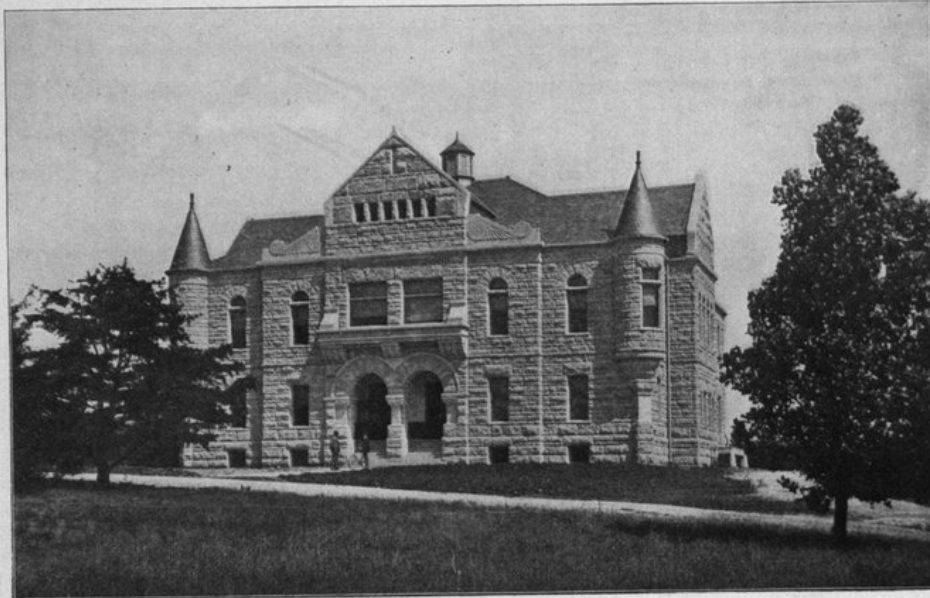




Twelfth biennial report of the Kansas State Board of Agriculture, 1899-1900



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AGRICULTURAL HALL, KANSAS STATE AGRICULTURAL COLLEGE, MANHATTAN.

Twelfth biennial report of the Kansas State Board of Agriculture, 1899-1900

TWELFTH BIENNIAL REPORT
OF THE
KANSAS
State Board of Agriculture
TO THE
LEGISLATURE OF THE STATE,
FOR THE YEARS 1899 AND 1900,
CONTAINING
INFORMATION UPON THE REARING AND MANAGEMENT OF SHEEP FOR WOOL AND
MUTTON; THE HORSE, FOR BUSINESS AND PLEASURE; FORAGE AND FOD-
DERS; A STUDY OF COWS AND CALVES, MILK AND MILK-
MAKING, ROADS AND ROAD CONSTRUCTION,
AND A CAREFUL ANALYSIS OF
THE STATE'S AGRICULTURAL STATISTICS,
FOR THE BIENNIAL PERIOD, AND ALSO FOR THE
PRECEDING TWENTY YEARS,
TOGETHER WITH
TABLES, STATEMENTS, SUMMARIES AND DIAGRAMS SHOWING THE POPULATION,
PRODUCTS, PROGRESS, ASSESSED VALUATION, RAILROAD MILEAGE,
AND GENERAL DEVELOPMENT OF THE STATE.
TOPEKA:
KANSAS DEPARTMENT OF AGRICULTURE.
1901.

Twelfth biennial report of the Kansas State Board of Agriculture, 1899-1900

KANSAS STATE BOARD OF AGRICULTURE.

1900.

MEMBERS.

W. E. STANLEY, Governor,					
GEO. A. CLARK, Secretary of State,					<i>Ex officio</i> , Topeka.
CHAS. E. SUTTON,	<i>Russell,</i>				Russell county.
GEO. W. HANNA,	<i>Clay Center,</i>				Clay county.
GEO. W. GLICK,	<i>Atchison,</i>				Atchison county.
ED. R. SMITH,	<i>Mound City,</i>				Linn county.
J. T. COOPER,	<i>Fredonia,</i>				Wilson county.
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THOS. M. POTTER,	<i>Peabody,</i>				Marion county.
A. W. SMITH,	<i>Groveland,</i>				McPherson county.
I. L. DIESEM,	<i>Garden City,</i>				Finney county.
J. H. CHURCHILL,	<i>Dodge City,</i>				Ford county.

OFFICERS.

PRESIDENT,	T. A. HUBBARD,	Rome.
VICE-PRESIDENT,	EDWIN TAYLOR,	Edwardsville.
TREASURER,	EDWIN SNYDER,	Oskaloosa.
	SECRETARY, F. D. COBURN,	Topeka.

OFFICERS BY APPOINTMENT.

BOTANISTS,	{ PROF. A. S. HITCHCOCK,	Manhattan.
	{ PROF. L. E. SAYRE,	Lawrence.
CHEMISTS,	{ PROF. J. T. WILLARD,	Manhattan.
	{ PROF. E. H. S. BAILEY,	Lawrence.
ENTOMOLOGISTS,	{ PROF. E. A. POPENOE,	Manhattan.
	{ PROF. F. H. SNOW,	Lawrence.
	{ PROF. S. J. HUNTER,	Lawrence.
HONORARY VETERINARIAN,	DR. PAUL FISCHER,	Manhattan.
GEOLOGISTS,	{ PROF. ERASMUS HAWORTH,	Lawrence.
	{ PROF. G. P. GRIMSLEY,	Topeka.
METEOROLOGISTS,	{ PROF. J. T. LOVEWELL,	Topeka.
	{ T. B. JENNINGS,	Topeka.
	(Observer U. S. Weather Bureau.)	



Twelfth biennial report of the Kansas State Board of Agriculture, 1899-1900

OFFICE OF THE STATE BOARD OF AGRICULTURE,
TOPEKA, KAN., January 2, 1901.

To his Excellency W. E. Stanley, Governor of Kansas:

We have the honor to transmit herewith the Twelfth Biennial Report of the Kansas State Board of Agriculture, for the years 1899 and 1900. Very respectfully,

T. A. HUBBARD, *President.*

F. D. COBURN, *Secretary.*

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INTRODUCTORY.

OFFICE OF THE STATE BOARD OF AGRICULTURE,
CAPITOL BUILDING, TOPEKA, January 2, 1901.

To the Legislature of Kansas:

The State Board of Agriculture presents this volume as its twelfth biennial report, covering the years 1899 and 1900.

The first 670 pages, containing 180 illustrations, are given to the promotion of improved animal and farm husbandry, under conditions the Kansas stockman and the Kansas farmer find ready-made or can make in their surroundings; to the furtherance of the dairy interests, through a higher appreciation of the cow, and her better management; and to encouraging the most approved systems of road-making. The succeeding 300 pages tell in careful detail the story of every township's achievements, annually, in the growing of each profitably important crop, its acreage and yield, and its value where produced; the number and value, by counties, of each class of live stock in each year; the mortality of live stock; the value of animals slaughtered or sold for slaughter, and of poultry and eggs sold; the population of each township and municipality; the assessed valuation of all lands, personal property, city lots, and railroads; the date of organization of each county, its area, rank in population, and miles of main-track railroad.

