when the pioneer, ignoring all theories, and disregarding all unfavorable reports, determined to make the experiment, and at once commenced breaking the prairie and cultivating the soil in what is now known as the "wheat belt"—as fine an agricultural district as can be found in this or any other State.

This brings us to the third and last belt, and while I have no disposition whatever to encourage anyone to "go west and grow up with the country," I will say, that while failures and reverses, common to all new countries, may be expected, the time is not far distant when good farms, happy homes, and prosperous communities will be found dotted all over western Kansas.

ADDRESS OF HON. ALEXANDER CALDWELL.

Hon. Alexander Caldwell was introduced, as a gentleman who served as a soldier in the Mexican war, and who came to Kansas at an early day, and aided to organize one of the overland transportation companies, long before the time of railroads in Kansas, and one who had been a leading promoter of the establishment of manufactories in this State. Mr. Caldwell then delivered the following address:

KANSAS MANUFACTURES AND MINES.

Mr. President: I appreciate the compliment intended by your committee in assigning to me the subject of "Kansas Manufactures and Mines," but, Mr. President, when I see present so many able gentlemen, distinguished in the annals of our State, I must express my sincere regret that your committee did not select from this number some one more competent than I to do justice to the subject.

My life has been too busy with the pressing and absorbing cares incident to trade and manufactures, to afford the necessary preparation for such an occasion.

However, in deference to the request of your committee, I come fresh from the workshop and factory, with the smoke and smut of the forge upon my brow, to contribute my mite to the exercises of the evening.

Twenty-five years ago I was somewhat extensively engaged in the business of transporting military stores across the Plains in wagons.

Mr. President, I am aware that an allusion to this business is barely germane to the subject, but a request from members of your committee that I should make some reference to this primitive mode of transportation is my apology for referring to it.

To those who lived here prior to the construction of railroads west of the Missouri, I cannot say much that will be new. Yet, even twenty-five years ago, there were comparatively few who realized the magnitude of that business.

The great development in Kansas from 1861 to 1886 will be better appreciated by keeping in mind the fact that one-third of a century ago the most intelligent people of the country had but an imperfect knowledge of this fertile land. As school children, we knew of it only upon the maps as part of the "Great American Desert," the solitude of which was only broken by the war-whoop of the Indian and the howling of the coyotes. To maintain possession of this territory and all that vast country acquired by the war with Mexico, military posts were established in what is now Kansas, Colorado, New Mexico, Utah, and California.

The troops stationed at these points, and thousands of civilians who had gone west in search of fortune, were dependent for support upon supplies from east of the Missouri, the only means of getting which were by wagon transportation.

Prior to the war of the great Rebellion, the starting or outfitting places were Kansas City, Independence and St. Joseph, Missouri; but during and after the war, Leavenworth, Atchison, Nebraska City and Omaha were the principal points of

departure. Leavenworth, however, was the point at which the great bulk of the stores were concentrated.

It is desirable that some record should be left of what at one time was the principal if not the only occupation on the Plains.

The magnitude of that business will be better understood by referring to what was done in this line by one company having then its headquarters at Leavenworth. The amount of supplies required annually for the military alone amounted to from thirty-five to fifty million pounds. I know that except to those who are engaged in the business of transportation by rail, the task of handling fifty million pounds will not be readily understood. Our expert and intelligent railroad men, accustomed as they are to the business of the day, will scarcely realize what it was twenty-five years ago to perform this service. It would have been a commerce of no mean proportion for the great Santa Fé or the Union Pacific Railroads to carry.

A train of twenty-five wagons, starting from the Missouri river on the 1st of May, would not reach Salt Lake City until about the 1st of October, or in four or five months. Now a train of twenty-five or more cars will make the journey in four or five days.

Then a passenger traveling by stage night and day, if unmolested by Indians, or not delayed by storms, could reach Salt Lake in twelve or fifteen days. Now he can ride there comfortably in the palace car in less than three.

Such, Mr. President, has been the progress of the times.

