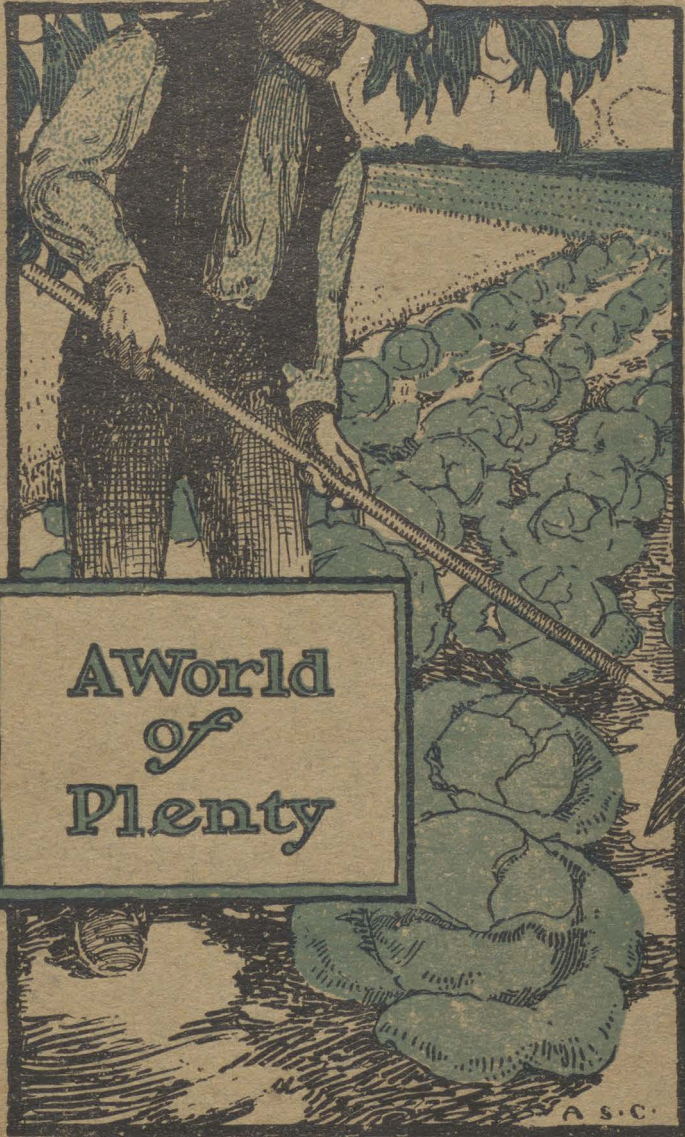
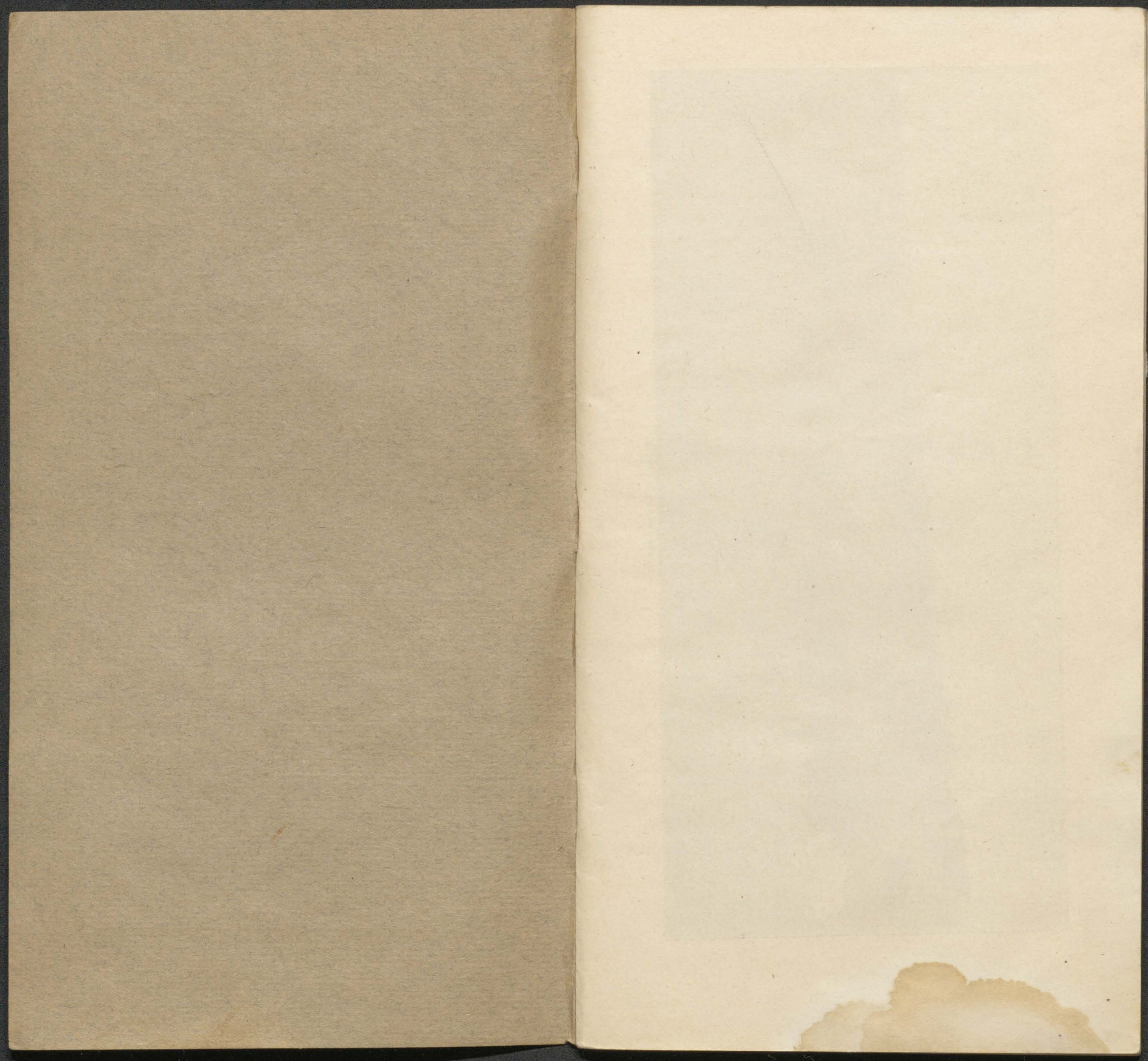


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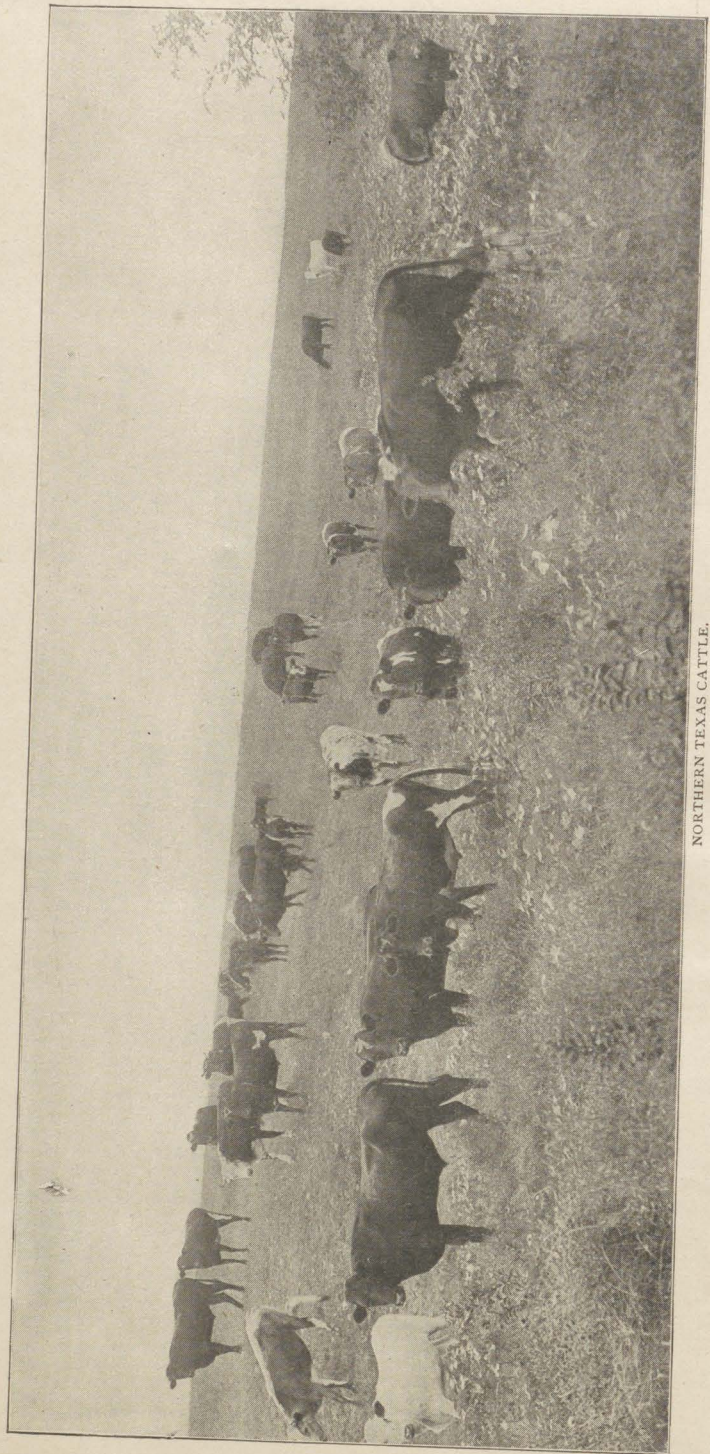
A World
of
Plenty

A.S.C.



TEXAS

A WORLD OF PLENTY



NORTHERN TEXAS CATTLE.

PASSENGER DEPARTMENT
ROCK ISLAND LINES
CHICAGO, 1904.

INTRODUCTORY.

In exploiting a country it is the usual practice to dress the good looking facts in their Sunday clothes and parade them before the world. The ugly facts—those with dirty-faces—those which have no "glad rags," and which do not keep step with the procession—are shut in the closet and never allowed to come into the "best room" when there is company.

"Paint me as I am," said Cromwell. The Great Lord Protector could afford to be honest with posterity. Texas can afford to be honest with the world. I have attempted, therefore, to paint the state as it is—as it appears to me. There may be a wart here and a wrinkle there—but what of it?

The interests concerned in the case in which I am called to testify, ask for the truth and nothing but the truth. The whole truth regarding such an empire as Texas could not be told between the covers of a booklet, even were the whole truth known to the writer. My limitations will confine me to the presentation of those salient facts which go to make up the general character of the country, together with such conclusions as follow from the natural correlation of those facts.

Whatever opinions I have expressed were not influenced by predilection, nor moulded by personal interest. In fact, I came to the investigation of Texas with a slight prejudice, not only against Texas, but against the entire Southwest—a prejudice the result of environment and a lack of definite and comprehensive knowledge.

Born and reared in the North, I had assumed the superiority of the North in all things. Moreover, I had for some time been engaged in an investigation of those industrial and commercial forces which are upbuilding that vast empire, that has for its boundaries, the Arkansas valley on the south, the Saskatchewan valley on the north, on the east the Great Lakes, and on the west the Pacific Ocean. Indeed, when I received the proposition to go to Texas for the purpose of investigating her resources and possibilities, I was at Winnipeg, arranging for a trip to the valley of the Peace River.

An investigating tour of Texas in mid-summer was to my mind a rather hot proposition. An examination of the United States weather reports, however, showed me that the temperature in Texas seldom rose above 86° in the month of June. With this assurance from high authority, I postponed the Peace River trip and started at once (May 25) for Texas. On June 15th I was in Galveston shivering in a temperature of 57°.

My instructions were to investigate the resources of Texas and report the facts with my observations from the view-point of a Northerner. This I have done in the following pages. What I found was so far beyond what I expected to find, that I have had to put the brakes on my enthusiasm.

When I state that Texas, to-day, offers better opportunities for the investment of capital and labor in the ordinary lines of intelligent enterprise, either agricultural, industrial, or commercial, than any other portion of North America, I am but stating a conclusion to which I am forced by an overwhelming array of facts. Some of these facts I have herein marshalled and set forth. The half has not been told—it cannot be told, because it is not known. The great state is in its infancy with the long day of its future all before it.

In submitting this view of Texas I am conscious that it is incomplete to a degree. But I have done my best. I have tried to treat the state as a whole and to furnish such facts as will be of interest to that vast army of sturdy Americans in the middle west, who are looking for a new land in which to pitch their tents—to invest their capital and establish their homes.

RICHARD A. HASTE.

LOCATION AND EXTENT.

Texas is the great keystone that supports the central arch of the United States. For four hundred miles it spans the Gulf of Mexico, and for eight hundred miles rests against the Rio Grande. Extending from the 26th to the 36th parallel of latitude and from the 94th to the 107th meridian of longitude, it embraces an area of 265,280 square miles. Everybody knows that Texas is a big state—the largest in the Union—but few have taken the pains to realize its actual size. Bare figures convey but a meager idea of distance or space. It is only by comparison that we get the relative importance of things. Compared with European territory, Texas is more than twice the size of England, Ireland, Scotland and Wales; a fourth larger than the German empire, and equal in area to France, Holland, Belgium, Switzerland and Denmark. Compared with other states of the Union, it is larger than Georgia, Florida, Alabama, Mississippi and Louisiana combined. Michigan, Indiana, Illinois, Wisconsin and Iowa could be dropped within her territory and still leave unoccupied space to make several states of the New England type. It is larger than the whole of New England, with New York, New Jersey, Delaware, Maryland, West Virginia, Pennsylvania and Ohio added.

Across the state from Texarkana to El Paso is as far as from Chicago to New York, and from Texline to Brownsville is as far as from Chicago to New Orleans. When Texas is as thickly populated as New England it will support a population of 73,142,000.

Take a pair of compasses, place one point on El Paso and the other on Texarkana, and with the latter as a center, draw a circle. The line of that circle will pass through Denver, within one hundred miles of St. Paul, through Milwaukee, and within seventy-five miles of Columbus, Savannah and Jacksonville. With Texline as a center this same circle will take in St. Louis, Bismarck, the Yellowstone Park and a large part of the Gulf of California. With the same radius and Chicago as a center, the line of a circle will pass within fifty miles of the Gulf of Mexico and Hudson Bay; will follow the line of the Atlantic coast from Mobile to New York, passing through New York, Montreal, Winnipeg and Bismarck; will cross the western part of Nebraska and Kansas, and cut off the northeast corner of Texas.

