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KANSAS

A Complete and Comprehensive Description

OF THE

AGRICULTURAL,

STOCK RAISING AND

MINERAL RESOURCES

OF KANSAS.

Also Statistics in regard to its Climate, etc.,

Compiled from the Latest Reports of 1890.

Presented with the Compliments of the

PASSENGER DEPARTMENT,

SECOND



EDITION.

—THE—

RESOURCES AND ATTRACTIONS

—OF—

KANSAS

FOR THE

Home Seeker, Capitalist and Tourist.

FACTS ON CLIMATE, SOIL, FARMING, STOCK RAISING, DAIRYING, FRUIT GROWING, GAME AND FISH.

WITH THE COMPLIMENTS OF THE

PASSENGER DEPARTMENT.

SECOND



EDITION.

ST. LOUIS.

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A COMPLETE
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REGARD TO ITS CLIMATE, ETC., COM-
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REPORTS OF 1890.

OMAHA, MARCH, 1891.



AN OUTLINE.

A State which in 1889 produced 276,500,000 bushels of corn and 40,000,000 bushels of wheat, and has 16,000,000 acres of land under cultivation, does not need an introduction. Her record speaks for her; and that record shows she has 1,500,000 inhabitants, 500,000 children in the public schools, 8,656 miles of railway, a delightful climate, rich soil, low taxes, and small debt. Kansas leads every other State in the Union on the average of winter wheat, and she is also developing the sugar cane industry more than any of her neighbors. Land in desirable localities can be bought cheap, and on ten years' time. The time of her tribulation is passed, and she now offers to the home-seeker as fair and fertile land as can be found anywhere in the Great West.

KANSAS.

The name "Kansas" is an Indian word which means "smoky water," and was originally applied to the Kansas or Kaw River, which runs through the State. The region now known as Kansas appears to have been visited by Spaniards in 1541 and explored by the French in 1719; it was a part of the Louisiana purchase of 1803, and afterward formed a portion of the Indian Territory. Organized as a Territory in 1854, it was admitted as a State into the Union in January, 1861. Kansas has an area of a little over 81,000 square miles; it is 400 miles in length and 200 miles wide, and has a frontage of 150 miles on the Missouri River.

This is about equal to the area of Great Britain, one-fourth larger than all New England, more than double that of Kentucky, or Ohio, or Indiana, and nearly twice as large as either New York, Pennsylvania or Tennessee.

Its whole surface is a continuation of the "Plains" that stretch from the Rocky Mountains eastward through Colorado. Its north line along the State of Nebraska is considerably higher than its southern boundary on the Indian Territory. Hence, in traveling westward to Denver, we ascend continually; where we cross the Kaw River at Kansas City, we are only 760 feet above the sea level; where we enter from Kansas into Colorado, somewhat beyond the 44th mile post, we are 4,000 feet above the sea, and at Denver 5,270 feet, although 20 miles east of this city, at the crossing of Box Elder Creek, the elevation is 5,550 feet. A glance at the map shows the water courses to follow this general pitch of the surface, south and east.

Kansas occupies the exact geographical center of the United States, midway between the two oceans on the east and west, and British America and Mexico on the north and south.

An embossed relief map of the State, would be quite smooth, since there are no mountains and hardly any hills, while the valleys of the principal streams are flat and rarely more than two hundred feet below the general surface of the surrounding high prairie. There is probably not a single square mile in the whole State on some part of which the plow cannot be used; and the totally untillable tracts amount in the aggregate to a very few square miles. If there were no cities and towns in the State, and it was occupied only by a farming population, with one family of five persons on every quarter section (160 acres), it would be the home of 1,600,000 souls. Its capacity for crops is endless. "The number of successive crops previously grown on the land even up to the fifteenth, shows no perceptible deterioration in the soil, although no fertilizers have been used."

It was settled by and is still attracting the most wide-awake, energetic, and highly intelligent people from the eastern and central States and

foreign countries. This, together with its glorious, healthy, invigorating climate, has made the development of the "Sunflower State" simply wonderful. Just look at a few figures:—

YEAR.	Population.	Acres in Cultivation.	Assessed for Taxation.	Bushels of wheat raised.	Bushels of corn raised.	Cattle.
1855.....	8,600					
1860.....	107,200	272,835				
1861.....			\$ 21,737,459			
1865.....	135,800	273,903	36,126,000	191,519	729,236	
1870.....	361,400	1,360,003	92,000,000	2,391,000	17,025,000	373,967
1875.....	528,350	4,749,901	121,544,844	13,209,403	80,798,769	703,323
1880.....	995,960	8,868,885	160,570,461	25,279,884	101,421,718	1,115,312
1885.....	1,268,530	14,252,815	277,575,353	10,859,401	194,130,814	1,973,018
1890.....	1,423,485		348,459,943			2,201,000

If the present number of horned cattle were all destined for the supply of the city of New York, and they were started, five abreast, the heads of one rank just a rod in advance of the next, and they were driven through Missouri, Illinois, Indiana, Ohio, Pennsylvania and the Empire State, the head of the herd would be crossing High Bridge over Harlem River, New York, before the tail had crossed the Missouri at Atchison.

To move our last crop of wheat will require 108,000 cars, which in a solid train would enter with its locomotives the city of Columbus, Ohio, when its caboose would just leave the depot at Kansas City, Mo.

Our corn crop for 1889 required 690,000 cars, which in one solid train would reach from Portland, Me., by way of Chicago and Minneapolis, to Portland, Ore., thence to San Francisco, and back over the mountains to Denver.

The time by which not only the railroads but also all business is regulated in Missouri and Kansas, is "Central" time—90° meridian—until we nearly reach the west line of the State, at Wallace; from there we reckon by "Mountain" time—105° meridian—which is one hour slower.

LEAVENWORTH.

Any stalwart citizen of the beautiful city of Leavenworth will promptly deny all claim for hot-house growth or boom craze for that attractive town. As one of the termini of the Union Pacific railway, Leavenworth is sturdily pushing to the front in commercial importance. It is situated on a high plateau on the west bank of the Missouri River, twenty-five miles above Kansas City, the site is rolling, and furnishes a perfectly natural system of drainage. In thirty-four years the city has reached a population of 36,000. Cantonment Leavenworth was founded in May, 1827, by Col. Henry Leavenworth, of the Third U. S. Infantry. The town site was claimed and settled upon June 9, 1854, by a company of thirty-two persons, and as this was the first town settlement in the Territory, Leavenworth very properly claims to be the oldest town in the State of Kansas.

The surroundings are more than ordinarily picturesque. Fort Leavenworth is one of the most magnificent military posts in the country, and located there are the military prison and officers' "School of Occupation."

"Sheridan's Ride," a lovely bit of winding road which creeps around the crest of the hills to the north of the Fort, was named in honor of gallant Phil when he was commandant of the post. There are numberless walks and drives in the spacious grounds of the Soldiers' Home, located south of the city, where 1,200 veterans find sumptuous quarters. The subsistence department, one of the most important at the post, has charge of all the necessary stores for the Department of Missouri. The amount of rations issued through the post is about 80,000,000 pounds a year.

But there are advantages beyond pretty scenery. Leavenworth is situated in an exceedingly rich agricultural district; wheat and corn are produced in great abundance, and cattle-raising forms a very large item among the products of this section. It is not generally known that this modest, conservative city contains the third largest stove manufactory in the United States, or that she stands in the center of twenty-five miles square of coal. Experts estimate that the city is actually located on a surface covering 23,000,000,000 bushels of coal! There are three shafts now being operated quite close to the city, and these are dry and free from gas. The bituminous coal produced is of excellent quality and exceeds in heating power any other coal of like character brought to this market by over 30 per cent. There are 110 manufactories in Leavenworth—immense works for the making of mill machinery, steam engines, bridge and iron work, and all prospering. There seems to be no question as to the healthfulness of the climate or the very great natural advantages of Leavenworth for a manufacturing center. The citizens are earnest encouragers of all new-comers, the taxation on all industries settling here being very low; the country tributary is rich and developing with amazing rapidity.

The country between Leavenworth and Lawrence is recognized as one of the very finest fruit districts in the West. Apples, pears, peaches, apricots, and grapes are grown all along the line. The surface of the country is rolling and well wooded and watered. The villages of Lansing, Fairmount, Tonganoxie, and Reno are pleasantly located, prosperous, and growing points. A ride of thirty-four miles through this charming district brings us to the historic town of Lawrence.

LAWRENCE.

To the traveler leaving Kansas City for the first time, westward bound, on the Union Pacific, the valley of the Kaw is a surprise and a revelation.

Kansas to him has been a familiar word for "Lo these many years;" and now, as for the first time he finds himself upon Kansas soil, he is amazed to find how different is the real country from the Kansas of his fancy. The broad and fertile farms, the running streams, the flourishing villages, bring home to him the conviction that he has been all "at sea" as to facts, and he is lost in admiration as the truth dawns upon him and he sees the wonderful panorama unrolled before him. Forty miles, swiftly flown, lands one in the historic city about which so much has been written. Lawrence present and Lawrence past are interesting topics. The river is crossed by a substantial iron bridge, and from this point one obtains an

excellent view of the manufacturing industries of Lawrence. A stone dam spans the river just below the bridge, making one of the finest water-powers in the State. Above the dam lies a smooth stretch of water, the shores lined with ice-houses. Fifty thousand tons of ice are stored here annually and shipped over the South and West. At the south end of the dam are the water-wheels that furnish power to a dozen different establishments, the power being conveyed by a system of wire cables to points distant from the river. One sees from this point four large flouring mills with a total daily capacity of from eleven to twelve hundred barrels of flour, with a total storage capacity of 250,000 bushels of wheat.

Lawrence is a manufacturing town of no mean rank, and in the nature of things it is destined to grow rapidly in this direction. Its railroads bring it into close connection with all the great systems; its magnificent water-power, its exceptional educational and social advantages, all help to make it an ideal town for the location of manufactories of all kinds. A first-class hotel with all modern conveniences occupies the identical spot where stood the Free-State Hotel destroyed by the border ruffians in 1856, and the Eldrige House, burned by Quantrell and his murderous crew in 1863. On the summit of Mount Oread are situated the buildings of the State University, admitted to be one of the very best educational institutions west of the Alleghenies. From the tower of the main building one has a delightful view: at our feet lies the beautiful city, its elegant residences and comfortable homes hidden by the mass of foliage—trees, trees everywhere; and remember that only thirty years ago all this was a barren prairie, without a tree save the few that lined the banks of the streams. Beyond the town on every side stretch the fertile farms of Douglas, Jefferson, Leavenworth, and Johnson counties, while through the center of the picture runs, like a silver thread, the Kansas River. On the level plain below us are the extensive buildings of Haskell Institute, the United States Indian School, and after a hasty glance through the buildings of the University, including Snow Hall, one of the finest Natural History buildings and collections in the country, we visit the Indian School. We find that Haskell Institute, under the charge of Charles Robinson, the first Governor of Kansas, is rapidly taking a front rank among the Indian schools. Its substantial stone buildings are roomy and well ventilated, and, with the new ones now in course of erection, will afford comfortable quarters for its four or five hundred pupils. With time for but a cursory examination of the Institute, we find much to interest and please and to impress us with a sense of the magnitude and importance of the work done by the Government in educating the Indian children.

Lawrence is in the center of some of the finest farming lands of the State, and is a shipping point for stock, grain, fruit, and farm products. The early days in Kansas were stirring times, and Lawrence stood the brunt of those first outbursts which bore such bitter results in the after years. The town was twice burned,—first, when a little village, on the 21st of May, 1856; secondly, on the 21st of August, 1863, by Quantrell and his band. The rebel raiders were but five hours in the town,—from five in the afternoon until ten at night; but these were five awful hours.

Seventy-five business houses and one hundred residences were burned, 143 citizens lay dead in the streets, and thirty were badly wounded; eighty widows and 250 orphans mourned their dead, and the busy, pretty city suffered the immense loss of \$2,000,000 in property destroyed. Full of storied interest is the historic town. Here really began the great battle, and from these lurid gleams of outlawry in Kansas sprang the flame which swept over the Nation for those four desperate, immortal years and smoldered out forever at Appomattox!

Just before we reach Lawrence, we pass

BISMARCK GROVE,

The handsome exposition grounds and race course owned by the railroad company. Perhaps we may catch a glimpse of the herd of buffalo, which has been kept here for years,—the only surviving remnants of their once immense numbers, when with the Indians they shared the whole country far to the west.

KANSAS CITY

Is a shining example of that splendid pluck, energy, and enterprise which is building and shaping this vast empire of the West. It is a city which eastern men should see; for the tales told of its marvelous growth in population and commerce resemble the feverish dreams related by "castle builders," and one fancies that the sharp daylight of actual inspection will dispel the illusion. But the miles of solid blocks, the ceaseless ebb and flow in the busy streets, the manifold industries, confirm the story that Kansas City is strongly founded, and peopled with a class of citizens who are supremely active, alert, and aggressive. It is built in a crescent on the south bank of the Missouri, at its confluence with the Kansas River. It is 283 miles from St. Louis, 503 from Chicago, 614 from Cincinnati, 1,308 from New York, 200 from Omaha, 565 from St. Paul, 1,178 from Washington, and 2,122 from San Francisco. It is a terminal point of the Union Pacific Railway, and enjoys unusual advantages in water transportation to all points on the Mississippi and its tributaries.

There is no particular historic interest or flavor of tradition about Kansas City. It was first settled in 1836. In 1846 and subsequent years it enjoyed a large Indian and Santa Fe' trade. With the gold excitement of 1850 came added business and the promise of enduring prosperity. The city had its "ups and downs" like many another frontier town during all these pioneer years, but fought on in the face of many discouragements until success and a place in the front rank were won. When one looks over the city, the wonder is why the early settlers pitched upon such a site for a town—hill and valley mingled together in grotesque confusion. There are broad avenues in the suburbs, lined with splendid residences, and parks and squares tastefully arranged for the comfort and pleasure of the people; but the business center is bunched in close, narrow streets in a valley and on the sides of steep hills. The

energy of the people, however, has overcome the unkindness of nature; and the result is a most wonderful system of cable cars, as perfect and thorough in all details, perhaps, as can be found in the United States. These lines make all sorts of impossible ascents and descents; the cars rush up ridiculously steep hills and plunge down an alarming grade nearly as acute as the side of a house, around curves and across level stretches at a very fast rate of speed. The tourist can see Kansas City to the best advantage, and enjoy a thoroughly delightful ride in any direction by a trip on these miniature railways. The system is a triumph of engineering skill, and a model of safety in quick, comfortable transit. It has been asserted of late that the citizens have well-nigh discontinued the use of the family carriage, as being both cumbersome and expensive, and taken entirely to the republican simplicity of the cable car.

The Union Pacific Railway has been a potent factor in the growth and development of Kansas City. As the connecting link between the Atlantic and Pacific, its many divisions have acted as feeders to all lines East and West. The Kansas division, with its main lines and branches aggregating over 1,200 miles, has been a great help to the city, and the principal agent in developing the rich agricultural, stock-raising and mining regions westward. Since 1871 Kansas City has been prominent as a feeding and shipping point for live stock, and at this time the receipts are over 81,000 cars per annum. In grain the receipts ran in 1887, wheat, 2,000,000 bushels; corn, 4,000,000; oats, 2,500,000, etc. In 1887, the twentieth year of the packing business, the number of hogs packed was 2,000,000, cattle slaughtered, 200,000, and sheep, 75,000, the aggregate value being \$55,000,000. The bank clearances run very close to \$400,000,000, and the real estate transfers, \$137,000,000. The completed water works system will cost from \$4,000,000 to \$5,000,000, the present daily capacity being 20,000,000 gallons. To the average reader statistics are wearisome, and in this brief outline none will be inflicted. It will be sufficient to say that Kansas City is a cosmopolitan city of 135,000 people; that within her borders are found great banks with millions of money, manufactories of gigantic proportions, the luxuries, the comforts, the equipped force and working machinery of a great metropolis. She reaches out for trade and traffic over a vast territory populated by 9,000,000 people, and in the natural increase and growth of this great domain, together with the resources within herself, lies her future—a future which by all signs and tokens, past and present, is assured beyond the peradventure of a doubt.

BONNER SPRINGS

Is seventeen miles from Kansas City, on the main line. This pretty little resort is destined in time to be a suburban residence town for Kansas City and other places within easy distance. The beautiful park, the mineral springs, the Forest Lake, the salubrious air, cool nights, and slight location of Bonner Springs, will all doubtless in the near future bring to the place a number of wealthy citizens, who desire immunity in summer from the dirt and heat of over-crowded centers. It is a delightful spot for

locating one's family. There are good hotels and boarding houses, and generous inducements are offered those who wish to purchase lots and erect permanent residences.

TOPEKA.

At Topeka, the capital of the State, a stop is made for dinner. It is to be regretted that one sees so little of this pretty town from the station. It is almost completely hidden from sight, so closely is it embowered in leafy shade. But a walk through the town discloses its beauties. There are shade trees everywhere, thus lending a charming air of country greenness and freshness to the heart of a city. Topeka shares the fate of most capital towns in being principally a residence city, and giving entire attention to politics. It is handsome, cool, inviting, and will well repay a visit.