Now let us see what kind of an undertaking it was to transport 50,000,000 of pounds by wagon. Usually trains were composed of twenty-six teams, each wagon loaded with about 6,000 pounds, and drawn by six yoke of cattle or four to six mules. Oxen were generally used, because the first cost was less than that of mules, and they could subsist on the grass alone, while mules or horses required grain to keep them in serviceable condition. Another advantage in the use of cattle was, that when they became foot-sore or disabled, they could be left at stations to recruit for use in succeeding trains, or killed for beef, as the occasion might require.

With each train of twenty-six wagons there were three hundred head of cattle, twenty-five drivers, a captain, (or, as we then called him, a wagon-master,) an assistant, and three extra men; in all, thirty men.

In times of imminent danger four or more of these trains were massed, and in cases of attack the wagons were drawn into a circle, forming a corral, if possible, near a stream of water. The animals were driven inside the corral so formed, and the wagons used for barricades.

To transport 50,000,000 pounds in this manner required 10,000 wagons, 12,000 men, and 120,000 head of stock. These trains of "prairie schooners," as they were then called, traveled westward along the Arkansas to Colorado and New Mexico, and in the valley of the Platte to Wyoming, and beyond to Utah and the shores of the Pacific. Had they been formed into one continuous line, in the ordinary way of traveling, we should have had a column more than 1,000 miles long.

This was an expensive mode of transportation. The investment in a single train of twenty-six wagons was about $35,000, and the means of transportation necessary to carry 50,000,000 of pounds would cost more than $5,000,000. The cost of subsisting and moving these caravans was enormous, and therefore large rates of transportation were paid. It may be surprising to the railroad men of the present to know that as late as 1865 the Government paid $2.25 per 100 pounds per 100 miles. The distance to Leavenworth from Salt Lake City being 1,200 miles, made the cost per 100 pounds $27, or $540 per ton. At this rate a train of twenty-five wagons would earn $45,500. To-day the same amount of freight is taken by rail at a cost of $1,500. Nothing better than such a comparison demonstrates what the railroads

have accomplished towards annihilating distance, and bringing the remote parts of this country in closer relation.

While it might have been to my pecuniary benefit twenty years ago, had I possessed the power to have said to the builders of railroads, when they reached the banks of the Missouri, "Thus far; no farther shalt thou go," yet the progress of the age demanded the roads, and "westward the star of empire took its way."

Those of us who lived in the river towns twenty years ago, have a vivid recollection of the busy and exciting scenes upon the departure and return of these caravans of the Plains.

Frequently a whole twelve months was consumed in making the round trip, wintering in the snows of the Rocky Mountains, and returning in the spring, the men clothed in the skins of the buffalo, bears and wolves; faces unshaven and hair uncut; some with hats, others with none at all; no two dressed alike, but all arrayed in the most fantastic manner, and some of them as wild and savage as the animals in whose skins they were so strangely clad.

But among them were many brave and faithful men. One instance will be sufficient to show the character of the men generally selected as captains or wagon-masters. One of the first trains organized by myself in 1861 started from Leavenworth, destined for Fort Union, New Mexico, under the charge of Tom Atkins, a character subsequently well known in the frontier towns of the West. The employés of this train were citizens of the western border of Missouri, and as soon as they learned of the fall of Sumter, were restless to return and join the Rebel army.

During the journey they conceived the idea of stealing the entire train and its cargo. Their plan was to run it into Texas, dispose of it for cash, and join the Confederacy. All except Atkins, his assistant, and one other, were engaged in the conspiracy. It was agreed that if Atkins opposed the plan he should be killed.

One night, in the Raton mountains, soon after getting into camp, and when within a few miles of a military post, the plan was submitted. Atkins suggested that after supper they would gather around the camp fire and talk it over. He so managed as to get them seated some distance from the wagon and their weapons, and listened to their proposals. Suddenly springing to his feet, he and his assistants covered the party with their revolvers, while the extra man was dispatched to the fort for assistance.

> "And they crouched before him, for he had skill
> To warp and wield their vulgar will."