AGRICULTURAL.

Texas is first and last an agricultural state. On no other equal area of the American continent has nature bestowed so much and withheld so little. In the adjustment of climatic conditions, in the arrangement of the surface, in the deposition of soils, and in the distribution of the water supply, the primal purpose seems to have been the perfect adaptation of the state to agricultural production. Nor was this adaptation limited to special lines of production. The list embraces most of the products of both the temperate and tropical zones. It is true that

the climate, soil, altitude and water supply have marked, as with a pencil on a map, the wheat, the rice, the cotton and the fruit districts, yet over a large portion of the state wheat, oats, corn, cotton, fruit and all kinds of vegetables can be seen growing side by side in the same field.

There is but little waste land in Texas. With the exception of the trans-Pecos region and the semi-arid plains of the extreme west, cultivation is not only easy but the returns are abundant and reliable.

From an agricultural point of view the state was most fortunate in its geological formation, for to this it owes the lay of its surface and the quality of diversity of its soils. From the low-lying Gulflands to the Staked Plains, the entire state is a succession of gigantic terraces which mark the successive geological formations. As a general rule these terraces present marked soil characteristics, which in turn determine their adaptation to the various agricultural products.

SOIL.—Soil is the farmer's stock in trade. It is his capital—the basis of his prosperity. In no other respect is Texas more blessed than in the possession of a soil that is both rich and varied. In connection with a climate equally varied, it gives to the farmer a choice of products ranging from wheat and oats to rice and sugar cane, from apples to figs, from corn to cotton.

WATER SUPPLY AND TEMPERATURE.

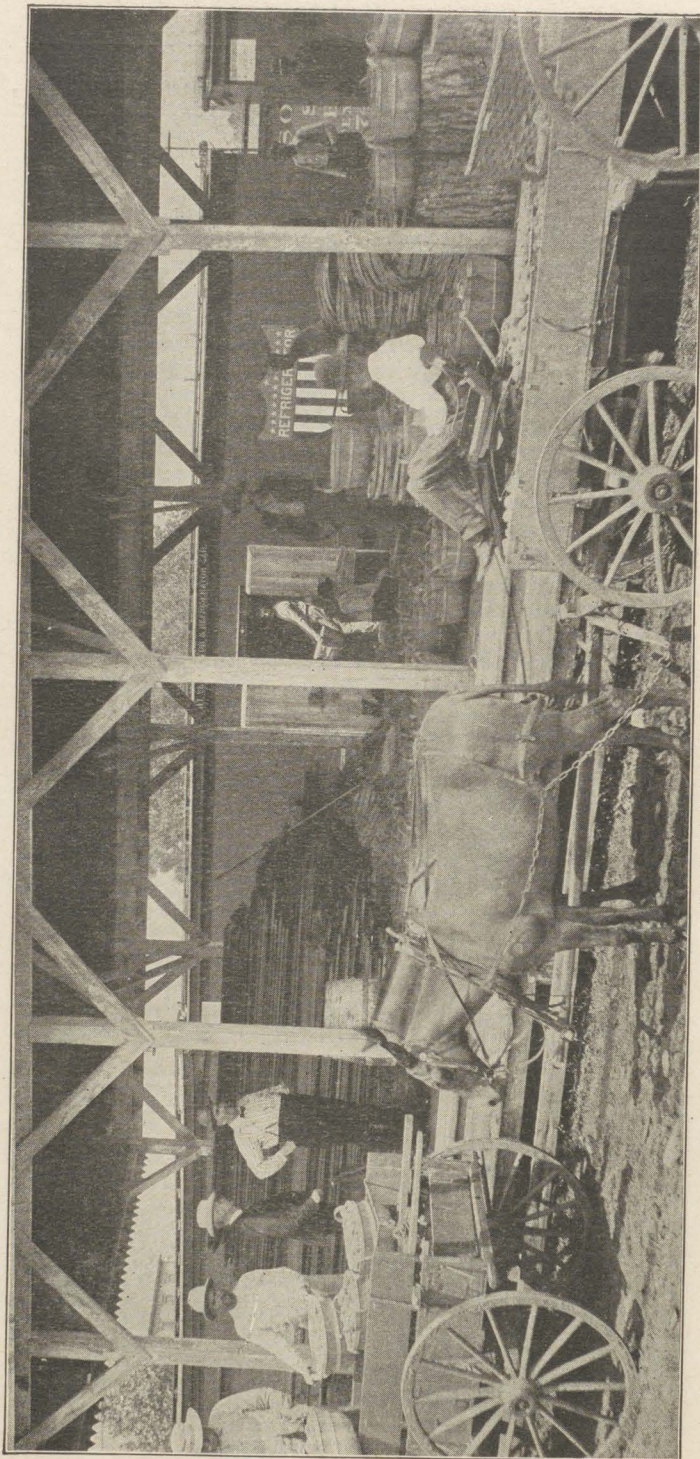
If a fertile soil be the first essential to successful agriculture an adequate supply of water is the second, and a proper temperature is the third.

The water supply may be either natural or artificial. That is, applied to the soil by precipitation in the form of rain, or by irrigation from open rivers and reservoirs, or from subterranean sources through pumps and artesian wells.

The average rainfall in Texas is marked by distinct zones and decreases from east to west at the rate of five inches for every sixty miles. It is 50 inches along the eastern border from the Red River to the mouth of the Sabine, 25 inches through the



HARVEST SCENE—JACK COUNTY.



SHIPPING PEACHES BY THE TRAIN LOAD.

west central region along the 100th meridian, 15 inches in the valley of the Pecos and the Staked Plains, and 10 inches in the trans-Pecos and along the border of New Mexico.

Proximity to the Gulf seems not to affect the amount of rainfall. The lines of equal precipitation move westward in slightly irregular waves. The irregularities are caused by local conditions, such as soil, altitude and drainage—conditions that affect the evaporation.

THE RIVER SYSTEMS.—The Rio Grande, the Pecos and the Canadian rise in the foot-hills of the Rocky mountains. The Canadian and the Pecos have eroded deep canyons through which they flow and the Rio Grande has no valley to speak of until it nears the Coastal Plain.

The rivers of Texas proper take their rise in the great plains country.

The Red, Brazos and Colorado head in the escarpment that guards the Staked Plains. The Nueces, the San Antonio, the Guadalupe and the Trinity rise in or near the Upper Cross timber country, the limestone region of the Lower Cretaceous period, which is marked by a great "fault" extending nearly across the state from the Rio Grande northeast to the Red. East Texas is drained by the Neches and the Sabine with their tributaries.

A marked characteristic of the rivers of Texas, from the Nueces to the Trinity, is the broad alluvial valleys which attend the greater portion of their courses. The immediate river channels are bordered by two distinct terraces, a lower and an upper bottom, the combined valley varying from ten to thirty miles in width.

The succession of rivers that stripe the state from northwest to southeast, each with its attendant valley, constitute an incomparable drainage system, while along the upper courses where the rainfall is unreliable or insufficient, the facilities for using the water of the streams for gravity irrigation are unexcelled.

SUBTERRANEAN WATERS.—The entire state is underlaid with strata of water-bearing rock. Vast deposits of unconsolidated sand from 400 to 500 feet thick lie at the base of the Cretaceous formations. Out-croppings of this loose sand stratum occurring in various parts of the state and covering large areas act as catch basins for the surplus surface water supply and hold it in storage until tapped by artesian wells at a lower altitude. From the highest plains to the coast level water can be secured and brought to the surface or near it by natural pressure.

From Eagle Pass on the Rio Grande to Fort Worth extends an artesian belt of unknown width, and an apparent limitless supply. Rivers that rise near the Staked Plains sink into the ground to re-appear later along the great geological fault heretofore mentioned. The San Antonio and Guadalupe rivers have artesian sources. Flowing wells are found not only along this out-cropping of the Lower Cretaceous formation, but they are readily secured in the middle and eastern part of the state. The great Staked Plains is a vast reservoir. This with the sub-Cretaceous sands feeds these lower subterranean water courses.



A NORTHERN TEXAS FRUIT FARM.

The condition of the soil and the surface slope have a marked effect upon the deeper artesian supply. The sandy soil of the Upper Cross timbers allows but little run-off; this is also true of the soil of the Staked Plains.

Whether this subterranean supply is sufficient to bring the semi-arid part of the state into general cultivation is a question. It has been demonstrated to be sufficient for all pastoral purposes. With the windmill or other cheap power water could doubtless be obtained to redeem large tracts to farming which are now used only for grazing.

Droughts are possible in the humid part of the state but not frequent. Of the five general droughts which prevailed in the United States between 1870 and 1890 Texas was for some reason visited by only two and those were not so severe as in other parts of the stricken country.

The greatest precipitation is in May and September, the least in February and July. During the other months a general average is maintained.

TEMPERATURE.—From the standpoint of the tiller of the soil, temperature is the most important of the several factors that go to make up climate. And it is the extremes of temperature, not the "mean annuals," that count. The mean annual temperature along the coast from Galveston to Corpus Christi is about 70. This decreases about one degree for every forty miles as you pass to the north, with a slight increase to the west. On the Llano Estacado the mean annual is 58 and in the extreme northern part of the Pan Handle it sinks to 54.

Observations covering a period of thirty years show that the temperature of central Texas passes the 100 mark only two years out of twenty in June, six years out of twenty in July and five

out of twenty in August. These maximum temperatures, moreover, do not occur on more than five or six days during the year.

While the maximum temperatures affect our comfort, it is the minimum temperatures that are of importance to the agriculturist.

In the valley of the Rio Grande and for a hundred miles inland from the Gulf, the lowest temperatures range from 10° to 18°, the latter being the minimum at Brownsville, at the mouth of the Rio Grande. Along the coast the thermometer seldom registers below 20°, and one year in five not below 32°. Temperatures below 0 are not recorded except in the extreme northwestern part of the state, where—14° has been recorded.

Over the central portions of the state the mercury falls below 32° only in the months of December, January, February and March; and then for not more than 28 days all told.

The average daily range of temperatures—the difference between the maximum and the minimum, is least at the coast, where it amounts to 6° in June and 11° in December. This increases as we recede from the coast until it reaches 30° in the northern part of the state. One peculiar feature of variability is that rises of 10° are more frequent than falls of the same number of degrees. This has an important bearing on vegetable and fruit culture, as it is the sudden falls and not the sudden rises in temperature that do mischief.

Along the coast the first killing frost occurs Dec. 15; in the central and eastern portions of the state Nov. 15, and in the northern part Oct. 15. The last killing frost occurs in the coast country about Feb. 5, one hundred miles inland Feb. 20, and in other parts of the state about March 1.

The agencies which dominate the temperature are the gulf, the winds and evaporation.

The Gulf is the great equalizer of temperature for a great part of the state. It keeps the temperature down in summer and up in winter. A Gulf breeze blows over two-thirds of Texas ten months of the year. By constantly changing the air it increases evaporation, rendering the nights cool no matter how hot the days. In January and February the south gulf winds are displaced by the winter monsoons, called "northers." If it were not for these "northers" coming down over the western plains from Medicine Hat, Assiniboia, the mercury in Texas would not go below 32° and the southern part of the state would be in the orange and banana belt.

AGRICULTURAL PRODUCTS.

GRAND DIVISIONS OF STATE.—A bird's eye view of Texas would reveal three grand divisions—and a fourth. The eastern or timbered region, the central or prairie region, the western or plains region—and the gulf region crossing and overlapping the others from the Sabine to the Rio Grande. The three grand divisions occupy three distinct zones of rainfall. The influence of this rainfall is seen not only in the character of the natural product of the soil, but together with the climate it determines the character and scope of the cultivated productions.

The eastern division is covered in the main with a dense forest of pine and hardwood. The central division is generally open, but dotted here and there with patches of scrub oak on the upland and stretches of elm, hickory and pecan along the river bottoms. The western division is treeless and bears the usual verdure of the western plains. The gulf region is mostly a level, grassy plain, striped with timber growths along the rivers and bayous.



DISKING SOD GROUND.

GENERAL PRODUCTS.—In the line of cultivated products the eastern division will produce, and that abundantly, too, everything that can be grown in the south land. It will produce all the cereals from wheat to rice, but, owing to the diversity and quality of its soils, it is specially adapted to fruit, tobacco and garden truck.

The northern section of the central prairie and the north-western part of the plains are the great wheat regions of the state. To the southwest, in the country of the Nueces, where the coast belt, the prairie and the plains merge into a triangle, south of San Antonio, is a section second only to eastern Texas in its adaptation to fruit culture and the production of garden vegetables.

The coast country is the natural home of rice and sugar cane. In the central prairie zone, while nearly everything known to mixed farming will do well, cotton and corn are at present the staple products.

The western plains while mainly given to cattle ranges, are being gradually thrown open for farming purposes, macaroni wheat, Kaffir corn, broom corn, milo maize, cotton and such crops are raised to advantage.

The plains country is being rapidly taken up by a good class of eastern and northern farmers. Those who have lived in the plains country long enough to test the climatic conditions and the fertility of the soil have found that it only needs the thrift and industry put into an older farm to make it produce a variety of crops which can be marketed at a good profit. It is worthy

the consideration of the homeseeker who is dissatisfied with his present surroundings or the renter who would like to better his conditions, and become a farm owner.