The biennial period with which the volume deals has been agriculturally by far the most profitably productive of any in the state's history, and the percentages of increase in values of products from Kansas' soil, not alone in this period, but on an average for all the years mentioned, are so gratifying that every citizen and friend of the state may well feel proud of an identity with a commonwealth possessing such capabilities, and showing such results from developments as yet little more than begun.

When it is considered that the state consists of more than fifty million acres of land, practically all arable and fertile—a country sixty-one per cent. wider in extent than England, two and one-half times greater than Ireland, nearly three times

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larger than Scotland, ten times greater in area than Wales, and in the most favored zone—and but a fraction of this utilized except in a limited way, and none of it nearly to its possibilities, it is patent that no prophet not inspired can foretell the riches in store for those fortunates who in the years to come shall possess a heritage so fruitful.

With her present progress, prosperity, and citizenship, and the bright future of which her many advantages give unquestionable assurance, Kansas is certainly occupying a most enviable position in the sisterhood of states.

The following diagrams and accompanying figures show by contrast the home values of the farm products of Kansas, also the values of live stock in each of the biennial periods for the past twenty-four years, together with the aggregate increase (or decrease) in values and the per cent. of increase or decrease in each of the same periods:

VALUES OF FARM PRODUCTS.

BIENNIAL PERIODS.

1877 }			
1878 }			
	Value,	\$129,661,731.	
1879 }			
1880 }	Value,	\$151,012,448.	Increase, \$21,350,717; per cent., 16.46.
1881 }			
1882 }	Value,	\$254,059,450.	Increase, \$103,047,002; per cent., 68.23.
1883 }			
1884 }	Value,	\$289,584,931.	Increase, \$35,525,481; per cent., 13.98.
1885 }			
1886 }	Value,	\$247,557,757.	Decrease, \$42,027,174; per cent., 14.51.
1887 }			
1888 }	Value,	\$258,181,550.	Increase, \$10,623,793; per cent., 4.29.
1889 }			
1890 }	Value,	\$268,179,141.	Increase, \$9,997,591; per cent., 3.87.
1891 }			
1892 }	Value,	\$334,459,797.	Increase, \$66,280,656; per cent., 24.71.
1893 }			
1894 }	Value,	\$235,926,448.	Decrease, \$98,532,249; per cent., 29.49.
1895 }			
1896 }	Value,	\$244,793,795.	Increase, \$8,867,347; per cent., 3.75.
1897 }			
1898 }	Value,	\$288,259,096.	Increase, \$43,465,301; per cent., 17.75.
1899 }			
1900 }	Value,	\$357,644,693.	Increase, \$69,385,597; per cent., 24.07.

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VALUES OF LIVE STOCK. BIENNIAL PERIODS.

1879 }		
1880 }		
	Value, \$116,609,453.	
1881 }		
1882 }		
	Value, \$153,680,539. Increase, \$37,071,086; per cent., 31.79.	
1883 }		
1884 }		
	Value, \$220,184,938. Increase, \$66,504,399; per cent., 43.27.	
1885 }		
1886 }		
	Value, \$247,631,335. Increase, \$27,446,397; per cent., 12.46.	
1887 }		
1888 }		
	Value, \$258,388,820. Increase, \$10,757,485; per cent., 4.34.	
1889 }		
1890 }		
	Value, \$229,724,807. Decrease, \$28,664,013; per cent., 11.09.	
1891 }		
1892 }		
	Value, \$226,699,092. Decrease, \$3,025,715; per cent., 1.32.	
1893 }		
1894 }		
	Value, \$177,005,422. Decrease, \$49,693,367; per cent., 21.92.	
1895 }		
1896 }		
	Value, \$146,505,158. Decrease, \$30,500,264; per cent., 17.23.	
1897 }		
1898 }		
	Value, \$207,302,818. Increase, \$60,797,660; per cent., 41.49.	
1899 }		
1900 }		
	Value, \$276,514,845. Increase, \$69,212,027; per cent., 33.38.	

The faithful services, always cheerfully performed, by Messrs. E. W. Longshore, J. C. Mohler, and J. H. Robison, assistants in the office of the Board, are gladly acknowledged and given honorable mention.

T. A. HUBBARD,
President.

F. D. COBURN,
Secretary.

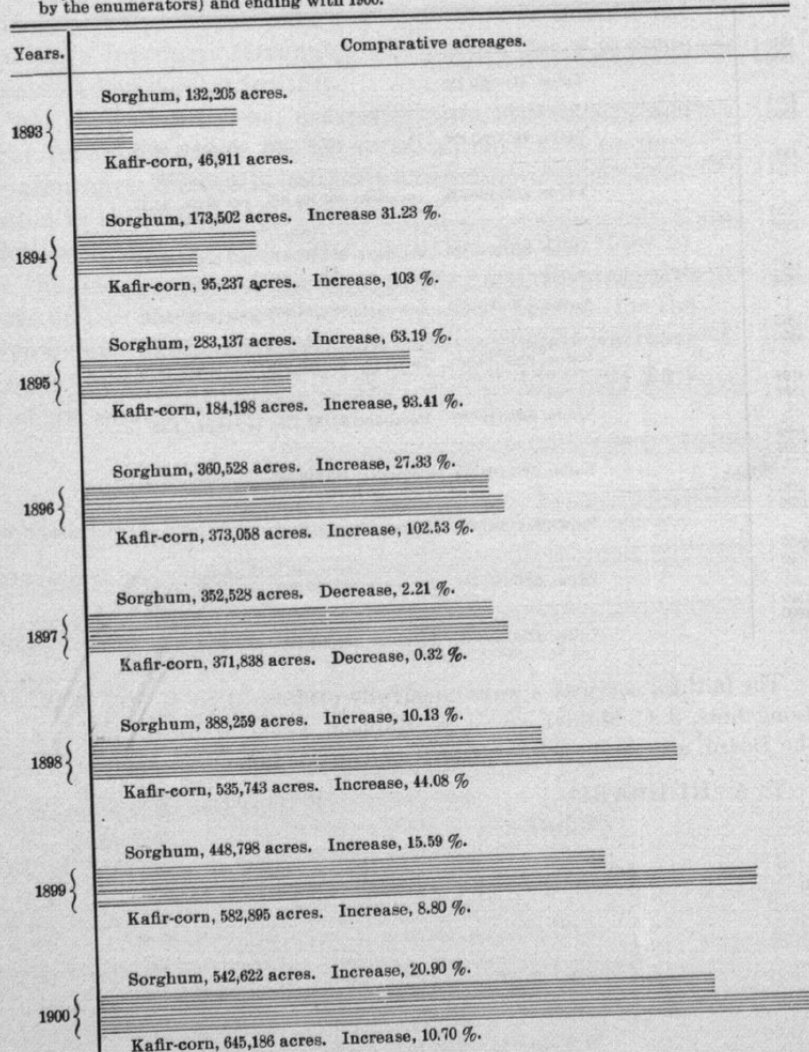
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SORGHUM AND KAFIR-CORN.