The mutineers were taken to the fort as prisoners, while soldiers were sent to take the train through to its destination. Thus did the courage and decision of Tom Atkins save to our company, and to the United States, thousands of dollars of valuable property.

Card-playing was one of the amusements of the Plains, as it appears to be here. I received a letter from a ranchman demanding $100 for a horse furnished Atkins. I referred the claim to him, and he returned it with the indorsement that he did not owe that man "a cent."

He insisted that he had gotten the horse on the square; that he had enjoyed the game, and with the poet might well exclaim:

> "Oh, the dear pleasures of the velvet plain,
> The painted tablets dealt and dealt again."

Subsequently, while engaged in my office in settling the business of his six-months trip, I was startled to find him quietly slipping his pistol from its holster, and then, without a word, and as quick as a flash, wheel around, covering with his weapon a man who had just entered the door. The stranger replied, "All right; you have the

drop on me now, but the next time we meet we shoot on sight, and don't you forget it."

This man was one of the mutineers whom Tom had put in irons, and who had sworn to shoot him. He had followed him to my office for that purpose, but was not quick enough for the occasion. Atkins subsequently killed his man, and he in turn was assassinated and died with his boots on in a Kansas town.

Twenty-five years ago the professional "bull-whacker" was a hard citizen. Profanity was a part of his nature—the cattle even appearing to do their level best, pulling in proportion to the energy and fluency with which the driver delivered himself of his most familiar expressions.

I have known of praiseworthy efforts at reform.

One distinguished freighter, whose name a quarter of a century ago was known west of the Missouri, perhaps better than any other, went so far as to furnish his "whackers" with Bibles, but the effort was a religious and financial failure. The men declared no mortal man could drive six yoke of cattle from the Missouri river to the Rocky Mountains without an occasional swear. The Bibles were traded off to the Indians, and within twelve months the firm went into bankruptcy.

Mr. President, of course you will not understand me as intimating that financial disaster overtook this firm because of its commendable effort to improve the vernacular of the Plains, nor do I admit that it is impossible to make cattle pull without the usual amount of profanity. But in those days there were times when it did appear difficult to dispense with the familiar code. In wet seasons, for example, trains would become mud-bound, and it was not unusual to see a wagon in the mud up to the axle, and the cattle in the mire almost to their backs.

Now this is a bad situation, and it did require real lively talk to get the load to move.

I was passing by a train upon such an occasion, in company with the late Thomas A. Scott, the railroad magnate, who had a moneyed interest in the enterprise.

We passed by one wagon which had sunk down to the axle. Scott, addressing the driver, said: "Well, my man, you are in a bad fix." "Oh, no," he replied, "I am all right, but there are two wagons below mine, and those fellows down there are having a h—l of a time!"

But much progress has been made since those days of prairie schooners; then there was not a mile of railroad in the State, now there are more than 4,000 miles in operation, and as many more projected.

Then not a school house or a church in the Territory, now we have more of both in proportion to our population than any other State in the Union.

Thirty-five years ago the Territory was unknown to the world of agriculture. In the past two years we have produced nearly 400,000,000 bushels of corn, 100,000,000 bushels of wheat, and all other products of the field in proportion.

In 1861 we had a population of 107,000, now we have not far from 1,250,000, and yet this is only our quarter-centennial.

But, Mr. President, it is not alone in agriculture that Kansas has made such rapid development; and now if it is not too late, and if I have not already taxed your indulgence too much, I shall proceed briefly with the subject assigned me.

Thirty-five years ago there was not a factory in the Territory, not a single smoke-stack to obscure the ethereal atmosphere. Human hands had not wrought in the virgin soil, and the curious and frisky prairie dog was undisturbed in his system of mining and subterraneous exploration.

Now our young State is known from the frozen lakes of the North to the warm waters of the Gulf, and even to the golden sands of the Pacific, for the numbers and excellence of her manufactures.

In Atchison, Leavenworth, Topeka, Wyandotte, Lawrence, Fort Scott, Emporia, Wichita, and indeed in all parts of the State, the never-ceasing hum of machinery may be heard. In the brief time allotted it will be impossible to refer in detail to the manufacturing enterprises of various cities and towns, but I may speak of one of them as an illustration of what is being accomplished.