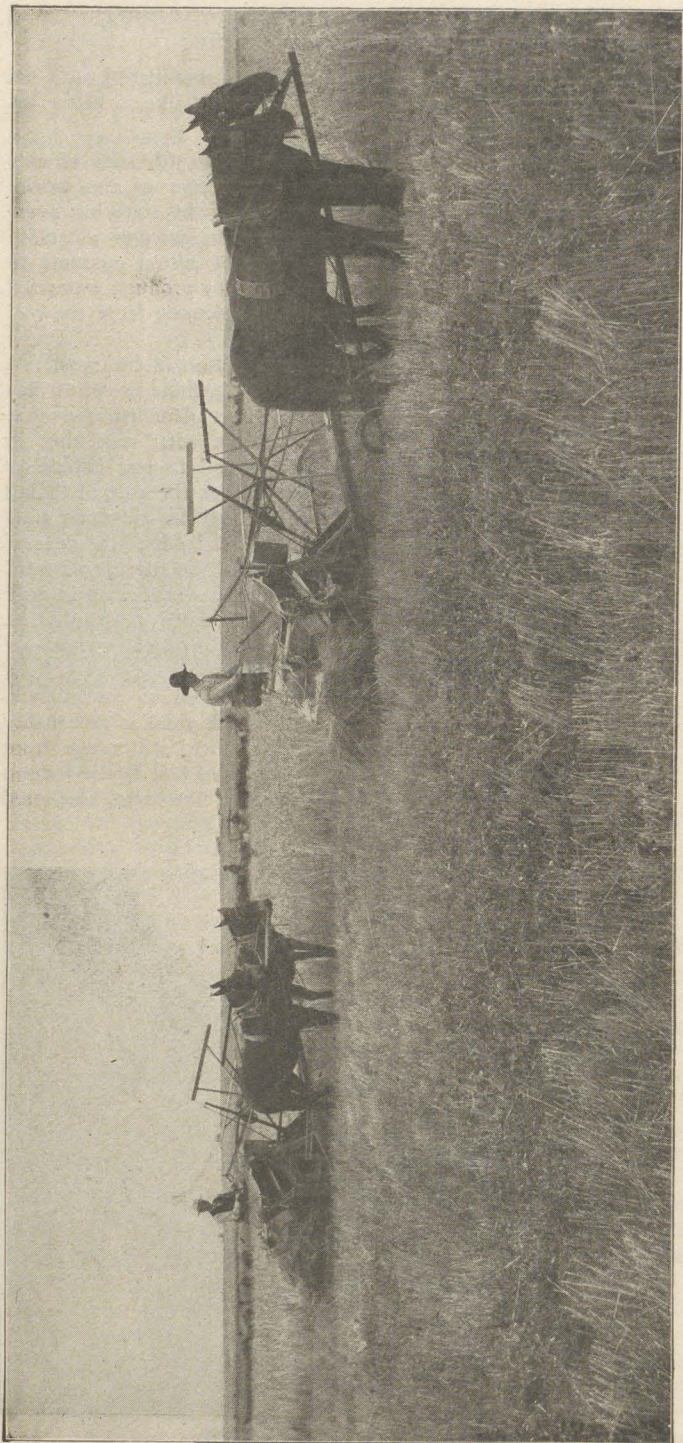
COTTON.—In 1901 Texas produced 3,808,568 bales of cotton—nearly one-third of the cotton production of the world. For the last six years the cotton product of the state has averaged 3,000,000 bales, or a bale for every man, woman and child in the state. This at the average price of cotton amounts to \$135,000,000. Add to this the value of the by-product, estimated at \$20,000,000, and we have a total of \$155,000,000 from the cotton crop alone.

Notwithstanding this brave showing, cotton is the most unsatisfactory crop produced in Texas. The trouble is cotton has been king. And universal experience has demonstrated that agricultural monarchs are failures. While corn was king in Illinois, Iowa and Nebraska, the people had to pay tribute to other states. While the northwest was under the rule of "King Wheat," despite the show of broad fields and the glittering statistical pageant of "average yields" and "total profits," the nose of the farmer remained on the grindstone, and the mortgages went unpaid. King rule is an exploded economic theory. It is only under the democracy of the farm—the diversity of crops, that the tiller of the soil will be able to reap the greatest reward for his labors.

Cotton is a crop that is admirably adapted to the climate, soil and labor conditions of the south. The yield is reasonably certain and the market is constant. The yield will range from four bales to the acre in the highly cultivated and fertile bottom lands to one-fourth of a bale per acre on the light, neglected soils of the sand hills.



BUSY DAYS IN THE FRUIT SEASON.



A 510-ACRE WHEAT FIELD—NORTHERN TEXAS.

The by-products of cotton—oil, cottonseed, meal, lint and hulls—will tend to help out the producer. The income from these by-products is becoming very considerable.

The establishment of textile factories in various parts of the state will furnish a home market for the raw material and have a decided effect upon the production of cotton.

WHEAT AND OATS.—Texas is not strictly speaking a wheat state. Its northwestern part alone is adapted to the growth of this northern cereal. Yet the crop of 1903 exceeded 25,000,000 bushels of wheat and 30,000,000 bushels of oats.

There is in the state about 26,000,000 acres of land that will grow good wheat. With this acreage the total yield, based on the present average production of 14 bushels per acre, would amount to 364,000,000 bushels—one-half of the present output of the United States. And yet Texas is not a wheat state.

Owing to the fact that the greater part of the rainfall in the western plains comes in the spring and fall at the times when most needed for winter wheat, the grain belt is rapidly invading the semi-arid zone. The history of the rise of winter wheat in Nebraska will be repeated in northern Texas. Ten years ago Nebraska did not produce enough wheat to supply her local flour mills. Last year the crop amounted to 60,000,000 bushels of first-class winter wheat. The conditions in the two sections are similar. The winter wheat matures early and thus escapes the dry, hot weather of July.

Oats is a good crop throughout the entire wheat belt. It can be sown in February and March and harvested with the wheat in May and June. The wheat grower of Texas has two commercial advantages over his rival further north. He gets the advantage of the summer market and the short haul to tidewater for export.

SUGAR CANE.—The consumption of sugar has increased from 30 pounds per capita in 1870 to 70 pounds per capita in 1903, an increase of more than one pound per capita each year. The consumption of sugar in the United States last year was, in round numbers, 5,500,000,000 lbs. Of this about 750,000,000 lbs. was domestic, one-half of which was produced from sugar cane. The remainder was the product of the sugar beet and the maple tree. The increase in sugar consumption is much greater than the increase in sugar production in spite of the fostering care of the government over the sugar beet industry. In the face of the tax we are paying out \$130,000,000 annually for foreign sugar.

These conditions are bound to bring to the front the cane producing lands of Texas.

RICE.—From the tenor and volume of the advertising matter emanating from Texas, one would conclude that rice is to be the dominant crop of the state, and that health, wealth and happiness will be the reward of all who engage in its cultivation. So well pleaded is the cause of rice and the coast country that the stranger from the north is led to declare: "Almost thou persuadest me to be a rice grower."

Rice is now and doubtless always will be a profitable crop in the rice belt of the United States. Whether it will pay bet-

ter returns than other crops where irrigation is employed is a question which will require more definite data than I have now at my disposal to answer.

ALFALFA.—Can alfalfa be successfully grown in Texas? An affirmative answer to this question means more to the state than the combined possibilities of any three of her spare products. If alfalfa will flourish on the soils of Texas, it means the establishment of creameries and cheese factories in every town in the agricultural districts; it means the multiplying of the dairy herds of eastern Texas by ten; it means the redemption of the western plains from the ranchman and the establishment of thousands of combination dairy and stock farms; it means the raising of hogs for export instead of the importation of ham and bacon; and, more than all, it means the establishment of a system of diversified farming and the redemption of all exhausted lands.

In the last ten years alfalfa has added thousands to the population of Nebraska and Kansas and millions to their wealth by bringing the western parts of those states into the circle of successful cultivation.



HOGS FATTEN ON ALFALFA.

Horses, cows and sheep thrive on it, either as a pasture or as cured hay. Hogs not only thrive on it, but grow fat when placed in an alfalfa pasture with no other food. And the hen, though not classed as a ruminant, will browse on alfalfa day after day and go to roost chewing the cud of contentment.

The value of alfalfa as a soil restorer lies in the fact that its roots, which penetrate the soil to a great depth, die and are constantly renewed, thus enriching the soil with a supply of humus, and, what is more important, the nitrogen which the plant has gathered from the atmosphere.

As a butter fat and milk producer alfalfa has no superior in the range of forage. Dairy cows feed on the cured hay and keep up the milk flow as well as when fed on ensilage. As hay it is worth from \$10 to \$15 per ton in the market according to seasons and more than that to feed on the farm.

Can alfalfa be successfully grown in Texas? In the northern part of the state, Mr. R. E. Smith has 600 acres of alfalfa which

yields an average of five tons to the acre. Mr. Smith is a farmer who uses brains as a fertilizer. Besides the 600 acres of alfalfa he has corn, cotton, potatoes, peas, wheat, oats and a large fruit orchard. He does not strip the soil of its products, but keeps 400 horses and 100 cattle, 600 hogs and a flock of Angora goats, just to show the land that he appreciates what it is doing, and incidentally to increase his profits. All this stock, including large flocks of poultry, eat and grow fat and strong on alfalfa.

There are sections of Texas where the probabilities are that it will not do well, but these areas are small. In a climate like that of Texas all that alfalfa needs is a loose soil with good drainage. It will resist drought by going deep for water or it will thrive abundantly when the water is applied to the surface.

In the present condition of the dairy, the stock and the swine interests of the state, the importance of the extensive cultivation of alfalfa cannot be overestimated.

PRICE OF PRIVATE LANDS.—The price of lands in individual hands has during the past two years been advancing with rapid strides. The rich returns which the soil yields to whomsoever will tickle it with a plow or hoe are gradually becoming known to the people of the Mississippi valley. Immigration has set in toward the southwest—an immigration of actual settlers and not speculators. This fact with the known returns secured from the cultivation of rice and sugar cane, the growing of fruit, and the garden truck business has had the effect of putting heart into the old inhabitants of the state. They are beginning to appreciate what they have. But still land remains cheap—very cheap.

In the central prairie region—a section well settled and with a soil that can not be duplicated except in certain portions of the Mississippi valley—a region that reminds you of Iowa and Missouri, improved land can be bought for from \$15 to \$50 per acre, and unimproved land from \$7 to \$20 per acre. And this is land on which anything from wheat to cotton can be produced.

Where sugar cane and rice are best adapted to the conditions, land can be had from \$6 to \$30 per acre according to location in reference to water and transportation.

In the eastern part of the state—that part which has been settled for more than a century—the most picturesque and perhaps the most fertile part of the state, land can be bought for from \$3 to \$20 per acre according to improvements.

Here the old and the new sit cheek by jowl. Here the cotton fields, studded with dead trees which the owner is too "busy" to remove, is neighbor to a peach farm newly cut out of the hardwood forest. Here lands that will produce tobacco equal to the best Cuban leaf can be bought for \$6 per acre.

There are tracts of cut-over timber land and pasture land that can be bought for \$2 per acre, and that in the humid portions of the state. There are irrigated tracts which bring a rental of \$25 per acre per year which can not be bought for less than \$250 per acre. There are fruit and truck farms which yield an income equal to 100 per cent on a land valuation of

\$100, while the land within two miles can be bought for \$6 per acre. Farms that are paying an income on a capitalization of \$50 per acre have for neighbors farms that can be bought for \$12 per acre.

This condition cannot long remain. The steady stream of immigration will adjust prices to values in a very few years. Unoccupied land is always worthless. A speculative value may attach to it for a time but in the end it becomes a burden unless made to contribute through cultivation.

The agricultural lands of Texas are bound to greatly increase in value within the next two years, and this will be the legitimate result of development, not a boom.

TRUCK FARMING AND FRUIT CULTURE.

Truck farming and fruit culture, like dairying, have developed from an occupation on the side to an industry, and from an industry to the dignity of a profession.

Forty years ago people did not expect to get vegetables and fruit out of season—they had not acquired the taste. The inhabitants of the cities were content to wait until the farmer in their immediate vicinity could raise and bring to market his garden truck in his own conveyance.

The increase in population and wealth of the northern cities, the development of transportation facilities throughout the south since the war, the invention of the refrigerator car and the establishment of fast freight service, have led to a most wonderful development of the vegetable and fruit industries, especially in the south, where the seasons are such that for ten and sometimes twelve months in the year the soil may be kept busy bearing small fruits and vegetables for the northern markets.

REFRIGERATOR CARS AND FAST FREIGHT.—Before the railroads were able to handle perishable garden truck and fruits, the traffic was carried on to a limited extent by the Atlantic coast steamers, plying between the eastern cities and the ports of the southern states. The first all-rail shipment of garden truck to New York did not take place until May 26, 1885. It came from Virginia. South Carolina sent her first consignment April 12, 1888. The first carload of oranges from Florida reached New York in 1888 and the first refrigerator car of strawberries in 1889.

Fruit had been shipped from California to eastern points in a small way as early as 1870, but not until 1886 did the first trainload of deciduous fruits in modern refrigerator cars leave the state.

Next to soil and climate, the most important factors in truck farming and fruit growing, are the refrigerator car and fast freight service. The general use of the refrigerator car was delayed by the difficulty in securing ice in the south. This has been overcome by the establishment of ice factories in all the principal cities and towns below the natural ice belt.

The freight service given perishables is about equal to that of express. The time consumed from Texas points to Kansas City, Omaha, St. Louis and Chicago varies from 36 to 72 hours, according to distance.

FRUIT BELT OF TEXAS.—The fruit belt of Texas extends from the southwest to the northeast across the state in a veritable zone.

Fruit demands not only a proper climate and a proper location as to drainage, but also certain ingredients in the soil. It is to be regretted that there is not a reliable and complete geological survey of Texas including soil analysis. Until this is done the fruit regions of the state cannot be determined except by experiment.

It is now known that peaches, apples, pears and plums among the larger fruits, and grapes, strawberries, blackberries and dewberries, among the smaller, will flourish in eastern Texas. It has been demonstrated also that peaches, apricots, figs, plums and all the smaller fruits are indigenous to the soil and climate of the southwestern part of the state.

Let it not be understood that fruit will grow only in the above sections. Orchards are found anywhere and everywhere in locations where the soil and other conditions are favorable, but the sections mentioned are distinctly fruit regions—regions where fruit culture can be carried on on a commercial scale and made to pay as it does in the fruit regions of California.