The new State Capitol, now nearing its completion, is an imposing structure of native stone, standing within a very pretty miniature park. In another corner of the park is the handsome public library building, already well filled with library treasures. Topeka has a large number of manufacturing and industrial establishments, although not dependent on water-power; it has also an excellent system of electric street railways. Its flour mills and elevators do a fine business. Many of its streets are already well paved, and the city is provided with water-works, gas-works, and electric lights. The handsome State Fair Grounds, two miles to the southwest, are connected with the city by electric and horse railroads. It is a treat to visit the State Fair, held here in the early part of September, and one becomes convinced of the greatness of Kansas, its agricultural and other industries.

Two miles above the city, on the high ground south of the river, is a cluster of tasteful stone buildings, overlooking the Kaw Valley,—one of the two State Insane Asylums.

Up the Kaw we go, through the wooded, grassy valley. Rich soil there is here, and great crops of sturdy corn and wheat and small fruits reward the farmer. On through many a small village—always a possible metropolis—till we reach

ST. MARY'S.

St. Mary's is twenty-four miles west of Topeka, and is the largest town within that distance. It is situated at the junction of four rich counties,—Waubensie on the south, Jackson and Shawnee on the east, and Pottawatomie, the county in which it is itself situated, to the west and north. Surrounding it lies the finest bottom land of the renowned Kaw Valley, where an entire failure of crops is unknown. The Kansas River is the dividing line between Pottawatomie and Waubensie counties, and a large iron bridge spans the river just at the door of the city, the only bridge west of Topeka for a distance of forty miles. This is an artery of trade which carries to St. Mary's every year untold thousands of bushels of wheat and corn, and droves of hogs and cattle.

St. Mary's has now a population of about 2,500, and is rapidly growing and improving. Her business houses are of stone and brick, and her mer-

chants are prosperous and have scarcely felt the depression which has affected agricultural districts throughout the Union for the past two or three years. Two banks, each with fair capital, furnish the means of exchange; the religious wants of the people are ministered to from five pulpits of as many denominations; and the education of her children is attended to through a graded public school, a parochial school, and as large an institution of learning as there is west of the Mississippi, if not the largest. The day passenger on the Union Pacific Railway from Topeka is attracted by the beautifully decorated grounds, or at night by the glare of the electric lights, as he catches a glimpse through the clusters of elms and maples of a group of three or four massive buildings. This is a Jesuit institution, known as

ST. MARY'S COLLEGE.

There are over 250 lives nestled in that grove, and the tourist will go a long way before discovering a family so numerous and withal so contented. The pupils range in years from ten to twenty-five, and have come together from various points between New York, Colorado, and Texas. There are two grades in the College, the junior and senior, having separate playgrounds, dormitories, dining-rooms, and study-halls. The curriculum embraces two departments, the collegiate and commercial; the former extending through seven, the latter through four years. Perhaps the feature of the college is its splendid library and elegant reading-room. There are three things above all others that careful observers have noted in the students of St. Mary's,—they are thoroughly moral boys, they are earnest workers, and physically they are strong and well developed.

In 1887 prospecting for coal began in the vicinity. One mile west of St. Mary's, the drill, at a depth of 328 feet, struck a bed of fine soft coal 38 inches thick; at a depth of 600 feet, a bed of cannel coal 4 feet thick was penetrated; and still below these coal beds, at a depth of 1,000 feet, the drill reached a vast deposit of salt, 110 feet in thickness. A strong salt brine flows continually from this hole, in artesian-well fashion, and the salt produced from it is equal in quality to the celebrated "Liverpool," so extensively imported by dairies and packing-houses; and here it is, near the track of the Union Pacific Railway, and with coal in abundance in the same shaft. In three different places near by, a soft coal of 36 inches in thickness has been found. This salt is at least 97 per cent pure.

Past WAMEGO, the end of the first district, 104 miles from Kansas City, MANHATTAN is next reached, the "prayer-founded city," 118 miles from the starting point. Here the Big Blue River comes tumbling down from Nebraska and joins issue with the Kaw—for the old settlers persist in still giving the Indian name of the Kansas River. Manhattan is a city of churches, and a flourishing place of above 3,400 inhabitants. In the early days, when there were but 500 people here, there were five places of worship, and it is asserted that church-building has very nearly kept pace with the increased ratio of population. The town is situated in a beautiful wide valley, and located here is the Agricultural College of the State—one of

the very best conducted institutions extant. From Manhattan the tourist can take the Manhattan & Beatrice Branch of the Union Pacific, and, ascending the valley of the Big Blue, reach Omaha through the cities of Beatrice, Lincoln, Valparaiso, and Valley.

Shortly after we leave Ogden in our journey along the Kaw, we discover in the edge of a river grove, and close to the railroad track on the south side, the ruins of a building of white lime-stone, and a little farther on, in the green meadow on our north, is its companion, both without roof or other wood work, but otherwise seemingly indestructible. These are the remnants of the first capital of the Territory of Kansas, Pawnee, in which the Territorial Legislature held a session July 2 and 3, 1855.

We are now within the Military Reservation of

FORT RILEY,

Which comprises a large select body of land along the river. Perhaps as we fly past, we may witness the evolutions of a troop of cavalry on yonder undulating slope. A little farther on, we can discern on the plateau at our right, the extensive new buildings, with their red roofs, of the Fort or Post itself. Of all the lovely country around this favored region, none can compare in natural beauty with the place selected by the United States Government for the establishment of that great post, Fort Riley. It was as far back as July, 1852, when Colonel Fauntleroy, of the First Dragoons, recommended the location to the Quartermaster-General, and in the autumn of that year a detachment of troops arrived and organized a temporary camp called Camp Center, and on March 4, 1853, the post was formally located and named Fort Riley, in honor of General Benjamin Riley, a distinguished army officer. The name Camp Center was first given the place because it is claimed to be the geographical center of the United States. Barracks were erected from time to time, some very costly frame ones during the period of the war, and the post continued to grow in importance. It was not, however, until 1884-5 that the Government became convinced of the great desirability of Riley as a large post. The plain facts appeared to General Sherman and General Sheridan to be these: The post was located on a reservation of over 20,000 acres; wood, water, and grass abundant; forage abnormally cheap in the district; railway facilities at the very gates of the fort (the Union Pacific running through the grounds), and the central position of the spot as a distributing point. An additional point was, that on the uplands, a short distance from the fort, the artillery had all the range necessary for field practice, and the cavalry all the room they needed. A board of military officers were especially appointed, selected the sites and planned the buildings. These buildings accommodate twelve companies of cavalry, half as many of artillery, recruits in training for each and every arm of land service, and officers to match, making a military population of 3,000 men and about as many horses.

The estimated cost of the contemplated structures will be from \$1,000,000 to \$1,500,000, in expenditures of from \$300,000 to \$400,000 annually. The first contract was awarded in October, 1885, and the amount spent in

construction up to the close of 1890 was over \$800,000, and nearly the same amount in 1889. Some idea of the extent of this work may be gained from the fact that the system of water-works will cost \$45,000, hospital \$30,000, and steam heating \$70,000. The post-trader's store will cost \$15,000. The material used is a very fine grained, white and cream-colored limestone, easily worked, but hardening on exposure. The stone has proven its durability after thirty years of satisfactory trial. The officers' quarters and the barracks are built double, while the residences of the post-commandant and the artillery-commandant officer are very handsome dwellings, fitted throughout luxuriously and conveniently. The plans of Captain George Pond, A. Q. M., constructing officer in charge, have been approved by the Quartermaster-General, and these plans assure the outlay of over \$800,000. But twice that sum will be expended before the Government has improved and adorned the post to its satisfaction. When full completion is reached, "Old Fort Riley" will be unquestionably our finest military post. It will be a cavalry and artillery school, and with the officers and their families, the soldiers and servants, there will be a little city there of nearly 4,000 souls. The forty buildings already erected are classed as follows:

Nineteen officers' quarters—fifteen double, 82x53½ feet each, and four single, 44x57 feet; all two stories high.

Two artillery buildings, 48x208 feet each; single story.

Six double cavalry barracks, 51x241 feet; each estimated to accommodate twelve troops of cavalry, or about 800 men.

Two administration buildings, one for each post of cavalry and artillery, the former being 57x127 feet and the latter 39½x91 feet.

The mess building; main hall, 73x180 feet, with kitchen 57x113 feet, the largest structure of the kind in the United States and capable of seating 1,000 men at a single meal.

Five cavalry stables, 63x143 feet.

Two gun sheds, 33x226 feet.

Guard house, 40x102 feet.

Hospital, 50x230 feet, with kitchen 30x63 feet.

Dispensary building, 37x54 feet.

Non-commissioned officers quarters, 35 feet square.

Among the buildings that are yet to be constructed are these:

Three artillery buildings.

Seven cavalry stables.

Three gun sheds.

Commissary store, 320x60 feet, the largest in the United States.

Cavalry drill hall, 100x300 feet, for use during stormy weather.

Bath for cavalry and artillery.

Quartermaster's stables, sheds and corral, 293x132 feet.

These comprise the best lot of buildings for a military post that were ever built by the Government, and in two years' time all will be completed. Captain Pond has absolute control of the improvements and is under bond to the government for the faithful performance of the trust.

The finest and most imposing of the buildings is the post administration building in which are located the offices of the commanding and field officers, and where the courts-martial are held. It contains beside the offices, a library and a lecture room. At the northwest corner is a three-story round tower in which will soon be placed an immense clock with illumin-

ated dials that can be seen from any point of the post, and, in some directions, for miles. The clock will cost \$1,500, and it will be of great service in insuring uniformity throughout the post and particularly with the trumpeters in sounding calls.

Many of the officers' quarters are furnished as well as the apartments of rich civilians. The double quarters are different from the singles only in that they are arranged to accommodate two families instead of one. To each family is allotted eight rooms, including the kitchen and laundry. They are heated with steam in winter, and are supplied with good water from a system of water-works that cannot be surpassed. A reservoir on the top of a hill at an elevation of 200 feet, has a capacity of half a million gallons of water.

These improvements will make a desirable innovation in army post life and will prevent a great deal of shifting about which becomes a burden to officers and their families. It is the custom that when changes are made, the new officers select their quarters from among any that may be held by their subordinates in rank, thus compelling the subordinate to move his family to some other quarters, probably pushing out the family of still another subordinate. The advent of one officer often necessitates the changing of the quarters of a half dozen families. This inconvenient and distasteful practice will eventually be abolished.

A street railway, using an electric or other fast motor, will soon connect Fort Riley with Junction City, making the two-miles-and-a-half trip in less than fifteen minutes. Several telephone wires are already in use. When completed, the regular expenses of the garrison and military school will be about \$2,000,000 a year, besides which a large proportion of the supplies for other western posts have been, and will continue to be, purchased here.

The Union Pacific will issue coupon tickets allowing the traveler to stop off at Riley on his route from Kansas City to Denver. Of the great natural beauty of this lovely place it is difficult to speak without being accused of "gush." The happiest combination of wood and field and river conspire to make it beautiful without the aid of art. Turn about. There is a broad, green valley, down which there stream two rivers, and these meet down yonder under the trees, and the Kansas is born. From this gentle eminence you see a low rim of hills a mile away which nearly encircles the fort, and toward the town unimagined depths of forest glade, shady walks and drives, and all these within the lines of the post. General Forsyth, the commandant, is most courteous to visitors, and allows civilians to roam at will over the picturesque portions of this lordly demesne—anywhere, in fact, except into the gun sheds and other mysterious buildings sacred to army discipline. Fort Riley will be a spot to be noted in every tourist book; the broad and harmonious scenery is of itself sufficient attraction, and there is the added interest of personally viewing one of the most charming homes of our boys in blue.

Immediately after leaving the station we cross the Republican river over a substantial iron railroad bridge; a little above and within sight, a wagon and foot bridge spans the river. This river rises in Northeastern

Colorado, flows all through Southern Nebraska, until it turns southward into Kansas, on the 98th meridian, in Republic county. At its confluence with the Smoky Hill river, it is the larger of the two, and both now assume the new name Kaw, or Kansas. Just before us is

JUNCTION CITY,

Quite a town, lying about half a mile north from the depot. The Union Pacific is erecting large round-houses for its locomotives at this point, and will bring the end of the first division from Wamego here. The town has a large trade in wheat, corn, oats and hay; has several flour mills, one on the Smoky Hill, which is here dammed and furnishes a permanent water-power. The population is about 4,000, classing the city among those of the 21st rank in size among all the Kansas towns (Topeka, 2; Lawrence, 8; Leavenworth, 4). It is the county seat of Geary, formerly Davis, county, which is watered by two rivers and seven creeks, and it is strongly claimed for Junction City that it is the center of more water power than any town in the West. The town is easy of access from all points, located as it is at the confluence of four great valleys—the Kansas, Smoky Hill, Republican, and, ten miles south, the Neosho. Timber is plentiful in the rich bottom lands, and magnesian limestone abounds on the bluffs. Immense crops of wheat are raised in this section, and grapes, apples and small fruits are always a sure crop. Its population is nearly 5,000; on nearly 9,000 acres 189,000 bushels of wheat were raised; more than a million and a half bushels of corn on 40,000 acres; more than 200,000 bushels of oats from 8,000 acres. Flax is grown on 260 acres, broom-corn on 57, castor beans on 22. Its horses numbered over 5,000, its milch cows nearly 5,000, other cattle 13,500, sheep 1,000, swine 9,000. Its assessed valuation of taxable property for 1888 was \$2,230,000, and its indebtedness \$110,000.

It matters not what may be the particular calling or inclination of the immigrant, if he is honest, industrious, sober and persevering, he will find an inviting field in this part of Kansas, with abundance of room for development among live, energetic people, with social, educational, religious and commercial surroundings equal to the best in most of the older States.

There are some pleasant bits of history concerning Junction City. In 1542, Francisco de Coronado, the Spanish explorer, crossed the rivers near where the town now stands. In 1719, M. Dutisne, the French explorer, arrived at a Pawnee village, near the mouth of the Republican Fork. He mentions finding two villages of about 130 cabins and 250 warriors each, and that they seemed in prosperous circumstances, each band owning about 300 horses. General John C. Fremont's exploring expedition crossed the Smoky Hill at this place. Bad weather and the necessity of making a raft detained them, when they resumed their journey along the Republican Fork. The General's narrative gives a handsome sketch of this region.

REPUBLICAN VALLEY.

Leaving the main line at Junction City, a pleasant trip may be taken up the Republican Valley to Clay Center, a flourishing city of 3,000 people. This is another fruitful section of which there are so many in

Kansas, but the sight-seer is doomed to some disappointment as he views the country from the car windows. The Republican River is apt to be rather impetuous at times, and, rising above its banks, thoroughly soaks the whole valley, so that one sees but fairly well-to-do crops and an average stand of small grain from the track. Out on the rolling prairies, beyond the bluffs of the river, are immense fields of wheat and corn, but this the traveler does not see unless he makes a special pilgrimage. This is a rich, mellow soil; there is plenty of timber, and wheat, corn, rye, barley, oats, potatoes, sorghum, apples, pears, peaches, plums, raspberries, strawberries, timothy and clover grow luxuriantly upon the slightest invitation.

CLAY CENTER,

The county seat of Clay county, is located on a beautiful southern slope, which extends from the banks of the Republican River on the south, on a gradual incline to the high prairie on the north, about one and a half miles from the river. In addition to this Huntress Creek flows along the western side of the city and empties into the river just south of the city, thus giving thorough surface drainage, and ample opportunity for a complete system of sewerage. There are the usual accessories of good hotels, street cars, electric lights and water-works. It is thirty-three miles from Junction City to Clay Center, and seventy to Concordia, a beautifully laid out city of 4,132 people.

CONCORDIA

Is the county seat of Cloud county, and situated on the bank of the Republican. The making of the town has been carried on with rare good judgment; the buildings are uniformly excellent, and the principal streets present quite a metropolitan appearance. Situated in a garden spot of agriculture, the town naturally grew into importance as a supply point, and the advantage has been energetically supplemented by the go-ahead spirit of her citizens.

BELLEVILLE,

Seventy-nine miles from Junction City, is the present terminus of this branch of the Union Pacific, and contains 1,631 inhabitants. Republic county, in which it is situated, is one of the very best agricultural districts in Kansas—splendid black loam soil; water, coal and salt basins, and a plentiful supply of building stone. The region contiguous produces great crops and fruits in profusion; cattle and hogs are largely raised. A non-sectarian college has been erected during the past year at Belleville, costing over \$100,000. It was built of Manhattan stone, 90x132 feet, and three stories in height.

MILTONVALE

Is 165 miles due west from Leavenworth, a well equipped narrow-gauge road connecting the two places. Miltonvale was named in honor of the late Milton Tootle, of St. Joseph, and is situated in the northeast corner of Cloud county. It is but a few years since the first building was constructed within its limits; now its inhabitants number about 700 of that thrifty, energetic class that is the pride of the West. Almost every branch of busi-

ness is represented, but not over-done in any branch. The stores are solid and substantial. There never having been a boom here, there has never been a set-back; hence the order of the day from the time the town started till now has been progress. There are three banks, one lumber yard, one grain elevator, one creamery, two brick yards, and two large implement houses; and a number of large general stores, dry-goods stores, groceries, hardware, and the usual lines of industry carried on in cities of this size, are found here in full operation. The soil is strong, rich, lasting, and unsurpassed in productiveness, besides being easy of cultivation. These lands are located near the best of markets, and prices vary according to the location, ranging from \$12 to \$25 per acre.