Leavenworth is the chief manufacturing center of the State. To dwell upon the subject without making that town a prominent factor in it, would be like attempting the play of Hamlet with that important character left out. I trust, therefore, that I am warranted in selecting that city, my home, as an example for the rise and progress of manufacturing and mining in Kansas.

Up to the year of the war, 1861, and during its continuance, slow progress was made, but since 1865 the development has been rapid.

Mr. President, you are familiar with the business of Leavenworth, but even you may not know that last year the aggregate of manufactures was about $20,000,000. Prominent among these industries are stove works, producing about 60,000 stoves per annum, about 200 per day, or a complete stove in about every four minutes of working-time.

A single wagon factory with a capacity of 10,000 per year, or thirty-three per day, or a complete farm wagon of the best material, substantially and beautifully finished, turned out every twenty minutes; flour mills with a capacity of 2,500 barrels per day, or 100 barrels every hour of running-time; a glucose factory which consumes daily ten car-loads of coal for fuel, and converts 5,000 bushels of corn into syrup.

An extensive factory for the manufacture of iron bridges.

Factories for the manufacture of furniture, steam engines, and hundreds of others, which time will not permit me to mention.

What I have said of the progress at Leavenworth will apply in a proportionate degree to other cities and towns of the State.

I know, Mr. President, that a classification of facts and figures is not a very entertaining theme, but the subject assigned me is an eminently practical one, and figures cannot be dispensed with. The records show that there are in this State 300 mills, producing annually $15,000,000 worth of flour, a product of $50,000 per day, or $2,000 per hour; and that there are more than 100 saw mills in operation in this prairie State. The aggregate value of wagons and carriages manufactured in this State is more than $1,500,000; furniture, $1,000,000; manufactures in iron and brass, $5,000,000; sorghum, $200,000; and besides these there are woolen mills, broom factories, lead and zinc works, canning factories, linseed oil works, packing houses, paper mills, organ factories, patent medicines, and other enterprises too numerous to mention, aggregating more than $40,000,000 of manufactured articles each year.

This, together with the value of field crops of more than one hundred millions, and live stock to the value of forty millions, makes a good showing for our young commonwealth. Mr. President, chance does not govern the world; there is a cause for all things. The fertile soil and excellent climate is the cause of the phenomenal development of our agricultural resources, and the real source and great factor in the wonderful growth of our manufactures is our coal.

It is important then once more to inflict upon you some facts and figures as to the permanency of our supply. At Leavenworth we have a coal mine with ponderous engines, and in its equipment unsurpassed by any in the country. There several hundred men are constantly employed, and from a depth of more than seven hundred feet the shining mineral is brought to the surface at the rate of five hundred tons per day, or one ton per minute at hoisting-time.

At the Penitentiary, four miles south and three miles west of Leavenworth, is an-

other mine of equal depth, and striking the same vein, from which the output is now about 250 tons per day, and which is being rapidly developed to much greater capacity.

From these mines coal is shipped to all parts of the State. The quality is the best bituminous, and has contributed largely to the encouragement of manufacturing.

In regard to the permanency of the supply, Judge F. Hawn, who has given the subject much study, in a report made to the Leavenworth Board of Trade, says:

"Is this supply of coal permanent? If not, our prestige as a manufacturing center will depart. A few facts will show. The shaft of the Leavenworth Coal Co. is situated on the Fort Leavenworth reservation, on the northern edge of the city, and on the bank of the Missouri river; the Penitentiary shaft, some four miles south of the southern city limits, and about three miles west of the other shaft, making the distance between them about seven miles. The rock and formations cut in sinking these shafts are the same, and there is no perceptible difference in the thickness or quality of the coal either; so that both the shafts are working in the same coal basin. There being no diminution in the thickness of this coal-bed, in the distance of seven miles south and three miles west, it is safe to say and certain that our coal basin is at least twelve miles square and covers an area of at least 144 square miles."