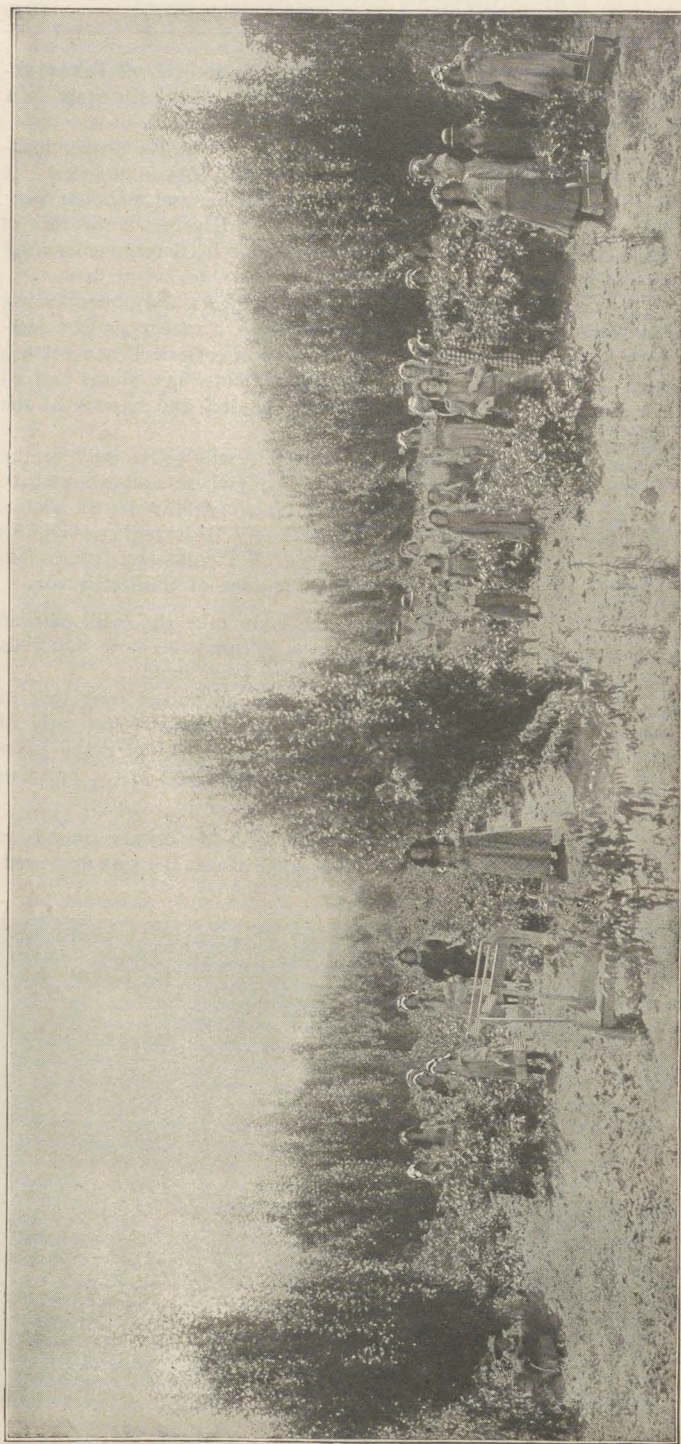
THE PEACH.—The peach seems to take the lead, marked success having been achieved in its culture, and now hundreds of acres of young orchards are seen on every hand.

The peach country of Texas has an advantage over that of California by being near the great fruit markets, not only of the interior, but of the Atlantic coast. And before many years the California peach will have to take a back seat in the presence of the red-cheeked beauty from Texas.

PEARS, PLUMS AND APPLES.—Pears are found in every county of the fruit zone. In some places the tree does well,



SHIPPING PEACHES



FRUIT PICKERS AT WORK.

the fruit grows large, but it is hard as a stone. This seems to be owing to some unfavorable condition of the soil. You can find magnificent pear orchards in certain localities of the coast country abandoned—the fruit not being marketable. But this is local. When we know more about the soil in that vicinity the reason for the failure of the pear will be made clear.

The plum has a wide range, both native and foreign. It will grow anywhere, but prefers the sandy loam soils of the eastern section. The wild plum is found in the river bottoms where the soil is rich and the drainage good.

The apple, being a fruit adapted to the north temperate zone, is more particular in its choice of location and soil. To do well, to bear well and at the same time to have a good flavor and good keeping qualities, the soil on which it is grown must be just right. On the beech, ash and hickory lands the best results have been secured.

GRAPES AND SMALL FRUITS.—Why should not Texas in time export as much wine as France? The only thing that will prevent the growth of the wine industry will be a prohibition amendment to the Constitution of the state—and that consummation seems a great way off.

Where the forest trees along every stream are covered with vines from which hang clusters of wild grapes, vineyards attended by the hand of man ought to flourish. The experience to date has been that wherever an attempt has been made to raise grapes, no matter what variety, the results have surpassed expectation. The grape is such a prolific fruit that where it is cultivated for commercial purposes, unless there are provisions made to utilize the surplus after the market for table use is supplied, the enterprise may meet with failure. When grapes are ripe they must be used. The Texas grape enjoys the same advantage of being able to get into the early market that the peach does. But large grape vineyards cannot depend entirely upon the market. There must be provisions for making wine.

The blackberry and the dewberry are both native and to the manner born. They grow where they are planted and where they are not planted. They seem to be the favorite small fruit for home consumption. They not only grace the table in their original form, but appear as a delicious wine and in the preserved form. Shipment to the northern market, however, is increasing rapidly. The blackberry can be placed on the northern market in May and kept there until the northern varieties come in.

IRISH POTATOES.—There is money as well as starch in potatoes. The yield is small, but that is offset by the fact that two crops can be grown on the same land each season. The yield is from 100 to 200 bushels per acre, according to the soil and attention in cultivation. This yield can be increased from 20 to 30 per cent by the judicious use of fertilizers. The soil in which the tuber does best is a dry, rich, sandy loam.

The first crop is planted in February and matures in May. The second crop is planted in July and matures in November.

The great difficulty with the Texas potato is it will not keep through the summer. The first crop must be marketed at once and a second crop planted to secure a supply for fall and winter use and seed for the next spring. Under present market conditions this is of little consequence, as the first crop matures in time to get into the northern markets when the price of potatoes is at the maximum. The second crop can then be grown for home consumption and for the next year's seed.

The potato grower can usually count upon receiving an average of \$1 per bushel for his spring crop and \$0.50 for that of the fall.



TEXAS SWEET POTATOES.

TOMATOES.—The tomato is one of the most satisfactory as well as one of the best paying of the list. The demand is universal and the article being of a perishable nature the market is seldom overstocked.

The growth of the tomato interest in Texas has been phenomenal. From practically nothing in 1899, the shipments in 1902 rose to 1,150 cars, not including the shipments by express. The Texas tomato has a monopoly of the northern market west of Chicago. And when this market is supplemented by local canning factories to use the surplus at the end of the season and the second-grade article that does not sell well, a tomato farm will mean not only a good living but a fat bank account.

CABBAGE.—Southwestern Texas is the home of the cabbage. It is a winter vegetable and in the mild climate of the state it is planted in November and is ready for market in mid-winter. The growth is almost abnormal. The heads literally cover the ground.

CANTELOUPES AND MELONS.—Canteloupes and melons, like tomatoes, must be rushed to market, the price depending much on the time of arrival. The profits run from \$100 to \$250 per acre. Cucumbers are another paying crop, but the market is more restricted and extensive acreage should be backed by a pickling factory to use up the surplus.

ONIONS.—As high as \$800 has been realized from an acre of onions in southwestern Texas. A New York commission firm wrote a shipper: "Mark all your onion crates Texas Bermudas. They are better than the imported onion; the people prefer them."

Commenting on the Texas onion, the "Fruit and Produce News" says: "It looks as though the trade had found something now which will supplant the Bermuda onion. The Texas stock can be raised cheaper and is better cured than the stock now in the market. There is no doubt that if once introduced they will bring more money than the original Bermudas. A buyer here said that the stock was 50 per cent better than any Bermudas he ever saw. The trade will take hold of this stock because it looks well, and in another year there is no reason why Texas should not market 400,000 crates in New York alone. The market takes best to the yellow variety, although the west will pay more money for the whites."

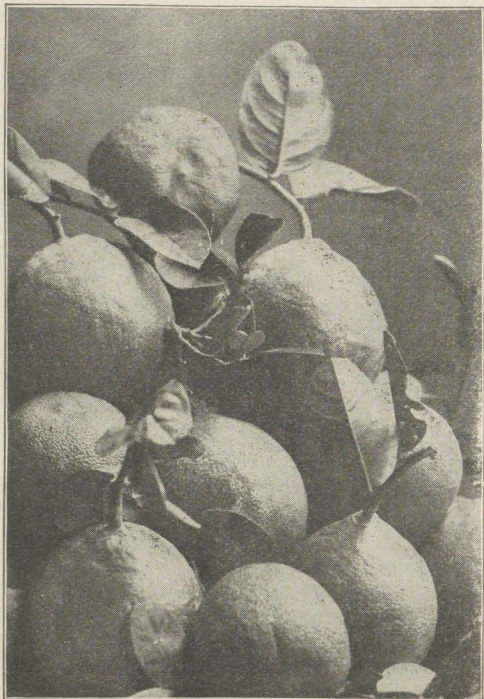
PROFITS.—The profits of fruit culture and truck farming are no doubt greater than in any other department of soil culture, unless it be that of tobacco. The net profits depend largely upon the industry and intelligence of the farmer. The market is the great thing. The producers and the transportation companies are in partnership, and by proper organization they can control the markets. The maturity of the crop must be properly timed and the shipments gauged according to the demand. The truck farmers of Texas are organizing for the purpose of shipment in car loads, as each individual may not have sufficient stock to take advantage of carload rates. A movement is on foot to combine all these local associations and place the control of the shipments in the hands of one man who will watch the market and distribute the output where it will meet with the best market. This superintendent will keep in touch with the market in all the cities and will issue instructions for just so many cars to go to the various points so the market may be kept active.

MINERAL RESOURCES.

When the mineral resources of Texas shall have been fully exploited it will be found that the state contains paying quantities of nearly every commercial mineral, while of many of those most essential to the industrial development of the country, such as iron, coal, oil, marble, and granite, the deposits are already known to be inexhaustible.

GOLD AND SILVER.—So far, the precious metals have not been found in paying quantities, except in the trans-Pecos region, where the output averages about \$1,000,000 annually—mostly silver. Copper ore and galena, carrying traces of gold and silver, are found in the Llano district. Placer gold has been found in many of the streams of the Central Mineral Region, as well as along the Rio Grande and the Pecos, but not in sufficient colors to warrant systematic work. What will be ultimately developed in the trans-Pecos mountains, time alone will determine.

COAL.—The question of fuel is so closely related to the industrial development of a community that in many localities,



TEXAS LEMONS—II INCHES IN DIAMETER.

and Texas is one of them, it assumes the position of primal importance. The coal supply of Texas is ample for all purposes of power and domestic use, and with the oil supply seems almost superfluous.

IRON.—Texas might well be named the "Iron State." Iron gives color to the soil in the Red Lands and chocolate plains. It adds character as well as productive power to the soil of the fruit and tobacco belt in the eastern part of the state.

That Texas has enough iron to supply the furnaces of the United States for a century, there is little doubt. But Texas iron will have to await its turn in the long line of development.

There are forces at work on the great problem of industrial evolution in the southwest which before long will cause a demand for the iron ore and its products.

MARBLE AND GRANITE.—A geological disturbance in the Llano, or Central Mineral Region, resulted in the formation and exposure of extensive quarries of marble ranging in color from purest white to blue. But the greatest curiosity of this most wonderful region is the mountain of pink-gray granite a few miles from Marble Falls, Llano county. This mountain is in the shape of a huge turtle, or the back of a whale. It rises above the normal level of the land surface some ninety feet, and covers forty acres or more. This is solid granite with an irregular cleavage which aids in quarrying. A test of this granite at the United States arsenal at Rock Island showed a crushing resistance of 11,482 pounds to the square inch, placing it at the head of all known granites in resisting power.

The state capitol at Austin and the jetties at Galveston are made from this granite. And 800,000 tons are being placed as rip-rap before the great sea wall now under construction along the Gulf beach on Galveston island.

In the Pecos region is found a black marble of fine quality. Both lithograph stone and slate are found in the Llano district.

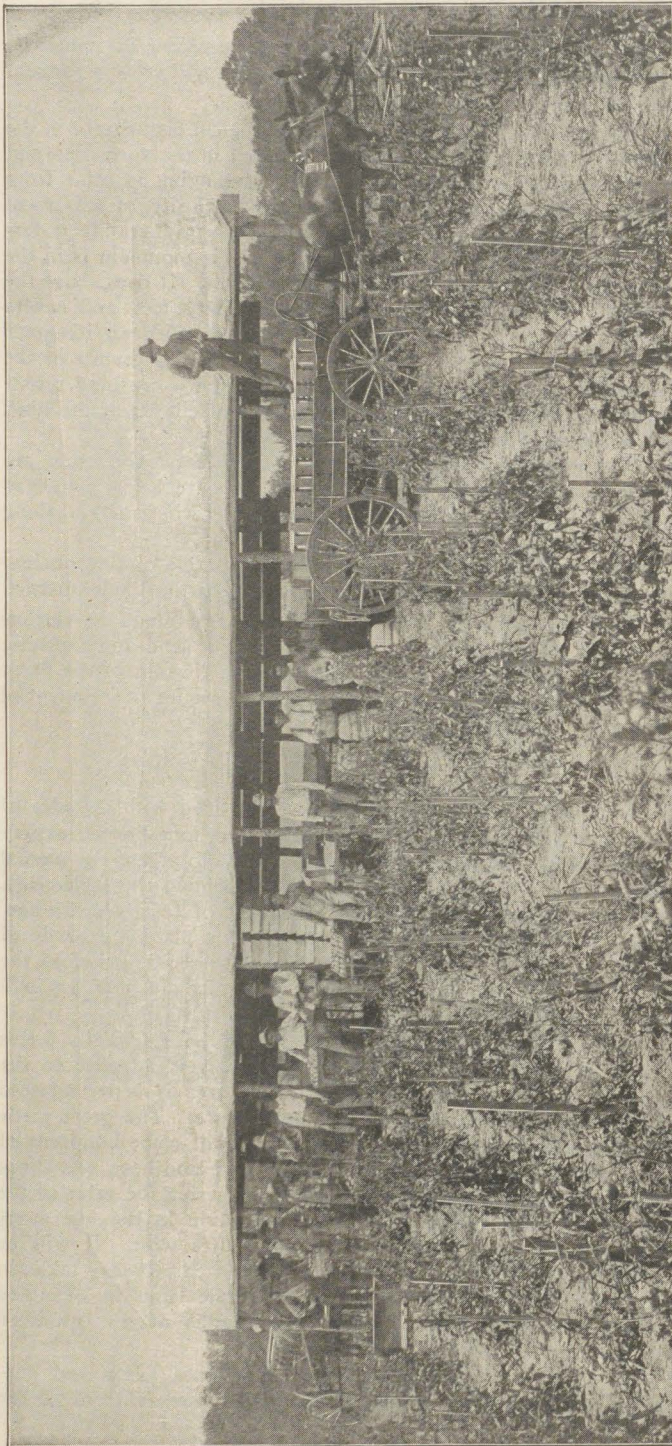
OTHER MINERALS.—Gypsum beds are found at various points in the northern part of the state. Oil sand and asphaltic limestone are found attending the oil belts. Kaolin of the finest quality, also beds of fire clay and other varieties of commercial clays are found in different parts of the state.

LIVE STOCK.

