

Reports of the Kansas State Board of Agriculture

Section 107, Pages 3181 - 3210

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.

Creator: Kansas State Board of Agriculture

Date: Bulk 1872-1984

Callnumber: SP 630.6 K13

KSHS Identifier: DaRT ID: 210899

Item Identifier: 210899

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RAINFALL.

The rainfall in all parts of Kansas is ample, as the observations taken by the Kansas State Board of Agriculture fully demonstrate. The Board have divided the State into three rainfall belts, for the purpose of observation, as follows: The territory east of Fort Riley first, or eastern belt; the territory between Fort Riley and the western boundary of Ellis county, second, or middle belt; all the State west of Ellis county, third, or western belt. The following was the amount of rainfall in the several belts from January to the first of November, 1875:

First, or Eastern belt	28.46 inches.
Second, or Middle belt	22.34 inches.
Third, or Western belt	21.19 inches.

The same authority states that the mean rainfall for 1874, for the whole State, was 26.72 inches. The mean for spring was 7.72 inches; for summer, 9.53 inches; for autumn, 6.01 inches; for winter, 3.44 inches. That there have been exceptions to this general and abundant distribution of rainfall is not to be denied. But these exceptions are not more frequent than in the older agricultural States of the Union, and, with the notable exception of 1860, have not seriously affected the general prosperity. The total rainfall for the last six years for the months of April, May, June and July, the months in which the staple crops are produced, may be tabulated thus:

1870	9.55 inches.	1873	15.47 inches.
1871	16.42 inches.	1874	8.66 inches.
1872	18.47 inches.	1875	18.50 inches.

In the growth of fruit, the State of Kansas is not excelled by any locality in the United States. Wherever Kansas fruit has come into fair competition with that of other States, it has never suffered in comparison, but more than once won the first place in the list of prizes.

DOMESTIC ANIMALS.

The special adaptability of Kansas to pastoral and cattle-producing purposes was claimed early in her settlement, and has been abundantly confirmed. The native grasses are unexceptionally nutritious. The winters are mild and dry. Less care is required for stock than in any other part of the country. The time is not far distant when our beef, pork and wool will be found in all the markets of the world. The increase of cattle, swine, sheep, horses and mules is shown by the following figures:

Years.	Cattle.	Swine.	Sheep.	Horses.	Mules.	Years.	Cattle.	Swine.	Sheep.	Horses.	Mules.
1860	93,465	138,224	17,569	20,344	1,496	1875	703,323	292,658	106,224	207,376	24,964
1865	202,303	95,424	82,662	32,469	2,490	1876	700,624	330,355	143,962	214,811	26,421
1870	373,967	206,557	109,088	117,786	11,786						

The total value of cattle is \$14,786,990; of swine, \$2,077,871; of sheep, \$247,501; of horses, \$9,034,775; and of mules, \$1,622,660: aggregate value, \$27,775,797. The raising of stock will always be easy and profitable in Kansas, and the capital and land employed in this branch of agriculture will increase in rapid progression with the development of the State.

TRANSPORTATION.

An area of territory with such vast resources, attractive climate, and rapid development and production, necessarily requires an extensive system of transportation. The founders of the commonwealth were equal to the work required. They planned a scheme of railroads which traverse all our great valleys, open up the rich agricultural regions, connect the chief trunk lines of the State with the rich mineral regions of the West, and with the Gulf of Mexico on the south—a distance of only 600 miles. The first railroad commenced in Kansas was the Kansas Pacific, and the last line completed was the Atchison, Topeka & Santa Fé—both now extending to the mountains, and placing the State in communication with the immense mining regions of Colorado, New Mexico and Arizona. In view of the close proximity of Kansas to Colorado, the first an agricultural and the last a mineral-producing State; in view of that community of interest which will forever unite the two commonwealths in commercial and fraternal unity; in view of the glorious future which awaits them in the grand march of American civilization, and in the elevation and happiness of the human race, and as they are indissolubly connected by iron bands, it is fitting indeed that they have clasped hands on this centennial year, and are united in the exhibition of their material prosperity and progress. The Missouri, Kansas & Texas Railroad connects Kansas and Colorado with the Gulf on the south. Altogether, Kansas has 2,215 miles of railroad at the commencement of the centennial year. Thirty States have a less number of miles each than Kansas, and only the States of New York, Pennsylvania, Ohio, Indiana, Illinois, Iowa and Missouri have a greater number of miles.

NATIVITIES.

The people of Kansas are thoroughly cosmopolitan in character. Her first settlers were mainly from the Eastern and Middle States. But in the decade from 1860 to 1870, in which the gain in population was 239.90 per cent., and since 1870, immigration into Kansas has been from all parts of the United States and Europe. According to the United States census of 1870, the foreign-born population of Kansas numbered 48,392. Of these, 12,774 were born in Germany, 10,940 in Ireland, 6,150 in England, 1,531

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in Scotland, 1,021 in Wales, 1,274 in France, 503 in Denmark, 300 in Holland, 38 in Hungary, 55 in Italy, 103 in Luxembourg, 588 in Norway, 169 in Poland, and 56 in Russia. But the increase of our foreign-born population has been large during the last six years. Several thousand Mennonites from Russia have established numerous settlements in the southwestern and western parts of the State, and although settling upon the raw, primeval prairie, have already erected thriving and productive communities.

UNSOLD LANDS.

The liberal public-land policy of the General Government has done much to hasten the settlement of Kansas. Under the homestead, preemption, and timber-culture laws, the public lands have been rapidly occupied and developed. The lands granted to railroads and for the benefit of public institutions are also receiving yearly a large number of new settlers. On the 1st of October, 1876, the Atchison, Topeka & Santa Fé Railroad Company had, in round numbers, 2,500,000 acres of land yet unsold; the Kansas Pacific Railway Company had 2,000,000 acres; the Missouri, Kansas & Texas Railroad Company had 450,000 acres; the Missouri River, Fort Scott & Gulf Railroad Company had 375,000 acres; and the Central Branch Railroad Company had 240,000 acres; the State Agricultural College, 35,000 acres; and the State University, 45,000 acres. The great body of these lands are adjacent to railroad lines, and are in the market at low prices, the policy of the railroad companies being to build up a local business along the lines of their roads at the same time they dispose of their lands, and to that end to make the payments as easy to the purchaser as possible, and to render it practicable for him to pay for his home from the products of the soil. A policy of this sort identifies the interest of the railroad corporations with the State at large, and coöperates largely in producing that very prosperity which alone can make such great and costly enterprises ultimately profitable to those engaged in them.

FUEL—WOOD.

The question of fuel is an important one in a prairie State. Kansas is abundantly supplied with both wood and coal. All the streams are skirted with belts of timber of good quality. On the high prairies the growth is rapid, and nearly all the varieties of forest trees can be grown to advantage.

COAL.

The coal measures, as far as discovered, extend into seventeen counties, and embrace about nine thousand square miles. From partial geological explorations, it has been discovered that the principal coal seam exists, with numerous breaks, from the north line of the State, in Washington and Republic counties, southwesterly to the Arkansas valley. It varies in thickness from ten to forty inches. The coal seams from the middle carboniferous or true coal measures produce bituminous coal not essentially different from the shaft coal of Illinois or western Pennsylvania. Though this quality varies somewhat in different localities on the same vein, it is all a fair marketable quality of coal. The three seams most extensively worked are known as the Osage, Cherokee and Fort Scott. The Osage coal field is in Osage county, and is, as far as explorations have determined, about 500 square miles in extent. Future explorations may find it much more extensive. It varies from fifteen to thirty inches, being usually thicker in the northern part of the area. It is, for the most part, mined by shafts sunk to a depth of twenty or thirty feet. The Osage shafts are mostly along the line of the railroad, and the coal is delivered directly on the cars. The cost at the mine averages about \$3 per ton. The Fort Scott coal appears at and near the surface in various places in Bourbon and Linn counties. It is famous throughout the West for special excellences. Some of their mines yield a brown coal, the color of which is owing to a minute quantity of oxide of iron, the presence of which is not in sufficient quantities to affect the value of the coal. This coal finds a large market not only in Kansas, but in the adjacent States of Missouri and Iowa. The thickest and best seam of coal thus far discovered in this State is the Cherokee bed, found in Cherokee, Crawford and Labette counties. It extends from the Indian Territory, entering near Chetopa, and runs across the western and northern parts of Cherokee and the northeastern part of Crawford, and enters Missouri; and trending to the northeast, appears to be identified with the seam which is being mined so successfully at Booneville, in the latter State. This measure is from fifteen to fifty-four inches in thickness, and is mostly free from pyrites or other impurities, with seldom any shale between the layers. At Leavenworth a new vein of coal thirty inches thick is reached at a depth of 710 feet, and is extensively worked.

SALT.

The salt deposits in many portions of the State are very extensive, and will eventually be the basis of a thriving and valuable industry. Salt is found in crystalized forms, in springs and marshes, and in solution in water veins which have been discovered for the most part while boring for coal. Large beds of crystalized salt exist in the southwestern portion of the State, south of the great bend of the Arkansas river. An exploration of these beds has shown them to be from six twenty-eight inches in depth, in compact form. The great salt fields of the State are in the northwestern part, and appear at various points in a tract of country thirty-five miles wide and eighty long, crossing the Republican, Solomon and Saline valleys, most frequently appearing in salt marshes of considerable extent. A description of a salt marsh, taken from Prof. Mudge's report on the geology of Kansas, may be interesting