Now, Mr. President, let us see what supply we have in this twelve miles square. Practical tests in both mines demonstrate that in this vein of two feet in thickness 70,000 bushels are obtained per acre, equal to 44,800,000 bushels, or about 1,800,000 tons per square mile, or for the 144 square miles 259,000,000 tons.

One thousand good miners will take out about 40,000 bushels, or 1,500 tons, per day. At this rate it will require the labor of 1,000 men for 576 years, or 5,000 men 115 years, to work out this area of twelve miles square.

It will be seen, therefore, that the supply of coal in Leavenworth county is practically inexhaustible, even were one hundred more shafts to be sunk.

But the coal deposit of Kansas is not limited by counties.

The eastern part of the State, from Marshall, Brown and Doniphan counties on the north to Osage, Cherokee, Crawford and Bourbon on the southeast, is to a great extent underlaid with coal.

Mining, perhaps, is prosecuted more vigorously in the four last-named counties. There extensive mines have been opened, from which immense quantities of the best quality of bituminous coal are shipped daily.

Now, Mr. President, while it is generally known that we have coal in Kansas, I do not believe that the quantity and value of this mineral deposit is generally understood and appreciated by our own people. I confess, until I had made some calculation upon the subject, I did not fully realize myself the perpetual source of wealth we have in our coal mines. In Cherokee, Crawford, Bourbon and Osage counties it is safe to assume there is a coal belt covering an area of seventy by twenty miles, or 1,400 square miles. A vein averaging two feet in thickness will give us 1,800,000 tons to a square mile, equal to 2,520,000,000 of tons. One ton of coal is equal to about two cords of wood; so that the coal in this area of 1,400 square miles is equal to 5,000,000,000 cords of wood. Kansas comprises about 50,000,000 of acres. If one-half of it was covered with a forest, we might say that there was a good supply of timber in sight. Yet if one-half of the entire State was covered with a forest of two hundred cords to the acre, we would have 5,000,000,000 of cords, a supply of fuel not exceeding that contained in the coal-beds of four counties; so that the farmers or the manufacturers now here, or those who may come for generations hereafter, may rest assured that in Kansas the supply of coal will not fail them.

But it is not in coal alone that the mineral wealth of Kansas consists. Her lead

and zinc mines are practically as inexhaustible as her coal, and of a richness and quality that have already established them in the markets of the world.

In various parts of the State, salt works are in operation, and large quantities of salt are procured from wells, the brine of which is of more than ordinary richness.

Chalk and gypsum abound in paying quantities, and the deposits of limestone and sandstone are so immense that all the houses and fences of Kansas might be built of stone without exhausting the supply.

Mr. President, with such a wealth of mineral, and from the geographical position of our State, as the center of the Union, I can see no reason why, within the next twenty-five years, we shall not be among the chief manufacturing States of the Nation.

To the press of Kansas, more than to any other agency, we are indebted for the knowledge the world has obtained of our agricultural resources. We trust now that those brainy, enterprising editors will devote as much energy and ability to set forth the advantages that exist here for manufactories.

Let it be known that immense quantities of farm implements are distributed from points on the Missouri river; that more than two-thirds of them are used upon farms west of the State of Missouri; and that we have all the advantages for manufacturing these articles in Kansas. Why, then, should we continue to pay tribute to the East?

Let us manufacture these articles ourselves, and build up within the borders of our own State the Pittsburgh of America, and thus will we bring the consumer close to the door of the producer, affording to the Kansas farmer the option of a home or a foreign market for the products of his labor.

In connection with this subject, we must not lose sight of the fact that natural gas, because of its convenience and cheapness, has become a great factor in manufacturing in Pittsburgh and other cities of the East. Already about one-third of all the establishments in Pittsburgh and vicinity are using it, and if the discovery and development continue, it will be but a short time until all the machinery of that busy city will be kept in motion by gas.

Manufacturers from other parts of the country, attracted by it, are locating there, and that city will not only be the great manufacturing center of the East, but through the agency of gas is rapidly being transformed from the blackest to the cleanest and brightest in the country.

Kansas should ever be in the van of progress, and action should be taken at once to ascertain what there is for us 4,000 or 5,000 feet below.