DIAGRAM showing relatively the acreages of sorghum raised for forage, and Kafir-corn, annually, for eight years, beginning with 1893 (when the first official notice was taken of Kafir-corn by the enumerators) and ending with 1900.



PART I.
THE MODERN SHEEP.



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THE SHEEP IN AGRICULTURE.

ESSENTIAL AND ESTEEMED FROM EARLIEST RECORDED TIME,
YET NEVER MORE ESSENTIAL AND NEVER
SO EXCELLENT AS NOW.

NO husbandman is so poor he cannot profit by its partnership; none so rich he can afford to ignore its helpfulness. Where sheep graze the grasses have added luxuriance and grains grow more abundantly. No other animal is so inexpensively reared and none is at once so happily adapted to generously clothe and nourish human kind. Nature seems to have planned Kansas as a theater of the sheep's foremost achievements.

No USEFUL animal of record antedates the sheep. No animal has a wider habitat, or has been from the beginning more an object of solicitous care-taking. Abel, an heir of Eden and son of its first occupants, was a keeper of sheep. Early Jewish history is the story of a shepherd race; their flocks constituted the wealth and largely the cares of the Hebrew patriarchs down through the centuries. Abraham was a great flock owner; Rachel, the mother of Joseph, tended her father's flocks, and Joseph was caring for Jacob's sheep when stolen and sold into Egypt; Job was owner of fourteen thousand sheep; Moses herded the flocks of Jethro, his father-in-law, and David, the greatest king of the Jews, was keeping his father's sheep when called to public life. It was the shepherds watching by night on Judea's plain to whom were first vouchsafed the good tidings of great joy, declaring a Savior born unto the world—the "Lamb of God," the "Good Shepherd."

Their propagation, care and improvement have played a large part in the best husbandry of all lands from time immemorial. Common to every country, they have adapted themselves to every condition. Existent on Greenland's frozen mountains, they are at home on Sahara and the scorched llanos of the Orinoco as well. Hungry, restless and gaunt on Switzerland's bleakest Alps, they represent one extreme of sheep existence; on the plains of Kansas and their affluence of grain and grass attaining a development nowhere else discovered possible, they represent the other.

Their flesh is both a staple and a delicacy wherever civilization exists; appetizing and healthful nourishment to the languishing invalid and strength-renewing to those whose toil and burden are heaviest. From their wool have been clothed the armies of dominant nations in all times; by spindle, loom and needle it is fash-

ioned to meet a wider range of requirements for the bodily comfort of human kind, than any other fiber, animal or vegetable; infancy and age, the weakest and the strongest, opulence and indigence, rely upon it for comfort, service, adornment, and surest protection from summer's heat and winter's cold. The sheeps' skins are through a thousand channels a large factor in manufactures, arts, and commerce.

In Kansas there are fifty million acres upon every one of which, on an average, a sheep could be maintained at a cost scarcely appreciable, and the acre's value be enhanced rather than diminished each year thereby. This alone would make the commonwealth rich. The opportunities that go unheeded are revealed by taking this in connection with the other fact that the state has scarcely one sheep to each 260 acres of her fruitful area, maintaining the while 184,000 dogs—as a rule the sheep's cruel and ever implacable enemies. Such a condition of affairs in a state which could care for fifty per cent. more sheep than are owned in all of the United States is discreditable but none the less suggestive. Crowded Britain finds profit in an average of 300 to the square mile of its high-priced lands.

Kansas has no superior as a region for the ready and inexpensive production of wool and mutton. Giving to the world fleeces, which in quality have never been surpassed, and in weight never elsewhere equaled, goes far to demonstrate this.

When her people rightly realize and utilize the possibilities and the conditions with which nature has endowed and surrounded them, her territory will be the seat of agricultural empire.



KING'S CHANCE.

A Kansas-bred Merino, yielding 301½ pounds of wool in eight consecutive annual shearings and making a record no other sheep ever equaled.

THE REARING AND MANAGEMENT OF SHEEP FOR WOOL AND MUTTON, AND THE ADVANTAGES AND POSSI- BILITIES OF SHEEP HUSBANDRY IN KANSAS.

EXAMPLES OF KANSAS WOOL YIELD.

A SEDGWICK COUNTY FLOCK.

A suggestion as to the adaptability of Kansas for wool-production is afforded by well-attested records of some of its flocks, which are easily accessible. One of these, consisting of several hundred head of thoroughbred and high-grade Merinos, has had for many years and still has its home in Sedgwick county.

At a public shearing, a four-year-old ram of this flock, weighing 120 pounds after shearing, yielded a fleece of one year and sixteen days' growth, weighing, wholly without artificially weighting or "doctoring," 52 pounds—by $7\frac{1}{2}$ pounds the heaviest authenticated year's growth ever shorn. The same ram, when two and three years old, sheared $37\frac{1}{2}$ and $44\frac{1}{2}$ pounds, respectively, making an average yield of $44\frac{3}{8}$ pounds for each of the three years, or more than any year-old fleece ever previously taken from a sheep. The two heaviest fleeces ever taken from a sheep in two consecutive years were also his.

This animal was born and reared in Kansas, and his sire at one time produced a fleece of 33 pounds and 13 ounces, which weighed 13 pounds 4 ounces of cleansed wool ready for the spindle, or 2 pounds and 2 ounces heavier than any cleansed fleece of which there is record. While the foregoing is a wonderful record for a single sheep, the ram mentioned does not stand alone in the phenomenal yields of wool in Kansas, for to this same Kansas flock to which he belonged stands the credit of producing the heaviest fleece ever shorn from a yearling ram—28 pounds; and also 28 pounds—fourteen months' growth—from a yearling ewe.

In addition to all this, there was sheared from a three-year-old ram a fleece of one year and three days' growth weighing 46 pounds; from a ewe, a fleece weighing 30 pounds; forty-seven two-year olds averaged $27\frac{1}{4}$ pounds; twenty-seven yearlings made an average of a small fraction less than 18 pounds per fleece; while the entire registered flock of 247 head made the remarkable average of 18 pounds 12 ounces each. Three breeding rams sheared $38\frac{1}{2}$, 41 and $41\frac{1}{2}$ pounds, respectively; a five-year-old ewe, with a sucking lamb, 27 pounds 14 ounces; and a yearling ram, $24\frac{3}{4}$ pounds. Taken all together, this showing is so remarkable as to be well-nigh incredible; but as the shearing was done in public, the weights, as published, can be verified by numerous reputable witnesses.