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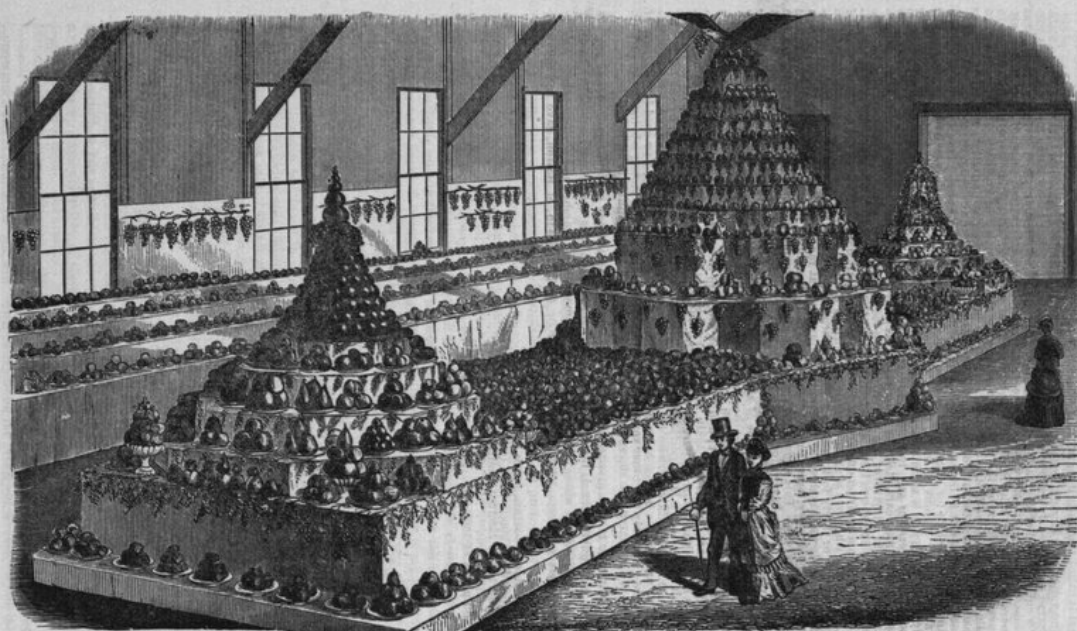
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as suggestive of the immense profit in the ultimate utilization of this vast deposit. It is a description of what is called the Tuthill marsh, and is as follows:

"The valley here is wide, sometimes rising to the high prairies so common in that part of the State. The marsh covers nearly one thousand acres, more or less impregnated with saline matter. About one-third is entirely void of vegetation, owing to the briny nature of the soil. It is perfectly level, and at the time of our first visit was as white as a wintry snow field with a crust of crystalized salt. The marsh is of recent alluvial formation, composed of sand and loam, from twenty to thirty feet in thickness, brought down by the wash from the high prairies, which rise gradually on three sides. In this alluvium, at various depths, are found the bones of buffalo, deer and antelope, which have probably made this a resort for salt for long ages past, as they are seen to do at the present time. The incrustation of salt is frequently three-eighths of an inch in thickness. This is scraped up, and used in its natural state for salting cattle, etc.; but for domestic purposes it is melted, by being mixed with about twenty gallons of water to a bushel of salt, when the mechanical impurities, sand, etc., readily settle. The salt is again returned to a solid state by evaporation. The marsh after scraping, produces a second crop of salt, in from five to seven days of dry weather, and after repeated scrapings during the past three years, yields as full a supply as at first. The brine exists in nearly equal quantities and strength in all parts of the marsh, and can be obtained by boring a few feet or digging pits. No definite salt spring shows itself at the surface; but the supply must come from numerous points below, though originating from one great central reservoir or salt bed. According to the observations of Mr. J. G. Tuthill, who lives near, and has made borings in more than one hundred different places, to depths of twenty or thirty feet, there is a very uniform supply and strength of brine. The water preserved for analysis was obtained by me from a boring made at random. It was found at four feet from the surface. The density, by salometer, was 24 deg., (6.16 Baume, or specific gravity 1.0421), with the thermometer at 60 deg. This should give a bushel of salt for one hundred and thirty gallons of the water (not counting the impurities), which is three times the strength of the ocean. It was taken at our second visit, immediately after a heavy rain, which must have diluted the brine. The marsh receives the drainage of the valley slope of about five miles from the north, and two miles in width, consequently the brine, as it comes from the source below, must be constantly weakened by so large a body of surface water. That from the north comes down in a stream ten or fifteen feet wide, and about a foot in depth, in a sluggish current; and when near a clump of trees at the north end of the marsh, suddenly disappears, and is not again seen till it reappears below the opposite part of the valley, toward the Republican river. A part of this stream, in its subterranean course, may pass unmingled with the salt water; but a large portion must percolate into the loose soil occupied by the brine, and help to dilute what would otherwise be a very strong solution. Every indication tends to the conclusion that, by an artesian boring, brine can be obtained equal to the strongest now used in any part of United States. Scarcely any other spring west of the Mississippi gives so strong a brine at the surface. The extent of the marsh also shows that the main source of the salt cannot lie far below."

Twelve salt springs were granted to the State by Congress in the act of admission. These springs are located in Republic, Cloud, Lincoln, and Mitchell counties, and are exceedingly valuable. In other portions of the State salt water has been found, and numerous salt marshes and springs exist. An analysis of Kansas salt, from Miami county, made by Dr. C. T. Jackson, of Boston, gave the following result:

Chloride of sodium, (pure salt)	97.947
Chloride of magnesium, (muriate of magnesia)482
Chloride of calcium, (muriate of lime)706
Oxide of iron500
Sulphate of soda365
	100.000



KANSAS FRUIT DISPLAY AT TOPEKA, KANSAS, 1872.

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KANSAS FRUIT.

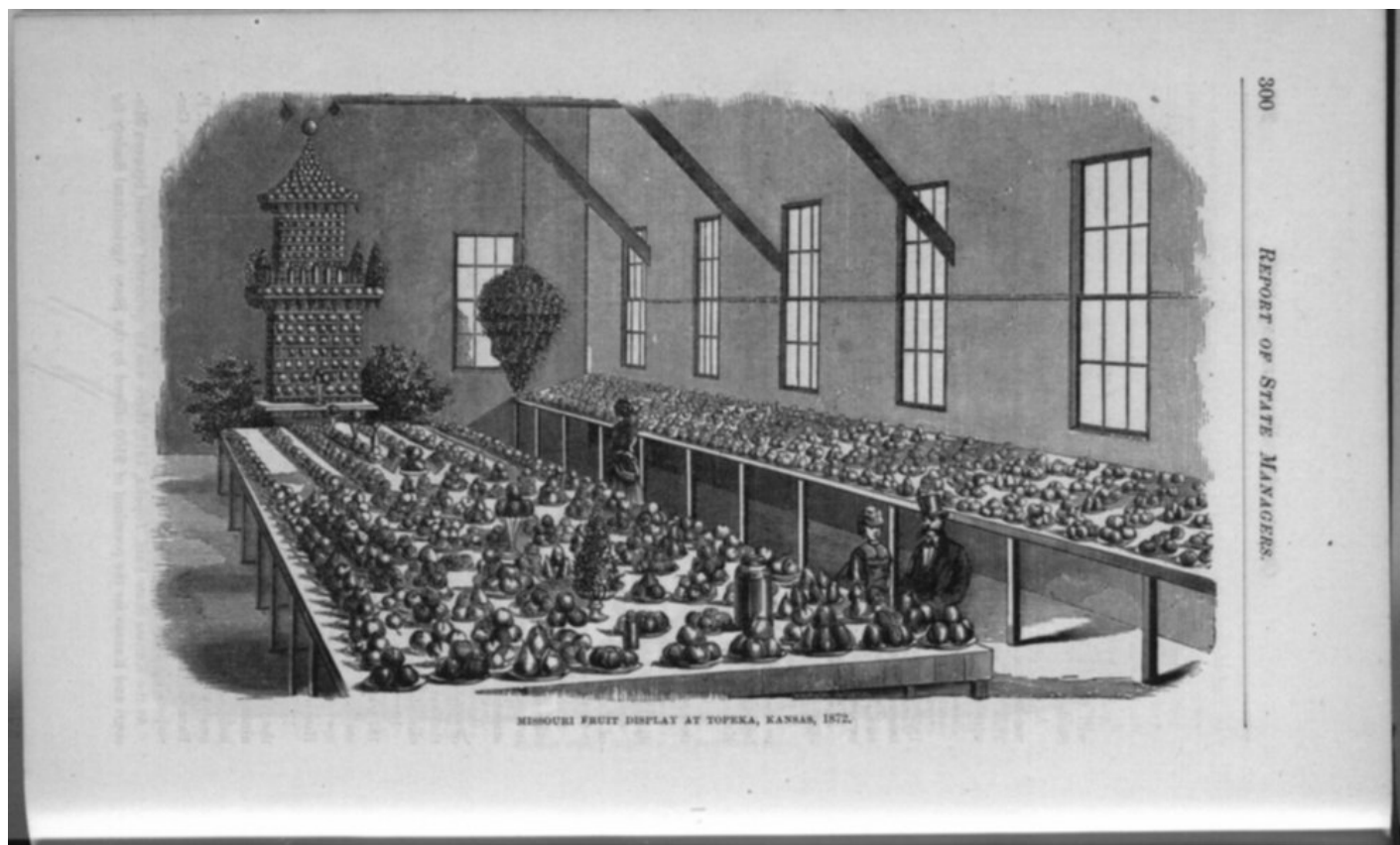
A succinct statement of repeated triumphs of Kansas fruits at competitive exhibitions will furnish all that is necessary to rank this young State first among fruit-growing States.

As early as 1866 an exhibit of over fifty varieties of apples, and some pears and grapes, was made at the Illinois State Fair at Quincy, and received highly complimentary report. This had been followed by an appropriation to the State Horticultural Society of \$500, with which to exhibit in Philadelphia in 1869.