The line from Miltonvale east runs across a fertile prairie country varied by valleys and small streams. For some distance from Clay Center we are in the rich valley of the Republican; thence on to high table-lands where heavy crops of wheat and corn are raised; but from Clay Center to Holton, corn and cattle practically occupy the land. From Holton the country is more heavily wooded, and from Valley Falls up to Winchester we traverse a very picturesque valley. For a time we again encounter the high table-land, and then go down through wood and by stream to Leavenworth. This section very much resembles the line of country from Leavenworth to Lawrence. A large majority of the district from Miltonvale to Leavenworth is suitable for cattle-raising, and this is largely engaged in, though the herds are not extensive. Once, near the Missouri River, we come again into the famous fruit region. The predominating crop on the entire line is corn, and large yields are annually secured.

THE BIG BLUE VALLEY.

Another delightful section is the line from Manhattan due north up the valley of the Big Blue, before mentioned. This valley from Manhattan to Marysville we have already noted. At a conference of capitalists held less than one year ago at New York City the conversation turned upon the comparative value for agriculture of different regions, when one gentleman present, a man well known in political and financial circles, remarked: "I have visited nearly every civilized nation on earth, and am especially familiar with the soil and products of the different States of our own country; and I feel warranted in saying, that aside from the valleys of the Nile, in Africa, and the Yang-Tse-Kiang, in Asia, I have never seen a rival to the valley of the Big Blue River in Kansas and Nebraska." This may appear an extravagant statement; yet, that the reader may form an idea of this wonderful Blue River Valley, the center of which is pierced by the fortieth parallel of north latitude, we will state that this river, 200 miles in length, has its source in Central Nebraska, within a few miles of the Platte River; thence coursing southward through rich prairie lands which gradually merge into a wide bottom of prairie and timber lands of wonderful richness, it finally empties into the Kansas River at Manhattan.

ST. JOSEPH, MO.

Is one of the eastern termini of the Union Pacific Railway. A city that rates its population at 52,811, and claims to wholesale \$150,000,000 worth of goods annually, is certainly no unimportant factor in the development of "Western Wonderland." Situated on the left bank of the Missouri, St. Joe is connected with thirty-two navigable rivers and in water communication with eighteen States. There are 170 manufactories in the city, and 1,200 commercial travelers are on the road selling St. Joe goods.

There was but little indication of a city here in 1843 when Audubon, the naturalist, made mention of the "Blacksnake Hills settlement" in his accounts of his travels. The establishment of the famous Pony Express attracted attention to the town, the tide of California emigration secured her position as an outfitting point, and the gold fever in Colorado and other Territories quickly following, solidified her chances for growth. But up to 1880 her numerous advantages remained untouched, and it is since that time that such astonishing progress in commercial prosperity has been made. In addition to the numberless wholesale houses there are three packing houses representing an employed capital of \$2,500,000, giving work to 350 men, and giving an output of \$2,550,000. The stock yards comprise a tract of 440 acres. The great jobbing houses of the city have the facilities of handling home-made goods, and stand pledged to the support of home industries. The Board of Trade is an active institution of upward of 200 members, and can always be commanded as a disinterested medium for the development of all manufacturing projects that appear reasonable. It has been a reliable agent in bringing the claims of new enterprises to the attention of the people for years. The city is a thorough metropolis, with every convenience of modern invention, and a spirit of enterprise that is making a bid for every movable manufacturing plant, wherever located.

ST. JOSEPH TO HANOVER, EN ROUTE TO GRAND ISLAND, NEB.

The bridge crossed and St. Joe left behind, we enter at once on the old Pony Express trail—the Union Pacific line of to-day following very closely that famous route. From St. Joe to Severance one does not get a fair chance to judge of the country; we cross and run through a succession of small, heavily-wooded valleys with clear running streams, but never catch sight of the splendid corn fields which adorn the uplands for miles away. Corn, hogs, and cattle form the staple products on this line. The railway itself follows several exceedingly rich valleys.

MARYSVILLE.

One hundred and thirteen miles from St. Joe, is a quiet, conservative old town of 1,385 inhabitants. It was settled in 1856, and was for years a stage station when the mail was carried from Independence, Mo., to Salt Lake; the mail was received once a month at Marysville. There is located here the largest cigar manufactory in Kansas, as well as several local institutions. Land is worth from \$15 to \$50 per acre, according to location. At Marys-

ville we cross the line of the Union Pacific branch from Manhattan on the main line. A trip down the valley of the Big Blue reveals some charming bits of scenery, but the farms are all up on the headlands. The track follows the winding stream the entire distance, passing through pretty groves, heavy woodlands, and occasional fields of corn. But the high bluffs persistently rise on either side and shut off any view of those glorious fields where seventy bushels of corn to the acre is a fair crop. Proceeding from Marysville toward Grand Island we reach

HANOVER,

The end of a division 123 miles from St. Joe, and 125 miles from Grand Island. In addition to being a great farming and stock-raising country, there are found here inexhaustible quarries of fine building stone, sand, and clay for brick-making. The cheapness of land, productiveness of the soil, and its adaptation to farming and stock-raising are the prime elements that offer inducements to capital; but there are also other splendid openings for business. Manufacturing, now in its infancy, opens up a large field for investment. The growth of Hanover has been gradual, steady, nothing spasmodic about it, such only as the advancing settlement of the country warranted, until now it is a solidly built town of 960 population. The town has a good, eligible location, being situated near the Blue River, with fine roads, rendering it accessible from all points for trade, and it is the best shipping point in the country. It is in the midst of a fine farming country, and only lacks the capital to make it both a commercial and manufacturing point of importance.

After this digression we return to Junction City and the main line. While the engines are being changed, we have time to look once more upon Fort Riley, which can be seen quite plainly from the train or depot grounds. Continuing westward along the Smoky Hill, and shortly after passing the small station of Kansas Falls (at about the 148th mile post), we enter

DICKINSON COUNTY,

One of the best developed and richest farming districts in the whole State. It has 21,191 inhabitants, by far the larger number of which are of Pennsylvania extraction. This in a large measure accounts for the profitable, systematic, and thorough farming practiced by these people. The rolling prairies and wide, shallow bottoms of this county have an average elevation above sea level of 1,050 feet. The beneficial effect of this altitude upon the climate is very marked; even in the hottest days of high summer the heat is never oppressive; it is very dry and invigorating instead of enervating. The average annual rainfall varies between 24 and 32 inches, which is fully sufficient to grow all the cereals and thousands of tons of hay besides the grass used for pasturage. In 1889 the county raised nearly a million bushels of wheat from 47,634 acres; 6,300,000 bushels of corn on 125,592 acres; 1,665,000 bushels of oats from 47,571 acres. It had 13,883 horses, 12,653 milch cows, 31,575 other kine, and 35,295 swine.

We cannot see much more than a comparatively narrow strip of bottom between the rising ground on both sides of the railroad but even the little we do see convinces us that the farmers in this county are prosperous. We thus skirt along the Smoky Hill River, which is often hidden by groves of timber, until at DETROIT we see a spur track leaving the main line southwardly, and there, on the high south bank of the river, we behold

ENTERPRISE,

A thrifty little town which was founded here on the river because of its water-power, and it has been well utilized. In all there are twelve flour mills in the whole county, with an annual output of more than \$1,000,000 worth of flour.

ABILENE,

The county seat, was founded in 1866, when the Union Pacific Railway arrived at this point. It is now quite a handsome town, full of activity, with a good railroad eating-house and hotel, where the train that leaves Denver the evening before, stops for dinner.

The town has 3,560 inhabitants, a public water system, gas and electric works, a graded school, carriage factory, mills, elevators, banks, stores, churches, newspapers, brick works, etc.

From the time the Union Pacific Railway was opened, until about 1875, Abilene was the northern terminus of the "Texas Cattle Trail." Hundreds of thousands of "long-horns" were driven here from the "Lone Star" State for shipment eastward. The surrounding country was yet a beautiful wilderness of native grasses and prairie flowers, presenting a magnificent grazing field for the largest herds; and the new town was the favorite haunt of cattle-traders, herdsmen, cow-boys, gamblers, saloon men and other invariable accompaniments of the typical Texas cattle town. Several "Wild Bills" and "Texas Bills," not altogether mythical, held high sway in those times, sometimes even in the role of city marshal, until the railroad had reached Ellsworth, and the half-wild herds and their hardly less wild cow-boys departed for new fields. It was in those transition years that a so-called "public opinion" demanded that the railroad company withdraw its lands in the west half of the county from market and hold them as a reserve for grazing purposes; but the farmers occupied the lands and put them to a better use. This process repeated itself when the road reached Russell and Ellis counties. For a long time the 100th meridian was by scientists and experienced cattlemen proclaimed to be the westernmost limit of agriculture. Yet the farmers pushed ahead into the counties of Gove and Sheridan, and have now raised corn, forty bushels to the acre on sod, in Thomas, Sherman, Logan, Wallace, and Greeley counties, where it was positively asserted it could never grow.

There is one more town in the very west end of Dickinson county,—

SOLOMON,

On the river of the same name, near its Junction with the Smoky Hill. It has good water-power for a large mill, the usual number of stores, a

graded school, churches, two banks, and a round-house for the locomotives of the Solomon Branch of the Union Pacific, which branch here leaves the main line to follow the Solomon River northward. The town has 1,200 inhabitants.

MINNEAPOLIS,

The county seat of Ottawa county, situated on the Solomon Branch, has 1,812 inhabitants, the county having 15,453. This county is fully as rich, fertile and prosperous as Dickinson. We pass farther up to

BELOIT,

Inhabited by 2,360 persons, and the county seat of Mitchell county (14,346 inhabitants), one of the rich and wondrously fertile counties in the north central portion of the State, on the upper Solomon. This river is born in the west end of the county out of the junction of its north and south forks. Of this river we shall learn more when considering the Salina, Lincoln & Western branch of the Union Pacific.

Returning to Solomon, we take the train on the main line. As soon as we have crossed the iron railroad bridge we enter

SALINE COUNTY,

One of the brightest pearls in the famous "Golden Belt," and just before us are the extensive Solar Salt Works of Solomon. The strong brine is pumped up from wells, and distributed into shallow evaporating vats, until it is sufficiently concentrated for final drying out of the pure salt, wind and sun being the willing agents to do the work. The annual output is worth \$125,000, and could easily be increased if more capital was employed. This salt is 97.37 per cent pure.

The country about here appears to be a plain, but it is really an extended bottom formed of the junction of four wide valleys—the Solomon, the Smoky Hill, the Saline and Mulberry Creek—an immense area of extreme fertility, extending southward along the course of Gypsum Creek, and southwestward along Dry Creek. The rim of these bottoms appears like a range of hills or a plateau on the distant horizon. No wonder that in this heart of Kansas such a magnificent county as Saline should have developed—a county of 20,000 inhabitants; a county which yielded a wheat harvest of more than 2,017,836 bushels from 87,777 acres; 2,869,440 bushels of corn from 59,780 acres; and 719,124 bushels of oats from 17,122 acres! There were, besides, 273 acres in flax, 434 acres in broom-corn, and 450 acres in castor beans. The returns for 1889 show that there were 10,631 horses, 9,711 milch cows, 22,987 other cattle, and 11,349 swine. Its total assessed valuation for 1888 was \$5,119,656. Already the produce of its orchards, with their 85,000 trees in bearing, and 108,000 not yet in bearing—apples, pears, peaches, plums, cherries, raspberries, blackberries, strawberries and grapes—and of its market-gardens, is exceeding the home demand.

Past the town of NEW CAMBERIA, settled by Pennsylvania farmers, we cross the Saline River, a little more than a mile above its junction with the Smoky Hill; and soon the steeples and colleges of

SALINA

Spring into sight. Here is a city scarcely thirty years old, with 6,550 inhabitants, where one may drive to a hotel recently erected at a cost of \$80,000, with electric lights, elevator, and all the style of an eastern city. And a bright, energetic town is Salina—street cars, Holly water-works, gas, and two electric light companies, and a lively manufacturing center. Here one sees the inevitable park or square in the heart of the city. And what a wise and beneficent forethought it is! Go where you will in Kansas, into the smallest of the small towns, and somewhere within the boundaries you will find a shady grove of trees. There used to be a theory that the church was built first and the school-house next in all Western towns, but in Kansas it would seem that the first instinct of the town builders is to lay aside two or three blocks and plant trees. And this later generation have reason to bless the kindly thoughtfulness of those hardy pioneers; for these beautiful squares of leafy shade are one of the most attractive features the tourist meets with in his trip through the State. A village of 1,200 people in this section is a vastly different community in this year of grace and peace, 1891, from one of thirty years ago, or from a New England hamlet of to-day, even. First, there is your cool and refreshing park; then there is sure to be a good hotel, admirable schools, water-works, and electric lights. And yet this was called the Great American Desert twenty-five years ago—but of that we will talk later on.

Many of the richest resources of Salina have not been developed—the people have been too busy buying, and selling, and making a city. A very large and deep bed of the best potter's clay underlies a portion of the western part of the town. The clay along the river makes an enduring hard brick, equal to the Milwaukee brick, and of the same yellow color. The yellow stone that underlies all the eastern hills near Salina is a hydraulic cement of excellent quality, not yet worked, although it was hauled 140 miles by horse and ox wagons to Lawrence in 1858 and 1859, and there made into cement and sold in the stores. On the highest points east of the city there are great beds of gray granite, very hard and very brittle, suitable not only for fine macadamizing and for pulverizing into cement-sand, but also required in making steel rails and otherwise in smelting and purifying for the purposes of finer manufacture. Great gypsum beds exist in close proximity to the city.

Salina was founded in the wooded bend of the Smoky Hill River, and its wide, level streets, all its private grounds, lawns, gardens, and parks are planted with trees. It is a beautiful city, its many tasteful modern buildings, business houses as well as dwellings, being literally hidden in the green shade of an immense grove. It has water-works, gas, electric light, street railways, a number of good hotels, many substantial business blocks of brick and stone, fine churches, stores, six banks, graded schools, five colleges, and one daily and a number of weekly papers. Its various mills and other industrial establishments represent an annual output of \$1,000,000. Some brands of Salina flour enjoy an enviable reputation in

Boston and also in Liverpool. The farms of the whole county in 1888 yielded an income of one and three-quarter million dollars.

The Union Pacific has for many years operated a branch railroad from Salina due south along the valley of the Smoky Hill into

McPHERSON COUNTY,

A county almost as pretty, fertile, and well developed as its neighbor on the north, Saline. It has 21,358 inhabitants, and the two best cities in it, McPherson and Lindsborg; have respectively 3,063 and 1,500. There were raised by its industrious farming population more than 2,000,000 bushels of wheat on 85,000 acres; nearly 5,000,000 bushels of corn on 122,375 acres; 1,792,000 bushels of oats from 47,176 acres; and there are 42 acres of flax and 4,060 acres of broom-corn. This county and a few of its neighbors furnish the many thousand bales of material out of which our common house brooms are manufactured. In 1887 the whole State produced 21,000 tons; in 1888 not quite 14,000 tons; in 1889 only about three-fourths as many acres were devoted to its culture, McPherson being at the head of the list, its neighbor on the west, Rice county, following with 3,160 acres, and the next county south, Reno, with 2,396 acres.

After leaving Salina on the Union Pacific branch for McPherson we are carried through a model agricultural country, with handsome farm-houses, mills, elevators, schools, churches and stores. At BRIDGEPORT we touch the Smoky Hill River once more. We now enter McPherson county; only two miles from the line we stop at the pretty, active town of LINDSBORG, the seat of the Lutheran Bethany College and Normal School, a large, handsome structure, with an average attendance of more than 200 pupils under an able faculty. In the center of the county and at the terminus of the Union Pacific branch, is the county seat,

McPHERSON,

A very pretty, active town, of 3,063 people, with buildings that would be ornaments to cities of much larger pretensions. It possesses tasteful public edifices, very pretty parks, water-works, gas and electric lights, street railways, seven banks, graded schools, churches, stores, good hotels, newspapers, etc. In an addition on the east side is located the McPherson College and industrial School, a large stone building, having nearly 200 pupils and a full faculty. It was founded, and is principally maintained, by the "Dunkers," a Pennsylvania sect of Baptists who practice the simple piety of the primitive Apostolic times.

On the return to Salina, a few miles south of Lindsborg, we meet the Smoky Hill river, which here has attained in its course the farthest point south.

SALINA, LINCOLN & WESTERN ROAD.

From Salina a new road, rather more than a mere branch, has been built within the last few years, running nearly parallel with the main line, and about twenty miles to the north of it. This new road has opened a splendid agricultural country, which had not enjoyed the advantages of

good communication, and in consequence lagged in the development of its rich treasures. As this road gives quick connection with trade centers, the fertile stretches of wild lands along the upper Solomon will quickly be peopled by an industrious farming and stock-raising population.