In view of the above facts, it might be interesting to know something of the management of these sheep. Of course, at the outset, they were given the best of care and attention. They were never permitted to go hungry nor want for pure water; they were carefully housed each night during the winter and at all times when the weather was stormy. In the winter these sheep were fed principally on corn, corn-fodder, and sheaf oats, along with a light ration of cottonseed meal. The cottonseed meal kept them in a good, healthy condition, and has much the same effect as feeding turnips, beets, and other roots. While it seems to be an excellent food for producing heavy fleeces, it is not esteemed equal to corn for fattening. For rapid fattening, a ration of corn in the morning and cottonseed meal in the evening were found to give very satisfactory results.

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BABY LORD (from a photograph). A Kansas-bred American Merino, whose fleece of 52 lbs., of 12 months and 16 days' growth, surpassed the world's record by $7\frac{1}{4}$ lbs. He sheared as a two-year-old, 37 $\frac{1}{4}$ lbs.; three-year-old, 44 $\frac{1}{4}$ lbs.; four-year-old, 52 lbs. Weight of ram, after shearing, 120 lbs.

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Twelfth Biennial Report.—Part I.

7

A COFFEY COUNTY FLOCK.

While some other states may excel in the mere matter of numbers, there are none whose flocks of fine wools are more favorably known among breeders, wool buyers and wool manufacturers for large yields and superior quality of product than those reared in Kansas. The wherefore of this is well suggested by the performance of such flocks as the one referred to in the preceding, and another, for example, many years maintained in Coffey county, famed far and wide for heavy fleeces of finest texture and innumerable winnings of prizes over world-defying competition.

The greater number of this flock are the broad-backed, round-ribbed and heavy-quartered large sheep, yielding a long staple, dense fleeces, and having extra well-covered heads, legs and bellies, necks, flanks, and tails, and generally smooth bodies, although a few wrinkly sheep are bred for show purposes and to keep up the highest standard of Merino fleece. These wrinkly sheep carry a very long staple, and are of fine form and strong constitution, the stock ram of that type weighing over 200 pounds, and ewes 100 to 150 pounds in fleece.

A ewe in this flock sheared an aggregate of 154½ pounds of wool in six fleeces, which is believed to be the heaviest yield ever obtained for six consecutive years, in two of which she yielded consecutively the two heaviest fleeces ever taken from a ewe, being 32½ and 31½ pounds, respectively. This wonderful ewe also raised a lamb in each of the six years, besides being a winner of first and sweepstakes prizes at numerous leading fairs, and was never defeated. Her weight at last shearing was 150 pounds. At later prominent shows another ewe of this flock won first and sweepstakes prizes, and there are many ewes, ranging from one year upwards, that shear anywhere from 20 to 25 pounds to the fleece. It seems to be a fact, also, that the heaviest eight fleeces, aggregating 301½ pounds, ever sheared from a ram in eight consecutive years were produced in this flock, making a yearly average of 37½ pounds. This ram proved to be a great sire, many of his get being first-prize winners at leading state fairs. While yet young and undeveloped he secured second in a flock of ram and three ewes at the Columbian Exposition, and as a yearling won first prize at each of the fairs at Lincoln, Topeka, and Kansas City; in 1894 he was first and sweepstakes, as well as at the head of first-prize flock, and sired most of the prize winners at the state fairs of Iowa, Minnesota, Wisconsin, and Illinois, and at St. Louis, and was first and sweepstakes winner at the Trans-Mississippi Exposition, at Omaha, in 1898, and also sired most of the winners there, besides yielding a fleece weighing 44 pounds. His sire weighed at three years of age 213 pounds, and sheared 38½ pounds, and has been sweepstakes winner at all the leading fairs from Buffalo west, twenty-two in all. Like the ewes, there are also numerous rams that yield exceptionally heavy fleeces, not to say anything of the unusually large size and weight of the sheep themselves.

Other premiums won at the Omaha exposition were 10 sweepstakes, including all the first sweepstakes; in classes, 18 firsts, 16 seconds, 7 thirds, 3 fourths, and 4 fifths, besides a special offered by the *American Sheep Breeder* for sweepstakes ram and sweepstakes ewe.

At a public shearing, six rams from this flock made an average of 31 pounds to the fleece; six ewes averaged 26½ pounds; six yearlings averaged 17 pounds, and the entire number sheared yielded an average of 19 pounds of wool each.

At a still later public shearing, a five-year-old ram sheared a twelve months' fleece of 42 pounds; five rams averaged a small fraction less than 35 pounds each; a three-year-old ewe sheared 27 pounds; a yearling ewe, weighing 112 pounds, with a staple of three and a half inches, produced 21 pounds; while the

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average of the entire twenty-five shorn that day was somewhat over 25 pounds of wool to each sheep.

In 1899 the sheep were sheared rather earlier than usual, and during the lambing season; but in spite of all this, the long, severe winter, and the cool, unfavorable weather prevailing at that time, they made a most excellent showing. For instance, four four-year-old ewes, weighing from 130 to 150 pounds, yielded fleeces of 29½, 23½, 22½ and 21½ pounds, respectively, while the fleeces of seventeen ewes, ranging from one to six years old, averaged 21½ pounds each. Another ewe, eight years old, weighing 150 pounds, staple three inches in length, sheared 22½ pounds. Two three-year-old rams, weighing 190 and 178 pounds, yielded fleeces of 33 and 32½ pounds; four two-year-old rams, weighing 133 to 175 pounds, produced fleeces of 32, 31½, 27½ and 26½ pounds; a yearling ram, weighing 108 pounds, clipped 19½ pounds, and an eight-year-old ram gave 35½ pounds.

At the Indiana state fair, a ram won first prize and headed the sweepstakes-winning flock of ram and six ewes. At the Columbian he was second-prize two-year-old, while two of the judges favored giving him first. Other honors won there were four first, eight second, four third, three fourth, besides fifth and sixth prizes on aged ewes; not to even mention any of the numerous premiums won at different state fairs.

In November, ram lambs dropped in March weighed 95 to 112 pounds, while yearling rams ranged from 128 to 160 pounds, and ewes from one to three years old weighed 120 to 140 pounds.

All the sheep mentioned in the foregoing, and their sires, were lambd and reared in Kansas, and the fleeces referred to were all shorn in public.

At present there are about 900 sheep in the flock, 530 of which are registered. They are pastured and allowed to run only on thick sod or grassed land, all the "roughness" being cut, hauled and fed in yards or under shelter, thereby lessening the possibility of there being sand or dirt in the fleece.

From this one flock rams have been furnished for some years, not only individuals but by the car-load, to flocks in states long recognized as leaders in wool-production, for improving the best as well as the more common flocks. Among the states receiving rams from this flock are Vermont, Michigan, Ohio, Pennsylvania, Illinois, Iowa, Wisconsin, Missouri, Texas, Oklahoma, New Mexico, California, Oregon, Montana, Wyoming, North Dakota, South Dakota, Colorado, Nebraska, and Indian territory.

These sheep are well wooled, having that combination of length and density which affords the maximum of scoured product; have size sufficient to make them profitable mutton-producers, and can be maintained in large flocks to better advantage than most, or, in fact, any of the so-called mutton breeds.