We give the awards of this and other exhibits in their order:

1. At the fair of the National Pomological Society held in Philadelphia Sept. 15-16, 1869, under the auspices of the Pennsylvania State Horticultural Society, an award was made to Kansas by the latter "for a collection of fruit unsurpassed for size, perfection and flavor." In addition to the certificate, the great gold medal of the Society was also awarded.
 2. June 8, 1870, the New Hampshire Agricultural Society granted a diploma for Kansas fruit.
 3. September 4, 1871, the American Pomological Society, at Richmond, Va., awarded us the highest premium "for the largest and best display of fruit, unequaled in size, beauty and excellence during the session." A diploma for this exhibit was issued to Kansas by the Virginia Horticultural and Pomological Society, also.
 4. In October, 1871, the St. Louis Fair gave to Kansas a diploma "for the best collection of apples."
 5. In the same month the American Institute, New York, gave a diploma "for a splendid exhibition of cereals and apples."
 6. The New England Fair, at Lowell, Mass., awarded a silver medal for best display of fruit.
 7. Same year, the Pennsylvania Horticultural Society awarded silver medal for fruit.
 8. November 20, 1872, a diploma by the American Institute, New York, "for ten varieties of pears. These pears are of unusual size and beauty, showing that many counties in this State are well adapted to pear culture, and invite by their splendid appearance the attention of fruit growers."
 9. November 10, 1872, the American Institute also gave a diploma "for 175 varieties of apples. These apples far exceed in size and beauty any on exhibition, and prove conclusively that this State is to take a high rank as a fruit-growing State, and that the soil and climate of the counties where these apples grew must be well adapted for fruit growing."
 10. The New Jersey State Agricultural Society, at its fair held at Waverley, October, 1873, awarded a silver medal bearing the following inscription: "Awarded to the Kansas State Horticultural Society, for a display of fruits." Also, a diploma, with the following: "Awarded by the New Jersey State Agricultural Society to the Kansas State Horticultural Society, for an assortment of fruits."
 11. The American Institute, the same year, gave a diploma as follows: "Awarded by the American Institute to the Kansas State Horticultural Society, for one hundred and ninety varieties of apples." We make the following extract from the report of the judges: "They are the largest and handsomest apples exhibited at the Forty-Second Annual Fair, and we have never seen a finer collection." This was signed by F. A. P. Barnard, President; Ira E. Gavitt, Recording Secretary, and Samuel D. Tillman, Corresponding Secretary.
- At the Kansas State Fair, Topeka, 1872, there was an animated contest between Missouri and Kansas for the premium of \$100 offered by the State Agricultural Society for

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the "greatest and best display of fruit by any State, county, township, society or individual." In this contest, State pride was the chief incentive that enlisted the leading fruit growers of both States to make herculean efforts to win the prize. We give extracts from the report of Prof. S. T. Kelsey, the superintendent of the fruit department, extracts from the awarding committee, of which J. S. McCreary, of Canton, Ill., was chairman, together with cuts of each display. These cuts are reproduced from the Agricultural Report of 1872, to show that Kansas, when only eleven years old, was able to compete successfully with a populous and prosperous State, forty-one years her senior:

[Extracts from Report of Superintendent.]

TO THE KANSAS STATE BOARD OF AGRICULTURE: I have the honor to transmit the following report of the tree and fruit exhibition of the Horticultural Department of the State Fair, held at Topeka, September 16th-20th, 1872. I also transmit herewith the reports of committees.

* * * Of trees and plants there were thirteen entries, and the display was very creditable to the exhibitors. The trees all showed a clean, thrifty, healthy growth; two-year apples being six to seven feet in height, with a strong stem and well-formed head. Peach, pear, plum, cherry and quince all showed a like thrifty growth—the fine collections of evergreen and deciduous ornamental trees and shrubs showing that our soil and climate can grow nearly all of the varieties as well as they can be grown East.

For the greatest and best display of fruits by any State, county, township, society, or individual, there were four entries. Two of these were withdrawn, leaving the contest to the State Horticultural Societies of Missouri and Kansas.

The Missouri Society was allotted the west wing of the Floral Hall, and the Kansas Society the east wing. The large amount of space in these two wings was packed with the choicest of apples, pears, grapes and other fruits. The entire tables were arranged in gorgeous pyramids of fruit, which also decorated the walls and overhung the passage-way. The different sizes and shades of color were so arranged as to show to the best advantage, making altogether the largest and grandest display of fruits ever held in the West, and perhaps in America. Much credit is due the Societies, as well as the soil and climate of the two competing States, for this grand display.

I transmit herewith the report of the awarding committee, for information respecting the merits of the fruit and award of premium.

For individual collections of fruit, there were two hundred and forty-one entries; the fruit occupying the entire center and east side of the north wing of Floral Hall. The display was very fine, and the specimens large, fair, and remarkably free from disease and marks of insect enemies. S. T. KELSEY.

[Extracts from Report of Committee.]

TO THE BOARD OF AGRICULTURE OF THE STATE OF KANSAS—Gentlemen: Your committee, appointed and instructed to determine merit and award the premium offered by your Board for the "greatest and best display of fruit by any State, county, township, society or individual," beg leave to submit the following report:

We found a display of fruit beyond all precedent in the history of exhibitions in the West. Indeed, we do not believe that in number of varieties, quality of fruit, and elaboration and taste in arrangement, it has ever been excelled by any collection in the United States.

In the Kansas collection, there were eight hundred and thirty-three plates of apples, eighty-five of pears, eighty of grapes, seventy of peaches, eleven of plums, and nine of quinces. To this must be added a very large quantity of fruit on shelves, in clusters, and in various ornamental devices.

In answer to our request, the Society having this lot of fruit in charge reported a written statement of the kinds of fruit and the names, so far as they had them, of the varieties of each kind. By reference to this statement, which forms a part of this report, you will see that one hundred and eighty-six varieties of apples, twenty-six of pears, fifteen of peaches, eight of plums, twenty-eight of grapes, and two of quinces, are claimed as correctly named; also, thirty-nine varieties of apples without names.

The officers of the Missouri Horticultural Society did not respond to our request with a report of the number of plates of the several kinds of fruit exhibited by them, but gave us a report of kinds and varieties, which is herewith handed you for information, wherein they claim as correctly named two hundred and sixteen varieties of apples, thirty-five of pears, seven of peaches, seven of grapes, six of plums, three of quinces, and six of crabs. To this they add unnamed varieties: sixty to eighty of apples, thirty-nine of peaches, and forty of pears.

Your committee made a careful examination of the competing displays, both in the aggregate and in detail; corresponding varieties in the two collections were compared to a sufficient extent to establish a correct judgment as to the comparative merits of the two collections. This comparison was in reference to size, perfection in form, freedom from natural defects and insect injuries. Bruises and damages by handling were not allowed to enter as an element of consideration, as the actual merits of the fruit when plucked from the tree were believed to be the true test. * * *

We construe the words "greatest and best display" as used by you, to refer solely to the fruit itself, and in no manner to the arrangement of such fruit for exhibition. We understand that you offer the prize for the best collection of fruit, variety and quality being considered, and not for the artistic arrangement of the fruit. The display itself, and not the manner of the display, we suppose it to be our duty to pass upon. The artistic merit of arrangement in these displays has received no consideration whatever at our hands, believing as we did that you designed to have the premium awarded to superior excellence in the fruit, as shown by comparison of individual specimens and aggregated collections.

In other words, our decision is substantially upon the comparative merits of soil and climate, between the States of Kansas and Missouri as fruit-producing territories, as measured by the display of fruit exhibited for our examination by the societies representing these States respectively. * * *

Your committee have only to add, that after examination of the competing fruit, and passing upon the points raised by the Missouri society, it was determined to test the judgment of each member of the committee before any decision or interchange of views were had. This was done by a closed ballot, on opening of which it was found that we were unanimous in the opinion that the Kansas State Horticultural Society was entitled to the premium of \$100 offered by you for the greatest and best display of fruit, "exhibited by any State, county, township, society, or individual."

Respectfully submitted, by

J. S. MCCREARY, Canton, Illinois,
GEO. T. ANTHONY, Leavenworth, Kas.,
FRED. E. MILLER, Kas. State Agric'l College,
Committee.

TOPEKA, Sept. 20, 1872.

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KANSAS EDUCATIONAL SYSTEM.

The organization of the Territory, May 30, 1854, was followed by an act of the first Legislature, passed August 30, 1855, providing that schools should "be open and free to every class of white citizens between the ages of five and twenty-one years." In 1858 the "white" restriction was removed, and provision was made for revenue by taxation. The State constitution provides for "a uniform system of common schools, and schools of higher grade, embracing normal, preparatory, collegiate and university departments," and that in the formation and regulation of schools the Legislature "shall make no distinction between the rights of males and females." The State Legislature of 1861 reenacted substantially the Territorial school laws of 1858-9.

SUPERINTENDENT OF PUBLIC INSTRUCTION.—The first section of the first article of the constitution provides for a Superintendent of Public Instruction, to be elected every two years by the people.

COUNTY SUPERINTENDENTS.—The constitution provides for the election of a Superintendent of Public Instruction in each county every two years—compensation and duties to be prescribed by law. There are seventy-one of these, and there was paid for their service in 1876, \$21,965.

BOARD OF COMMISSIONERS.—The constitution provides also that the State Superintendent, Secretary of State and Attorney General shall constitute a Board of Commissioners for the management and investment of the school funds.

SCHOOL LANDS.—In the act of admission, January 29, 1861, the sixteenth and thirty-sixth sections (640 acres each, or one-eighteenth of all the lands in Kansas), were granted by Congress "for the use of schools." Seventy-two sections were appropriated "for the use and support of a State University." The school lands of the State therefore number nearly three millions of acres. The average price per acre has been about \$4.09. Sales from 1861 to 1876, inclusive, embrace 595,325 acres. They sold for \$2,434,377.94. When all sold the lands will yield about ten millions of dollars for a permanent fund.

THE STATE SCHOOL FUNDS.—By section 3, article 4 of the constitution, the proceeds of the lands granted, as above stated, "for the use of schools," all estates of persons dying without heir or will, and the per cent. (five, on net proceeds) granted by Congress on the sale of lands in the State, "shall be a perpetual school fund, which shall not be diminished. Its interest, the rents of the lands, and such other means as the Legislature may provide, by tax or otherwise, shall be inviolably appropriated to the support of common schools." The income of these funds is disbursed annually to those districts in which school has been maintained at least three months in the year, in "proportion to the youth resident therein between the ages of five and twenty-one years." The above constitute the State funds, and are in the control of the Board of Commissioners for management and investment.

COUNTY SCHOOL FUNDS.—By section 4, article 4 of the constitution, all money paid "for exemption from military duty, the clear proceeds of estrays, ownership of which shall vest in the taker-up, and the proceeds of fines for any breach of the penal laws, shall be exclusively applied" in such county "to the support of common schools."

SCHOOL DISTRICTS.—Districts are created by the County Superintendent. They are governed by a district board elected every year, consisting of a director, clerk and treas-

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urer. The districts are authorized to vote a limited tax for the erection of school houses, the maintenance of schools, etc. The board employs teachers, prescribes uniform text-books, etc. Indigent children are supplied with text-books out of the contingent fund.

COMPULSORY EDUCATION.—Since 1874, education is compulsory for children between eight and fourteen years old—attendance not to be less than twelve weeks in each year, unless excused by district board, for cause. The parent or guardian responsible for non-attendance of the child, is liable to a penalty of from five to twenty dollars.

BRANCHES TAUGHT.—"Orthography, reading, writing, English grammar, arithmetic, and such other branches as may be determined by the district board," are required to be taught.

TEXT-BOOKS.—The County Superintendent is required to look after "uniformity in the course of studies" and "the district board shall require a uniform series of text-books to be used in each separate branch in each school."