After leaving Salina the road takes us along the Saline River, crossing it at Culver, to LINCOLN CENTER, the capital of Lincoln county. It is quite a substantial town, with 1,100 inhabitants, good hotel, stores, banks, mills, elevators, etc. Much of the county is broken and rough, the dark brown, hard sandstone of this region cropping out in numerous places. Many cattle and sheep ranches are located on these well-watered pastures. It is one of the few counties in which the sheep and wool crop has not decreased since 1888.

The train takes us along the Saline River, until, a few miles west of Sylvan Grove, we enter the valley of one of its tributaries, Wolf Creek, beautiful with its changes of groves, open prairie and tilled fields. At WALDO we leave this valley, and ascend on easy grade the dividing ridge between it and the Paradise Creek Valley, which we first strike at Ivamar Station, and continue it up to PLAINVILLE, where the passenger trains stop for meals. This is quite a stirring young town, with 500 children in its graded school, two banks, two elevators, and a wind grist mill.

We are now in a smooth, somewhat rolling, prairie country, which was attractive enough to induce some Swiss immigrants to settle here and found the town of ZURICH. From here we ascend another divide, on an easy grade, to enter the valley of the South Fork of the Solomon River. We strike this water-course first near BOGUE, a new promising town, with several stores, hotels, and a large school house, situated in a rich country not yet developed.

A few miles to the northeast is the town of NICODEMUS, the chief settlement of a large colony of colored people from Mississippi and West Tennessee, who came out here shortly after the war, very poor, but who have managed to improve their homesteads as well as their condition.

We are now actually in the valley of the Solomon, crossing and re-crossing the small river many times, on our straight east and west track. At HILL CITY, 550 inhabitants, we see the county seat of this (Graham) county, about half a mile north of the station. All this county has plenty of room yet, and invites the settler to occupy its fertile, smooth prairies.

In the next county, Sheridan, we take leave of the Solomon at Tasco Station, but continue up the bed of a tributary to the west line of the county, Menlo Station, where we enter the smooth prairies of Thomas county. The county seat of Sheridan county, HOXIE, 325 people, is, in its aspect, not a fair representative of the county itself. Its well-watered prairies are still open to the home-seeker, and promise a rich reward to industry and perseverance.

At COLBY we arrive at the terminus of the Salina, Lincoln & Western road, a division of the Union Pacific System, but may run down to the main line, which we strike at Oakley. Although it is the county seat of Thomas county, Colby is not yet five years old, but has substantial brick blocks, four banks, good hotels, stores, a very large school house, elevators, and,

in short, looks more like an Eastern Kansas county town than one only forty-five miles from the Colorado line. The town has 800 inhabitants. The Union Pacific Company offered their lands in this and Logan, Sherman, Wallace and Greeley counties, for the first time, to actual settlers only, in 1887,—in all about one million acres. Nearly one-half of the amount was disposed of at the close of 1888, thus proving the wisdom of the policy of selling to actual settlers only.

The county raised in 1888 agricultural produce valued at \$228,500, with a population of only 6,174. The crops of 1889 were 166,000 bushels of wheat from 11,000 acres, 840,000 bushels of corn from 42,000 acres, 138,000 bushels of oats from 5,000 acres; 396 acres are in flax and 643 acres in broom corn. The Government Free Homestead lands have all been taken up.

GOODLAND,

The new county seat of Sherman county, is close to the Colorado line, and the second county south from Nebraska. Ten years ago nobody would have been so audacious as to predict that this would become a flourishing farming region with as fine a young county seat as can be found anywhere three hundred miles farther toward the Missouri. But here it is, an accomplished fact. The county was organized in 1886; in 1888 it had 5,115 inhabitants; in March, 1889, 5,902. Its crops were splendid. In September, 1889, they held their first county fair, and were themselves astonished at the wealth of grain, corn, sorghum, millet, broom-corn and grass they possessed. One farmer exhibited heads of cabbage so solid as to suggest the question whether he had plugged and filled them with lead. They took part of the exhibit down to the State Fair at Topeka, and there elicited the profoundest astonishment at what the wild and desolate "Far West" could do.

One of the hidden causes of such fertility may lie in this fact. The bed of the Republican River, near Colorado and Nebraska, is very wide, flat, shallow and sandy. A great portion of its water no doubt sinks into the sand, and fills a stratum of gravel which underlies all this part of Kansas, and is struck at an average depth of thirty feet. Hence every farmer may set up his wind-mill pump and make the prairie wind work it for irrigation. This "sheet water" extends all through this and Wallace county on the south, though for the last few years, since its settlement, it has enjoyed sufficient rainfall during the growing season for all its crops. The people are proud of their county and do not tire of recounting the successes of their farmers. One crippled veteran has raised on his homestead claim—the work all done by hired help—one thousand dollars worth of broom-corn, and the hard cash was paid to him in the fall of 1889.

Goodland has a very good hotel, magnificent court-house, public school, stores, banks, and a live, active population.

RESUMÉ.

The line from Salina to Denver, by way of Colby, just described, has several important advantages. In the first place, it is not only actually shorter but its most pronounced claim is in its easy grade, averaging about ten feet

to the mile, with but two greater rises, where the divides already mentioned are crossed. There are no such steep grades anywhere as to require "double headers" (two locomotives) on any train, neither freight nor passenger.

Why, then, was not this route chosen in the first place?

It must be remembered that the construction of the Pacific Railroads—the Union Pacific, Central Pacific and Southern Pacific—was commenced as a war measure, to bind the Pacific Coast States to the Union. Very little was known of the vast country lying between the Missouri and the Pacific Ocean, the old Pike's Peak trail followed by the adventurous prospectors for gold and silver being the only route that had been somewhat explored. The savage Indians were everywhere, and in no friendly mood. So it came that the then possible nearest western course toward Denver was selected as the route for the main line.

The main line from Salina westward to Denver continues through the rich bottoms toward a rim of hills on the distant horizon. We pass several artificial (*i. e.*, planted) groves—"tree claims"—the United States having given free to the settler 160 acres of this rich soil, the only condition being that there be 6,750 good and thrifty trees planted and growing on ten acres of the donated land. This is a very beneficial law, and has already entirely changed the face of many localities from former bleak prairie to a pleasingly diversified landscape.

At BROOKVILLE we stop to change engines; soon we enter a hilly, broken district, the brown sandstone bluffs piled up in fantastic castles and walls and turrets. We are in

ELLSWORTH COUNTY,

Whose population is 9,667; that of the city of Ellsworth, 2,100; Wilson, 772; Kanapolis, 320. Wheat raised was 1,573,400 bushels from 56,274 acres; corn, 1,518,110 bushels from 41,030 acres; oats, 49,000 bushels from 4,900 acres; 5,400 horses, 4,696 milch cows, 15,268 other kine, 10,400 sheep, 4,240 swine.

Its eastern portion is mostly hilly, and is well watered by numerous springs and creeks; its grassy slopes are peculiarly fitted for pastures. It was a ranch country before the county was organized, and since about 1880 Massachusetts capitalists, in search of a country in which diseased lungs would regain health and strength, have established quite a number of sheep ranches. Here they enjoy the pure, invigorating air of a sunny climate in a high altitude (about 1,500 feet above sea level), and as free from the sultry heat of summer as from the piercing cold of long winters. Their sheep ranches are models; their houses, mansions with every city comfort. The farming lands are interspersed along the valleys and bottoms, and the entire southwest portion on the Plum Creek Flats cannot be excelled for agricultural possibilities.

At CARNEIRO we cross a creek with a belt of native timber, and on the slope south of the railroad we can see from the car window a cluster of mushroom-rocks, curious formations left standing after ages of weathering processes had crumbled the softer limestone below a harder

cap rock. The slopes on the next creek we shall cross have similar specimens.

KANAPOLIS.

A young town of only a few years, population 320, occupies the site of old Fort Harker; some of the brown sandstone buildings are remnants of this military post, which afforded the necessary protection to the laborers and contractors while building the road and laying the track, no longer than twenty-three years ago. The new town has all the wide-awake activity of its Ohio founders, who knew what they were about when spending and investing capital of many hundred thousand dollars. Lately deep borings in prospecting for coal have developed a solid bed of rock salt, 230 feet thick, besides 4 feet of good coal. They have begun to sink a shaft, 9x23 feet, and soon will be bringing up the rock to be crushed into salt as pure as the English imported Asthon, so extensively used by Western packing houses.

We are now running down a long grade to the banks of the Smoky Hill, of which we took leave at Salina, and enter the city of

ELLSWORTH,

The county seat, a thriving city, with good water-works, parks, schools, churches and mills. Its streets are lined with shade trees, and its private gardens and lawns are smiling ornaments of civilization, where little more than fifteen years ago the savage whoop of the cowboy was the predominating noise.

Here, also, borings have demonstrated the existence of a bed of rock salt, 730 feet below the surface, 110 feet thick, and nearly 96 per cent pure. The same shaft at the depth of 1,195 feet struck a good flow of natural gas, which awaits useful employment.

We continue up the Smoky Hill for ten miles, when we bid it good-bye. We now ascend to the high prairies, and shall run along their smooth backbone ridge for many a mile. And while we speed along on this perfectly ballasted track, it may be well to talk a little about this great country through which we pass. This is the true and veritable "American Desert"—that is, it used to be termed so, that stretch of country anywhere west of Salina. As one traverses west of Ellsworth these immense rolling seas of prairie land, the monotony of the picture may perhaps be remarked. As mile succeeds mile the same billowy surface meets the eye. But remember, this great section is the future home of a mighty host from other lands and our own over-crowded centers, and even now the advance guard is here; an occasional farm comes creeping down toward the track. Remember, too, that this great area has sustained countless herds of cattle in the past, and while stock-raising continues, and will continue to be for a time, the principal use to which this country is put, still the tendency is toward the permanent settlement by the farmer, and with the encroachment of the agriculturist will disappear the herds, and so the occupation of the gifted cow-boy is but for a time. At the same time, cattle and stock raising will continue to be a

staple product, but in a restricted sense, more as the adjunct to the farm than the dominant industry.

But about this "Great American Desert." It has disappeared from the map, but remains very obstinately fixed in the minds of many intelligent people. Argument is well-nigh useless. You cannot convince them that crops can be raised in Western Kansas. Shortly after 1873 the surplus population of a few Western States drifted into Kansas. The locust pestilence of 1874 and 1875 drove them back, and in 1876 the grasshoppers raided again. It gave a great advertising to the State, and when prosperity returned in 1878 the overflow crowded in again—and staid. The abuse of the climate of this section, when investigated, develops one of its strongest points. The atmosphere is dry and invigorating. Sunshiny days outnumber all the others of the year. During the past ten years there has been an average of 196 days of mild weather between frosts. Hon. Frank H. Spearman in a recent article very justly and clearly points out the falsity of the abuse of the climate. "In summer," says Mr. Spearman, "although the thermometer ranges high, sultry heat is impossible at such an altitude, and the nights are always cool. In Southern Nebraska and Northern Kansas one finds nearly as perfect a climate as the United States affords. Even the blizzards, when they do come, last but one or two days, and the remainder of the month may be counted certain for fine weather. And frosty air and clear sunshine put life and metal into a man, which the soft and balmy odors of Florida cannot supply. And it naturally follows that such a climate must be remarkably healthful."

An adequate rainfall suggests a topic out of which has arisen all, or at least the main, controversy regarding the future success of this region and the entire new West. Experts who know absolutely nothing about actual facts talk and write learnedly to prove that Kansas does not have, never had, and never can have, adequate rainfall. Actual dwellers in this "Desert" know that we do have liberal rains. This is the result of experience. Buffalo-grass sod, in its natural state, is as impervious to water as a rubber coat. Turn that sod over, and it will absorb water like a sponge. After a day's heavy rain there is no mud visible in a plowed field; the moisture soaks downward to great depths, which retain it through weeks of dry weather afterward. The great influx of population into certain quarters of Nebraska and Kansas have made possible Omaha and Kansas City and St. Joseph and lesser lights. These towns are simply the reflection of the farms, and are dependent upon the "Desert" for their business. Well-watered farms are plenty. While there is but little of the lands which are not now classed as farms, there is a great deal not under cultivation. As this uncultivated land under fence is used for grazing purposes, it is estimated as farms. These lands are waiting for the cultivating energy of enterprising immigrants.

Kansas now supports and makes wealthy a population of nearly one and one-half million people, according to the latest enumeration. And if all the land of the State were under cultivation, it would support twenty times as great a population.

During the ten years from 1877 to 1887 Kansas made a growth without a parallel in history. In population it has grown from a half million to a million and a half; in acres of lands farmed, from five million to sixteen million; in railroads, from two thousand to eight thousand miles, from 1877 to 1888; in taxable property, from one hundred million to three hundred million dollars. The increase in stock and field crops has been three-fold. It has been ten years of unsurpassed growth in agricultural development.

WILSON,

With a population of 772 people, is in the very west end of the county and is remarkable in the history of the development of this western region for the Experimental Nursery planted here by the Railroad Company early after the completion of the road. The object was to demonstrate that trees *could* be grown on the high prairies, and to ascertain which varieties were best suited to this purpose. All along the railroad the stations and section houses are provided with small parks, the trees being furnished by the Wilson Nursery. There is no longer any need for it; the State of Kansas is doing the same work on a much larger scale now.

About three miles south of town, on the Smoky Hill, is a coal bank, furnishing a light lignite coal, costing about three dollars a ton at the mine. There are other mines in different portions of the county, which yield a similar fuel; yet the farmer who has an abundance of corn in his bins, finds it cheaper to use corn in the ear to heat his rooms and cook his meals, than to hitch up, drive several miles to the nearest coal mine, and pay three dollars a ton, when corn is about the same price, and to get it he goes only across the yard to the crib.

Immediately after we leave Wilson, whose depot is built of the dark brown sandstone brought from Fort Harker, we enter

RUSSELL COUNTY,

Which has a population of 7,337; 34,135 acres in wheat yielded more than 800,000 bushels (one field of 60 acres near Bunker Hill yielded 1,920 bushels); 34,779 acres of corn yielded more than 1,000,000 bushels; 4,339 acres of oats harvested 165,000 bushels; horses number 5,153, milch cows 6,181, other cattle 16,770, sheep 7,720, swine 3,367. This is another county wherein the sheep ranches flourished for many years until the prices obtained for wool seriously depressed the profits. Still large ranches of improved cattle, sheep and horses are yet existing, principally along the Saline River in the northern, and the Smoky Hill in the southern, part of the county. The assessed valuation of all taxable property for the year 1888 was a little over two million dollars. Streams are not continuously fringed with timber, a few groves appearing at intervals. There were in 1888 about 900 acres planted with timber, trees one year old and over, the number of fruit trees in bearing was 12,740; of those planted but not yet bearing, 44,700.

The Union Pacific and its Salina—Lincoln—branch (in the north townships) are in the county. Stations on the main line: Dorrance, 200

population, with water tank, Bunker Hill, Russell and Gorham. BUNKER HILL, 250 population, has water works, large mill and elevator, and graded school. RUSSELL, the county seat, with 1,093 population, has a steam mill, elevator, good stores, two banks, two weeklies, a graded school, and good churches. It enjoys an active and profitable trade with all portions of the county.

The herd law is in force in this county, under which every owner is obliged to keep his stock from trespassing upon the lands of others; yet we must notice, as we pass through its fields and pastures, that a great number are fenced, the posts being of stone split from the hard layers of limestone found in almost every neighborhood, and barbed wire strung between them.

The railroad is following all through this county a comparatively narrow backbone ridge of high prairie. North as well as south deep ravines and heads of streams approach within half a mile of the track. This feature of the country explains the course and curves of the track from Bunker Hill to Russell and Gorham.

CREAMERIES.

From Brookville, 500 people, westward we have passed a number of creameries; they are all new, near a railroad station, and built on the same general plan. The farmers drive up to the platform, lift the large cans with the milk, gathered sometimes from a whole neighborhood, out of their light wagons, have it weighed and gauged, and receive their credit ticket for as many pounds as delivered. The milk is subjected to a quick centrifugal agitation in a "separator," which in a short time separates cream from milk. The cream is churned, the butter properly worked, salted and put into tubs for the market. The farmer may re-purchase the skimmed milk at a low price, to use for their growing young stock. At stated periods they receive cash for the milk furnished. Quite a number of these creameries are conducted on the co-operative plan, the farmers themselves being the stockholders, and employing the necessary skilled help. They have proved quite a benefit to the small farmers; generally their store bills are paid by this income from a product which formerly was used up at home and almost valueless.

A mile west of Gorham we enter

ELLIS COUNTY,

With a population of 7,933, principally farmers and stock-raisers. It had this last year 46,350 acres in wheat, yielding about one and a quarter million bushels, averaging 26 bushels to the acre; its corn crop was estimated at 475,000 bushels from 14,400 acres; and its oats, 165,118 bushels from 4,300 acres. There were 4,275 horses, 3,283 milch cows, 12,490 other cattle, 1,257 sheep (against 9,000 the year before, and 18,000 in 1888). The wool clip of 1887 yielded 39,381 pounds at a value of \$7,088; that of 1888 was only 8,943 pounds, valued at \$1,609. The number of fruit trees in

bearing in 1888 was 4,691, of those not yet bearing 27,403. There were also 21 acres in raspberries, 10 acres in blackberries, 9 acres in strawberries.