In selecting a foundation flock of sheep, soundness and vitality should be carefully considered. If sheep are thin and ragged looking, unless the cause of their condition is known beyond question, the flock should be passed by as an object of suspicion. Though sheep are generally healthy there are deep-seated diseases of sheep which are a mystery to even the most experienced shepherds. If such diseases (they may properly be called constitutional weakness) prevail in the flock the percentage of loss will make the business unprofitable. The sheep should have broad, level backs; clear, bright eyes; well expanded, clean nostrils; shapely, sound feet, and a clean skin. A flock well developed in these particulars, and "as like as peas" in style, will be a pleasurable and profitable part of the equipment of any farm.—*Nebraska Farmer.*

THE BREEDS OF SHEEP.

Compiled chiefly from "The Breeds of Live Stock," by J. H. Sanders; published by the Sanders Publishing Company, Chicago, Ill.; 475 pages.

Sheep are commonly classified according to the characteristics of fleece. Thus result the terms "fine wool," "long wool," "middle wool," so familiar in breeding and exhibition circles. Each of these grand divisions is subdivided into varieties, more commonly designated by their peculiar habitat, the name of the breeder most intimately identified with their development, etc. The typical animals of these divisions are so unlike in size and general appearance as to leave upon the mind of the novice an impression that they belong to an entirely different race; while between certain of their numerous subdivisions the resemblance is so striking as to require the critical eye of the expert for determining their proper designation.

MERINOS.

The origin of the fine-wool sheep—the Merino in its several varieties—so far antedates any known history as to preclude the possibility of enlightenment upon that point beyond what is furnished by conjecture. However interesting authentic information might be to the student of history, all that the practical breeder could realize from such information is a knowledge of the fact that the descendants of admirable fine-wool sheep have been carefully bred and reared in Spain, and pure-bred descendants from these in other countries for nearly or quite 2000 years; and from these Spanish flocks, attaining their highest excellence during the latter half of the eighteenth century, have sprung all the fine-wool varieties of sheep, however widely divergent their present types may seem. In 1765 a number of fine-wool sheep—supposed to be about 300—were taken from Spain into Saxony, where, owned and controlled by royal families, they assumed certain peculiarities of form and fleece materially differing from the parental stock. Some twenty years later (1786) the first importation of importance—some 300 in number—was made into France. These also became the objects of royal care, and, through a system of care and breeding, assumed a changed type and became the source of the French Merino.

Though a very few animals had been brought here previously, the shipment of Spanish Merinos to the United States really began in 1801-'02, between which date and the year 1812 large numbers, probably as many as 20,000, were landed, and scattered chiefly through the New England and Atlantic states. Conspicuous in these importations were David Humphreys, minister to Spain; Chancellor Livingston, minister to France, and William Jarvis, consul to Portugal. A large proportion of the Merino flocks of the United States, descendants of the importations from Spain, were subsequently interbred with the Saxon and French varieties, until many of the characteristics of these were engrafted upon American flocks. Through the exceptions to this rule, however, a sufficient number of flocks have been found tracing with reasonable proof of purity direct to their Spanish ancestry to warrant the claim that the present highest type of American Merino is the direct descendant, without admixture of other blood, of animals included in some of the several importations from Spain made prior to the year 1812. Full-grown rams from this breed will weigh from 120 to 180 pounds, and the ewes some forty pounds lighter. The wool is fine and dense, and is characterized by heavy folds in the skin.

The French Merinos have perhaps a larger carcass than the average Ameri-

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can, and the French breeders were the first to produce a Merino combing wool, from which have developed some of the most interesting and profitable branches of the wool manufacture, though they have subsequently found rivals among the breeders of fine-wool sheep in America, Germany, and Australia.

The Saxon Merinos have been but sparingly introduced into this country, the course of breeding in Saxony (fineness of fleece having been the one absorbing object sought) having rendered them too tender for our methods of sheep husbandry. Among such as have been brought over, however, it may be said that the sheep, as well as the fleece, have been materially modified; the fiber, though fine, is lengthened and the weight greatly increased, while the carcass is equally improved. This animal commends itself to breeders who aspire to the production of a superfine wool.

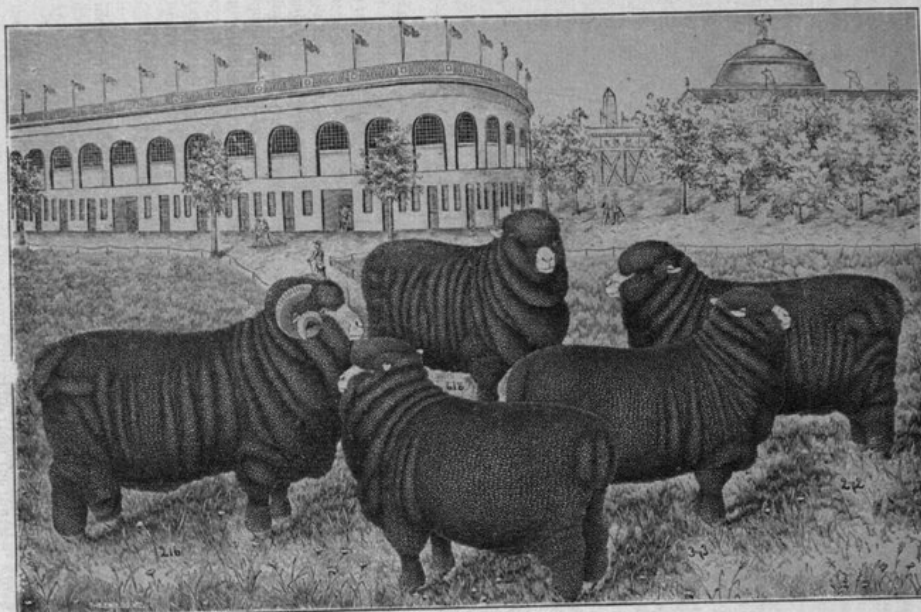
THE RAMBOUILLET MERINO.

Henry Stewart, in his "The Domestic Sheep," says: The so-called Rambouillet Merino has become exceedingly popular during a few years past. This is really the true French Merino, quite as much so deserving this name as our native-bred Merino deserves to be called, as a distinguishing name, the American Merino. For it has a longer history as a distinct family of the Spanish Merino than the American variety has, for it was first originated some years before the first importation of the Merino into the United States.

It was in 1786 that the French government, with the intention of founding a special race of sheep fitted for the climate and other conditions of the country—then having no distinct and really valuable breed of sheep within its borders—purchased, with the friendly help of the Spanish government, over 300 of the finest specimens of the sheep of that country. A suitable farm for the accommodation of this flock was procured at a place known as Rambouillet, not far from Paris, and once the residence of the kings of France. In the beautiful park near the otherwise unnoteworthy village of this name, this flock was cultivated with the highest skill by the government for the advantage of the citizens. No sheep were sold for many years, nor until—by selection and breeding—a distinctly new race, indeed a well-defined breed, was produced, differing in several important points from the original foundation stock.