UNION OR GRADED SCHOOLS.—Two or more districts can unite in a graded or union school, by a vote of a majority. There were seventy-seven graded schools in 1876, with salaries of superintendents ranging from \$300 to \$2,500.

TEACHERS' INSTITUTES.—The State Superintendent is required to hold, annually, in each judicial district, "a normal district institute." Of these there are thirteen. The Superintendent, in counties of fifteen schools, holds a "county institute."

SCHOOLS IN CITIES.—Cities of the first and second classes are separate districts, to be controlled or subdivided by the city board of education. Each ward elects two members of this board for two years, and the board elect superintendent and teachers.

DISTRICT LIBRARIES.—In districts with less than \$20,000 taxable property, an annual tax not exceeding two mills on the dollar may be voted for a district library. In districts with more property, the rate is reduced by gradations until the limit is one-half mill on the dollar, where the property exceeds fifty thousand dollars.

STATE TEACHERS' ASSOCIATION.—This association, organized September 29th, 1863, has held a session each year. It is voluntary, but has become a recognized State institution.

STATE BOARD.—The act of 1873 provides that the State Superintendent, the Chancellor of the University, the President of the Agricultural College, and the Principals of the Normal Schools at Emporia and Leavenworth, shall constitute a State Board of Education, to examine teachers and issue diplomas to be valid for life, in the State, unless revoked by like authority. They can issue certificates of two grades—one for three and one for five years. Diploma and certificates to be accepted by district boards. The State Board is required to meet at least once in each year.

SCHOOL HOUSES.—These number: log, 253; frame, 2,769; brick, 151; stone, 588; total, 3,881. In 1861 there were but 217 organized districts. In 1876, 4,658.

NUMBER OF CHILDREN.—In 1861 there were 4,901 children of school age, of whom 2,310 were enrolled. In 1876 there were 212,977 of school age, of whom 147,224 were enrolled. Average length of school term, 20.7 weeks.

TEACHERS AND WAGES.—In 1862 there was paid to teachers \$14,009.67. In 1876, \$743,578.08. The average wages in 1864 was \$27 for males, \$16.10 for females. In 1876, \$33.66 and \$27.03. In 1862 there were 319 teachers; in 1876, 5,576.

REVENUES AND DISBURSEMENTS.—Raised (1876) by district taxes, \$716,833.75; amount of State annual school fund disbursed, \$289,979.70: total amount disbursed for public schools for 1876, \$1,165,638.80. Value of school houses, \$4,167,948; value of school property, \$4,590,615: total expended on common schools from 1861 to 1876, inclusive, \$8,894,818.35—to which add \$576,670.47 disbursed to schools of the higher grade, and we have a grand total of \$9,471,488.82.

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UNIVERSITY OF KANSAS.

This institution was located at Lawrence, in 1864. By section 7, article VI, of the constitution, it is made to embrace in its scope "literature and the arts and sciences, including a normal and agricultural department." Its endowment consists of seventy-two sections of land granted in the admission of the State, and all other grants, donations and bequests that may be made to it. It is governed by a Board of Regents, six in number, appointed by the Governor and confirmed by the Senate. The Superintendent of Public Instruction, Secretary of State, and Chancellor, are *ex-officio* members, and the latter is President.

SIX DEPARTMENTS.—Section 10 of the act of 1864 declares: "The University shall consist of six departments. First, the department of science, literature and arts; second, the department of law; third, the department of medicine; fourth, the department of theory and practice of elementary instruction; fifth, the department of agriculture; sixth, the normal department." Educational work commenced Sept. 12, 1866.

THE BUILDINGS.—All of the University buildings are constructed of native limestone. North College is 50 feet square, three stories high, contains eleven school rooms, and stands near the center of a lot of ten acres, within the city limits. The observatory stands on a bluff half a mile south of North College. University Hall is 246 feet in extreme length, 98 feet wide in the center, wings 62 feet each, main audience room 94 feet long, 56 feet wide. There are 54 rooms in this building, all designed for the purposes of instruction. In the north dome, over which the vane and anemometer shape their direction and velocity to the winds, may be found a complete outfit of apparatus in constant use in taking weather observations. In the natural history rooms of the south wing are more than 40,000 specimens of beasts, birds and insects, largely representing the animal life of the great Mississippi valley. The basement of the south wing is devoted to chemistry, and the rooms for physics occupy the first floor in the same wing. The north wing is given to languages and mathematics. The center is occupied by library, office, cloak rooms and the general audience room. The campus embraces forty acres, and from every point commands an extensive view.

FACULTY.—Rev. James Marvin, D. D., is Chancellor and *ex-officio* President of the Board of Regents. He is sustained by a Faculty of ten.

COLLEGIATE DEPARTMENT.—Of the several departments contemplated in the act of incorporation, only two have yet been organized, viz.: the department of science, literature and the arts, and the normal department. These departments, at present, comprise seven courses of instruction, viz.: a classical and a modern literature course, each leading to the degree of bachelor of arts; a general scientific course, and three special scientific courses, (one in chemistry, one in natural history, and one in civil and topographical engineering,) each leading to the degree of bachelor of science; and a teacher's course, on the completion of which a diploma is granted. Each of these seven courses of instruction is provided with a specific curriculum, extending through four collegiate years.

PREPARATORY DEPARTMENT.—This department has been organized to supply the existing want of suitable preparatory schools in the State, and therefore will not be made a permanent feature of the University. The course of instruction extends through three years, and is designed to prepare students for the freshman classes in the respective University courses.

NORMAL DEPARTMENT.—This department has been opened by legislative requirement, and the following plan adopted for a higher normal course: For admission to this course, the applicant must be prepared in reading, spelling, elements of English grammar, penmanship, arithmetic, algebra through simple equations, descriptive and physical geography, elements of natural philosophy, history and constitution of the United States,

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and industrial drawing. The course of study and practice extends through three full years.

SELECT COURSE OF STUDY.—Students who desire to confine their attention to special branches adapted to their requirements and attainments, are permitted, subject to the advice of the Faculty, to take such a course of study as they can pursue with advantage.

APPARATUS OF INSTRUCTION.—The chemical department is supplied with laboratory tables, and with the apparatus and chemicals requisite for a complete course of laboratory practice in analytical chemistry. The department of astronomy is provided with Green's standard barometer and thermometer, an astronomical clock, and five-feet astronomical transit for the use of students in observatory practice; and with a Gambey's sextant, an artificial horizon, and a Negus box chronometer, for use in field practice in astronomy. The department of engineering possesses an engineer's transit, an engineer's Y level, and all requisite accompaniments for office and field work in engineering. The collection of philosophical apparatus affords the means of experimental illustrations in mechanics and physics.

THE CABINET COLLECTIONS contain upwards of 40,000 specimens, illustrating chiefly the departments of botany, zoölogy and geology. The collections in entomology, ornithology and botany now include upwards of 3,000 species of Kansas insects, 300 species of Kansas birds, 3,000 species of United States plants, and 5,000 specimens of minerals and fossils.

LIBRARY.—The library contains a large number of valuable books. The collection is to be increased by an appropriation of \$1,000 for 1877-8.

SOCIETIES.—There are two literary societies, the Orophilian and the Oread, and one society of natural history.

EXPENSES.—No charges are made by the University, except a contingent fee of five dollars per session, and a graduating fee of five dollars.

PREPARATORY HIGH SCHOOLS.—By authority of the Regents, a plan was presented to the high schools of the State in May, 1876, and a course of study recommended. Schools adopting this plan send their graduates to the University to enter classes without reëxamination. Atchison, Emporia, Winchester, Lawrence and Leavenworth have officially adopted this plan.

ATTENDANCE—NUMBER OF STUDENTS.—Since the first opening of the University as a State institution, 1,051 students have been enrolled. The attendance has included both sexes in very nearly equal numbers. The first graduating class of four members took their degrees June 11, 1873. There were three graduates in 1874; seven in 1875; eight in 1876. Of these graduates, fourteen were males and eight females. The degrees conferred were: Bachelor of arts, eleven, five of which were to women; bachelor of science, eleven, three of which were to women. By act of the Legislature, the normal department was opened in the spring of 1876. The enrollment for the first ten weeks of this (1876) fall session is 317. About 100 of these recite in collegiate classes, 98 are in the normal classes, and the remainder in preparatory classes. Forty-one counties of Kansas, and seven other States and two Territories, are now represented by post-office address, and twenty-two different States in the nativity column of records for the term.

STATE AID.—The total amount of aid granted by the State Legislature is (1876 included) \$225,497.91.

KANSAS STATE AGRICULTURAL COLLEGE.

This institution was located at Manhattan, Riley county, in 1863. The act of Congress, July 2, 1862, donating lands, requires that "military tactics" and branches relating to "agriculture and the mechanic arts" be taught, not "excluding scientific and classical studies," in order "to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Its educational work commenced

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September 2, 1863. It is governed by a board of thirteen Regents—nine appointed by the Governor. The Governor, Secretary of State, Superintendent of Public Instruction and the President are *ex-officio* members.

ENDOWMENT.—The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the Congressional grant.

THE FACULTY.—Its Faculty consists of President John A. Anderson, A. M., and eleven professors.

COURSE OF INSTRUCTION.—There are "The Farmer's Course" and "The Woman's Course." The former is adapted to the mechanic also, and is accompanied with training on the farm and in the shop. The "Woman's Course," in addition to the elementary branches of practical education, embraces the chemistry of cooking, the composition of food, bread, tea, chocolate and coffee, butter and milk, ripening and preservation of fruits, etc.

Household Economy follows the above, and includes instruction and drill in the art of housekeeping, embracing cookery, domestic management, and kindred topics. An admirably furnished kitchen laboratory affords every facility for practice.

Butter and cheese making, dairy management, gardening, etc., are taught; so, also, physiology and hygiene.

INDUSTRIAL DEPARTMENTS.—Instruction is given in the following well-equipped industrial departments, and every student is required to recite in some one of them, as selected by the pupil or parent: *For Male Students*—The Farm, the Nursery, Carpentry, Cabinet-making, Turning, Wagon-making, Painting, Blacksmithing. *For Female Students*—Dress-making, Printing, Telegraphy, Scroll-sawing, Carving, Engraving, Photography, Instrumental Music. Each of these departments is conducted exactly as in daily life, and aims to give precisely the drill received by an apprentice.