The word Texas has been so long identified with the idea of vast herds of cattle—cattle of the wild-eyed, long-horned variety—and limitless plains, that the public is slow to accept any mental pictures as at all accurate which do not contain these elements. But the Texas of to-day is not the Texas of twenty years ago. The "Texas steer" has vanished and in his place are herds of sleek, pure-bred stock; the silent plains are receding before the breaking plow and irrigation, and the picturesque cow-boy will soon be singing his swan song.

Nevertheless, Texas is, and always will be, essentially a live stock state. By climate and production it is adapted to the growth of animal life. One-third of its area is better adapted to pastoral pursuits than to pure agriculture. The great cattle ranches will disappear, but in their stead will come hundreds of smaller ones—farm ranches on which cattle and hogs and sheep will be grown under modern methods, increasing the value of the output ten and twenty fold. This evolution in the live stock industry has been going on over the entire west. It will be complete when the public domain is exhausted. It may take ten to fifteen years for the leases of the public lands in Texas to expire, but with their expiration the regime of the cattlemen will end.

The live stock statistics of 1901 show that Texas had one-sixth of all the cattle in the United States, one-eighth of all the



PACKING TOMATOES FOR SHIPMENT.

mules, one-twelfth of all the horses, one-eighteenth of all the hogs, and one-nineteenth of all the sheep. This on its face appears to be a good showing. But when the size of the state is taken into consideration, the figures are not so startling, inasmuch as the state embraces one-seventeenth of the area of the United States.

With the segregation of the large ranches, the rapidly increasing acreage of alfalfa and the inevitable development of the dairying industry in both the central and western parts, the state will soon be able to produce one-half the cattle of the Union.

THE HOG.—The Texas hog in his native state is not a thing of beauty. He wears the facial expression of the chronic pessimist. He seems discontented, is suspicious, and has that lean and hungry look which seems so foreign to his race.

Why the hog has been neglected is a mystery. He is an omnivorous feeder and during a large part of his allotted life needs but little attention. He will consume all the left-over rubbish and give good returns for being permitted to live a year or even eight months. He will thrive, be happy and grow fat on alfalfa. All he wants is a chance. The climate is most favorable, the market beyond question, and yet Texas in 1901 produced for market and home consumption only 804,508 head of swine.

That a community with every facility for the growing of swine will prefer to import bacon and ham for every-day consumption, paying the original cost with the tariff of trade and transportation added, is one of those economical conundrums so often found in an undeveloped country.

It is to be hoped that the great packing houses recently established in Fort Worth will, by affording an active home market, stimulate the raising of swine to its proper place among the farm industries.

SHEEP AND GOATS.—The bulk of the 3,000,000 sheep found in the state are in the Pan Handle and the extreme western part where the altitude and the latitude are most favorable to wool-growing.

While sheep do well in other parts of the state, the climate is not adapted to wool-production. But this same climate, with its mild winters, is just the thing for growing spring lambs for the northern market.

The Angora goat, however, seems to be at home in this state as he is everywhere else. A few have been introduced into eastern Texas and also into the coast country. But it is in a rugged country where the Angora thrives best. Like the honey bee he likes to work for a living. A Burnet county farmer who has a large flock in the Central Mineral Region says: "If you have a cheap, hilly range you can raise nothing better than Angora goats. Where you have rough bush, you really need them to help clear out the brush. You can shear from \$1.50 to \$2 worth of mohair from each goat per year, and the kids will bring you from \$2 to \$10 each. Angora goat venison is the best on earth."

HORSES AND MULES.—There are about 1,300,000 horses in the state. The horse seems to be bred solely for carriage use and shipment. The mule dominates the work-a-day life. In the country he plows the fields and hauls the produce to market. In the city he bears the burdens in the heat of the day. He is slow, patient, wise and tough. The mule and the "nigger" are inseparable—they seem to understand one another and have about the same views of life. They work when they have to, but would much rather doze in the sun. England owes her final victory over the Boers to her ally, the Texas mule. No other animal could have endured the hardships of the Transvaal with such equanimity. With these qualities, it is not strange that there is a demand for mules. Mule culture is one of the best paying industries of the state.



HERD OF REGISTERED CATTLE—JACK COUNTY.

DAIRYING.

Closely allied to the live stock interest is that of dairying. But dairying in Texas is only a name. From end to end of the state you may travel without seeing a dozen creameries. On every hand are to be seen herds of the finest dairy stock, Herefords, Durhams, Short Horns, and Jerseys. What becomes of the milk and cream that ought to come from these herds is a mystery. It is not fed to the hogs—there are none. It is not made into butter and cheese, for the state imports 75 per cent of the butter consumed. Creameries have been started in various parts of the state and failed for want of patronage. This dairy condition is one of those industrial anomalies found only in Texas.

No section of the United States presents better conditions for successful dairying than does Texas. True, the native grasses are not so favorable to milk flow and the production of butter fat as are those of Minnesota, Wisconsin and Upper Michigan. But the winter climate is more favorable, and with alfalfa, sorghum and the cow pea for spring and early summer, backed by the silo to tide over the dry season of mid-winter, the conditions average up well with the best dairying states of the north.

INDUSTRIAL.

Raw material, transportation, markets, power and labor are the prime factors of the industrial problem. Under favorable conditions one of these factors may be absent, sometimes two, and still a community may make a fair progress along industrial lines. On the other hand, all the prime factors may be in evidence, but owing to the subtle influence of legislation, either local or national, the natural equilibrium is disturbed and the wheels of industry refuse to turn.

Possessing all the primal elements necessary to the development of an industrial commonwealth; with an unlimited supply of raw material, and an ever-hungry home market, Texas is to-day twenty years behind the industrial procession. Why is this? The cause may be found in our national economic system—a system the benefits of which, while universal in theory, have been sectional in practice—a system that has built up the industries of the east at the expense of the west—a system that has compelled Texas to exchange her raw cotton and her beef-on-hoof for eastern-made goods and pay the freight both ways.

Let it not be understood that the state is without industries. It has many, and very successful ones, too. And many more are constantly working in under the handicap of established competition.

As rapidly as the actual conditions existing in the state can be made known, capital will seek investment in the various openings in the industrial field. For, with everything at hand, material, markets and transportation, the results can be calculated to the point where the element of speculation will be entirely eliminated.

LUMBER SUPPLY.—Among the chief sources of raw material are the forests. These lie mostly in the eastern part of the state, between the Sabine and the Trinity rivers, and cover an area of about 36,000 square miles—an area equal to the state of Indiana. The entire timbered area of the state is estimated at 64,000 square miles, but that includes the cross-timber belts, the timber along the rivers and in the Central Mineral Region. This timber, while of value for fuel, fencing and other domestic use, has little commercial value.

The 36,000 square miles of the timber region proper is covered with pine and hardwood having a commercial value on the stump. The pine, composed of the short and long-leaf variety (southern or Georgia pine), covers about two-thirds of this area, and the hardwood forests the balance. The hardwood belts are composed of oak, beech, elm, ash, sweet gum, and magnolia.

A marked characteristic of these forests, both pine and hardwood, is the absence of underbrush. They are gigantic parks, kept clean by nature's gardeners.

PINE FORESTS.—The present stand of pine is estimated at 80,000,000,000 feet, with an average of 4,500 feet, board measure, per acre, seven-eighths of which is owned by lumbermen.

This vast forest of pine was until the last few years practically untouched. But with the passing of the northern pine and the introduction of the dummy locomotive and the railroad track into the logging business, men with an eye to the future saw fortunes lying loose in the pine timber of the south.

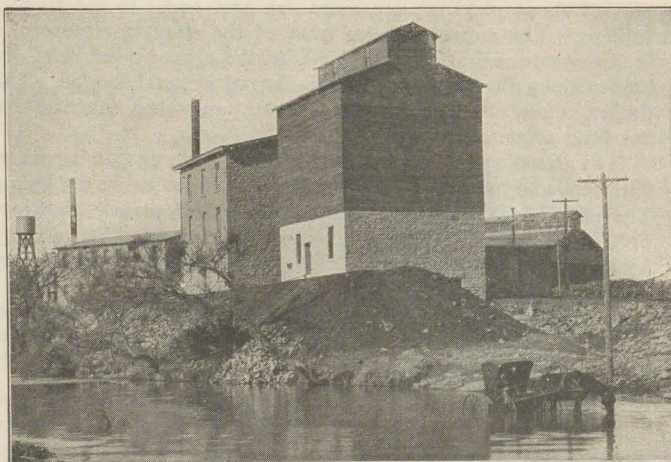
The pine woods of Texas, lying shoulder to shoulder to the vast prairies, was a golden apple ready to drop into the hand of him who had the shrewdness to see and the nerve to act upon what he saw. It has not been five years since lands in eastern Texas covered with pine, clean and straight as a ramrod, were bought for from \$1.50 to \$5.50 per acre.

In the popular mind lumbering is associated with snow-covered forests and ice-roads. The great pine woods of Maine, Michigan, Wisconsin and Minnesota were cut in the winter and hauled on the snow to the streams to be floated down to the mills.

Logging in the south is quite a different proposition. It is an all-the-year occupation. The temporary railway takes the place of the logging road and the river. And the snorting locomotive does the work of the straining teams. Even the loading is done by a crane and engine.

HARDWOOD FACTORIES.—While the pine lands have been pretty well bought up by lumbermen and speculators, the hardwood lands which are of greater value have been passed over. Here is one of the best opportunities for profitable investments in the state. These forest lands make the very best of farms, and the timber is worth twice the price of the land.

Throughout this entire region opportunities are beckoning to the man of small or large means. Wanted—Portable saw mills, stave factories, box factories to supply home demands, chair factories, factories for the production of wagon wood-work, and wood novelties. Every stick of timber can be worked up into stock that brings a good price. Ties, both pine and oak, are



OIL MILL AT JACKSBORO.

always in demand. Piled along the railroads can now be seen cords of oak staves cut and worked out by hand to be shipped to Europe to make wine casks. Why ship them to Europe?

IRON INDUSTRY.—Although iron ore has been known to exist in great quantities in the state, the industry has hardly made a beginning. The state has been doing some successful work along the line of smelting the soft ore of the eastern part of the state, in its furnaces at Rusk. Beyond this nothing worth considering has been done. One drawback has been the absence of coke and the popular opinion that the native coal will not make good coke. Whether coke and oil can be combined in the smelting of iron ore is yet to be demonstrated. Doubtless there is plenty of coal in the state that will meet the requirements of coke ovens. But it will take time to develop these co-ordinate industries—coal, coke ovens, ore mining and smelters.

The iron market is developing so rapidly in the southwest that in a short time coke can be imported and used with a profit in the production of Texas pig iron. Of course the static inertia of capital and the influence of the great iron and steel industries may delay the iron industry of the state still another decade, but the shifting of the market to the west, the ever increasing domestic demand, and the proximity of this great wealth of raw material to tide water and the markets of the world, will in time overcome the artificial barriers and the iron industry of Texas will be second only to that of Pennsylvania.

TEXTILE FACTORIES.—It is the old story of the hewers of wood and the drawers of water. With one-third of the cotton of the United States and one-fourth of that of the world produced within her borders, Texas has until recently manufactured no cotton goods. She shipped her cotton in bales to the eastern states and England, and then bought part of it back. Why has this tribute been paid to Cæsar? Why? Because it has been the custom to pay tribute to Cæsar. Is there any reason why Texas should not manufacture a portion of this raw material, at least enough to supply the home demand, and that of the immediately adjoining territory? None that enterprise and business sense can not overcome.

There have been built and put into operation in the state during the last two years nearly a dozen cotton mills. This is not a great number when compared with the mills in Lancashire, but it is the beginning of a vast industry that is peculiarly indigenous to the state.

Failures may be expected—there are always failures in the inauguration of any industry under new conditions, but the ultimate success of textile manufacture in the southwest is certain.

Every factor necessary to the production of cotton goods seems to be present with the possible exception of labor. There is abundant raw material, power in the shape of cheap fuel, an unlimited market and the best of transportation facilities. Labor is the one unknown factor. It may and doubtless will cause trouble at first, but the law of supply and demand will in time overcome the difficulty.



A 600-ACRE WHEAT FIELD IN NORTHERN TEXAS.

PACKING HOUSES.—For thirty-five years the packing industry has been moving steadily west—getting closer to the source of the raw material. The time was when Cincinnati was the great meat-packing center. Then came Chicago, and the great and growing plants at Kansas City, Omaha and St. Joseph on the Missouri river.

It is less expensive to ship dressed beef than cattle on the hoof. Cattle have to be attended and fed. Then, too, the shrinkage on live stock amounts to several per cent of the gross weight. Why then ship one-sixth of the cattle raised in the United States from Texas to Kansas City to be worked up into beef? The answer is found in the establishment by Swift and Armour of large packing houses at Fort Worth, which no doubt will be followed by others still nearer the cattle ranges to the southwest.

COTTON SEED OIL AND CAKE.—The by-products of cotton, cotton seed oil, cotton seed cake, lint and hulls, are important items in the list of industrial products of the state. The combined annual revenue derived from these amounts to \$20,000,000. To take care of these products there are 176 oil mills in which are invested \$12,000,000.

The cotton seed cake, or meal, brings \$22 per ton at the mill, the oil 30 cents a gallon, the hulls \$5 per ton, and the lint 2½ cents per pound.

The oil is used in combination with beef fat for making oleomargarine, and in combination with olive oil for packing sardines.

It is estimated that two-thirds of the American product goes to Europe—to Rotterdam, Hamberg and Marseilles. The lint is used in this country in the manufacture of furniture and in Europe in making cheap carpets.

CANNING FACTORIES.—With an unlimited supply of fruit and vegetables that go to waste, there are not a dozen canning factories in the state. There is room for hundreds in the fruit zones. The late tomato crop can not be marketed with profit. And if shipped at all serves only to lower prices. Here is the work of the cannery. The same thing is true of peaches, and other fruit.

TRANSPORTATION.

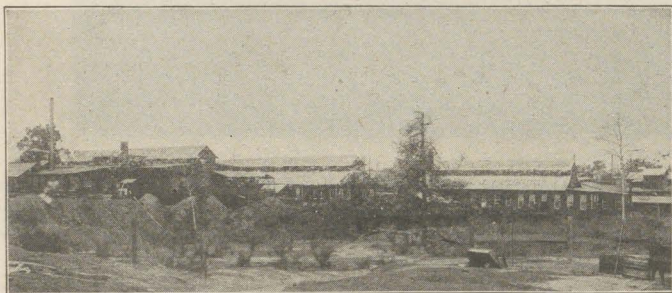
The second factor in the industrial problem is transportation. If I am rightly informed, Texas has now more railroad mileage than any other state in the Union. This is by reason of her great area. Taking the United States as a whole, it has 6.38 miles of railroad for every 100 square miles of territory.