It was increased in size, and even more than proportionately to this in the weight of the fleece, the wool of which was increased in length to fully three inches and even more, while the exquisite fineness and delicacy of fiber was in no way depreciated. The size of the sheep became double that of the original Spanish flock, full-grown ewes weighing up to 200 pounds, and the rams up to 300, live weight. This improved fleece became the valuable staple for the manufacture of those popular dress goods known as the French Merino, as well as for mixed fabrics of cotton warp and weft of this wool, and which were known as delaines. From this style of exceedingly popular fabric, which was beautifully printed in the French factories, this sheep has taken the sometime name of the Delaine Merino. Here it takes the name commonly of the place of its origin, as the Rambouillet breed, and truly it deserves this popular name in commemoration of the place of its origin, which will doubtless retain this name.

The author visited this flock in the year 1848, and was entertained in the most cordial manner by the superintendent, who prepared a saddle of the mutton, cooked especially in the American style, as a sample of the excellent quality of the meat. The sheep had been fed on the fine pastures of the park and on beets specially grown for the flocks. The meat was distinctly equal to the best of the English mutton of the choicest breed of that country, the Southdown, and showed that the skilful breeding and the really scientific feeding of the sheep



Group of Kansas American Merino World-Beaters at the Columbian Exposition.

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had transformed the tough, dry flesh of the original Spanish sheep into one of the best market meats in the world. This point is one to be well considered by our breeders of this sheep, for the future prosperity of the American shepherds is to come, not from the wool alone, but still more from the mutton, which is so rapidly coming into popular favor everywhere.

It is one of the good qualities of this sheep that the fleece is far more profitable for its weight than our native Merino. This is due to the absence of the excessive quantity of yolk and gum in the wool. The result of this of course is to increase the proportion of actual wool in the fleece.

COTSWOLDS.

As early and as fast as the increase of population, and the consequent enhanced value of lands, required a larger return from their holdings, English farmers wisely sought, and were remarkably successful in securing, such precocity and symmetry in their meat-producing animals as would make animal husbandry possible under the changed condition of their agriculture; and the sheep was early seized upon as offering the readiest solution of the perplexing problem. With a climate unsuited to the profitable production of fine wool, and facing a demand for a meat supply that would not be ignored, the mutton-production that is so conspicuous a feature of the sheep husbandry of the United Kingdom is by no means the result of accident. The English long-wool sheep, symmetrical in outlines, and in every detail of carcass so well calculated to give a profitable return for what it consumes, has found admirers in every country where economical meat and wool production has been attempted.

Among Americans the best known and most popular variety of long-wool sheep is the Cotswold. Its origin, like that of many other popular types of domestic animals, is enveloped in obscurity. The original Cotswold was a much coarser animal than its improved successor of the present day. It has been refined in its general anatomy; its carcass has been improved in outline and detail; its fleece has been greatly ameliorated; its precocity increased—in short, its development has kept pace with the rapid strides in other branches of live-stock development, until the typical Cotswold has become an admirable specimen of physical development. A well-poised head, with its characteristic foretop, made to appear small by reason of the massiveness of the body when in full fleece; back broad and straight; body well rounded over a deep flank and full brisket—the whole draped by a fleece of spotless white, averaging eight to ten inches in length, and weighing from eight to sixteen pounds—furnish a *tout ensemble* well calculated to “fill the eye” of the most fastidious connoisseur.

Just the kind and number of “out-crosses” that have been resorted to by those who have brought the Cotswold to its present standard will never be known. The Leicester has been credited with contributing in no small degree to this end, and it is probably entitled to such honor.

LEICESTERS.

Though for more than a hundred years a popular sheep in England, the Leicester has not secured a high place in the estimation of American breeders. An animal of conspicuous merits intensified by a century and a quarter of careful and intelligent breeding, it combines many excellences that would seem to commend it to the farmer who seeks to bring to a higher mutton-producing standard his flock of native or low-grade animals.

Youatt's description of the typical Leicester may be condensed as follows: The head hornless; ears thin, long, and directed backward; neck full and broad at base, gradually tapering to the head; breast full and broad; shoulders

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broad and round; arm fleshy, even down to the knee; bones of the leg small, standing wide apart, and comparatively bare of wool; quarters long and full; thighs wide and full; pelt thin and covered with a good quality of white wool, not as long as in some breeds, but finer.

This description applies to the improved Leicester, as distinguished from the Leicester type before its amelioration under the manipulation of Robert Bakewell, of England, who began about the middle of the last century that series of efforts at improving the proclivities for cheaper mutton-production of the sheep in his vicinity which has resulted in transmitting to the present one of its highest types of meat-yielding animals.

Mr. Bakewell was so reticent as to his system of improvement that little concerning it is positively known. Certainly he converted a "coarse-boned, slab-sided, slow-maturing animal into one symmetrical, precocious, and capable of being profitably employed on lands devoted to the production of improved crops. That he did not scruple to go outside the original Leicesters for fresh blood is highly probable, and liberal feeding, even to forcing, was his invariable rule. A knowledge of its history and the steps by which its improvement was secured clearly indicates the Leicester as the sheep for close farming. It will not thrive under conditions that are well suited for the profitable employment of some other types of long-wool sheep. It requires extra-nutritious food and shelter from extreme temperatures for the successful breeding of the Leicester, and to this fact is to be ascribed the lack of popularity of the breed with American farmers.

LINCOLNS.

This heaviest of the English sheep has found but few admirers in the United States, most of its desirable characteristics being presumably combined with those of the Cotswold and Leicester. The original type of the Lincoln, as it existed a century ago on the low, rich lands of the locality from which its name is derived, was that of a coarse, large sheep, presenting for the eyes of modern breeders few desirable features. The fleece was long and open, carrying more oil than some of its congeners. When highly fed it furnished good mutton, with less fat on the outside and more internally than most of its rivals for popular favor. The coarse frames of the Lincolns, with their comparatively slow-maturing propensity, doubtless early suggested an employment of the better-outlined and more precocious Leicesters, then developing under the supervision of Robert Bakewell; and thus the "Bakewell" blood, as well as the stimulus of success of Bakewell's labors, undoubtedly contributed to advance the standard of mutton-production throughout England more generally than some breeders of the present will readily admit. Though long inbred, and probably as purely as its rival varieties, it was not until within the past twenty years that the Lincoln has been recognized as a distinct variety by the management of stock shows.

Quite remarkable yields of flesh and fleece have been secured, in this respect placing this sheep well up on the list of English favorites. Requiring for its successful employment the richest pasturage and "high feed" under all circumstances, there has not been found the same encouragement for its distribution that has contributed to popularize many other varieties. From 1835 to the present time occasional importations have been made into the United States, though the number of animals, in any instance, has never been large.

OXFORDS.