BUILDINGS.—*Old College Building*: Stone, three stories, 40x60, nine rooms, used for library, cabinet and dormitories. (This is one mile distant from all the other buildings.) *College Building*: Stone, 42x100, two stories, containing chapel and ten recitation rooms. It was designed for a barn, but is now used by the literary departments. *Practical Agriculture Wing*: Stone, 50x110, two stories and basement, containing nine rooms. Will be erected early in 1878, as a wing of the new college building. *Laboratory*: Cross form, 109x109, one story, stone, containing a lecture room, office, balance room, and four large laboratories. *Horticultural Building*: Stone, one story and basement, 31x80, five rooms for recitations, work-shop, etc. *Mechanical Building*: Stone, 38x102, two stories, seven rooms, containing wood shops, printing, telegraph, sewing, and instrumental music departments. *Barn*: Stone, one story and basement, 46x96, furnishing accommodations for forty head of cattle and eight horses, with granaries, harness room, etc. *Blacksmith Shop*: Wood, 20x40; two forges.

ILLUSTRATIVE APPARATUS.—*A Farm* of 185 acres, thoroughly equipped and cultivated. Short-horn, Devon, Jersey and Galloway cattle, Berkshire and Essex swine, etc., etc. *A Nursery* of 30 acres, thoroughly equipped and stocked with experimental apple, pear and peach orchards, vineyard, small fruits, etc. *The Chemical Department*, with its new laboratory and appliances, is practically equal to any in the United States. *The Mechanical Department* has twenty-five kits of carpenter's tools, lathes, scroll saws, etc., and a well-furnished blacksmith shop. *The Sewing Department* is well equipped with machines and appliances. *The Mathematical Department* is supplied with the appliances

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necessary for study and practice in surveying. *The Printing Department* has twenty-six pairs of cases, presses, etc. *The Telegraph Department* has four miles of line, twenty-five instruments, and every facility for practical instruction.

TERMS OF ADMISSION.—Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading, arithmetic through decimal fractions, and English grammar to syntax.

EXPENSES.—There are no charges either for tuition or contingent fees.

EDUCATIONAL LABOR.—Manual labor in the recitations of the industrial departments is not remunerated.

REMUNERATED LABOR.—When the institution needs labor on the farm or elsewhere which is not educational, it furnishes such employment, and pays according to the value of the service rendered, at from seven to ten cents per hour. As a rule, a faithful boy skilled in farm work can earn half his expenses by entering the labor class of practical agriculture. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale.

ATTENDANCE—NUMBER OF STUDENTS.—During 1876 there were 303 students enrolled—sixty-one per cent. males, thirty-nine per cent. females. Fifty-three counties were represented.

STATE AID.—The total appropriated by the Legislature (1876 included) is \$144,943.32.

STATE NORMAL SCHOOLS.

Of these there have been three—one at Emporia, one at Leavenworth, and one at Concordia. They were each governed by a board of directors. The Legislature, since the close of 1875, has made no appropriation for them, but has authorized a normal department of the University. That of Emporia was located in 1863, and is endowed with 38,460 acres of land. It has two commodious buildings, with twenty-five acres of land adjacent. President C. R. Pomeroy, D. D., continues it without salary. Tuition fees are charged. The State Normal Schools of Leavenworth and Concordia were established in 1870. The total amount of State aid rendered to the three, up to November, 1875, was as follows: Emporia, \$168,373.52, exclusive of endowment; Leavenworth, \$32,533.98; Concordia, \$5,297.11. Total, \$206,204.61.

OTHER INSTITUTIONS OF LEARNING.

Besides these State institutions there are a number of denominational and other colleges of high character.

WASHBURN COLLEGE.—Located at Topeka; is Congregational. As early as 1858, steps were taken to found a college. It has a site of 40 acres, one and a half miles from the State House. In 1872 the erection of its building was begun. It is 130x54 feet, and four stories high, including basement. It has an endowment, library, etc., and its property is estimated at \$125,000. Rev. Peter McVicar is President of the Faculty. It has three courses—collegiate, preparatory, and business.

BAKER UNIVERSITY.—Located at Baldwin City, Douglas county. Founded in 1856. It has suitable buildings and a small endowment. Is under the auspices of the M. E. Church. Its enrolled students numbered 174 for 1876. Rev. J. Denison, D. D., is President, assisted by four professors.

BETHANY COLLEGE.—Located at Topeka. An institution for young ladies. It is under the management of Bishop Thomas H. Vail, of the Episcopal church. It has a large and handsome edifice, built of stone, and costing, including barn and laundry, \$85,026.31. There are about 100 students in attendance.

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LANE UNIVERSITY.—Located at Lecompton, Douglas county. Organized January 20th, 1865. Opened for instruction March 6th, 1865. Occupies the large building once known as the "Rowena Hotel" as rooms for the gentlemen students, recitation and society rooms and chapel; and the building erected for U. S. Land Office, in which the "Lecompton Constitution" was framed, as studios for ladies. Endowment, \$12,500. Less than \$1,000 debt. Is under the auspices of the United Brethren church. Enrolled students for 1876 numbered 105. N. B. Bartlett, A. M., is President, assisted by three professors.

HIGHLAND UNIVERSITY.—Located at Highland, Brown county. This is perhaps the oldest institution of the State. It is Presbyterian.

OTTAWA UNIVERSITY.—Located at Ottawa, Franklin county. It is under control of the Baptists.

There are Catholic institutions at Leavenworth, Atchison, St. Mary's, Osage Mission, and other places.

We find it impossible to enumerate all the literary institutions in various parts of the State.

IN CONCLUSION.

To the Centennial Commission, boards of other States, commissioners of foreign countries; to the authorities and citizens of Philadelphia, and to the lines of railway, made up of the Missouri Pacific, St. Louis, Vandalia, Terre Haute & Indianapolis, Pittsburgh, Cincinnati & St. Louis, and the Pennsylvania Central Railroad managers, the State was placed under obligations, for which in its name the Board gives expression to formal thanks.

The Board was sustained by the faith and sympathy of all with whom it had to deal—a faith and sympathy born of a belief that in the future as in the past, whatever Kansas undertook must succeed.

It remains only to admit, with expressions of grateful acknowledgment, that to the intelligent appreciation, the earnest sympathy and the abiding faith in results, manifested in the body of the people of the State, and expressed in prompt response to the demands of the Board by the Legislature, is due the credit for the distinguishing and exceptional honor earned for Kansas in this interstate and international contest.

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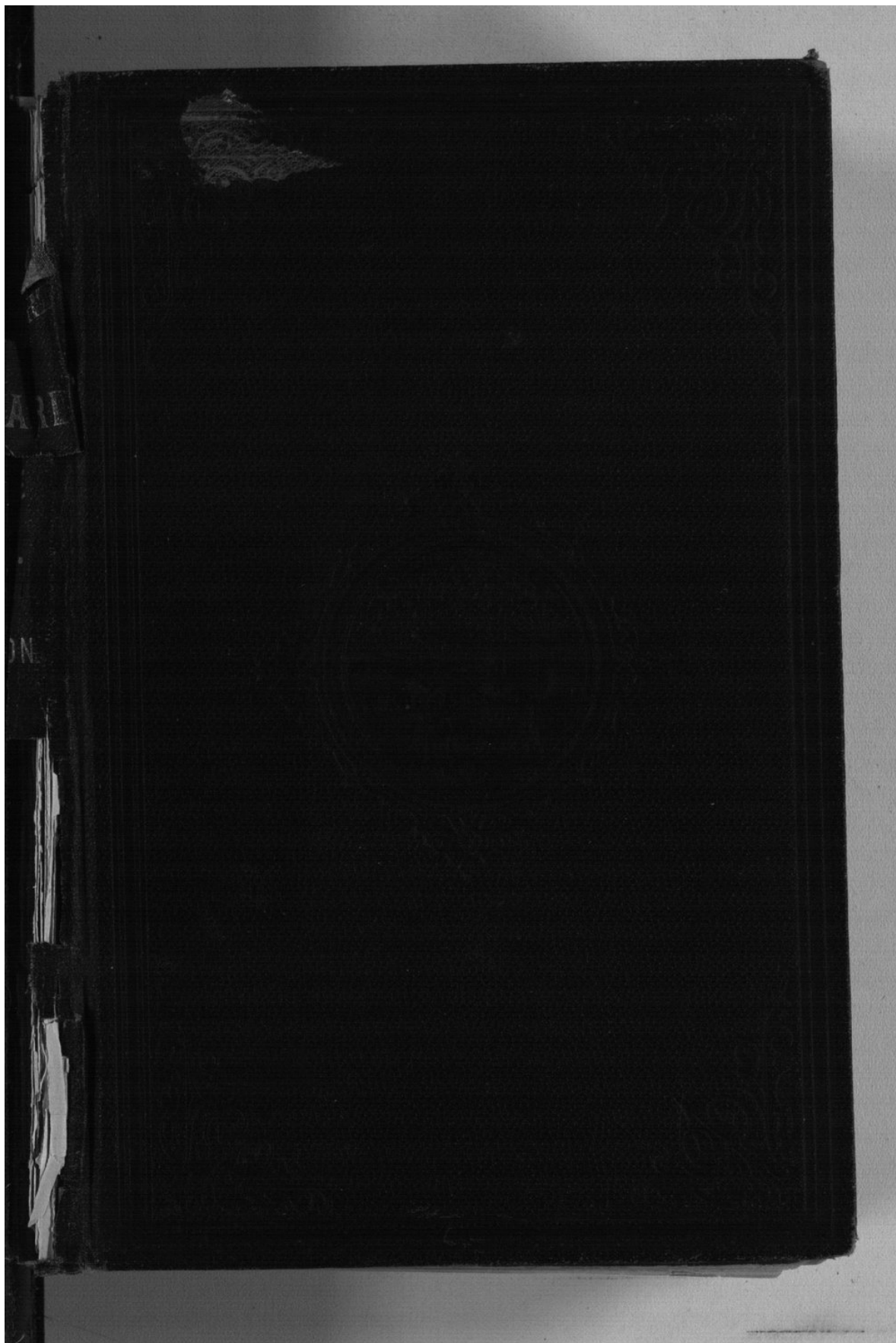
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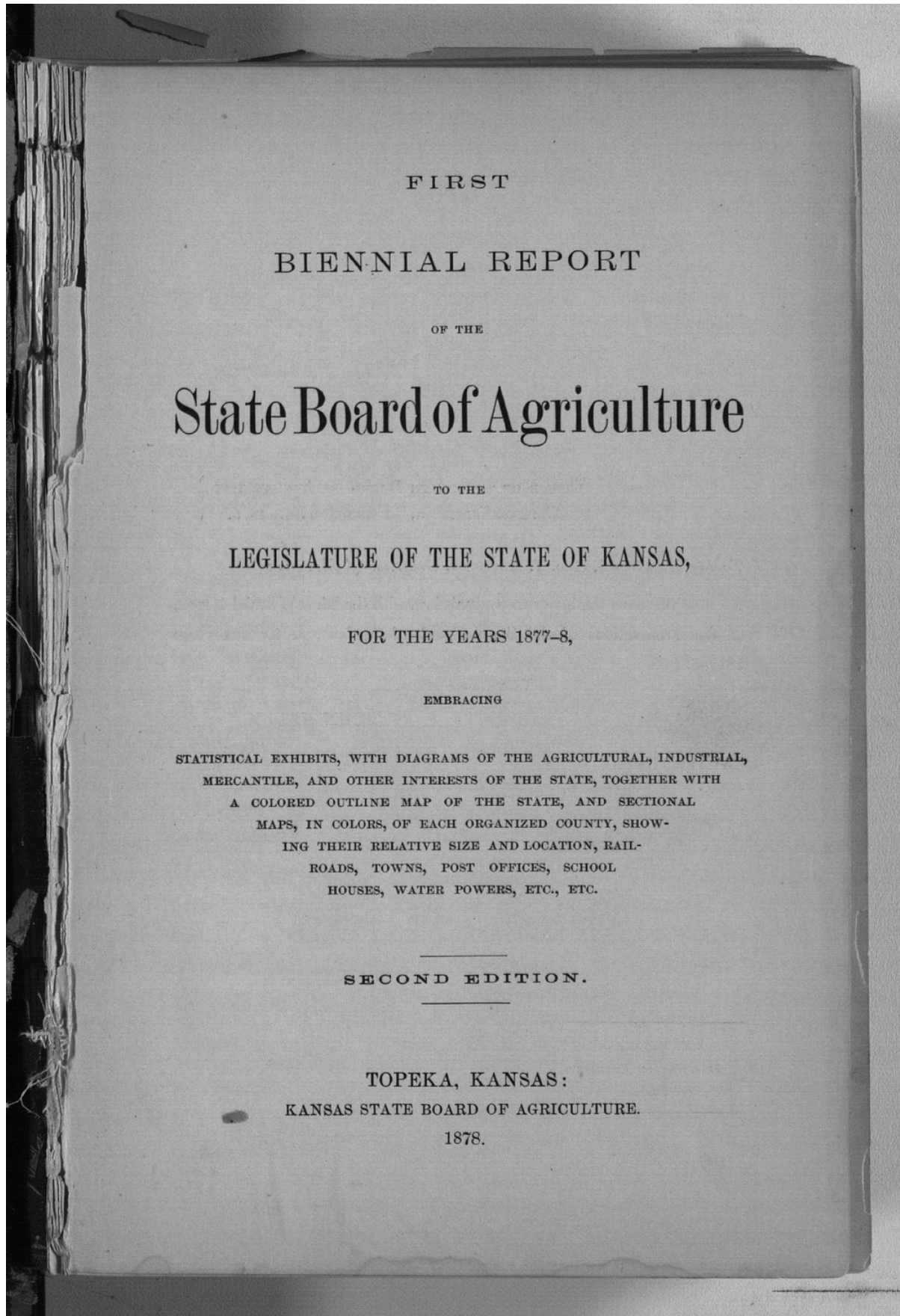
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OFFICE OF THE STATE BOARD OF AGRICULTURE, }
CAPITOL BUILDING, TOPEKA, Dec. 31, 1878. }