A few thousand dollars judiciously expended in the line of geological survey might result in adding untold millions to the wealth of the State.

Let our legislators consider this matter.

Mr. President, every Kansan should feel proud of the progress already made in manufactures.

Even now, as he journeys westward or eastward, he may cross in safety the great rivers spanned by a Kansas iron bridge.

He may travel to the warm waters of the Gulf, or even to the golden sands of the Pacific, and eat bread of Kansas flour baked upon Kansas stoves.

In the forests of Puget Sound he will hear the shrill whistle of a Kansas steam engine. He may tramp his way over mountain and plain, comfortably shod with Kansas shoes; or at any point in the western country a Kansas wagon may be at his command.

If the development of Kansas during the first twenty-five years of Statehood has been so wonderful, to what proportions may not this young athlete attain before you and I are called upon to attend its Semi-Centennial?

I am, sir, not much of an enthusiast, and I do not wish to deceive myself or you by an exaggerated description of what this State may attain to.

I do not think, sir, that I indulge in wild flights of fancy, when I predict here and now, that before another quarter of a century shall have rolled by, this Commonwealth will have more than 4,000,000 people; that it will be the leading agricultural State of the Union, and among the greatest in manufactures.

Here will be the center of pork and beef packing, and the imperial granary of the world; and from the banks of the Missouri, upon the borders of Kansas, streams of traffic will flow, as great and resistless as are the currents of the mighty river itself.

ADDRESS OF NOBLE L. PRENTIS.

Colonel Anthony then introduced Mr. Noble L. Prentis, as the closing speaker. Though the hour was very late, the large audience with eager interest remained to listen to the address upon the subject—

THE WOMEN OF KANSAS.

Ladies and Gentlemen: The women of Kansas, to whom we give to-night, not only the praise of our lips and the loud plaudits of our hands, but the grateful homage of our hearts, is she who sought Kansas from afar, who gave up what man resigns almost without a thought, but to woman is most dear—the home where she was born. Who left the spots her girlhood knew and loved, made precious by hope and sorrow, the altar where she was wed; the grave, perchance, of her first-born, to come to this land, then full to her gentle heart of known and of imagined terrors.

The woman we pledge to-night, whose name and fame is linked with that of Kansas in all the gathered glories of a quarter-century, is she, who, brought face to face with all that was appalling, bore it all, not with the passive, silent endurance of a slave, but with the high resolution of a heroine. Amid the noonday raid and midnight burning, she bravely stood; she heard the ruffian's oath, the Indian's yell, the wolf's hungry cry, and still she stayed by Kansas, and like Deborah, of old, prophesied the future triumphs of her people. She faced not only visible, but more terrible, because invisible, enemies. She sat pale but undaunted in her lowly home amid the parched and desolated fields, while gaunt Famine stood on the threshold or looked in at the window.

She not only saw and suffered, but she was her own and our historian. Before the destroying angel had passed, or the blood on the lintels was dry, she wrote the story down, and among the first and brightest and clearest of the many books in which the wonderful record of Kansas is set forth, is that of a Kansas woman, Mrs. Sara T. L. Robinson, who wrote all that she saw and part of which she was.

The Kansas woman was our first teacher. She is not an old woman yet, as years are counted, but she is older than the Agricultural College, or the Normal School, or the State University. She gathered the children in an academy, the walls of which were of sod and the roof of brush and earth, and taught them to spell such words as truth, liberty, freedom, independence, and instructed them in their geography that the earth revolves every twenty-four hours around its center—which is Kansas. In consideration of her services to the cause of education in those early days, the law of Kansas allows her to act as county superintendent—if she can get votes enough.

The Kansas woman has manifested at all times that highest quality of the mind, endurance of daily ills, hourly discomforts, petty and perpetual annoyances. She has lived in a dug-out; she has existed in a claim shanty, with a stove-pipe for a chimney. She has cooked without wood or coal, and she has battled with the Kansas zephyr. Every Kansas woman who has run a cooking stove with corn-stalks, straw,