The Oxford, recognized as a distinct variety for little more than twenty years, is less known in this country than either of its long-wool contemporaries of English flocks. It was originally produced by the cross of a Cotswold ram with Hamp-

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shire (and, it is said, occasionally Southdown) ewes, and the subsequent coupling of the progeny from these. These animals, for some years classed as cross-bred sheep, under the designation of Down-Cotswold, were given a definite title by a meeting of breeders in 1857, and have since been known as Oxfordshire Downs. As an analysis of their breeding will disclose, and as indicated by the appearance of the animals, they are more properly classified with the long-wool than the Down breeds. In the Hampshire Down, the acknowledged foundation on one side of the Oxford, there was unquestionably a predominance of long-wool blood. The Oxford has many characteristics commending it to the favor of American breeders. It has size of carcass and a prolificacy that insures lambs for an early market. It has a length of fleece that insures for the wool clip the attention of buyers who require long wool. The body is well rounded, legs short, and in its native locality evinces a hardiness and adaptation for profitable feeding unsurpassed by any of the English types. The weight of full-grown ewes is 80 to 100 pounds, and of rams, in working order, 160 to 200 pounds. The mutton is of superior quality and commands a high price.

SOUTHDOWNS.

The middle-wool breed, in its several varieties, undoubtedly includes the most generally popular sheep. Bred and fed through many years with especial reference to improvement in quantity and flavor of flesh, the best types of middle-wool sheep stand to-day very near the ideal of a perfect meat-producing animal. To the flocks of "the Downs," in their varied types, the epicurean Englishman looks for the savory flesh that has already lessened the demand for his traditional roast beef. The black foot, invariably left when dressing the carcass, insures for the "quarter" for which it is the insignia of merit a ready sale at a price "the top of the market." The middle-wool sheep are not heavy shearers; their wool is coarse, inclined to be dry, and, though often of sufficient length to be easily combed, is not classed as combing wool.

The Southdown stands confessedly at the head of the several varieties of middle-wool sheep. While some might question its priority in the matter of individual merit, none will gainsay the claim that to the Southdown most other types of middle wools are indebted for their "best blood." On the chalky hills of Sussex and adjoining shires, through several centuries there has existed a variety of sheep taking its name from the locality—the sloping lands to the south—Southdowns. These animals have long been conspicuous for the quality of their mutton as well as their peculiar adaptability to thrive on a comparatively scanty herbage. They were probably horned in their earlier history, though this tendency has been overcome by breeding, and even the smallest horns on the male animal of to-day are not tolerated.

The description of a typical Southdown, as given by Mr. Ellman, the most noted improver of the breed, may be condensed as follows: Head small and hornless; face speckled or gray; space between the nose and the eyes narrow; ears tolerably wide and covered with wool, and the forehead also; and the whole space between the ears well protected by it; breast wide, deep, and projecting forward between the fore legs; ribs coming out horizontally from the spine and extending far backward, and the last rib projecting more than others; the ribs generally presenting a circular form like a barrel; the belly as straight as the back; legs neither long nor short; the fore legs straight from the breast to the foot, and standing far apart both before and behind; the bones fine and of a speckled or dark color; the belly well defended with wool, and the wool coming down before and behind to the knee and to the hock; the wool short, close, curled, and fine, and free from spiry projecting fibers.

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The Southdowns are not conspicuous shearers. Their fleeces are dry, coarse, and light, in comparison with the weight of carcass; but the fiber is strong, and insures good service in the fabrics for which it is adapted. The prominent characteristics of the Southdowns—vigor, precocity, fecundity, and propensity to develop well-marbled flesh at the most desirable points—especially commend them for crosses where mutton-production is chiefly sought.

DORSETS.

This English sheep in its native country goes by the name or class of the Somerset and Dorset Horned breed. Of late years, says Henry Stewart, in "The Domestic Sheep," this breed has become exceedingly popular on this continent, mostly, however, for its special fecundity and early-breeding habit. Indeed, it is so prolific that two lambing seasons in the year are possible under the right management. It is a white-faced sheep, with a close, short fleece, used for flannel goods and such clothing fabrics as require such a material. It is thus a useful sheep for its wool alone, of which the fleece will weigh four or five pounds. It is a native of the southern part of England, in which the mild, delicious climate permits tender plants such as the fuchsia, the heliotrope and the geranium to bloom the whole year round, covering the picturesque cottages with their brilliant bloom, while the northern parts of the country are covered with snow.

It is solidly built, having a broad back and short legs; it has a tuft of wool on its forehead, and ewes are horned as well as the rams. It is one of the most ancient of the English breeds, and has been preserved in its original purity from a remote period. Its breeders claim that it was existing before the Roman invasion, more than 2000 years ago. But of late it has been carefully improved by the selection of the best rams and the diligent search for the most prolific ewes, of whom it is not at all rare that the breeder may obtain four or even five lambs in the year. It is larger than the Southdown, and although most esteemed for its prolificacy, yet its mutton is above the average of its class of short-wooled sheep. The wethers, under good feeding, reach a dressed weight of twenty pounds the quarter; the forequarters, however, are apt to be light. They are a hardy sheep, and since their introduction here have proved to be well suited to our cold winters and warm summers. They have also proved to be well adapted to the ranges, being excellent travelers and rustlers.

Their most prominent characteristic, however, is their unrivaled fecundity. Taking the ram in May, they rear lambs ready for the market in the holidays, and, breeding again soon after dropping the lamb, bring another or other lambs in March or April, and often bring twins and sometimes triplets, thus increasing very fast, besides making a good profit for the lambs sold. It is the usual custom to breed the ewes to a Southdown or Hampshire ram, by which the market lamb has a black face, which is generally preferred by the butchers. No other breed of sheep is so prolific as this under skilful management.

HAMPSHIRE DOWNS.

The breeders of Hampshire and Wiltshire, in England, among whom have long been cultivated a large-sized, hardy sheep, white faced and with horns, early in the present century secured and used Southdown rams, and by subsequent in-breeding and occasional use of other blood succeeded in establishing a variety now recognized as Hampshire Downs, with the prominent Down characteristics—dark face and legs, hornless heads—thoroughly fixed.

Referring to the origin of these sheep, Mr. Spooner, in 1859, said: If we were asked, What original blood predominated in the Hampshire sheep? we would unquestionably say the Southdown; but if the further question were put, Is the

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present breed derived from the Southdown and the original Hampshire alone? we should express a doubt as to such a conclusion, as there is good reason to consider that some improved Cotswold blood has been infused. . . . Although after dipping once or twice into this breed they then ceased to do so, yet they have continued breeding from the descendants of the cross.

As would be inferred from its foundation, the Hampshire is larger than the Southdown, and bears a fleece—though classed as a middle wool—exceeding the latter in length, but not so fine. The mutton is good. The breed has not been largely imported into the United States, though possessing many characteristics that seem to commend it to breeders, so ready to see an advantage in every type of animal promising flock advancement. The probable reason is to be found in the fact of its close resemblance to the Southdown (which it excels only in size), which has been found to so admirably fill the requirements of American flock managers in producing a first-class mutton sheep.