To his Excellency, GEO. T. ANTHONY, Governor of Kansas :

We have the honor to transmit herewith the First Biennial Report
of the Transactions of the State Board of Agriculture for the years
1877-8.

Very respectfully,

JOHN KELLY,
President.

ALFRED GRAY,
Secretary.

RAND, McNALLY & Co.,
PRINTERS AND ENGRAVERS,
CHICAGO.

Reports of the Kansas State Board of Agriculture

OFFICERS AND MEMBERS OF STATE BOARD.

1878.

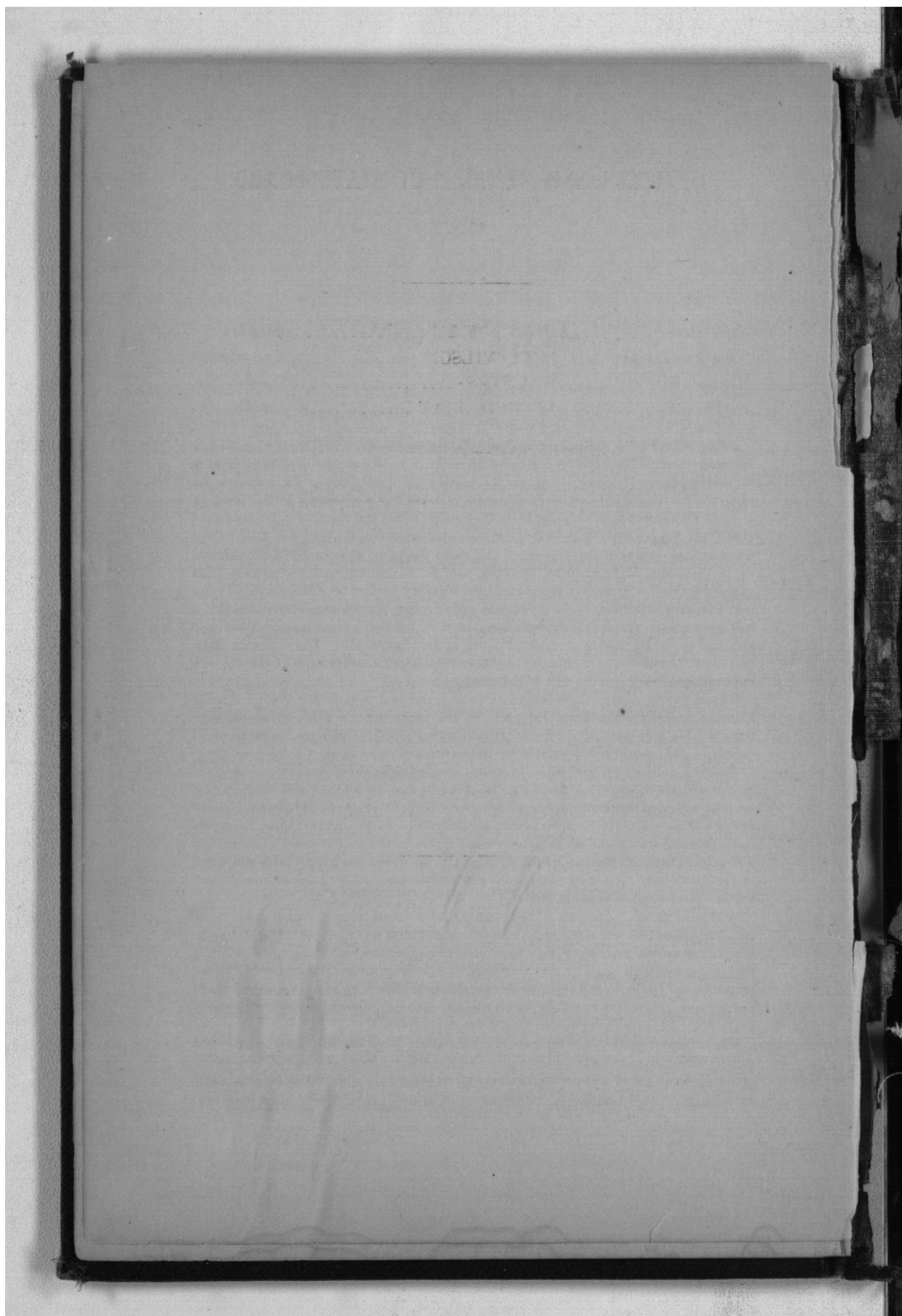
PRESIDENT	JOHN KELLY	<i>Blendon.</i>
VICE-PRESIDENT	LEVI WILSON	<i>Leavenworth.</i>
TREASURER	WM. SIMS	<i>Topeka.</i>
SECRETARY	ALFRED GRAY	<i>Topeka.</i>

MEMBERS OF THE BOARD.

GEO. T. ANTHONY, Governor	} <i>Ex Officio.</i>
THOS. H. CAVANAUGH, Secretary of State	
JOSHUA WHEELER.....	NORTONVILLE <i>Jefferson County.</i>
H. C. ST. CLAIR.....	BELLE PLAINE <i>Sumner County.</i>
S. J. CARTER.....	BURLINGTON..... <i>Coffey County.</i>
I. O. SAVAGE	BELLEVILLE <i>Republic County.</i>
W. P. POPENOE.....	TOPEKA..... <i>Shawnee County.</i>
J. W. JOHNSON	HAMILTON..... <i>Greenwood County.</i>
M. MOHLER	OSBORNE <i>Osborne County.</i>
R. W. JENKINS	ONAGA..... <i>Pottawatomie County.</i>
S. M. PALMER.....	SALINA <i>Saline County.</i>
O. D. HARMON.....	LA CYGNE..... <i>Linn County.</i>

OFFICERS BY APPOINTMENT.

GEOLOGIST	PROF. B. F. MUDGE.....	<i>Manhattan.</i>
ENTOMOLOGISTS.....	{ E. A. POPENOE.....	<i>Topeka.</i>
	{ GEO. F. GAUMER.....	<i>Lawrence.</i>
METEOROLOGIST	PROF. FRANK H. SNOW	<i>Lawrence.</i>
	(Professor of Natural History and Meteorology, State University.)	
BOTANIST	PROF. J. H. CARRUTH	<i>Lawrence.</i>
CHEMIST	PROF. W. K. KEDZIE.....	<i>Oberlin, Ohio.</i>
	(Professor of Chemistry, Oberlin University: formerly of Kansas State Agricultural College.)	



Reports of the Kansas State Board of Agriculture

REPORT.

FROM 1872 to 1876, annual reports were issued by the Board of Agriculture—five volumes in all. We have been somewhat crippled in our supply of annual reports for distribution. By some oversight the legislature of 1877 made no provision for maps for the second edition of ten thousand copies of our report for 1876. We had secured estimates for the report, including maps, from the State Printer, and submitted the figures to the legislature. An appropriation was made to this Board “for ten thousand copies of the Report of the State Board of Centennial Managers and the State Board of Agriculture for 1876, and for wrapping, mailing, postage and expressage on the same, six thousand eight hundred dollars.” After the legislature had adjourned, but before the book was put to press, we discovered that a mistake had been made, which exactly corresponded with the cost of the maps. This item by some oversight had been omitted in the appropriation bill. There was no alternative but to reduce the number of copies to be printed, in order to make the amount appropriated cover also the cost of the maps.