In September, 1889, the county displayed at the State Fair in Topeka a splendid exhibit of its grains, grasses, vegetables, and fruits; it competed with such old, well-developed counties as Wyandotte (Kansas City), Shawnee (Topeka), Douglas (Lawrence), Jewell, on the Nebraska line, and two counties east of Ellis; yet it was successfully recognized. Wyandotte obtained first, Shawnee second, Ellis third, and Jewell fourth prize; and in largest variety and excellence of its fruit Ellis county competed successfully with all the older and more eastern counties.

There are farmers in this county, who in the last harvest threshed from 2,000 to 10,000 bushels of wheat. If a man should have bought of the railroad company one quarter section of its good wheat-land at its average price of seven dollars an acre, and had put half of it (eighty acres) into wheat, this single wheat harvest would have furnished all the cash to pay for the whole quarter.

KANSAS AND SEVEN OTHER STATES.

(From the Fourth Agricultural Report of Kansas, extending to the year 1882.)

“Massachusetts thinks a good deal of itself, almost as much as New York, Pennsylvania, Ohio, Indiana, Illinois, and Missouri do of themselves. And each of these States has a right, because of its agricultural achievements, to a very good opinion of its capability. Together they form the best agricultural belt of the continent, both as respects climate and fertility of soil. Since 1862 the Department of Agriculture has presented the average yield per acre of each, the last report being that for 1881. In order that persons familiar with these States may be able to judge of Kansas, which they do not know, by comparing it with the crops of a State which they do know, we present the following table of the average yield per acre in each State, of the two staple crops, corn and wheat, during consecutive years.

“If the choice States of the Union are reliable agricultural States, Kansas, resting on the facts here presented, is at least equally safe. If they have a right to entertain a good opinion of themselves, agriculturally, so has Kansas; and if it chose, it might glorify itself.”

WHEAT.—AVERAGE PER ACRE IN BUSHELS IN

	Mass.	N. Y.	Pa.	Ohio.	Ind.	Ills.	Mo.	Av. in these 7.	Kan.
1862.....	17.	13.	18.	16.	14.	14.	17.	16.6	21.
1863.....	14.	14.	14.	13.	14.	12.	16.	13.9	16.
1864.....	.....	.....	.....	10.2	.....	14.8	14.2	12.9	15.
1865.....	17.6	15.3	12.2	9.5	8.5	11.	12.7	12.4	15.
1866.....	14.9	15.2	11.	4.5	5.9	13.	16.5	11.6	21.40
1867.....	.....	.....	.....	11.6	.....	11.4	12.4	11.8	14.
1868.....	15.5	14.6	12.8	13.	11.2	11.5	14.	13.2	15.6
1869.....	18.	16.	14.8	15.5	12.4	11.2	14.1	14.9	18.5
1870.....	17.6	13.8	12.	13.8	11.	12.	13.	13.3	15.
1871.....	18.2	17.2	16.2	13.9	12.	12.3	13.4	14.8	15.9
1872.....	17.4	12.5	10.8	11.7	12.4	12.1	8.8	12.2	11.6
1873.....	19.	13.5	14.2	12.	11.2	13.5	12.8	13.7	14.
1874.....	14.5	15.6	14.8	14.5	12.2	11.5	13.5	13.8	13.8
1875.....	16.	8.	13.8	9.2	9.	10.5	9.	10.8	17.7†
1876.....	18.	15.	13.2	10.18	11.	9.3	12.4	12.7	14.3
1877.....	22.	18.	13.5	15.6	14.5	16.5	14.	16.2	13.5
1878.....	22.	19.	15.	16.5	16.	13.6	11.	16.1	18.7
1879.....	18.	15.	15.3	17.8	20.3	18.7	14.	17.	10.6
1880.....	17.	16.	15.	17.2	16.8	16.7	13.4	16.	10.4
1881.....	15.8	13.9	12.5	13.3	10.8	8.2	8.6	11.8	9.4
1882.....	.....	.....	.....	.....	.....	.....	.....	.....	22.3
1883.....	.....	.....	.....	.....	.....	.....	.....	.....	19.25
1884.....	.....	.....	.....	.....	.....	.....	.....	.....	21.47
1885.....	.....	.....	.....	.....	.....	.....	.....	.....	9.40
1886.....	.....	.....	.....	.....	.....	.....	.....	.....	13.60
1887.....	.....	.....	.....	.....	.....	.....	.....	.....	11.40
1888.....	.....	.....	.....	.....	.....	.....	.....	.....	17.11
1889.....	.....	.....	.....	.....	.....	.....	.....	.....	22.09

CORN.—AVERAGE PER ACRE IN BUSHELS IN

	Mass.	N. Y.	Pa.	Ohio.	Ind.	Ills.	Mo.	Av. in these 7.	Kan.
1862.....	37.	35.	36.	33.	42.	40.	38.	37.	40.
1863.....	33.	33.	33.	24.	24.	22.	29.	28.	44.
1864.....	.....	.....	.....	31.5	.....	33.	26.8	30.4	25.
1865.....	33.3	24.	40.	41.5	40.4	35.2	39.	36.1	41.2
1866.....	34.	27.	34.4	38.	36.5	31.6	30.8	33.1	34.2
1867.....	.....	.....	.....	28.7	.....	23.8	27.2	29.6	38.6
1868.....	37.	32.	35.	34.	34.	34.2	30.3	33.8	18.
1869.....	34.2	27.1	34.4	30.1	23.2	23.2	30.6	28.5	48.4
1870.....	33.	34.	35.8	39.	39.5	35.2	31.4	35.4	28.
1871.....	34.3	33.	33.5	38.5	35.7	38.3	38.	36.2	40.
1872.....	34.	37.	39.	39.5	38.7	39.8	37.	37.9	38.5
1873.....	35.	31.	35.1	35.	25.6	21.	23.5	29.5	39.1
1874.....	32.	30.	33.2	39.7	27.	18.	16.	27.9	10.3*
1875.....	37.	34.	40.	34.	34.	34.3	36.6	35.7	48.8†
1876.....	35.	30.	35.	36.8	30.	25.	27.8	31.3	43.7
1877.....	34.7	32.	33.	32.5	30.	29.	29.	31.3	40.38
1878.....	36.	36.	35.	37.	32.8	37.1	26.2	32.5	37.13
1879.....	36.	33.	35.	34.	33.	35.	37.	34.7	36.3
1880.....	33.5	34.8	40.6	38.9	29.	27.2	28.4	33.2	28.5
1881.....	25.1	26.4	25.2	25.4	21.8	19.1	16.5	22.8	19.38
1882.....	.....	.....	.....	.....	.....	.....	.....	.....	35.34
1883.....	.....	.....	.....	.....	.....	.....	.....	.....	39.13
1884.....	.....	.....	.....	.....	.....	.....	.....	.....	42.
1885.....	.....	.....	.....	.....	.....	.....	.....	.....	33.67
1886.....	.....	.....	.....	.....	.....	.....	.....	.....	24.05
1887.....	.....	.....	.....	.....	.....	.....	.....	.....	18.9
1888.....	.....	.....	.....	.....	.....	.....	.....	.....	32.74
1889.....	.....	.....	.....	.....	.....	.....	.....	.....	40.54

*Grasshoppers in summer.

†Grasshoppers in two east tiers of counties in spring.

RANK OF KANSAS AMONG THE SEVENTEEN BEST
AGRICULTURAL STATES.

WHEAT, 1883.			CORN, 1883.		
STATE.	BUSHEL PER ACRE.	WHOLE STATE.	STATE.	BUSHEL PER ACRE.	WHOLE STATE.
KANSAS	19.1-4	30,025,000	KANSAS	39.1-10	182,000,000
Oregon	16½	13,123,000	Nebraska	36	101,278,000
Dakota	16	16,128,000	Missouri	27½	161,655,000
Nebraska	15½	27,481,000	Indiana	27	95,620,000
Michigan	14	25,000,000	Pennsylvania	27	37,857,000
Pennsylvania	13½	20,000,000	Ohio	26,½	73,560,000
California	13	36,320,000	Illinois	25	203,785,000
Minnesota	13	33,773,000	California	24½	2,464,000
Wisconsin	12½	19,600,000	Iowa	24½	169,629,000
Iowa	11½	27,518,000	Kentucky	24	78,200,000
Indiana	10½	28,447,000	Michigan	23½	21,412,000
New York	10½	8,035,000	Oregon	23½	129,000
Missouri	10,½	23,819,000	New York	23	17,512,000
Ohio	10	25,884,000	Wisconsin	21	23,579,000
Illinois	10	22,150,000	Minnesota	20½	15,124,000
Texas	8½	4,300,000	Dakota	18½	4,915,000
Kentucky	7,½	9,612,000	Texas	17½	64,146,000

(From Report of Bureau of Agriculture, Washington.)

In Russell county we were at an elevation of 1,850 feet above sea level, and have risen but little when we reach the county line between Russell and Ellis counties at Gorham. Here we seem to descend to the beautiful flats of Walker Creek, Victoria Creek, and Big Creek—all tributaries of the Smoky Hill, which runs through the south townships of Ellis county. We pass WALKER, a nicely growing station with mill and elevator, stores and school, in the midst of a rich agricultural country; and at Victoria we are at an elevation of 1,946 feet. That large village to the north of the road, clustering around its conspicuous red-roofed church and other ecclesiastical buildings, is

HERTZOG,

Settled about August, 1876, by Russians of German descent. When Russia in the last century under enlightened and liberal rulers opened its wide, wild steppes on the Volga and other streams in South Russia to civilized immigration, Southern Germany as well as Eastern Prussia, along the Baltic, sent their sturdy overflow into this new territory, and they built hamlets and villages such as they had been used to live in. They enjoyed some privileges, full religious liberty, and conducted their own schools. Times changed, however; they were oppressed in various ways by the Russian government, and became restless. Their eyes were set toward this new West. So they emigrated, many thousands of them, to Kansas. The Mennonites, a branch of Baptists practicing primitive Christian piety and simplicity, like the Quakers and Dunkers, found a congenial new home in Marion and McPherson counties. The Lutherans settled in the south portion of Russell county along the Smoky Hill, and the Catholics came to

Ellis and Rush counties, where they founded strong and prosperous settlements. Hertzog is the largest of them. It has now 1,200 inhabitants, a large parochial and a public school, stores, etc.

Several years before these Russo-Germans arrived, an English colony had been founded here, at

VICTORIA.

They were young men with means, who set to building a fine depot, good houses, a cozy Episcopal chapel; and they found enjoyment in the pretty county seat, Hays City, where a garrison of several companies of Regulars gave tone and interest to society.

As we cross the bridge over Victoria Creek, with its fringe of timber, we may see on the south side, close to bridge and creek, a small plot enclosed by a rude paling fence, with the mounds of thirteen graves. When the road was being built these thirteen laborers were slain in one night by the Indians. It was under constant fear of attack and surprise, and with painful watchfulness, that this national work of building the railroad to the Pacific had to be pushed.

Just ahead on the north side we see a large ranch, with good buildings and good fences, owned by a wealthy gentleman in New York City; he takes delight in breeding the pure-blooded Black Polled Angus cattle, which we may happen to see leisurely grazing and displaying their immense fat forms.

Ellis county has a number of the best ranches in the State. Blooded horses, blooded cattle, fine-wooled sheep, and high-bred swine, all succeed wonderfully on these perennial pastures of the nutritive native grasses, principally the short deep-rooted buffalo grass, supplemented by generous allowances of alfalfa, corn and sugar cane (sorghum). Good water is plentiful. One gentleman came from the Cape Colony of South Africa, and is well pleased with the change from an African to an American ranch.

HAYS CITY.

(2,109 feet elevation), the county seat, with 1,350 population, is beautifully located on Big Creek. It has steadily and substantially grown, and bids fair to be the handsomest town between Ellsworth and Denver. It has elegant blocks built out of the native magnesian limestone, a rich yellow in color, and others of pressed brick made here out of an excellent bed of clay. There are large steam mills, elevators, banks, a handsome courthouse, a large graded school, good stores, lumber and coal yards, two good, new hotels, several weekly papers, and a flourishing creamery, whose product is in active demand as far as Denver.

After the railroad was located, there was a military post—Fort Hays—situated here, on the south side of Big Creek, almost hidden by the timber. In the autumn of 1889, however, it was abandoned, and the garrison, being no longer needed here, was removed into the Indian Territory. The reservation will no doubt be sold, and form a handsome addition to the city.

Resuming our journey, we pass between Big Creek on the right, and rather steep hills on the left, until we stop at

ELLIS-

(2,155 feet elevation), which is the end of a division. Here are located the principal repair shops of the Union Pacific between Armstrong and Denver, there being a very large round-house, store-house, etc.; also a good railroad hotel, where the trains from Denver and Kansas City stop for meals. The population of 1,350 is largely dependent upon the railroad, although a good trade with the country to the west and north is carried on. A project is on foot to establish here a

SORGHUM SUGAR FACTORY.

This industry is comparatively new to the State; but enough has been demonstrated to show that the cane grown here is well adapted to the production of sugar and molasses. What remains to be settled is the proper method of working the raw product; as soon as a sufficient number of experts and skilled laborers have been trained, there will be raised in the "Sunflower" State all the sugar and molasses for its own consumption, and some to spare to its neighbors. Capital is ready for investment, farmers are ready to supply the cane; the only lack now is skilled labor and management. Even without sugar factories, sorghum cane has for years been a most important crop. It supplies a forage highly nutritive and greedily relished by all stock, and, what speaks most in its favor, it is not affected by the

HOT WINDS.

Every summer, more or less often, there are hot, dry winds blowing from the southwest, often with considerable force. When they occur just as the corn is in bloom (silk and tassel) they destroy, by drying up, the tender organs of fructification, and no corn will mature, there being only stalks and blades for fodder. The experiments carried on all over the State now are to develop varieties of corn which will be past this critical period of bloom at the time the hot winds may be expected. All the small grain is then in shock, millet and sorghum are not affected, and the rains of latter August and September revive the grasses. The origin of these injurious winds is still in dispute; some hold that they are bred in Arizona and New Mexico; others contend that they are a home product. At all events, the unbroken, dry, smooth prairie upon which the sun pours down its rays through a cloudless atmosphere, is their brood-bed. Many a time before we reach Denver we may notice, hovering close upon the southwestern horizon, a strip of grayish, floating, mist-like matter, resembling the motions of the short waves of a distant lake. This is the *mirage*; it is the effect of the hot sun upon the dry, smooth prairie.

At the west end of Ellis, Big Creek is dammed for the ice crop which the railroad company needs and stores on the bank. We next enter

TREGO COUNTY,

Leaving Big Creek far to the South. This county has a smooth, rolling surface, broken and rough sections occurring only in its northern portion,

along the Saline River. Round Mound, about two miles south of the railroad and two miles west of the east line of Trego, is a conspicuous landmark, and is visible from the car windows. There are no timber belts or fringes along the water-courses; the groves we espy are all planted. Its 900 square miles had a population in 1889 of 2,884 persons, of whom nearly one thousand live in the towns, although, with but few exceptions, they also follow farming. It had 4,708 acres in wheat, yielding about 57,200 bushels; its corn crop was estimated at 271,100 bushels on 9,683 acres; its oats at 46,390 bushels from 2,017 acres; there were thirteen acres in flax and 117 in broom-corn. Its horses numbered 2,172, its milch cows 1,828, all other cattle 7,037, sheep 5,937, swine 607. The total assessed valuation for 1888 was \$1,356,438. Sheep have proved a success here; it is one of the few counties showing an increase of flocks over former years.

About a mile west of Ogalia, the first station we pass through, the State of Kansas has established under a special commissioner a

STATE FORESTRY STATION.

One of the two in the State, where forest trees, mostly deciduous, or such as have been proved to be adapted to growth in groves on the high prairies, are being raised by the ten thousands and under certain conditions given to applicants for planting groves about their homes.

When the railroad construction had advanced to about this point, in 1867, somewhere hereabouts the contractors built a stockade to fortify their camp. It was absolutely necessary that the gang of laborers should be armed, and the Government furnished them with rifles and ammunition. Water for men and teams had to be hauled from Big Creek, some four miles to the south, and must always be done under guard. Wood for fuel had to be obtained on the Saline, about ten miles to the north, and on such occasions the whole force, men and teams, would start out, camp for the night on the Saline, cut and load the wood, and return. The Indians were very troublesome, and never to be trusted. One of the contractors was killed by them when he had ventured out alone. The oxen used at work, after being out quietly grazing, would return to camp with arrows sticking in their sides.

WA-KEENEY,

(Elevation, 2,391 feet), nearly 322 miles from Kansas City, is the county seat, 403 population, and the location of a U. S. Land Office for this district. It has two banks. There are no Government lands left fit for the use of a farmer or stock owner. The railroad lands were many years ago sold in bulk to different parties; but the development of the county does not appear to have been quickened much by this sale.