SHROPSHIRE DOWNS.

Though but recently recognized as a distinct variety, none of the English types have advanced more rapidly into public notice and favor than the Shropshires. Their size, rotundity and general carriage commend them to the notice of the casual observer, while they "fill the eye" of the critical judge and experienced breeder so completely as to make them favorites wherever shown.

The history of the Shropshires, when traced back toward their origin, becomes enveloped in a maze of uncertainty. While all authorities agree that the foundation was a so-called native sheep of Shropshire, and perhaps Staffordshire, described as black or brown, or spotted faced—and conspicuous for the flavor of their mutton—there is not the same agreement as to the crosses and lines of breeding resorted to. It seems certain, however, that the Southdown and Leicester were both heavily drawn upon, and the merits thus secured afterward intensified by interbreeding from selected animals. The Shropshire of to-day retains the black face and legs of its ancestors, as also the well-flavored mutton, while in respect to size, maturity and fleece-bearing it has been as thoroughly modernized as any of the meat-producing animals of the present century. The first importation of any account here was made about forty years ago. Both here and in England these sheep have taken many prizes in the mutton classes. The face is dark grayish or brown, the wool going well down to the eyes, and with no trace of horns; the legs are darker than the face, almost black; head longer than in the Southdown, the ears larger, while the wool is close set and longer in staple.

According to the description of a typical Shropshire, adopted in connection with the scale of points by the American Shropshire Association, they are deep and large in breast and through the heart; back wide, straight, and well covered with lean meat and muscle; wide and full in thigh; deep in flank; skin thick but soft, and of a pink color; prominent, brilliant eyes and healthful countenance. In fair condition, when fully matured, rams should weigh not less than 225 pounds, and ewes not less than 175 pounds. They have a good carriage; head well up; elastic movement, showing great symmetry of form, and uniformity of character throughout. The body is well proportioned; medium bones, great scale and length, well finished hind quarters, thick back and loins, twists deep and full, standing with legs well placed outside. Breast wide, and extending well forward. Head short and broad; wide between ears and eyes, short from top of head to tip of nose. Ears short and of medium size. Head should be well covered with wool to a point even with the eyes, without any appearance of horns. The neck is of medium length, good bone and muscular development, and, especially with the rams, heavier toward the shoulders, well set, high up, and rising

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from that point to the back of the head. Legs are broad, short, straight, well set apart, well shaped, and well woolled to the knees.

The body is well covered with a fleece of even length and quality. The wool is medium, such as is known in markets as "medium delaine," and half combing, strong, fine, lustrous fiber, without tendency to mat or felt together, and at one year's growth not less than three and one-half inches in length.

THE CHEVIOT.

These popular sheep, taking name from the hills bordering on Scotland and England, are described by Spooner as a hardy race, thriving well on poor keep. They have white faces, without horns; ears large, with much space between the ears and eyes; carcass long, back straight, shoulders rather light, ribs circular, and quarters good; legs small in the bone and covered with wool. As will be inferred from this description, the Cheviot is admirably adapted to the mountainous region from which it derives its name. There is no doubt that the Cheviot of to-day has been considerably modified by crossing with the more improved types, notably the Lincoln and Leicester, to which it is indebted for the white face now so prevalent, as the earlier descriptions give the prevailing color of the face as black. The wool of the Cheviot is always in demand, being especially adapted to certain manufactures, notably the line of goods bearing its name. The fleeces average in weight four to six pounds.

Prof. C. S. Plumb, of the Indiana Experiment Station, says: There are several things to commend the Cheviot to the sheep-breeders of this country. It is a sheep that produces both a fleece and mutton of superior quality. Cheviot mutton has for over a century been regarded as one of the very best in both Scotland and England. In 1897, in a trip through those countries, I asked numerous breeders of other breeds how they valued Cheviot mutton, and in every instance and without hesitation they commended it as very superior. One of the best known Shropshire breeders of England gave high testimonial to Cheviot mutton.

The fleece is of the middle class and shears about eight or nine pounds on an average. The ram, however, will grow a fleece of twelve or fifteen pounds' weight. The fleece covers the body in good shape, excepting that the face is bald, the wool meeting the hair at the ears and cheeks in a decided ruffle, while the legs are bare below the knees and hocks. Some of the handsomest middle wools I have seen came from an Indiana Cheviot flock, and this topped the market that year for middle wool in the region where grown.

The Cheviot is a pure white breed, excepting nose and nostrils, which must be black. Rams should weigh, in good flesh, about 200 or more pounds, and ewes 150. This is one of the most stylish breeds of sheep in the world, having a carriage of great attractiveness. The head is kept very erect, the ears are usually quite animated, eyes are rather prominent and bright, and life and activity are striking features. The males in particular are also characterized by a Roman nose, which gives an uncommon appearance to a bunch of Cheviots that is not without its effect. The breed is hardy and of strong constitution; otherwise it would have long ago fallen by the wayside. This sheep is a good forager and will secure his living where others might fail. While some other breeds have thriven under quite a range of conditions, the Cheviot has shown an unusual adaptability to variation, for not only has he been shown to be a most superior mountain breed, but also is very successfully grown on the lower lands of the West. I know of flocks in Indiana that have been kept with the greatest success for years, and more beautiful flocks I have never seen.

FAVORABLE PROSPECTS FOR SHEEP-RAISERS.

The prospects were never brighter for the sheep industry than at this time. The inquiry for sheep is not confined to any one locality, but it is general throughout the whole United States, says the editor of the *Live-Stock Indicator*.

In the central West the demand is for ewes for starting breeding flocks. There are many reasons for this state of affairs, but the chief one is the plentifulness of feed and the high price of other kinds of stock to eat it. When feed is plentiful there is always a demand for live stock, and when cattle are above the profit line those desiring something will naturally look for something else to feed.

We are not unmindful of the fact, however, that the good prices prevailing for wool and mutton have something to do with the matter, for it has. When wool is a good price there is a tendency to increase the flocks, and when prices are ruling low sheep are naturally slow. Moreover, to assist in the further depression at such times, so many sheep are usually thrown on the market as to break it. The present demand is mainly among farmers who have not hitherto kept sheep, and who know but little about them other than they feel that they can make them profitable if they will give them a trial, and this they are willing to do if they can obtain them at reasonable prices.

There is just one thing we desire to have our readers who wish to buy sheep know, and that is that they should go into the business carefully. We know the desire of so many farmers of the West is to go into anything in a large way or not at all. In the sheep business there has been many a failure on this very account. The man who has had many years' experience with sheep can buy of them largely and hope to succeed, but the farmer who has never handled sheep should venture



PREMIER.

The 500-guinea grand champion ram in medium-wool Merino class at the New South Wales Sheep-breeders' Association, at Sydney, Australia, in 1899. Descended from Vermont stock.