Owing to the change in legislative sessions, the last legislature provided for a biennial report for the years 1877–8. In the meantime, monthly and quarterly reports have been published for the purpose of honoring requisitions, as far as practicable, made upon this department for industrial and other data.

The first annual report, issued in 1872, was principally composed of essays, together with the story of the State Fair held that year. In making said compilation we only followed the remarkably uniform precedents of other and older State Boards and Societies. But it did not answer the desired purpose. At this time, inquiries came from all sections of the country regarding the products, resources, possibilities and probabilities of Kansas, which could not be answered intelligently for the want of requisite data. No one could give the cultivated acreage of the State, nor yet the acreage or product of a given crop.

While the decennial periods of 1860 and 1870 furnished stops to which guess-work could be corrected, and starting points from which new calculations could be made, yet the marvelous rapidity with which new counties were being organized and settled, the wonderful activity in converting the wild prairies into cultivated fields, orchards and gardens, and the notable transitions which were transforming all Eastern Kansas from a new to an old country in appearance, rendered guess-work exceedingly intricate, as we receded from each decennial period.

The present report is the outgrowth of the daily work of this department. No statistical information is herein presented which has not been called for almost daily, either by Kansans, or those who have, or expect to have, an interest in Kansas. We have endeavored to supply all requisitions, through our publications and a carefully

Reports of the Kansas State Board of Agriculture

conducted correspondence, for data relating to the vast resources of the State, both developed and undeveloped, climate, soils, churches, schools, etc. If, therefore, we have included in the present volume that which is unusual in "Agricultural Reports," or omitted that which usually finds a place therein, it is because the wants of Kansas are different from those of other States. Thus, while New England has a surplus of population, Kansas has millions of unoccupied lands open for settlement. And while our Eastern friends are engaged in pointing out to their farmers the best fertilizers, and the most economical methods of reclaiming worn-out and impoverished soils, Kansas farmers can not be induced, in their headlong eagerness to amass fortunes, to even save and utilize such animal manures as may accumulate about their farm buildings, nor even be moderate in inverting new sod so as to have the ability to place the "old land," that is, such as has been under cultivation for one or more years, under a higher state of cultivation, the mania being to put too much under cultivation at the expense of thoroughness. While our Eastern friends point with hereditary pride to the "old homestead," with all its ample appointments for substantial comfort and happiness, it is our province, with a pride which is the result of the wonderful history of our material development during the last twenty years, to direct the attention of their young farmers, whose lives are before them, but whose brains, energies and best years are being expended, scattered, and comparatively lost upon the unprofitable, high-priced and exhausted soils of their forefathers, to the alluring munificence of the General Government within the borders of Kansas in furnishing homesteads without price, and to the various kinds of railroad, school and other low-priced lands, which are unsurpassed in fertility—forming some of the most attractive and fascinating rural scenery in the world—with a climate midway, or forming a "happy compromise" between the inclemency of the North and the enervating influences of the South.

To do this, to call attention to our splendid industrial achievements, and to the vast resources yet undeveloped and in reserve, we have only to invite careful analytical attention to our annual budget of statistics, which are the sure and actual outgrowth of the progress of the year. If in so doing, we frame, unconsciously and inadvertently, an indictment against the over-peopled, poverty stricken soils of the East, we most anxiously trust that we may, at the same time, sound the alarm—warn the farmers of Kansas against doing precisely what the settlers of the older States did in taking from the earth more than they returned to it, thereby robbing it of its elements of fertility. The history of the New England States, in this regard, will surely repeat itself here if the methods of farm management are not changed in conformity to the admonitions of the past. These murmurings and warnings are marching westward in the ratio of the westward march of population, production and wealth. Even the great and prosperous State of Ohio sounds the alarm, and it will soon be taken up all along the line, and reach from the Atlantic to the Pacific. In the last published report of the lamented John H. Klippart, late Secretary of the Ohio Board of Agriculture, Mr. M. B. Bateman, in an essay replete with practical suggestions, "On the Deterioration of Soils in Ohio," says: "That the soils of Ohio, especially in the older portions of the State, have generally declined in productiveness, no one who has given attention to the subject will deny." He then proceeds to show how deterioration has been caused, and suggests remedies for soil recuperation, etc. And in this connection it is an amusing as well as an instructive fact, that Secretary Klippart, many years ago, when Ohio was in the zenith of her agricultural glory, and when all Kansas was *certainly* a desert, in an elaborate and valuable essay on wheat, placed the western limit of the wheat belt within the boundaries of Ohio.

Reports of the Kansas State Board of Agriculture

FIRST BIENNIAL REPORT.

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The annual records of wheat products in Ohio and Kansas, from 1866 to 1878, inclusive, is as follows:

	OHIO.	KANSAS.
1866.....	10,208,854 Bushels.	260,455 Bushels.
1867.....	18,000,000 "	1,250,000 "
1868.....	17,050,000 "	1,537,000 "
1869.....	20,400,000 "	2,800,000 "
1870.....	19,150,000 "	2,343,000 "
1871.....	18,575,000 "	2,694,000 "
1872.....	18,203,000 "	2,155,000 "
1873.....	18,567,000 "	4,330,000 "
1874.....	25,993,000 "	9,445,000 "
1875.....	17,500,000 "	12,700,000 "
1876.....	21,750,000 "	16,510,000 "
1877.....	26,000,000 "	14,316,000 "
1878.....	16,000,000* "	32,315,358 "

Kansas, in 1866, in the race for agricultural supremacy among the States, ranked 24, while Ohio ranked 7; the former having produced that year only 260,465 bushels, while the latter produced 10,208,854 bushels. In 1878, Kansas stands at the head of the list of wheat growing States, with a product of 32,315,358, while Ohio produces 16,000,000, or less than one-half as much. Who shall compute the influence of soil-deterioration in causing this result in Ohio? Again we say, that it is the principal business of the Boards of other States to arrest the waste of fertilizing elements, that the attention of Kansas farmers can not even be temporarily diverted from crop-growing, and money making, to do the same thing, and that it is our business to people the millions of unoccupied lands which are inviting settlement all over Kansas. Our

STATISTICAL MACHINERY,

therefore, has been moulded and fashioned accordingly. First, we have the official returns of 825 township assessors, made to this department through the county clerks, distributed to the several counties as follows:

Allen.....	10	Ford.....	2	Osage.....	11
Anderson.....	10	Franklin.....	15	Osborne.....	11
Atchison.....	8	Greenwood.....	11	Ottawa.....	9
Barbour.....	4	Harvey.....	15	Pawnee.....	6
Barton.....	8	Jackson.....	12	Phillips.....	7
Bourbon.....	12	Jefferson.....	11	Pottawatomie.....	17
Brown.....	9	Jewell.....	24	Reno.....	19
Butler.....	27	Johnson.....	10	Republic.....	20
Chautauqua.....	12	Labette.....	19	Rice.....	7
Chase.....	5	Leavenworth.....	11	Riley.....	9
Cherokee.....	15	Lincoln.....	8	Rooks.....	4
Clay.....	38	Linn.....	11	Rush.....	6
Cloud.....	18	Lyon.....	11	Russell.....	5
Coffey.....	14	Marion.....	11	Saline.....	18
Cowley.....	22	Marshall.....	12	Sedgwick.....	26
Crawford.....	9	McPherson.....	23	Shawnee.....	11
Davis.....	6	Miami.....	13	Smith.....	9
Dickinson.....	18	Mitchell.....	17	Sumner.....	20
Doniphan.....	7	Montgomery.....	11	Wabauunsee.....	11
Douglas.....	10	Morris.....	10	Washington.....	11
Edwards.....	2	Nemaha.....	15	Wilson.....	14
Elk.....	9	Neosho.....	12	Woodson.....	10
Ellis.....	2	Norton.....	3	Wyandotte.....	7
Ellsworth.....	5				

In addition to the Assessors, the Secretaries of District and County Agricultural Organizations are, by law, our legal reporters for their respective localities, to which list we have added a numerous corps of competent correspondents, who make monthly reports to us on blanks furnished by this department. The amount of time, labor and careful thought bestowed upon these monthly returns is very great, and our correspondents have no reward other than the publications of the Board.

* Estimated.

Reports of the Kansas State Board of Agriculture

In addition to all these, county clerks have responded to all inquiries for various kinds of miscellaneous data which it seemed almost impossible to secure through other sources. And in this connection the attention of the Legislature is respectfully directed to Chapter 182, Session Laws of 1877, in which certain important and onerous duties are imposed on county clerks, in the interest of the statistical work of this department, without compensation—duties imposed since the salaries of county clerks have been fixed by law. Previous to the passage of this act, the township assessors performed the same work, and were paid for such services at the rate of three dollars per day. The object in transferring this work from one branch of the public service to another—from the assessors to the county clerks—was to secure greater efficiency. It is far better that seventy county clerks, elected on account of their peculiar fitness to perform the duties imposed upon them, should do this work, and deal directly with the State Board of Agriculture, than that it be done by over eight hundred township assessors, who were elected by reason of their fitness for quite another and different kind of work. This being a transfer of duty from one set of officers to another, the one having been justly compensated therefor, there is no rule of justice that would not carry the pay with the work.

Among other provisions defining the duties of the Board of Agriculture, the following is an extract from Chap. 137 of the Session Laws of 1873:

"It shall be the duty of the State Board of Agriculture to publish, as a part of their annual transactions, a detailed statement by counties of the various industries of the State, and other statistics, which shall be collected from the returns of the county clerks, and from such other reliable sources as the said board may deem best; also to collect, arrange and publish from time to time, in such manner and form as the said board may deem to be for the best interest of the State, such statistical and other information as those seeking homes in the West may require; and they shall deliver a synopsis of it to such immigrant aid societies, railroad companies, real-estate agencies, and others interested, as may apply for the same; also to arrange in suitable packages and cases, and place the same in the agricultural rooms for public inspection, samples of agricultural products, geological and other specimens provided for in this act."

GRATUITOUS LABOR.