MARKETS.—As has been stated, the industrial interests have not only the home market made by 3,000,000 people, but the markets of the growing territory to the west and south. These markets, with proper transportation rates, the manufacturers of Texas can absolutely control. And there is no reason why this trade should not be extended north into Oklahoma an

east into Louisiana. On this subject, the committee of the Merchants' Association of New York which visited the state two years ago said:

"As the country west of the Mississippi river is settled and developed the traffic to the southwestern Gulf ports will become greater. Then, too, the possibilities of the development of Texas itself must be considered. It has 265,780 square miles of territory, about one-half of which is fertile soil capable of producing almost anything that grows in other parts of the country, is rich in mineral resources, in timber, in cattle and sheep, looks forward naturally to a great increase in manufactured products for which it has an abundance of raw material, is capable of supporting a vast population, and, taken all in all, is one of the states of greatest possibilities within the limits of the Union.

Several of its railroads already connect with the railroads that have been built in Mexico, and further development in Mexico must, in the very nature of the surroundings, favorably affect the traffic of these roads in Texas. Texas is naturally the route through which a large part of the products of Southern California going eastward and all going by way of the Gulf ports



A TEXAS CAR WHEEL WORKS—USING TEXAS ORE.

must pass. Between California and Texas are the intervening territories of New Mexico and Arizona, rich in minerals and which have by no means been fully developed."

POWER.

Texas has no available water power, and, fortunately, she needs none. Nature was more kind to Texas when she placed beneath her surface vast deposits of coal and filled the subterranean reservoirs with oil, than if she had set the river courses with waterfalls. The question of cheap fuel and with it the question of power was solved when the first gusher was discovered at Beaumont.

Ex-Governor Hogg, in an interview regarding oil as a fuel, is reported to have said: "There is no question, however, about its being a fine fuel oil. We have used it in our mill several months with most gratifying results. We carry an even pressure of about 100 pounds of steam on our two 100-horsepower boilers, fed by a pump which runs slowly all the time and forces the oil through the nozzle burner where it mixes with steam from a

small pipe from the boiler. We burn about 45 barrels per 24 hours. This costs 44 cents per barrel of 42 gallons, delivered."

"The oil can be laid down in St. Louis for 45 cents per barrel. Three barrels are equal to a ton of coal. Instead of paying \$3.50 for coal the oil costs \$1.35.

The question naturally arises, why ship Texas oil north to build up manufacturing centers there? Why not use the power derived from this natural product of Texas to manufacture other natural products of Texas? The oil supply of Texas may mean something to the industrial interests of other sections, but they mean much more to the industries of Texas.

LABOR.

The most serious question that confronts the industrial as well as the agricultural interests of Texas is that of labor. At the entrance to every city, on the door of every factory, on the gate of every farm and plantation, might be placed the placard, "Wanted—At all times men who can and will work." There is no use in trying to disguise the fact that the negro labor in the south under present conditions, and Texas is no exception, is inefficient and unreliable. What is left of the old slave generation can be depended upon to do the work that they were used to do under the old regime. They can and will work faithfully in the corn and cotton fields. But the generation now on deck will work only when it is forced to do so. The average negro will not earn his salt working alone. It is only in gangs, under the eye of an overseer or a head man, that he will perform sustained labor. On the farm he may work a few days, or a few weeks, until he gets a few dollars ahead, then without warning he gets "sick" and retires to the shade of his shack, leaving his employer to wrestle as he may with a growing or a maturing crop. The same difficulty is experienced in the industrial lines. The cotton mills have to run short handed during the cotton picking season because a majority of the employees go to the cotton fields where the wages are better. This disregard for contract seems to be contagious, for the imported labor from the east is apt to fly the track in the same way. The cotton mills find it difficult to keep their skilled labor, so great is the demand from other sources.

In the southwestern part of the state where Mexican labor can be secured the situation in the agricultural line is somewhat better. The Mexican is steady, faithful, but stupid to a degree. He must be shown how to do every new thing required of him. He is without initiative. But to even things up he works for little and boards himself.

TEXAS AS A PLACE TO LIVE.

Most people are content to live where they can do well in a financial way. All have individual preferences as to climate and social surroundings. Our inherited tendencies have much to do with our likes and dislikes, especially as to climate. This is seen in the broad fact that world-emigration usually follows

isothermal lines. Those who were born and bred north of Mason and Dixon's line prefer the stimulating air and ozone-freighted breezes of the north, while those who first knew life in the south, love that south with its beauty, its warmth, its delicious languor.

THE CLIMATE.—How about the climate of Texas? It is warm—semi-tropical. But it is not so warm as you would think from the geographical location—it differs from that of other southern states of the same latitude. This difference is caused by the prevailing winds.

During eight months of the year, including the long summer, a wind blows from the Gulf of Mexico to the north. It is cool, gentle and never-ceasing. The result is that the summers, though long, beginning in May and lasting till October, are not only endurable, but pleasant.

The autumns and winters of Texas are delightful. They make up for the shortcomings of the summer. There is no time when the farmer can not plow. He is not obliged to hibernate for five months and hustle the remaining seven.

Does not this mild climate rob you of your energy and undermine your ambition? Yes, if you allow it to. If you are constitutionally lazy, a shady tree and a hammock look mighty inviting just after dinner. But there is about as much evidence of energy in the cities of Texas as can be found anywhere else. A large portion of the business men are from the north and so far the climate does not seem to have injured them permanently. It is true that the lazy and the unambitious find here a climate suited to their taste—a climate where they have to work but a few months of the year to secure enough to sustain life.

THE SCHOOLS.—One of the first things that a prospective settler from the middle west or eastern states wants to know is—how about the schools?

The state of Texas has set apart to the common school fund all told about 38,000,000 acres of land. Of this there is about 22,000,000 acres remaining. The value of this land in connection with the accumulated funds amounts to \$40,000,000, the largest school endowment possessed by any state in the Union.

The state pays out annually \$5 for each child of school age against \$1.35, the average of the United States.

The enrollment of the common schools is 18.32 against 17.21 in Massachusetts. This indicates the general interest in education.

The State University as well as the institutions for the education of the blind and the deaf and dumb are located at Austin, the Agricultural and Mechanical College at College Station near Bryan, the North Texas Normal School at Denton, and the Southwest Texas Normal School at San Marcos. Besides these institutions of higher learning there are fifty-six private and denominational schools in the state with an attendance of about 12,000 pupils.

Separate schools are maintained for white and colored children. The report of the State Superintendent of Schools for 1901 gives the following statistics:

The number of schools in the state.....	12,092
The number of teachers employed.....	14,814
The number of school children.....	739,400
Amount paid teachers.....	\$3,886,454
Amount expended for schools.....	4,469,015
Value of school property.....	9,166,550

SOCIAL CONDITIONS.—A majority of the 3,000,000 people in Texas came from the southern states, or, at least, their parents did. A great many came west after the war. Springing from such a stock, we find what we would expect to find, a people courteous, genial, cultured and hospitable. There is a charm, a subtle, seductive influence about the manners of the southern people that is irresistible. Come from where you may, you soon fall under its dominion, and offer your tribute.

The Texan of cheap literature, the swaggering border ruffian, with pistols and bowie knife, is conspicuous by his absence. He may once have had a material existence, but he has long since retired over the border of Texan mythology.

Is there no prejudice against northern people? Not any. The war is over in Texas. The old and the new join in welcoming this new invasion from the north.

Supplementing this dominant southern element is the contingent from the north, young, active and shrewd. They are one and all making money and seem well content to live in Texas.

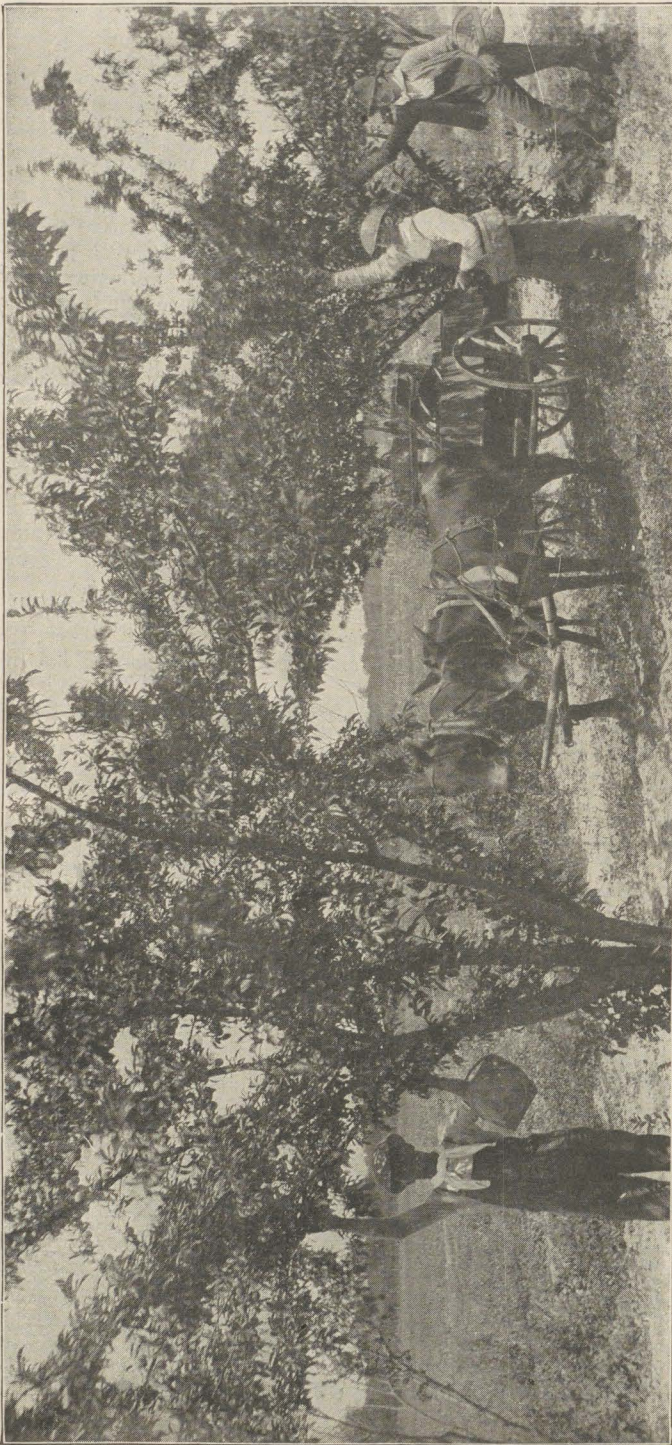
A description of the counties penetrated by the Rock Island System follows:

MONTAGUE COUNTY.

Lies on the Red river and is about equally divided between timber and prairie, broken in parts, but contains large areas of level or undulating uplands, diversified by broad valleys and



A RANCH HOME—NORTHERN TEXAS.



PICKING JAPANESE PLUMS.

high, rolling prairies. A belt of woodland, 15 miles in width, known as the Upper Cross Timbers, runs nearly north and south through the county, and consists chiefly of the low, heavy-topped post-oak, interspersed with pecan, walnut and blackjack. Along Red river and some of the other streams is a heavy growth of oak, walnut, pecan and cottonwood. Red river, Belknap, Denton, Elm, Farmer, Sandy, Beaver, Saline, Freestone and Clear creeks are the principal water courses, and are very generally distributed throughout the county.

The county contains a large number of unfailling springs, and wells of good water can be obtained in all parts of the county at an average depth of 30 feet. The mean annual rainfall is 33 inches, and is usually so distributed that protracted drouths are uncommon.

Most of the county is susceptible of profitable cultivation, the leading soils being reddish loam, a gray sandy on a clay foundation, black, waxy and a dark sandy.

Improved methods of agriculture and stock raising are followed. Cotton, corn, wheat, oats, rye, millet, Kaffir corn and sorghum are the principal crops. All garden vegetables are raised in abundance. Potatoes yield abundantly, especially the sweet varieties. This is also true of watermelons, cantaloupes, etc. It has been demonstrated that this soil is especially adapted to fruit, such as apples, peaches, pears, apricots, plums, grapes, blackberries, etc.

Many commercial orchards are now in bearing and others are being planted. The center of the fruit industry is the territory lying tributary to Bowie, which is the chief shipping point. Fruit is sent out from that place in carload lots.

New land, of good quality and easy to reduce to cultivation, ranges in value from \$10 to \$15 per acre; good improved land sells at \$15 to \$25 per acre. Improved land rents at \$3 to \$4. The common sedge and mesquite are the chief varieties of grass. Free schools are numerous throughout the county. There are also several private schools. Church conveniences are good in all parts of the county. The altitude of the county is 1,113 feet. Climate healthy. The Rock Island system runs through the county. Among the principal towns of the county are Bowie, Stoneburg and Ringgold, all located on the Rock Island System.

WISE COUNTY.

This county is in the second tier south of the Red river. The Rock Island System runs diagonally across the country from northwest to southeast.

Two-thirds of the area of this county is occupied with a belt of woodland known as the Upper Cross Timbers, consisting of several varieties of oak, including post, pine, burr, water and red oak, while along the streams that penetrate this woodland region there is usually a large growth of black walnut, pecan, cottonwood and elm of the several kinds, and on the uplands grow the low, heavy-topped post-oak and blackjack. The general elevation is about 1,850 feet, and the surface is for the most part

farming. Protracted drouths are unheard of; the rainfall averages 24 inches yearly. Pears, apples, plums and other fruits are profitably raised.

The federal government has decided to locate in this county two experimental farms, and actual work has begun on both of them.

FORT WORTH.—Forth Worth, the railroad center of the northern part of the state, is 32 miles northwest of Dallas.

The population of Fort Worth is not far from 40,000. And the city is growing. The selection of Fort Worth by the packing interests as the center for Texas will bring to that city the cattle and hog markets of the state, as well as many kindred businesses and industries. This enterprise alone will add 10,000 to the population of the city.

Fort Worth ranks fourth among the manufacturing cities of the state. It has over 200 separate establishments, with a combined capital of \$3,000,000. The wholesale business is increasing rapidly with the filling up of the country to the west. The business interests of the city are also well prepared to meet every demand upon it, and are daily adding to its facilities. The present houses are enlarging their plants, and adding to their capital, and new establishments are coming to participate in the reward that waits upon business energy well directed.