A few miles northwest of Wa-Keeney there is a large deposit of superior chalk; it is being worked principally for whiting. There were in 1888 13,385 fruit trees, in bearing, and 18,761 more not yet so far advanced. There are about a dozen large ranches scattered over the county in the most eligible sites. A little west of Collyer (elevation 2,608 feet), 335 miles from Kansas City, we pass into the next county,

GOVE COUNTY.

Organized in 1886, it has now a population of 3,637 to its 1,080 square miles. Its surface is rolling prairie, with some bluffs, rough lands and ravines adjacent to the streams, which are, the Smoky Hill in the southern townships, and Plum Creek and Hackberry Creek through the central portions. It had in 1889 1,845 acres in wheat, bearing about 27,000 bushels; of corn it raised 150,000 bushels from 14,431 acres; and of oats, 41,500 bushels from 1,184 acres. There were 263 acres in flax, and 447 in broom-corn. Horses 2,066, milch cows 2,603, other cattle 7,316, sheep 2,196, swine 471. The total assessed valuation for 1888 was \$1,335,190.

QUINTER,

The first station we pass in this county, is quite a young Quaker town, showing the usual Quaker thrift and neatness. These people came from an Eastern Kansas county.

Of the other three stations, Buffalo Park (2,773 feet), Grainfield (2,829), and Grinnell (2,912), Grainfield is the largest place, with a good hotel, and a lively local trade with the surrounding country, south and north.

The railroad lands in this county were also sold in bulk to various parties, and, it would seem, with the same lack of successful settlement by small farmers. There are eight large ranches scattered over the county. The county seat, Gove City, is a small place almost in the exact geographical center of the county. On the east line, in section 1, township 14, range 26, there is a curious natural monument, "Castle Rock," 177 feet high above the surrounding prairie—a remnant of the high prairie as it was before the waters of long-past geological eras had washed away the softer material (erosion).

We now enter the two counties farthest west, in which the railroad lands were first offered for sale about March 1, 1887, and in ten months, until the close of the year, the railroad company sold, of nearly one million acres in this territory, more than one-fourth, and all to actual settlers who have seen the lands and determined to occupy them. The lands in these western counties are nearly all moderately rolling, smooth prairie, nine-tenths suitable for agriculture, possessing almost universally a good, strong, rich and deep soil. Splendid water is easily obtained at from 30 to 100 feet. All the government lands in these counties have been taken up, and cultivation has commenced on many sections. Many enterprising towns already have a start, and others are springing up.

LOGAN COUNTY,

Which we enter with our arrival at OAKLEY station, population 350 (376 miles from Kansas City, 2,981 feet elevation), was organized only in 1888. It has 1,080 square miles, 3,529 inhabitants, 3,986 acres in wheat, the yield being estimated at from 57,000 to 58,000 bushels; 18,640 acres in corn, with an estimated yield of 278,100 bushels; oats, 2,367 acres, with 54,500 bushels; 165 acres in flax; 357 acres in broom-corn; 1,944 horses, 1,817 milch cows,

3,616 other cattle, 446 sheep, 811 swine. Its total assessed valuation in 1888 was \$1,603,986. The value of all the products of field and farm in that year was \$165,500. There are seven large ranches in this county, whose county seat is Russell Springs, in the center of the county on the Smoky Hill River.

At Oakley the Union Pacific has a branch road running in a northwesterly direction to Colby, connecting there with the Salina, Lincoln & Western Division, of which mention has been made heretofore.

MONUMENT

(3,107 feet elevation), is 385 miles from Kansas City, and is a lively young town. It takes its name from the obelisk monument near the track, erected in honor of General John A. Logan, after whom the county is named. (Previous to its organization in 1888 the county had been named St. John.) From the top of this obelisk it is said that nearly 100 wind-mills may be seen. The settler who puts up a wind-mill to pump his water supply to where he needs it is to be considered a "stayer;" hence, the larger the number of wind-mills, the larger the number of permanent settlers.

At WINONA, population 130, in 3,303 feet altitude, we are 398 miles west of Kansas City.

One mile west of Lisbon station, near the water tank, we cross the North Fork of the Smoky Hill, here only a little rill, but about seven miles to the southeast it unites with the somewhat stronger South Fork.

MCALLISTER has been built by Topeka parties for a summer resort.

FIELD SPORTS.

In all this Central and Western Kansas game has become scarce. After the railroad came the buffaloes were chased and killed for their hides, and they are now extinct. Antelopes are sometimes seen, having strayed in from Nebraska or Colorado. Quails and prairie chickens (ruffed grouse) are protected by law. The farmers also very properly object to having these useful birds killed, for they destroy such numbers of injurious insects that the living bird is much more valuable than the dead one. The long-legged, long-eared jack rabbit affords good sport for man, horse and dog, so does the wily coyote (prairie wolf).

At Turkey Creek station we cross the county line into

WALLACE COUNTY,

Area, 900 square miles, organized in 1888, with 2,644 population. It raised in 1890 10,134 bushels of wheat, 153,000 bushels of corn on 10,195 acres, 3,520 bushels of oats on 352 acres; there were also 323 acres in broom-corn, and ten acres in castor beans. Horses 1,113, milch cows 1,434, other cattle 2,900, sheep 3,270. There are about a dozen large ranches in the county.

WALLACE STATION

Is the end of a division of the railroad, population 350, with round-house, repair shops and residence for the division superintendent. All these will

be removed to Cheyenne Springs in Colorado, forty-one miles farther west. The station with its park, hotel, and railroad buildings, is located at the northwest corner of a military reservation, on which Fort Wallace was located. The reservation is a strip of smooth bottom-land about two miles wide and seven miles long down the Smoky Hill Valley, which feature explains its selection. The records of weather observations were kept here by the army officers, and after the abandonment of the fort, the railroad officers continued them. For the period of eight years the average annual rainfall amounted to 17.24 inches, which will probably increase somewhat as we proceed northward into Sherman and Cheyenne counties. We here have to change our time to Mountain time, one hour slower. The county seat of this young county has been located at

SHARON SPRINGS,

Distant from Kansas City 429 miles, 3,419 feet altitude, an active little place, 500 people, with county court-house, school, water-works, stores, etc.

The last station in Kansas that we pass is Weskan, 3,800 feet elevation, and at the State line we are 3,842 feet west of the 44th mile post. Where we cross the line, there is on the north side of the track an iron cone, black and red, which indicates the 78th mile from the extreme northwest corner of the State of Kansas, due north from here.

RAINFALL IN KANSAS.

Much has been said and printed of late about "the increase of rainfall in Kansas." Carefully made observations, dating in one instance back to the time previous to the settlement by white people, do not present any ground for such speculative assertions. But a change for the better has undoubtedly taken place, and in this way:—

The original wild grass which covered all the vast prairies of the West, the buffalo grass, forms a sward perfectly impervious to rain; water is shed by it as by a sheep pelt. Its presence always indicates a deep and strong soil. As it is plowed up, the soil is uncovered, and drinks in all the rain that falls upon it.

Formerly, the creeks and streams would rise rapidly and swell up to over-flowing in a few hours after every shower. Now, they rise slowly, and fall as slowly, even after heavy rains. The buffalo grass is being crowded out, even on the unbroken pastures, by a long-stemmed variety, the "blue stem," equally good for grazing as for hay-making. We regard all these changes as sure indications that with increased cultivation of the surface, more moisture becomes available; and the thoughtful farmer assists nature by plowing a little deeper every year.

The records of rainfall kept at FORT LEAVENWORTH (in longitude 94° 54' west) in the Missouri Valley, and on the extreme east line of Kansas, date from 1836. In periods of ten years the average rainfall observed was:—

From 1837 to 1846 (ten years).....	30.4 inches
“ 1847 “ 1856 “ “	32.3 “
“ 1857 “ 1865 (nine years).....	33.7 “
“ 1867 “ 1876 (ten years).....	32.2 “
“ 1877 “ 1883 (seven years).....	32.9 “

THE LEAST AMOUNTS FELL IN

1874.....	24.21 inches	1882.....	22.07 inches
1875.....	25.51 “		

THE LARGEST AMOUNTS FELL IN

1872.....	44.21 inches	1870.....	41.70 inches
1877.....	44.01 “		

In 1888 it amounted to.....	41.84 inches
“ 1889 “ “ “	32.49 “

About one hundred and forty miles west from the eastern State line (in longitude 96° 35' and 1,300 feet above sea level) is FORT RILEY, where similar observations have been made and recorded since 1853. In periods of ten years the average annual rainfall observed was:—

From 1854 to 1863 (ten years).....	23.68 inches
“ 1864 “ 1873 “ “	24.22 “
“ 1874 “ 1883 “ “	26.26 “
“ 1884 “ 1888 (five years).....	22.09 “

This point is located so that it may be taken as a fair representative for all Central Kansas, nearly up to the 100th meridian, in Trego county.

THE LEAST AMOUNTS FELL IN

1854.....	16.93 inches	1874.....	15.14 inches
1860.....	15.36 “	1886.....	18.01 “

THE LARGEST AMOUNTS FELL IN

1876.....	37.38 inches	1858.....	31.97 inches
1879.....	33.06 “	1869.....	31.69 “
1877.....	32.68 “	1861.....	31.68 “
1871.....	32.19 “	1872.....	31.55 “

The annual average for the period from 1854 to 1888, taking one year with another, is 25.18 inches, of which

April has.....	1.95 inches	} Growing season.
May “	3.16 “	
June “	3.94 “	
July “	3.68 “	
August “	3.51 “	

The winter months have from 0.50 to 1.95.

The western portion from Ellis county to the Colorado line, has not yet been the field for like careful and reliable observations. At FORT HAYS, in Ellis county (longitude $99^{\circ} 20'$ and 2,100 feet above sea level), the record covers a period of only eleven years, one of which was of unusual drought; still the annual average of rainfall is 25.40 inches, oscillating between 15.52 inches in 1868 and 36.94 inches in 1876. This may be accepted as applying to all the counties from the Arkansas River north to the Nebraska line and for about fifty miles on both sides of the 100th meridian, which runs a little west of Wa-Keeney, in Trego county.

In the extreme west the observations are yet more deficient: those kept at FORT WALLACE, in longitude $101^{\circ} 36'$ (the nearer Colorado State line is along the 102d meridian) and 3,300 feet above sea level, cover a period of only eight years; average, 17.24 inches annual rainfall; lowest, 6.57 inches in 1873; highest, 34.00 inches in 1880.

On the whole, our experience is to the fact that the growing season, between March and August, is favored with rain sufficient to supply the wants of the usual crops, and that the winter wheat, as a rule, receives in early fall all the rain needed for its early sprouting and growth before cold winter arrives.

PERMANENCE OF STREAMS.

The most remarkable fact to an eastern observer is the permanence of the streams on the great Kansas prairies. Although they do not rise in the mountains and are not directly fed by the great mountain snow fields, yet it is evident that they are indirectly so fed. Only a small portion of the waters of those broad mountain regions, with fifty feet depth of melting snows, is able to escape in the form of mountain torrents. The pent-up reservoirs pass into the bowels of the earth, and, per force of hydrostatic pressure, find vent as gushing springs all through the outlying foothills and plains for hundreds of miles. These springs are plentiful in Kansas. They are plentiful in Davis (now Geary) county. They are numerous about the sources of our rivers. They are the origin and life of these rivers. They obtain their supplies from the vast snow fields of the broadest chain of mountains in the world, and are not affected by the severest droughts. In the driest time there is said to be more than one hundred horse-power of surplus water passing over the dam at Fogarty's Mills, on the Smoky Hill River at Junction City.

There is another fact not generally recognized. The rivers, and especially the Smoky Hill, are not only very permanent, but they are also very regular during the extremes of rain and drought. Usually the channels are deep, and besides the channels proper there are broad bottom-lands, both above and below high-water mark. The broad alluvial valleys are underlaid with a porous subsoil which is readily permeated by the waters of the rivers. During rainy seasons, which should seemingly cause great floods in the rivers, the waters escape into the subsoil to a great distance from the channels, and by thus *underflowing* the valleys, their overflow is prevented. Then, as the dry weather sets in, this subsoil, saturated with water, feeds the rivers, and preserves a regular stage of water. These

facts have been verified by the rise and fall of wells in the vicinity of the streams during rains and droughts, and by the permanent rise of wells after the construction of mill-dams.

The country through which these branches of the Union Pacific extend, offers special inducements either to the farmer or investor. Here are found all the advantages of railways, markets, schools, churches, society, and neighbors, that can be found in an old, settled country, with the additional advantages of cheap lands unsurpassed in fertility, and a climate of acknowledged healthfulness. To the man who is the possessor of a few hundred dollars, this country presents better opportunities for securing a home and a competency than it is possible for any Government land district with its free lands to offer. It is unnecessary to say why the above statement is true, for a little thought on the part of any intelligent farmer will convince him of its accuracy. The man who has experienced the hardships incident to the homesteader's and pre-emptor's life, in a country remote from railways, markets, schools, and society, the increased expense for provisions and fuel, will find, at the end of five years' residence that he has expended more than the purchase money of a quarter section of land where all the conveniences and advantages referred to above are ready at hand.

CLIMATE.

As has already been stated, the geographical position of Kansas is an unanswerable argument in favor of its healthfulness. The enterprise and vigorous advancement shown in the years of settlement, contribute another premise to the logic whose conclusion is, that Kansas is all that can be desired for health, and vigorous, pushing health at that.

Professor Frank H. Snow, of the State University at Lawrence, Kansas, has kept a correct weather record since 1868. He publishes the tables of his observations in the large volume of the Report of the State Board of Agriculture. From them it appears that the mean temperature for the spring months is 54 degrees, for summer 76.39 degrees, for autumn 52.89 degrees, and for winter 30.08 degrees; the mean temperature for the year is 53.34 degrees. This places us in line with the States to the east of us—Missouri, Southern Illinois, Southern Indiana, Southern Ohio, Kentucky, the Virginias, and Maryland.

The temperature of the western half of the State, from one to two thousand feet higher than Lawrence (875 feet above sea level), is slightly lower, but no such accurate observations for a long period are at hand from that portion of the State.

The winters of Kansas are generally open; the fall of snow is comparatively light, rarely exceeding six inches in depth for a single storm. There is great variety in the cold of our winters. In 1869, 1874, and 1880, the temperature fell below zero only twice in each year. In 1872 the zero point was passed on sixteen days. In the winter of 1867-68 farmers were plowing during the whole of December until the 5th of January, when winter began. Uninterrupted cold weather then lasted until the 12th of February, when the winter was at an end. The winter of 1871-72. on

the other hand, extended from the 18th of November to the 15th of February.

The average number of days when the mercury reached ninety degrees at Lawrence, during thirteen summers, was thirty-nine.

But though the thermometer indicates a higher temperature on a greater number of days than in the States of the same latitude to the east of us, the heat is, on the whole, much easier borne than there. First, the nights are invariably cool. Second, the air is in almost constant circulation—rarely becomes calm. Third, the most important modifier of heat is the dryness of our Kansas atmosphere, which cools the body by rapid evaporation, and makes the high temperature of midsummer easy to endure. The greater the amount of moisture in the air, the more oppressive becomes the heat; so that eighty degrees in Philadelphia or Boston is far more intolerable than ninety degrees in Lawrence or in Hays City.

The average date of the last light frost of spring is April 22; that of the first light frost in autumn is September 25, giving an average interval of 157 days entirely without frost. The period of freedom from *severe* frosts is considerable longer, averaging 200 days, from about the 4th of April to the 18th of October. The April frosts are seldom severe enough to materially injure fruit-buds.

SOIL.

In nearly every portion of the State the soil is a dark, rich loam, composed of the accumulated mold of the vegetation of ages, mixed with fine, silicious grains of sand and lime. We have no "hard pan," except in a few counties on the Missouri border; have no "gumbo," and consequently no "craw-fish" prairies. The surface soil is so porous that the heaviest rains are almost completely absorbed. "More rain, more rest," does not hold good in Kansas. The morning after a night's rain the farmer can plow or cultivate his corn field without fear of packing and baking the ground. The rain is stored in the soil, and is accessible to the roots of the crops during long weeks of cloudless, sunny weather. That is one of the secrets of the peculiar success of crop-raising in our State, and the intelligent farmer assists nature by plowing a little deeper every year and loosening the subsoil.

Our ground is very easily plowed, as it turns nicely; the three-horse riding plow, cutting a sixteen-inch furrow, is coming into quite general use, and is doing quick, thorough work. So easily is the soil worked and planted that not a few shiftless people will scatter oats, for instance, in a corn-stubble field, and then run a harrow through it, expecting to raise a crop in such a sluggard manner, and frequently succeeding, too.

"The soil of both valley and high prairie is the same fine, black, rich loam so common in Western States. The predominating limestones, by this disintegration, aid in its fertility, but the extreme fineness of all the ingredients acts most effectively in producing its richness. * * * A few exceptions to this general rule exist in the extreme southwestern counties, but they contain only a small portion of the whole. * * * A very

common opinion prevails, that the land lying near the Colorado line contains numerous alkali springs, and that the surface is sometimes covered with white alkali deposits. This is not so. During fifteen years' acquaintance with that portion of the State I have seen but two springs appearing to contain that substance, and never found ten acres of land in one place, where the vegetation had been injured by it."—*Professor B. F. Mudge, State Geologist.*

The soil on the high, rolling prairies is several feet deep, resting frequently on gravel, and under that is found the magnesian limestone, which rock formation underlies the whole State.