On the part of county clerks, and our regular and special correspondents, the amount and character of gratuitous labor can be inferred when we state that from one circular, No. 19, selected from many, we quote in part the following letter of transmittal of blanks, covering the most minute details of the subject matter of inquiry:

"Sir:—The Legislature of 1877 provided for a Biennial Report of the State Board of Agriculture for the years 1877-8. Plans have been adopted for the same. One feature will be an accurate and minute description of each county, by townships and cities as far as practicable, showing its progress in the various industries, schools, churches, wealth, etc., from the first settlement to the date of going to press with the Report. These county descriptions will be profusely illustrated with engravings of prominent objects of interest. Through these descriptions and illustrations we hope to mirror with accuracy and precision the past and the present, so that the immigrant may have a guide, and the future historian an array of facts and incidents, relating to the early settlement of the several counties, many of which will be buried in oblivion unless collected and put in tangible form while the first settlers remain to give personal recollections. Where county histories have been written, in most cases it is probable that they will furnish largely the required data.

Reports of the Kansas State Board of Agriculture

FIRST BIENNIAL REPORT.

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CENTENNIAL MAP.

"For exhibition at Philadelphia, the State Board of Centennial Managers had drawn on canvas an elegant map of the State, 13 by 24 feet. This map is now placed on the east wall of the Agricultural Room in the Capitol Building, with a receding stand in front filled with glass jars containing grains, etc., etc. The rooms are thronged from day to day with strangers who examine carefully this map, together with the products from the various counties, and such statistics as we have to furnish. Armed in this manner, they radiate from this point to the various portions of the State, and in many cases they are induced to locate and make investments in real estate and securities by reason of the information thus obtained. This map is in black, with counties indicated in colors. Additions in red, from year to year, will be made, thus showing in black the status of the State at the commencement of the Centennial year, and subsequent progress in red. A more important record for each county and the State, could not well be imagined, unless it be that indicated on the

STATE AND COUNTY MAPS.

Which will continue to be important features of the State Report. * * * * We intend that these maps shall not be excelled for elaborateness, elegance and accuracy. The location of lands of all kinds will be omitted in this collection of information, as data of this kind will be obtained through the officials in the various land departments.

COÖPERATION SOLICITED AND METHODS SUGGESTED.

"An earnest appeal is made to the citizens of the respective counties of the State to co-operate with this office in procuring the information sought. Once obtained an annual exhibit of progress will only be necessary to continue the story. For future reference and comparison, this information will be invaluable. No county can afford to be a missing link in this important chain of progressive events.

"We are not unmindful of the amount of difficult gratuitous labor incident to this work. The assessors are paid for their official duties, but we have found from experience that the kind of information asked for herein it is impracticable to obtain through the assessors. Their double duties of filling statistical blanks and making assessments of real and personal property, preclude details of this kind."

Thus it will be observed that by successive legislative enactments the policy and principal work of this department have been determined. Elaborate machinery for the collection and distribution of statistics has been provided, thereby constituting the Board a "Statistical and Immigration Bureau." Provision has also been made for a

MUSEUM OF AGRICULTURE AND NATURAL HISTORY.

Sec. 3 of Chap. 137 of Laws of 1873 reads as follows:

"The said assessors shall collect samples of agricultural and other products, and forward the same to the county clerk; also collect and forward as aforesaid specimens of gypsum, lime and sandstones, with a description of the character, extent, locality and accessibility of each; of various coal beds, their qualities; location and extent of the various ores of value; which said samples and specimens shall be sent by the county clerk to the agricultural room, capitol building, Topeka, for preservation and public inspection."

The collections thus far made comprise samples of field products, which are exhibited in glass jars and in the stalk; a botanical collection; a choice collection of building stones, consisting of limestones, sandstones, magnesian limestones, marble, etc.; thirteen mounted animals; three hundred and eighteen specimens of birds; a collection of domestic fowls; seven hundred and seventy-six species of insects; sixty alcoholic specimens; a valuable collection of minerals; a geological collection, embracing a large number of different forms of calcite, selenite and other varieties of cretaceous minerals, and a variety of lead ores and associated rocks and minerals; a collection of five hundred and fourteen centennial views, exhibited in a wall case with folding frames; one hundred and forty centennial stereoscopic views, exhibited in a graphiscope. There is also an interesting collection of buffalo horns, antlers, statuary from Blue Rapids plaster, etc., etc.

Reports of the Kansas State Board of Agriculture

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STATE BOARD OF AGRICULTURE.

METRIC STANDARDS.

In December, 1876, too late for acknowledgment in the Report of that year, there was added to the Museum of the Board of Agriculture, a set of Metric Standards, through the partiality of His Excellency, Thos. A. Osborn, Governor. The following letter, with Governor Osborn's indorsement thereon, was received:

"BUREAU OF WEIGHTS AND MEASURES, U. S. COAST SURVEY OFFICE,
WASHINGTON, Nov. 8th, 1876."

"To the Governor of the State of Kansas:

"SIR:—By direction of the Secretary of the Treasury of the United States, I have the honor to inform you that a set of Metric Standards for the State of Kansas is now ready for delivery.

"These standards have been prepared under a joint Resolution of Congress, of July 27, 1866, directing the Secretary of the Treasury to furnish to each State one set of the standard weights and measures of the Metric System. Their use has been legalized by an act of Congress, dated July 28th, 1866, a printed copy of which is enclosed, together with a brief description of these standards, prepared by J. E. Hilgard, Inspector of U. S. Standard Weights and Measures, under whose immediate direction they have been constructed and adjusted.

"I would request you to instruct me as to the mode of delivery. They may be sent by express to such address as you may indicate.

"Very respectfully,

C. P. PATTERSON,
Supt. of U. S. Standard Weights and Measures."

The foregoing letter was transmitted to the Board of Agriculture, with the following indorsement:

"EXECUTIVE OFFICE, TOPEKA, Nov. 14, 1876.

"Respectfully referred to the Secretary of the State Board of Agriculture. The writer of this letter has been directed to forward the set of Metric Standards mentioned herein to my address, and upon receipt will cause the same to be placed in your department, where it is hoped they may be permanently retained and properly cared for.

(Signed)

T. A. OSBORN, Gov."

In addition to the above, there are foreign exchanges—that is, specimens received in kind for our own, as follows:

Australia.—Twelve varieties white wheat, ranging from 56 to 67 pounds to the bushel. Oats, six varieties, from 46 to 52½ pounds to the bushel, etc. Barley, from 56½ to 58½ pounds to the bushel. Also, rye-grass seed, five varieties of peas and four of beans, together with a very choice assortment of wool.

Brazil.—Ornamental woods, eleven varieties; grains, consisting of wheat, rice in hull, barley, oats, and winter rye; also, silk cocoons, coffee, beeswax, gums, coconut in shell, oils, fibres, mate, sugars, teas, cocoa, tinder, maralla, parana, tapioca, rice, farina, wheat flour, rice starch, biju, corn meal, arrow root, torreo, mandioca, cotton lint, cotton seed, paina, a bean-pod 29 inches long, etc.

Canada.—Wheat, six varieties, fall and spring; two of oats, white and black; six of corn; seven of beans; two of peas; a collection of wools.

Egypt.—An incense-burner, made of clay from the Nile; a tabooret, or stool, inlaid with ivory and mother-of-pearl, said to be 152 years old, and made by the Nubians of Assoor; iron sand from the desert; three specimens of palm d'oum, or fruit of the palm tree, with leaf, and wood fibre; castor beans, two varieties; also, crushed lentil, dolichos sesquipedalia, melilotus, two varieties of wheat, rice, lentil, sorghum seed, Gaillardia pieta, cotton seed, helianthus seed, corianbrum seed, cress seed, tetragone, tetragonum cornutum, raine, robinia pentoavacia, rice barley, common barley, four varieties of beans, two of peas, seeds of hasheesh, parsley, saffron, spinach, powder of henna, anise, yellow gourd, common spet, ketmie hemp, date husk containing dates, ebony wood, etc., etc.

Russia.—Flax, hemp and other fibres; beet sugar, in cone and slab, and pulverized; white wheat, claimed to weigh 75 pounds to the bushel; seven varieties of

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FIRST BIENNIAL REPORT.

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wheat; seeds of rape, spurry and razam, from the model farm; clover, mohair, linseed and millet; cotton in the lint; cotton in the pod; lucerne; Polish hirse, etc.

Spain.—Nuts—almonds, English walnuts, chestnuts, pecans, filberts, etc.; an assortment of wheat, peas, beans, rice, teas, and seeds.

Sweden.—Peas and beans in great variety; wheat, rye, oats, barley meal, timothy seed, red and white clover seed, flax seed, etc., etc.

Colorado.—An assortment of gold and silver ores, gold and copper, mica, iron ore, tellurium, amazon stone, forest rock, etc.

Both floor and wall space are occupied with the museum collections, of which the foregoing is only a synopsis. There should be ample room, so that representative collections could be secured and placed on exhibition from every county in the State, for examination by investment and home seekers who frequent the rooms of the Board for the purpose of obtaining data, and examining agricultural and other specimens from the various counties. The crowded condition can be appreciated by an examination of the diagram (see page 12) of the Agricultural Rooms, which are located on the lower floor of the Capitol Building.

IMMIGRATION.

Kansas made a great show at Philadelphia, and although more than two years have elapsed since that time, the benefits to the State are just beginning to be realized. While the immigration of the past year has been remarkable, it is only a forecast of what 1879 and the years following will develop. The interest in Kansas throughout the Eastern States, as indicated by the correspondence of this department, is greater than ever before, and we are utilizing our facilities for the distribution of official data to those thus interested. To do this is only to care for the Philadelphia expenditure of nearly \$40,000. To relax our efforts one jot would be to throw away that expenditure and the best opportunity the State has ever had for peopling her vacant lands, both in the eastern and western counties.

Kansas requires no agencies in the interest of immigration outside of the State either for the interception of foreign immigrants or for increasing the facilities for reaching the surplus population of our own country.

Of the foreign immigration coming to the United States, Kansas has received her full proportion. The popular idea of the immigration to this country is greatly in exaggeration of the true numbers of people who come from foreign countries to seek a home in the new world. Carefully prepared tables by the Chief of the Bureau of Statistics for the General Government show from quarter to quarter the number of persons who come to this country from abroad, and a newspaper paragraph from these reports stating that for the year 1876, 224,860 arrivals were recorded at the various customs districts of the United States, might lead some to believe that the population of this country had been increased by that number. But this is not the case; for the same tables show that while that was the actual number of arrivals, yet of those so registered, 42,833 were citizens of the United States returning from