The cattle industry is easily the first in the state, not only from standpoint of tonnage, but represents more money than any single industry in the state. Cattle raising is no longer confined to the plains, to boundless and unfenced ranches, grazing countless untamed long-horned and long-limbed cattle, but now every ranch is fenced and improved, and cattle are well graded, and many of them thoroughbred registered herds. The "man with the hoe" has pushed back the frontier and forced the ranchman to own and enclose his lands, and raise more and better cattle to a given number of acres than was formerly done. The cultivated land producing cotton and cereals for market, and not diminishing the number of cattle, adds to the value of trade and increases the business of the country, all of which redounds to the commercial and business activity of the city.

The importance of Fort Worth's location can be understood by a familiar comparison. Suppose that the situation were such that all the products of the states of Ohio, Indiana, Illinois, Wisconsin, Michigan, Missouri, Iowa and Minnesota were forced to seek a market in one city, and all the manufactured articles were compelled to come in through the same city, it would not require a vivid imagination or prophetic ken to picture a great mart of commerce.

This is just the situation here. All the territory from the southwest around to a point north of the city must, and always will, by sheer force of the situation, pay tribute to the city of Fort Worth. This territory is as great in area as the states named, and it is its equal in fertility of soil, and variety of products, and far superior in the salubrity of its climate. Year by year the agriculturist is possessing the land, planting and harvesting crops, improving farms, and building villages and



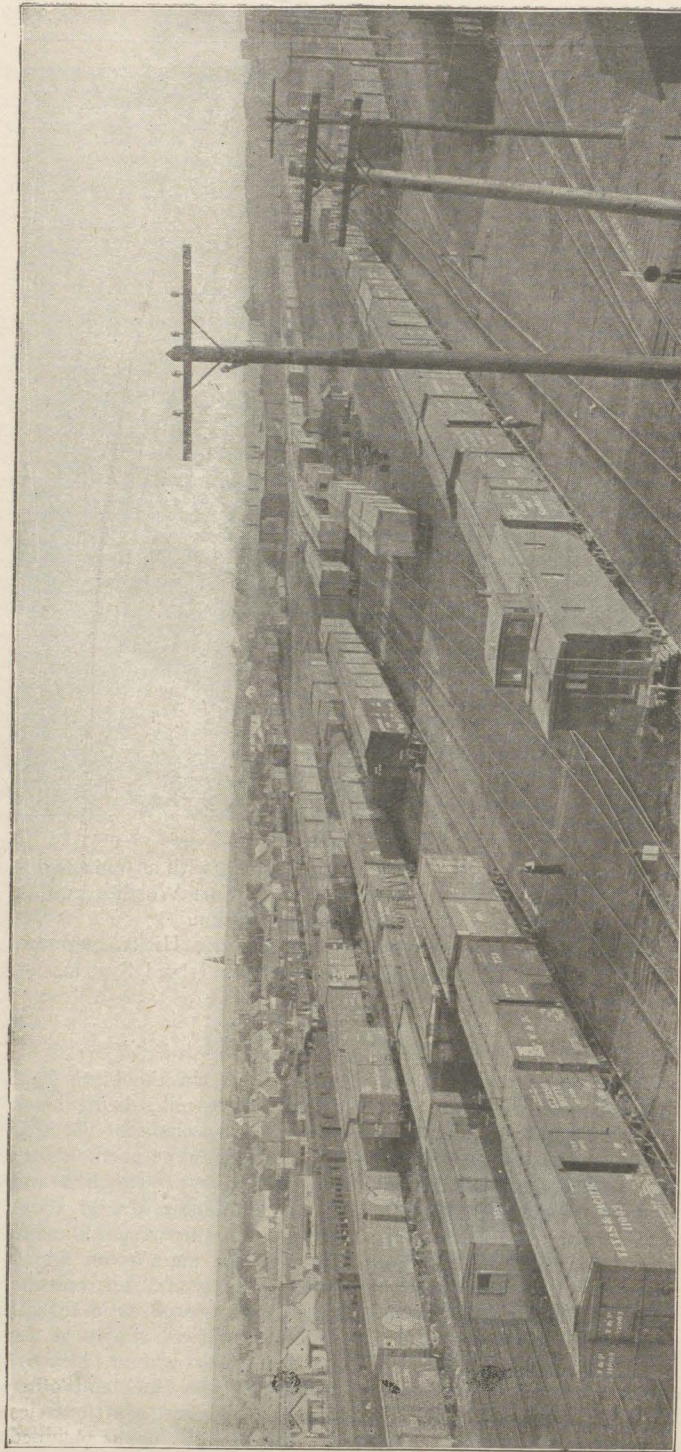
DALLAS CLUB BUILDING—DALLAS.

towns. A few more years will see it teeming with an industrious and thriving population, which will find at Fort Worth a market for its products and supplies for its consumption.

Other prominent towns in this country are Hicks, Saginaw, Hurst and Candon, all reached by the Rock Island System.

DALLAS COUNTY.

This county lies in north central Texas, in the black land belt, a considerable portion of its 900 square miles being black waxy land and extremely productive. Three-fourths of the area of the county is high-rolling prairie, rising in some portions into hills and again stretching out into broad valleys. The Elm and West forks of the Trinity river, and Mountain Creek, about equi-distant from each other, flow in from the west and unite near the center of the county, forming the main river, which passes out near the southeast corner. Along and between the forks of the river, and on the main stream, as well as in several other portions of the county, is found a sufficient supply of the several varieties of oak, cedar, pecan, black walnut, hickory, bois d'arc, elm, hackberry and cottonwood for fuel and other domestic purposes. The Trinity has a number of tributaries throughout the county. Good water for domestic use is obtained



RAILROAD YARDS—FORT WORTH.

from springs and from wells at 18 to 50 feet. The city of Dallas procures its present water supply partially from the Trinity river, and from a large surface reservoir. There are numerous artesian wells in the city, almost every hotel and large office or commercial building being provided with one. Nine-tenths of the area of the county is good farming land; the soil of the prairies is black waxy, and of the river and creek bottoms a rich sandy loam, which is easily tilled and very productive. Wheat, corn, oats, hay and cotton are the principal crops, while small fruits and garden truck are extensively and profitably grown, these latter chiefly on the sandy land. The dairying industry of the county is quite profitable and extensive. Alfalfa is a new crop in this county, and has been quite extensively planted.

Stock raising, horse raising and hog raising are pursued in connection with farming, and many fine horses of the driving and draft classes, as well as high grade and thoroughbred cattle are produced. Pasture lands suitable for cultivation, but not yet tilled, are quoted at \$5 to \$10 per acre; bottom lands and the black lands of the uplands at \$20 to \$100 and other lands between the extremes.

The county is well supplied with public and private schools and churches.

DALLAS.—Dallas, the southern terminus of the Rock Island System, is by location as well as by appearance the most "northern" city of the state. There is an air of up-to-date energy about it that is not always found south of a certain imaginary line. It is thoroughly modern both in its buildings, which will do credit to any city of its size, and in its street appointments. It is well lighted and the transportation service is excellent.

Dallas was one of the pioneer points to secure railroad communication with the north and east.

This gave the young city a lead in the distributing business of the southwest, which it has steadily maintained. The wholesale trade of Dallas reached a total of \$40,000,000 during 1903. It is now the largest distributing point for agricultural implements in the world, and it ranks second in the United States in the manufacture of saddlery and harness goods.

Dallas is located in the center of the most populous, if not the most fertile region of the state. Dallas county, which contains 572,000 acres, has under cultivation 430,000. A circle with a radius of 100 miles and Dallas as a center will include one-half the population of the state.

As a railroad center Dallas ranks second in the state and has ambitions to become an ocean port. Do not smile, for the people of Dallas do not smile when they tell you that before many years they will be able to reach tidewater with boats of 12 foot draft. This consummation so devoutly to be wished is to be brought about by clearing out, deepening and locking the channel of the Trinity river. The fall of several hundred feet between the city and sea level will be overcome by a series of locks which will make of the Trinity a grand canal. Congress will be asked to make the appropriations necessary for the work—and it may be put through.

Dallas is a pleasant place. The surroundings are attractive. Native forests afford natural parks and pleasure grounds. The climate is healthful and it is near enough to the coast to receive the benefit of the gulf breezes in summer and still retain the benefits of an invigorating altitude.

The city has a complete complement of churches, and the educational facilities both public and private are of the best. What the city particularly needs is better means of physical recreation—parks and lakes—but, alas! there are no lakes in Texas and the city will have to invent a substitute for the things which nature neglected to supply.

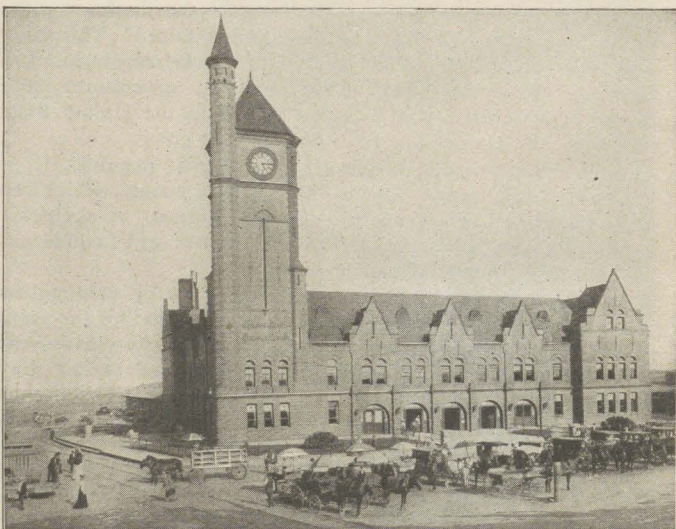
Dallas is distinctly a commercial city, a distributing point. But in addition it boasts of a number of manufacturing establishments, among which are cotton mills, breweries and packing plants.

The United States census of 1900 reports 373 manufacturing establishments of all kinds, with a capital of \$6,897,000, employing 3,756 persons and producing an output valued at \$11,480,000. This has increased greatly during the last two years; how much it is impossible to determine, but an estimate of 25 per cent would not be extravagant.

The town of Irving in this county is also on the Rock Island System.

JACK COUNTY.

Jack County, containing 870 square miles, was organized in 1857, being formed from Cook County, and is one of the second tier of counties from Red River, being separated from it by Clay County.



ROCK ISLAND STATION, FORT WORTH.

The surface is undulating timber and prairie land, with low valleys, traversed by the West Fork of Trinity River and its tributaries; also tributaries of the Brazos River, thus being provided with good drainage and an abundant water supply for any and all purposes.

The soil varies from a light sandy to a dark loam, approaching the "black-waxy," and is of unsurpassed fertility, void of swamps and marshes. The atmosphere is pure and healthful—the climate mild and agreeable, and the health of the citizens is remarkable.

Two-thirds of the county is prairie land, which in its natural state is covered with Mesquite grass, indigenous to this state, nutritious and hardly surpassed by the famous blue grass of Kentucky for grazing purposes, affording excellent pasturage for an innumerable number of cattle, horses, sheep and other stock, which graze upon it, requiring but little attention even during the winter season. The existence of such favorable conditions enables the farmer of moderate means, who owns seventy-five, one hundred and fifty, two hundred or more acres of land, to keep a few head of stock at but little expense, and at handsome profit; the higher the grade kept, the more remunerative.

The larger per cent of the cattle now raised in the country are high grade, there being many herds of registered Durhams, Herefords, Aberdeen Angus, etc., special attention being given to high graded and registered stock.

The timber of the country consists principally of post-oak on the high lands, spotted oak, ash, elm, cottonwood, walnut and pecan in the valleys and bottoms, the latter yielding annually in their uncultivated state many hundred bushels of nuts, rich and palatable. The cultivation of the pecan would, and is, sure to prove a profitable industry, as the nut is preferred by many to the almond, filbert or English walnut.

Tillable land constitutes about seventy per cent of the acreage of the country, and of this not more than fifteen per cent is in cultivation, notwithstanding its fertility and productiveness offers every inducement to the farmer and horticulturist. Every berry, fruit, vegetable and agricultural product that can be grown in this latitude, 33°—10' North, can be grown to perfection here; and of the most elegant and delicious flavor—strawberries, dewberries, blackberries, apples, pears, apricots, peaches, quinces, plums, cherries and grapes grow in abundance, as well as every variety of vegetable.

The nature of the soil permits the farmer to raise a diversity of crops, such as macaroni wheat, rye, barley, oats, corn, sweet and Irish potatoes, millet, sorghum cane, hay and cotton.

Choice unimproved lands can be bought at from \$3 to \$8 per acre; improved lands can be bought at about the same price, plus the value of the improvements, and on most liberal terms. A small cash payment and the balance payable in from one to eight years.

JACKSBORO, the county seat, situated near the center of the county, on the Rock Island System, which runs through the county, has a population of about 2,000 and is possessed of all the



TRUST BUILDING—DALLAS.

advantages necessary to make it an excellent market for all of the products of the county and all the conveniences necessary for the accommodation of the citizens. Jacksboro has good schools and churches, banks, up-to-date store and electric-light works.

The growing towns of Vineyard, Hess and Bryson in this county are on the Rock Island System.

YOUNG COUNTY

Has an area of 900 square miles, about one-half of which is covered with fairly good post-oak, with prairies here and there, the streams being fringed with a good growth of cottonwood, pecan, elm, hackberry, etc. The other half of the county is undulating mesquite prairie. The Salt Fork of the Brazos river passes 100 miles through the county from the northwest to the southeast corners. The Clear Fork of the Brazos enters at the southwest corner of the county and unites with the Salt Fork a few miles from Graham. There are a number of good springs and water of good quality is found almost everywhere at a depth of 15 to 150 feet.

The soil and climate are adapted to growing cotton, macaroni wheat, oats, rye, barley, millet and cane, vegetables of all kinds,

peaches, apricots, plums, pears, grapes and other small fruits and berries. The price of wild lands is \$2 to \$10 per acre, of improved lands \$5 to \$20 per acre. The rental value of cultivated lands is \$1 to \$3 per acre. Graham, the county seat, is the terminus of the Jacksboro line of the Rock Island System. The town is well built and growing. Land in the vicinity of Graham and Dakin is exceedingly cheap.

ALONG THE EL PASO LINE.

The Rock Island System has two lines to and through Texas. One at present, terminates at Dallas; the other at El Paso. The territory traversed by the first of these two lines as well as that part of Texas south of Fort Worth and Dallas, is very fully described in the foregoing pages. It is now in order to say something about the country along the El Paso line. This line on its way from Kansas City to El Paso leaves the Fort Worth and Dallas line at Herington, Kan., and continuing a south-westerly direction, cuts across the northwestern corner of Texas. After a run of about 75 miles, it crosses the state line, separating New Mexico and Texas, re-entering Texas only a few miles north of El Paso. There are several prosperous towns in New Mexico located along the El Paso line—Tucumcari, Santa Rosa, Carrizozo and Alamogordo. Dalhart and El Paso are the largest of the Texas towns along the El Paso line.