BUILDING STONE.

The most abundant and best building material in the State is limestone. A heavy stratum of it, sixty feet in thickness, extends from the Nebraska line, in Jewell county, over 160 miles in a southwesterly direction, crossing the Solomon, Saline, and Smoky Hill valleys, and disappearing in Hodgeman county. The layers composing it are of quite uniform quality in all localities. It is wrought easily, is durable, and forms handsome buildings at low cost, and improves in hardness on exposure. It also gives a good quick-lime. That known as the Junction City stone is soft, of a fine grain, and can be sawed with a common saw and smoothed with a carpenter's plane, and is at the same time firm enough to be durable. This is seen in the buildings at Fort Riley, erected thirty years ago. They not only stand firmly, but the marks of the quarryman's tools are still clearly visible on the outer walls, being scarcely changed by the action of the elements.

In Ellsworth and Lincoln counties a hard sandstone is found and extensively used for buildings and fences. Farther west, in Russell and Ellis counties; a soft limestone of beautiful colors in strata, gold, rose, and white, is found; when sawed in the shape and size of bricks it forms a very cheap and handsome building material. The towns of Wilson, Bunker Hill, Russell, and Hays City are mostly built of this stone, and the farmers prefer it to lumber for their own dwellings, stables, barns, and outhouses.

LIME AND HYDRAULIC CEMENT.

Lime for mortar can be obtained almost everywhere. Hydraulic limestone for cement is found near Fort Scott, Lawrence, and Leavenworth, and exists probably in many other places.

GYPSUM (PLASTER OF PARIS)

Occurs in many places and in great masses. At Blue Rapids it is already manufactured into plaster of Paris of a quality equal to the best in eastern markets. In Saline county, near the Smoky Hill River, along Gypsum Creek, there is a very large deposit. In later times this plaster will become a valuable fertilizer for the tame grass and clover pastures of the State.

SALT

A tract of country about thirty-five miles wide and eighty long, crossing the Republican and Saline valleys, will furnish Kansas and the neighboring States with all the salt they may require. The deposit has not been uncovered, but the indications are plainly seen in the numerous salt springs and extensive salt marshes. The value of Kansas salt is enhanced by its purity, containing only 2 per cent of impurities. Recently rock salt in thick beds has been discovered at Ellsworth and Kanapolis.

Extensive salt works are in flourishing operation at the town of Solomon, near the junction of the Solomon with the Smoky Hill; they already cover nearly twenty acres with their evaporating vats and drying sheds. Good salt springs and wells in other parts of the State have not as yet been utilized.

LEAD AND ZINC

Are found in rich deposits in Southeastern Kansas, close to the Missouri line. They are already extensively mined.

MANGANESE.

A large deposit of this valuable mineral is still awaiting its first development.

COAL.

A soft, light lignite coal is found in Washington, Republic, Cloud, Mitchell, Lincoln, Ottawa, Saline, Ellsworth, McPherson, Rice, Barton, Russell, and probably some adjoining counties. It contains a great per cent of ashes, and crumbles upon exposure to rain and frost. Notwithstanding these defects, it becomes of value in the sparsely-timbered prairie country, by furnishing the settlers a cheap fuel which may be had almost for the labor of getting it. The really good bituminous coal is found in the eastern counties below Kansas City, Fort Scott and Cherokee coal being already an article of great commercial and manufacturing value. It can be bought in all the railroad towns for about \$4 a ton. All the western counties which are touched by the Colorado railroads, have the splendid semi-anthracite coal of Colorado brought to them at about five dollars a ton.

CHALK

Is found in extensive deposits in Trego county. It is of rare purity, and will become a source of rich income when the country is more developed.

TIMBER AND FRUIT TREES.

Three-fourths of the State is amply supplied with forest. The eastern division has more timber than is needed for fuel, and a fair supply for fencing and building purposes. The middle division has enough for shelter for live stock. The western division has much less, but still enough in most of the counties for present needs. The mildness of the climate requires less fuel than in the eastern and northwestern States. The west-

ern counties use little or no wood for fencing, because they have a herd law; do not need fences, and build none. All the streams of Kansas have borders or belts of timber, ranging from forty rods to a mile in width, with the exception of a few which run out into the plains and high tablelands of the western counties. These streams are so well distributed over the State that the distribution of timber could hardly be better equalized. The counties having the poorest timber supply have, in good measure, compensation for the want of it in the finest and most available building stone in the Western country. In the east division the market has a full supply of cord-wood at \$3 to \$5 per cord, and in the settled portions of the western division at \$3 to \$6 per cord, the price depending on the quality and distance to haul. The native varieties are cottonwood, white, black, red, swamp and burr oak; red, white and water elm; white, blue and black ash; linden, sycamore, willow, sugar and soft maple, black walnut, hackberry, box-elder, pecan, hickory, and some of the smaller varieties, like iron-wood, box-wood, etc. The per cent of native forest in sixty-six counties runs from 16 down to 1, the average being 5.27 per cent for the entire territory embraced in said counties. Since the annual prairie fires were checked by the cultivation of lands, the opening of highways, and other causes, the timber belts have widened at a rapid rate, and to-day there is fully 10 per cent more native wood in Kansas than when it was organized as a Territory, notwithstanding the constant consumption. Tree-planting has become a great interest of later years. In many of the older counties there are thousands of acres in domestic forest. These groves have attained a height of from fifteen to sixty feet, the trees having a diameter of from three to fifteen inches. The annual growth is from one to two inches diameter, and a four or five-year-old forest will thereafter furnish a good supply of fuel for the family. In the homestead counties, where the Government has stimulated artificial forestry by the "Timber Act," giving any man, or head of family, 160 acres of land on the condition of his or her planting forty acres of the same in timber and caring for it seven years, beautiful groves of cottonwood, ash, box-elder, maple and walnut dot the country in every direction, and lend a charm to the prairie landscape quite beyond the power of description. These charming groves will be as numerous and noteworthy in the near future of Kansas as the orchards of Michigan and Western New York. Columns of forest trees outline the farms and highways for miles and miles, in many districts, and it is no unusual thing for a farmer to plant 1,000 young trees in a single year. With the pretty valley timber belts and artificial groves grown into stateliness, ten years from to-day Kansas will be one grand, continuous park, and the most beautiful country under the sun. Beyond the questions of abundant and cheap fuel, building and fencing timber, and embellishment of landscape, which are involved in extended tree-planting, these groves will superinduce rainfall, temper the February and March winds, and give increased equability to the climate. The State of Kansas is doing good work in its two Forestry Stations, one located immediately west of Ogalla, in Trego county, where such trees are grown for free distribution as have proved to be adapted to our soil and climate.

FENCING AND THE HERD LAW.

Fencing is an important item in all countries, and especially in a new region where the settlers are mostly men of limited means. The total capital invested in fencing in the United States would twice pay the National debt. The outlay in cash and labor on fences in this new country is astonishing. But the chief concern of the Kansas farmer about fencing centers in hedging. The 46,000 miles already grown are of the famous *Bois d'Arc* (Osage Orange), the most beautiful and perfect material that ever went into the construction of a fence. It is almost indigenous to the country, growing wild in all parts of the neighboring Indian Territory. In the form of a hedge it comes the nearest to perfection in Central Kansas, and is so easily and cheaply grown that no farmer who must fence at all is excusable for being without it. One bushel of Osage Orange seed, costing \$4, will give 750 plants, sufficient to fence half a dozen farms. It will turn domestic animals the third year after planting. One hundred dollars, judiciously expended, will plant and grow a mile of perfect hedge. In summer it is the most beautiful fence in the world.

While they are busy planting hedges in Eastern Kansas, they have the herd law in Western Kansas, and the herdsman must take care of his flocks. No farmer is compelled to fence his estate or crops, and a great country of wheat and corn fields, orchards, vineyards, and lawns, with not a vestige of fencing, is a novel and refreshing sight. Half the earnings of the Eastern farmer are wasted in protecting his crops. The herd law of Kansas gives ample protection, for it is entrenched in popular sentiment and is rigidly enforced.

It stimulates settlement and development. Most of the farmers came here poor, and could not fence if they would.

The herd law makes it possible for them to start in a race for a home and competence.

Other things being equal, the herd law is the best impulse to settlement in a prairie country. It is in force now in nearly every one of the counties in the western half of the State.

ORCHARDS AND VINEYARDS.

Fruit culture is a prime interest in Kansas, and the extent of its cultivation throughout Eastern and Central Kansas is a matter of surprise to visitors. No country within the "fruit belt," from the Atlantic to the mountains, gives more prolific crops of apples, peaches, and grapes, or fruit of finer quality. Pears, cherries, plums, apricots, nectarines, and the smaller fruits of the garden are all successfully grown. Douglas, Wyandotte, Leavenworth, Brown, Doniphan, Johnson, Labette, Lyon, Riley, Bourbon, Cherokee, Crawford, Coffee, Allen, Wilson, Neosho, Montgomery, Jackson, Marshall, Shawnee, Pottawatomie, Wabaunsee, Geary, Morris, Dickinson, Saline, Clay, and other of the old counties, have each a good list of orchards that would do honor to Michigan.

The quality of Kansas fruits is a matter of general remark with the fruit men of the older States. In 1869 the National Pomological Society, at Philadelphia, by a unanimous vote awarded to Kansas its great golden medal "for a collection of fruit unsurpassed for size, perfection, and flavor." In 1871 the American Pomological Society, at Richmond, Va., awarded Kansas "the highest premium for the largest and best display of fruit, unequalled in size, beauty, and elegance, during the session of the American Pomological Society." Medals and diplomas for Kansas fruit have also been given by the Pennsylvania Horticultural Society, the St. Louis Fair, the New York State Fair at Albany, the New Hampshire Agricultural Society, the New England Fair at Lowell, Mass., the Illinois State Fair, the Minnesota State Fair, etc.

THE GOLDEN BELT.

There is a strip of country from forty to sixty miles wide, extending through the center of the State from its eastern line to the extreme west, that for its richness and beauty has very aptly been denominated the "Golden Belt." It embraces the valleys of the Republican, Solomon, Saline, and Smoky Hill rivers, and through its middle line the Kansas Division of the Union Pacific Railway has been constructed. A glance at the map will show the location of the counties generally included in it. What they raised in 1889 of the three principal crops, the following table¹ will show:—

COUNTIES	Wheat.		Corn.		Oats.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Barton.....	82,755	2,057,630	71,497	2,073,413	8,085	299,145
Clay.....	8,525	169,708	121,696	5,963,104	39,668	1,586,720
Dickinson.....	47,634	995,664	125,592	6,279,600	47,571	1,664,985
Ellis.....	46,352	1,203,112	14,402	475,266	4,361	165,718
Ellsworth.....	56,274	1,575,429	41,030	1,518,110	6,409	224,315
Geary*.....	7,917	189,004	40,983	1,639,320	8,271	206,775
Gove.....	1,845	27,033	14,431	144,310	1,184	41,440
Graham.....	6,235	80,020	26,765	695,890	6,225	155,625
Greely.....	1,513	15,130	15,454	231,810	691	10,365
Lincoln.....	37,861	981,710	45,043	2,026,965	12,601	567,045
Logan.....	3,986	57,153	18,540	278,100	2,367	54,440
McPherson.....	85,032	2,039,580	122,375	4,895,000	47,176	1,792,688
Osborne.....	27,928	516,289	80,435	3,860,880	11,783	636,282
Ottawa.....	36,210	868,440	75,031	3,276,395	19,631	745,978
Pottawatomie.....	7,828	171,478	88,060	4,579,120	18,606	613,998
Rice.....	51,962	1,299,050	92,186	3,963,998	18,141	780,063
Riley.....	4,516	97,882	57,998	2,899,900	18,375	753,374
Rooks.....	25,508	499,635	39,537	1,581,480	15,086	467,666
Rush.....	35,270	845,864	19,803	455,469	2,814	87,234
Russell.....	34,135	818,214	34,779	1,078,149	4,339	164,882
Saline.....	87,777	2,018,646	59,780	2,749,880	17,122	719,124
Sheridan.....	7,151	85,367	21,848	670,896	5,730	144,600
Sherman.....	3,877	60,035	45,102	1,262,856	3,609	72,180
Thomas.....	11,761	166,657	41,944	838,830	5,096	137,592
Trego.....	4,708	46,919	9,683	271,124	2,017	46,391
Wallace.....	479	5,568	10,195	152,925	352	3,520

*Formerly named Davis.

LANDS OF THE UNION PACIFIC RAILWAY.

Headquarters at Omaha, Nebraska.

ALBERT WOODCOCK, GENERAL LAND COMMISSIONER.

Statement of number of acres of land for sale by the Union Pacific Railway Company in the following counties in Kansas; also maximum and minimum price per acre.

COUNTIES.	Number of acres for sale.	Price per acre.	
		Lowest.	Highest.
Johnson	85	\$10 00	\$20 00
Douglas	5	.....	.....
Pottawatomie.....	402	6 00	10 00
Wabaunsee	428	.....	.....
Riley	819	6 25	10 00
Geary	6,789	6 25	8 00
Dickinson	342	.....	.....
Clay	322	.....	.....
Saline.....	6,172	6 00	12 00
McPherson	1,045	6 25	13 50
Lincoln	80	.....	.....
Ellsworth.....	13,139	5 00	15 00
Rice	1,202	8 00	15 00
Osborne	5,650	4 00	10 00
Russell	56,413	4 00	12 00
Barton	3,434	6 50	10 00
Rooks	9,596	5 00	7 50
Ellis	62,887	4 00	10 00
Rush	1,090	6 00	11 00
Trego.....	4,571	5 50	10 00
Gove	29,030	4 00	7 50
Thomas.....	115,780	4 50	15 00
Logan	195,449	4 50	15 00
Wichita	1,426	5 50	6 00
Sherman.....	31,558	3 50	6 50
Wallace.....	139,902	4 50	15 00
Greeley.....	17,763	4 50	7 00

TERMS OF SALE.

TEN YEARS' CREDIT.—One-tenth of the purchase money is paid at the time of sale. At the end of the first year no part of the principal is due, but interest at the rate of seven per cent per annum is paid on the deferred principal. At the end of the second year, and each year thereafter, one-tenth of the principal is due, together with interest on deferred amount, at the rate of seven per cent per annum.

EXAMPLE:—160 acres sold March 1, 1888, at \$4 per acre = \$640. Payments would be due as follows:—

PAYMENTS.	When due.	Principal.	Interest.	Total.
First.....	March 1, 1888	\$64 00	.....	\$ 64 00
Second.....	" 1889	.....	\$40 32	40 32
Third.....	" 1890	64 00	40 32	104 32
Fourth.....	" 1891	64 00	35 84	99 84
Fifth.....	" 1892	64 00	31 36	95 36
Sixth.....	" 1893	64 00	26 88	90 88
Seventh.....	" 1894	64 00	22 40	86 40
Eighth.....	" 1895	64 00	17 92	81 92
Ninth.....	" 1896	64 00	13 44	77 44
Tenth.....	" 1897	64 00	8 96	72 96
Eleventh.....	" 1898	64 00	4 48	68 48
Total.....	.....	\$640 00	\$241 92	\$881 92

No discount allowed for cash.

Contracts may be paid up in full at any time before maturity, and interest will be charged only to the date of final payment; but no discounts will be granted in case of anticipated payments.

REBATE ALLOWED.—Purchasers of land in Thomas, Gove, Logan, and counties west thereof, in Kansas, who settle on the land and erect a habitable dwelling thereon within two years from date of contract, will be allowed a *rebate of 20 per cent of the price of every acre cultivated* by sowing or planting in a good farmer-like manner within that time.

Satisfactory evidence of breaking and cultivation must be furnished the Land Commissioner before the expiration of two years from the date of sale, and the rebate will be credited when final payment is made.

Land agents, appointed by the Company, will be found at all the principal places where railroad lands are for sale. The duty of these agents is to show the land and quote prices; and when a tract has been selected, to fill out the application and attest it. The *applicant* will then forward his application and first payment to Albert Woodcock, Land Commissioner, Omaha, Neb. Here all applications are subject to approval or rejection. If accepted, contracts are made out in duplicate and sent to the purchaser for his signature, and when returned properly signed, one copy of the same duly executed on the part of the Company will be sent to the purchaser to retain.

WESTERN LAND DISTRICT.

Office at Wa-Keeney, Trego County.

Counties.	Acres.	Counties.	Acres.
Rooks.....	*-----	Thomas.....	25,000
Ellis.....	*-----	Logan.....	20,000
Graham.....	*-----	Scott.....	*-----
Trego.....	*-----	Sherman.....	2,000
Ness.....	*-----	Wallace.....	*-----
Sheridan.....	*-----	Wichita.....	5,000
Gove.....	8,000	Greeley.....	5,000

*None reported; probably all taken.

WHERE TO SOW—THE SOIL AND ITS PREPARATION.

A strong clay loam, resting on a friable clay subsoil, is, in Kansas, as everywhere, natural grass land. The soil can hardly be too rich, naturally or artificially, for grass. Poor lands may be counted on to produce poor crops of grass as of everything else; but lands which have become impoverished from any cause may be relied on to exhibit, in the crops grown upon them, in an unusual degree, all of the unfavorable influences of the climate in general, or of a particular season. Whatever the character of the soil, prepare it for the reception of grass seed by as thorough plowing and harrowing as is ordinarily done for oats or corn; and follow the seeding with a light harrow or roller, or both. Do not seed upon "raw prairie." Except in the extreme eastern and northeastern sections of the State, I have never known or heard of a "catch" obtained from unbroken prairie, although I have been familiar with a considerable number of costly "experiments" made to test this matter. I would in no case attempt seeding grass upon land that had not been cropped three years. Never consent to seed with some other crop, as wheat or oats; this is a rule with scarcely an exception.

WHEN TO SOW.

Our best stands have been had from spring seeding. It is difficult to speak accurately here; but do not in any case be tempted to sow grass seed until the ground is thoroughly wet from the spring rains. We have rarely found it advisable to sow earlier than April 15. The following excerpt, an argument for spring seeding, is taken from a report of 1885: "I am aware that by many the view is held that, inasmuch as the plant casts its seed in the fall season, this is Nature's own time for the sowing of seed, and that, in this respect as in so many others, art can do no better than to copy Nature. To this, answer may be made that Nature, in her seeding operations, is wasteful in the extreme, sowing a thousand seeds that come to nothing for every one that develops a plant. Moreover, this argument for fall seeding applies equally in the case of corn, oats, and other similar 'spring' grains, which, in a state of nature, are equally with grass seeds sown in the fall. Fall seeding may be said to be better than seeding in the spring in the case of all plants which make a growth in the fall sufficiently strong to withstand the rigors of winter. This, corn and oats and most grasses will not do." Timothy and Kentucky blue-grass may be sown late in August or early in September with fair prospect of success; but even these have done better with us when the seeding has been delayed until spring.

WHAT TO SOW.

"Many sorts of grass and clover, are, doubtless, valuable to the agriculture of the State; and it is equally certain that varieties useful in one section or situation are of little value in others. The practical man, however, never finds it to his interest to attempt the cultivation of many sorts. Usually, two or three varieties complete the list of grasses cultivated in any section; and very often a single species like alfalfa, as grown in

Southwestern Kansas, satisfies fully the requirements of a large section of country. For this reason I refer to but few sorts here; others might, beyond question for other localities, be substituted to advantage for those commended here.

“Mixed orchard-grass and red clover have proved for the general purposes of the farmer very satisfactory, and, in addition to these, alfalfa is strongly commended.”

Immigrants and investors should remember that in the spring and autumn of every year the Union Pacific Railway runs bi-monthly excursion trains from Kansas City to all points on its line where land is offered for sale. Full information may be obtained by addressing F. B. Whitney, General Agent Union Pacific Railway, Kansas City.

EXPERIMENTS WITH WHEAT.

The Secretary of the Kansas State Board of Agriculture in his report for 1888 says:—

For several years experiments with wheat have been in progress at the College farm, having for their object (1) to show the comparative values of common and unusual sorts, and (2) to give expression to varying methods of treatment.

The results of our experience with something over one hundred sorts of winter wheat have abundantly satisfied me that the Kansas farmer can rely only upon the fine, early-ripening red sorts—often of southern origin—of which Early May and Zimmerman are types. These are usually reckoned light-yielding sorts, but in Kansas soils, during favorable seasons, they often yield enormously. The coarse-growing, late-maturing sorts, like Clawson, Lancaster, and Egyptian, sometimes do remarkably well, but much oftener they fail miserably.

On October 1, 1887, forty-nine varieties of winter wheat were sown—twenty in contiguous plots in Field B, and twenty-nine in a connected series in Field No. 6. The following is a complete list:—

Bearded King.	Golden Prolific.	Red Odessa.
Big English.	High Grade.	Red Russian.
Deitz Longberry.	Hungarian.	Rocky Mountain.
Diehl-Mediterranean.	Jennings.	Royal Australian.
Democrat.	Martin's Amber.	Royal Red.
Deitz.	McGary.	Sibley's New Golden.
Early May.	Miller's Prolific.	Silver Chaff.
Early Rice.	Missouri Blue Stem.	Surprise.
Egyptian.	New Monarch.	Tasmanian Red.
Farquahar.	Nigger.	The Good.
Finley.	Oregon.	Theiss.
French Prairie.	Patagonian Trigo.	Tuscan Island.
Fulcaster.	Poole.	Valley.
Fultz.	Raub's Black Prolific.	Velvet Chaff.
Genoese.	Red Fultz.	Walker.
German Emperor.	Red Line.	Wicks.
Gypsy.		

Of these, Hungarian, Red Russian, Red Line, Genoese (wholly killed), Sibley's New Golden, The Good, and Surprise suffered most from winter-killing, the loss amounting to fully one-half of all the plants, in most

cases. The varieties that sustained the least injury were Theiss, Big English, Tuscan Island, Diehl-Mediterranean, Gypsy, Fultz, and Finley.

KANSAS PAST AND PRESENT.

Two speeches were recently made in Kansas,—one by General Thomas Ewing, the first Chief Justice of the Supreme Court, before the State Bar Association, at Topeka; and the other by the Hon. David J. Brewer at Leavenworth on the eve of his departure for Washington to assume his seat as Associate Justice of the United States Supreme Court. Both these gentlemen are old residents of Kansas, eminent in public and private life; and their recollections of early days are so interesting and instructive that they are given herewith. General Ewing said:—

*“Mr. President and Gentlemen of the Kansas Bar Association, Ladies and Gentlemen:—*Twenty-nine years ago I had the honor to be chosen by the people of Kansas Chief Justice of the Supreme Court of the then proposed State; and when, in the year following, after her long struggle and rude rebuffs, Kansas was admitted to be a State in the Union, I presided at the first term of the Supreme Court held near the spot where we are now assembled. How changed the scene! A splendid city rises now with its temples, electric railways, flashing lights, and elegant mansions where then scarcely a graded street cut the primeval sward or broke the tendrils of the wild strawberries and the blue-bells as they rode in wind and sunlight on the unbroken waves of the prairie.

* * *

“And how the State has changed! The Pilgrim Fathers, though tossed by rough seas and starved on barren shores, were not so rudely tried as were the pioneers of Kansas. When a rest came after the exhausting struggle to make her a free State, the seasons brought famine instead of plenty in their hands. A more feeble State in population and property, or a greater State in the splendid spirit and hardihood of her people never knocked at the door of congress for admission. With a population of but 107,000, impoverished by the long struggle against force and fraud, and by the total loss of crops by drouth, she set out on her career with empty barns and the certainty of an empty treasury. The State officers were paid poor salaries and poor scrip. As Chief Justice, I sold my State scrip at 60 cents on the dollar, so that my whole official income was \$1,080 for the first year. We then thought that the utmost limit of cultivable land was about the meridian of Fort Riley, and never dreamed of a day when the sun would look down from west of that line on boundless wheat fields, harvested by steam, and on millions of cattle fattening to feed the world; nor of a day when Kansas, instead of being least of her sisters, should stand as she does now, with 1,750,000 people, and the thirteenth in power of the forty-two States of the Union.

“There is a longing in the human heart akin to that for immortal life to have our names live after us, associated with illustrious or benignant events. I think all of us who fought for freedom in Kansas, and who fol-

lowed up the fight throughout the war for the Union, may feel this longing fully satisfied. It was the sling of the stripling Kansas which slew the Goliath slavery. Few men have ever had the chance to serve mankind so signally as those of us who wrested this splendid State from the haughty and reckless Southern propaganda, and then formed the right wing of that glorious army which swept both rebellion and slavery from the land forever.

"I visit the State of my early manhood now with a heart full of gratitude to Almighty God for all the good of which He made her poor, gallant and struggling sons the instruments; for sending them here when the Missouri compromise was broken by the South, to meet force with force and give blow for blow; for arousing North and South alike to the fact that the conflict on the outposts here was the deadly struggle of two hostile and irreconcilable civilizations; and for leading the antagonists on to the settlement by the sword which alone could make the Union free, fraternal, and perpetual.

"A new republic was born of the war. Almost all great and sudden evolutions are painful and destructive. Old institutions generally perish only under blows, at the sacrifice of their hapless and often blameless upholders. Not only secession and slavery, but also the infinitely mischievous idea of the ignobility of labor, perished by the war. The youth who fought in both armies and survived, came out of them brighter and broader men for their trials, especially in the West, where the service was most strenuous and the play of individual character most ample. All the latent powers and faculties of the people were called into action; and when the struggle ended, the impetuous currents of war turned into the channels of business, and swept away old impediments which custom and prejudice had set for boundaries. In spite of the infinite losses of life and health by the war; in spite of the demoralization of labor and industry throughout the South during the long period of reconstruction; in spite of the enormous burdens of public debt ingeniously doubled through contraction of the currency, the last two decades have witnessed a greater development of American civilization and industry than was ever known in any equal period of our history. The people have thus been lifted up to recognize their own powers, the infinite resources of their country and its mission as the torch-bearer of freedom and civilization for the world.

* * *

"And now, my friends, I have only to thank you for your attention and bid you good-night. It has given me great pleasure to revisit Kansas, the State of my early political, professional, and married life; which honored me with its dignities, with a seat on its supreme bench, and with the still higher honor and authority to be captain over 1,000 of the best and bravest of its sons in the glorious fight for the Union. Though separated from Kansas and its affairs by half a life-time and half a continent, I have almost daily gone back in memory to its billowy and beautiful landscapes, and to my old friends and companions here; and after this brief and charming visit I shall bid adieu to them again, with revived and strengthened affection.

May God bless Kansas! May her heroic service for freedom and the Union be treasured as the proudest inheritance of her sons and her daughters forever! May length of days be in her right hand, and in her left hand riches and honor, and may her ways be ways of pleasantness, and all her paths be peace!"

Judge Brewer, in responding to the toast of his health, said:—

"An emigrant built his cabin on one of our Western plains. With him was his little boy, who was coming to that age when boys so quickly take in all their surroundings. One day the boy stood at noon before the door of the cabin looking up at the sun in the zenith, and after reflecting a moment he broke out with, 'Why, pap, we are in the center of the universe, ain't we?' That boy is the typical Kansan.

* * *

"No State has within equal limit of time ever been robed in its history with so much of achievement and splendor. She has more miles of railroad than any State save Illinois, and although but a babe in the sisterhood of the States she will number nearly two million in the coming census. In my boyhood's geography Kansas was put down as the 'Great American Desert,' and yet she has made the wilderness to blossom as the rose; but grander far than any material development has been the pathway which she has lined with school-house and church. Go where you will through her borders, and there stands before you the open door of the school-house, in whose portal is the ever-present Yankee 'schoolmarm,'—priestess of virtue and prophethood of knowledge and glory; while the spires of a thousand churches attest the universal faith in Him for whose worship our fathers crossed the sea. Though my work in the future must largely be in Washington, I shall continue to write my name in gratitude and pride, 'of Leavenworth, Kan.'"

ELEVATION OF TOWNS ON THE KANSAS PACIFIC DIVISION OF THE UNION PACIFIC.

KANSAS PACIFIC MAIN LINE AND BRANCHES.

	Feet.		Feet.
Kansas City.....	681	Silver Lake.....	855
Armstrong.....	690	Rossville.....	871
Muney.....	717	St. Mary's.....	899
Edwardsville.....	709	Belvue.....	901
Bonner Springs.....	739	Wamego.....	929
Lenape.....	721	St. George.....	937
Linwood.....	733	Manhattan.....	957
Fall Leaf.....	743	Ogdensburg.....	989
Lawrence Junction.....	749	Fort Riley.....	1009
Lawrence.....	763	Junction City.....	1021
Leavenworth.....	712	Kansas Falls.....	1033
Williamstown.....	789	Chapman.....	1050
Perryville.....	786	Detroit (Ent.).....	1073
Medina.....	789	Abilene.....	1093
Newman.....	796	Solomon.....	1111
Grantville.....	812	New Cambria.....	1138
Topeka.....	821	Saliua.....	1163

ELEVATION OF TOWNS.—Continued.

	Feet.		Feet.
Bavaria.....	1205	Onaga.....	1040
Brookville.....	1287	Blaine.....	1450
Carneiro.....	1503	Fostoria.....	1394
Kanopolis.....	1513	Olsburg.....	1374
Ellsworth.....	1471	Garrison.....	1005
Wilson.....	1627	Garrison Crossing.....	1004
Bunker Hill.....	1802	Leonardville.....	1322
Russell.....	1765	Green.....	1234
Victoria.....	1851	Clay Centre.....	1142
Hays.....	2056	Idana.....	1200
Ellis.....	1936	Miltonvale.....	1319
Ogalla.....	2056	Oketo.....	1157
Wa-Keeney.....	2391	Marysville.....	1136
Collyer.....	2517	Blue Rapids.....	1098
Buffalo Park.....	2695	Irving.....	1084
Grainfield.....	2743	Randolph.....	1045
Grinnell.....	2843	Garrison Crossing.....	1038
Oakley.....	2981	Manhattan.....	957
Monument.....	3107	Alida.....	1048
Winona.....	3303	Milford.....	1041
Lisbon.....	3079	Wakefield.....	1091
Wallace.....	3286	Broughton.....	1122
Sharon Springs.....	3419	Clay Centre.....	1142
Monotony.....	3741	Morganville.....	1177
Elwood.....	817	Clifton.....	1216
Wathena.....	818	Vinning.....	1216
Blairs.....	897	Clyde.....	1238
Troy.....	1093	Lawrenceburg.....	1268
A. & N. Junction.....	1093	Coneordia.....	1305
Norway.....	1110	Christie.....	1280
Ryans.....	892	Talmo.....	1304
Severance.....	903	Belleville.....	1490
Leona.....	918	Verdi.....	1141
Robinson.....	950	Bemington.....	1162
Mannville.....	973	Lindsay.....	1181
Hiawatha.....	995	Minneapolis.....	1195
Hamlin.....	1084	Summerville.....	1224
Morrill.....	1098	Delphos.....	1239
Sabetha.....	1308	Glasco.....	1258
Oneida.....	1219	Brittsville.....	1273
Seneca.....	1152	Asherville.....	1285
Baileyville.....	1204	Beloit.....	1322
Axtell.....	1363	South Leavenworth.....	699
Beattie.....	1293	Leavenworth Junction.....	697
Home.....	1339	Lansing.....	728
Marysville.....	1155	Fairmount.....	891
Herkimer.....	1238	Hoge.....	790
Hanover.....	777	Big Stranger.....	770
Hund.....	1028	Moore's.....	851
Pleasant Ridge.....	850	Tonganoxie.....	787
Easton.....	985	Reno.....	764
Lee.....	1105	Lawrence Junction.....	749
Winchester.....	858	Assarea.....	1222
Valley Falls.....	885	Bridgeport.....	1210
Larkin.....	919	Lindsborg.....	1270
Drake.....	959	McPherson.....	1430
Holton.....	1043	Culver.....	1203
Circleville.....	1131	Tescott.....	1235
Soldier.....	1112	Beverly.....	1262
Havensville.....	1051	Lincoln Centre.....	1311
Savannah.....	1051	Lucas.....	1656



WILL TELL YOU ALL ABOUT IT.

Any Ticket Agent in the United States or Canada can sell Tickets, check Baggage, and arrange for Pullman Palace Sleeping Car berths, via the Union Pacific Railway.
Do not complete your arrangements for a Western trip until you have applied to the undersigned. Additional information, Maps, Time Tables, etc., will be cheerfully furnished.

- BOSTON, MASS.**—290 Washington St.—W. S. CONDELL, New England Freight and Passenger Agent.
E. M. NEWBEGIN, Traveling Freight and Passenger Agent.
- BUTTE, MONT.**—Cor. Main and Broadway.—E. V. MAZE, General Agent.
- CHEYENNE, WYO.**—C. W. SWEET, Freight and Ticket Agent.
- CHICAGO, ILL.**—191 S. Clark St.—W. H. KNIGHT, General Agent Passenger and Freight Departments.
W. T. HOLLY, City Passenger Agent.
T. W. YOUNG, Traveling Passenger Agent.
D. W. JOHNSTON, Traveling Passenger Agent.
- CINCINNATI, OHIO.**—27 West Fourth St.—J. D. WELSH, General Agent Freight and Passenger Departments.
C. A. STARR, Traveling Freight and Passenger Agent.
T. C. HIRST, Traveling Passenger Agent.
A. G. SHEARMAN, Traveling Passenger Agent.
- COUNCIL BLUFFS, IOWA.**—U. P. Transfer.—A. J. MANDERSON, General Agent.
R. W. CHAMBERLAIN, Passenger Agent,
J. W. MAYNARD, Ticket Agent.
J. C. MITCHELL, City Ticket Agent, 421 Broadway.
- DENVER, COL.**—1703 Larimer St.—GEO. ADY, General Agent.
F. B. SEMPLER, City Passenger Agent.
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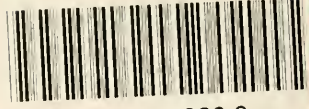
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