SHERMAN COUNTY

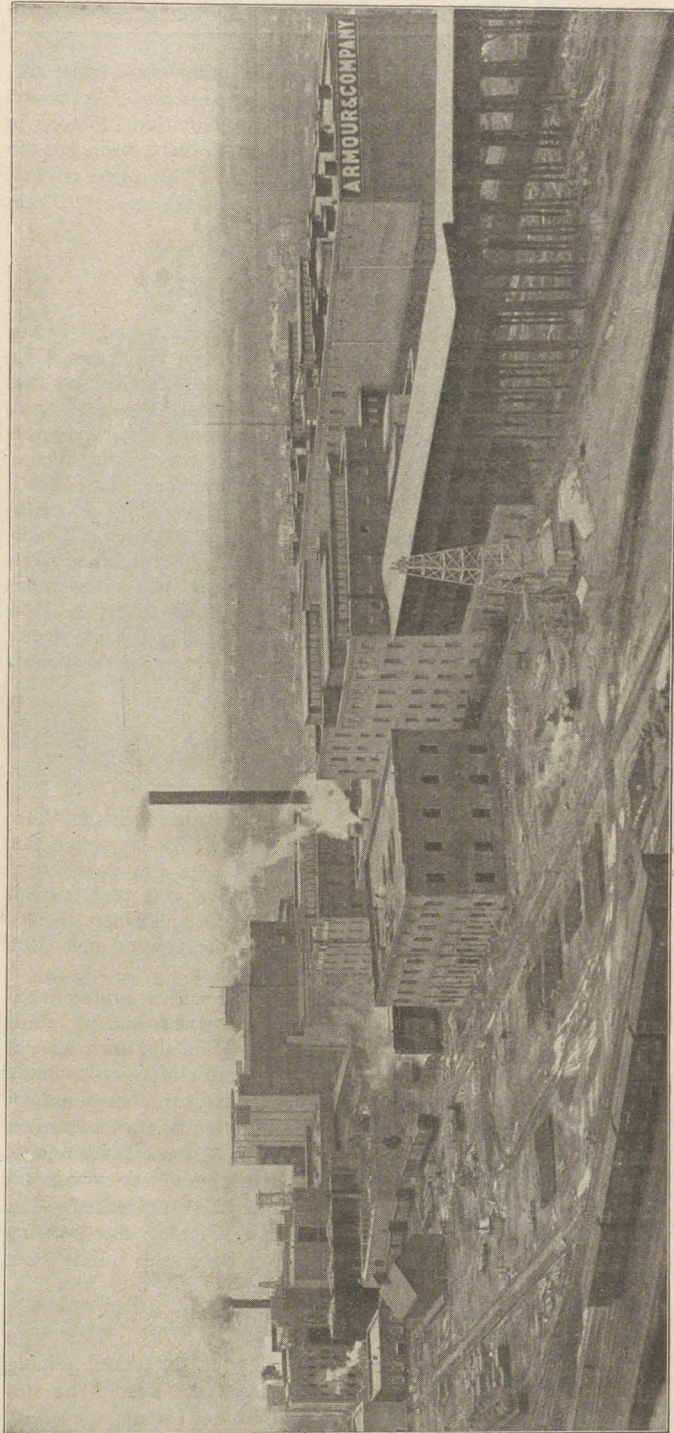
Is located in the northern tier of Panhandle counties.

The surface of the county is smooth, with here and there draws and breaks. There are several varieties of soil. The tight land, sandy loam, with grama and sage grass mixed is extremely fertile. This soil is clear of grubs and rock except in the breaks. The county is drained by the Coldwater, Frisco and Palo Duro draws. The only timber in the county is a little hackberry brush on Coldwater draw.

The county has a splendid underground water supply inexhaustible and of superior quality. Macaroni wheat and all kinds of forage crops grow well. Fair corn has been grown on sod land without cultivation. Sorghum, Kaffir and Milo maize made on an average of about a ton to the acre last year. Steam plows are being used in breaking up the sod lands, and farms are becoming numerous. Farm lands sell at \$1.50 to \$8. per acre. There is one incorporated school district and seven country schools. Various religious denominations are represented. The Rock Island System crosses the country, reaching the growing towns of Stevens and Stratford, the latter being the county seat.

DALLAM COUNTY.

This is the northwest corner county of the state, joining Oklahoma on the north and New Mexico on the west. The surface of the country is generally level, broken along the south



ARMOUR & COMPANY'S PACKING HOUSE AT FORT WORTH.

line by the Rito Blanco cañon. The soil alternates from a rich brown, sandy loam to a hard land. Both have been proven fertile. There is no timber in the county. The underground water supply is abundant and apparently inexhaustible, lying at depths of 200 to 400 feet. The principal crops of the county are Kaffir corn, Milo maize and sorghum. Macaroni wheat, oats, corn, alfalfa and rye do well here. The price of land will average about \$3.50 per acre.

Murray, Chamberlin and Dalhart are towns in the county on the Rock Island System. Dalhart, the county seat, is situated partly in Dallam and partly in Hartley County. This town was established about three years ago, and now has a population of 1,800, which is rapidly increasing. It is a division point of the Rock Island System, and shops and roundhouse are located there. Dalhart also has an independent school district, electric light plant, ice plant, waterworks, telephone system, national bank, steam laundry, etc.

HARTLEY COUNTY

In the Panhandle of Texas, lies north of the Canadian river. The general surface of the land is undulating prairies, broken by cañon valleys. The soil generally is a reddish brown marl, very fertile. The natural grasses are mesquite, grama and buffalo, with a few sedge grass tracts in the northern part. There is very little timber in the county. The cañon valleys are watered by springs and running streams, the uplands by wells, ranging in depth from 150 to 400 feet. Macaroni wheat, Kaffir corn, Milo maize and sorghum are the principal forage and grain crops. Corn, wheat and oats, where tried, have yielded well. One-third of the land is yet held in large pastures, the remainder in pastures and stock farms of 640 to 15,000 acres. Land can be purchased at \$2.50 to \$8 per acre, according to location and improvements. There are good schools and churches throughout the county. The county has been noted chiefly for its fine-bred cattle, some of the best bred herds of thoroughbred Hereford and Polled Angus cattle in the state being located in Hartley County. The Rock Island System crosses the county northeast to southwest, reaching the towns of Rehm, Middlewater, Romero and Bravo.

EL PASO—Few towns in Texas—or anywhere else, for that matter—have grown as rapidly as El Paso. In 1880 its population was less than 800. In 1890 it had about 10,000 and at the present writing it claims, and undoubtedly has, considerably more than 30,000. Eight different lines of railroad center here. These railroads radiate in every direction—to Los Angeles and San Francisco; to New Orleans; to the City of Mexico; to the mining camps of New Mexico, and to the populous cities of the north. One of the largest smelting plants in the world is located near El Paso.

Mineral wealth is the cornerstone of El Paso's prosperity. The territory within a radius of 500 miles is extraordinarily rich in copper, coal, gold, silver and lead.

Unimproved agricultural lands in the Rio Grande valley, ten to fifty miles from the city, sell for \$10 to \$25 per acre and improved lands for \$20 to \$100 per acre, except orchards and vineyards. Unimproved lands within five miles of the city can be bought for \$200 per acre. Orchards and vineyards yield \$150 to \$200 per acre. One vineyard of six acres pays the owner an average of \$2,700 per year. A good yield of alfalfa is 4 to 5 tons per acre for the season, from four cuttings, netting the owner \$30 to \$40 per acre. Agriculture cannot be practiced in this section without irrigation. Water for this purpose is obtained through canals from the Rio Grande, and by the use of wells and gasoline pumping plants. An eight horse power gasoline en-



STREET SCENE—AMARILLO.

gine and pump will irrigate sixty acres of orchard or vineyard. The projected international dam and reservoir will be of incalculable value to agriculture in the valley below El Paso.

The New Mexico Agricultural College and Experiment Station is located about forty miles north of El Paso, affording that city all the advantages of the excellent educational opportunities of the college, as well as the benefit of the extended scientific agricultural experiments under conditions identical with those of the Rio Grande valley below El Paso.

There is a distinct need at El Paso for canning factories for meat, fruits and vegetables. Factories are also required. The market is of enormous extent and competition is not overly keen.

El Paso has waterworks, sewer system, two telegraph lines, two telephone systems, gas works, two electric light and power plants, four national banks, twelve miles of electric street railway,

four bridges across the Rio Grande, a sixteen-company United States military post on which the government has already expended \$750,000, a large modern hospital (the Hotel Dieu), two foundries, two ice plants, several cigar factories, three harness and saddlery factories, carriage and wagon factories, large stock-yards.

For two months of the year—May and June—the climate of El Paso is apt to be too warm for comfort. July, August and September also have a few days which are unpleasantly hot. But from October to May no more delightful climate can be imagined. And at all times of year the evenings are cool. As soon as the sun disappears behind the mountains the mercury drops, and it is not long before a fall of 15 or even 20 degrees is registered.

THE TEXAS PANHANDLE.

For a fair, honest and expert expression of the actual conditions to be confronted in the Texas Panhandle the following, written by Mr. George Findlay, is frankly typical of the whole region outlined. Says Mr. Findlay:

"The land lying in the extreme northwest corner of the Panhandle of Texas comprises approximately the following proportions of the counties named: Dallam, two-thirds; Hartley, one-half; Oldham, five-eighths; Deaf Smith, one-half; Parmer, nearly the whole; Castro, one-seventh; Bailey, one-fifth; Lamb, one-half, and Hockley, one-fifth. Dallam county lies thirty-four and one-half miles south of the corner of the states of Kansas, New Mexico and Colorado, and the other counties named lie south of Dallam, being the western tier of counties in the Panhandle, and, excepting Castro, Lamb and Hockley, which are in the second tier of counties on the west side of the Panhandle, about the line between Texas and New Mexico.

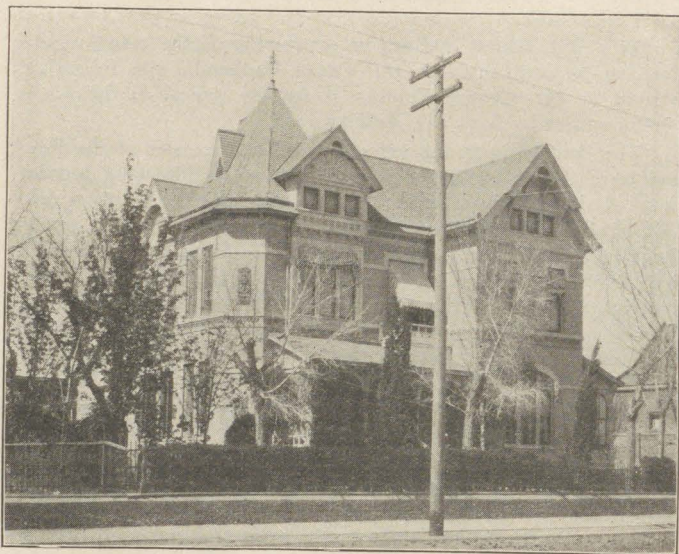
"The soil of the land lying north of the valley of the Canadian river, which crosses the tract from west to east in Oldham county, varies from chocolate loam to chocolate and clayey loam, red sandy loam, red and light sandy loam and red sandy clayey loam; the soil of the Canadian valley comprises red clayey and sandy loam, red and light sandy loam, deep red clayey and sandy loam, rich red loam and chocolate loam, and south of the Canadian valley, beginning at the brakes of the Llano Estacado or Staked Plain, and stretching south about 100 miles to the end of this tract the soil is of a rich red loam, rich red clayey loam, deep rich red clayey loam, red clayey loam, red sandy and black sandy, and chocolate loam and light sandy loam. These soils are of most excellent quality, and the materials of which they are composed are the sediments of a great lake, which is believed to have existed here in late tertiary times. The sub-soils are practically of the same porous materials as the soil itself, and under these lies an impervious bed of clay.

"North of the Canadian valley it may be described as rolling, gently rolling, high rolling and gently undulating; the Canadian valley as rolling, gently rolling, broken, an occasional rocky

bluff, pebble knoll and gravel ridge, and south of the Canadian valley it is remarkable for its uniformly rolling, gently rolling, undulating or gently undulating character.

"The north boundary line of the Llano Estacado or Staked Plain crosses this tract in Deaf Smith and Oldham counties, and is marked by a ledge of precipitous rocky bluffs varying in height from 30 to 200 feet and often of much greater elevation above the plain below, and at a distance has the appearance of a range of flat topped mountains. The territory south of this precipitous boundary is an elevated plateau that would seem to have been forced up from the surrounding plain by some great convulsion of nature.

"The altitude above sea level in Dallam county at the north end of the tract is a little over 4,700 feet (Denver, Colo., is 5,170 feet); at the Canadian river, in Oldham county, between 3,200



RESIDENCE—EL PASO.

and 3,300 feet; at north edge of the Staked Plain in Deaf Smith county, probably about 3,800 feet, and from this point to the south end of the tract in Hockley county there is a gradual decline to about 2,000 feet.

"The Staked Plain is dotted every few miles with circular depressions or lake basins, sometimes several miles in circumference, which after heavy rainfalls contain large quantities of water.

"The drainage is toward the east, and every five to fifteen miles a grassy ravine or 'draw' traverses this land, sometimes wide and deep, sometimes narrow and shallow.

"The large proportion of crisp, bright, bracing, sunshiny days makes it a salubrious and delightful climate to live in. Outdoor work can be carried on here almost every day in the year, sun-

strokes are unknown, the nights are always cool, and this section is destined to become the abiding place of a vigorous, healthy, hardy race of people; and a climate that conduces to that condition in the human race will also conduce to a good healthy condition of all the domestic animals.

"The wealth of this tract in its natural state lies in the abundant supply of its excellent grasses. There is probably nowhere else such a fine sward of valuable grasses as is found here.

"First of these in importance, quantity and universality stands the true buffalo grass, unsurpassed for grazing purposes, which as a winter forage is without an equal, and is greatly relished by all grazing animals. It is a low growth, rarely more than five or six inches high, and it cures during the dry season on its roots into perfect hay, which recent tests at the experiment station at Manhattan, Kan., show to be considerably superior to Kentucky blue grass and very much better than timothy.

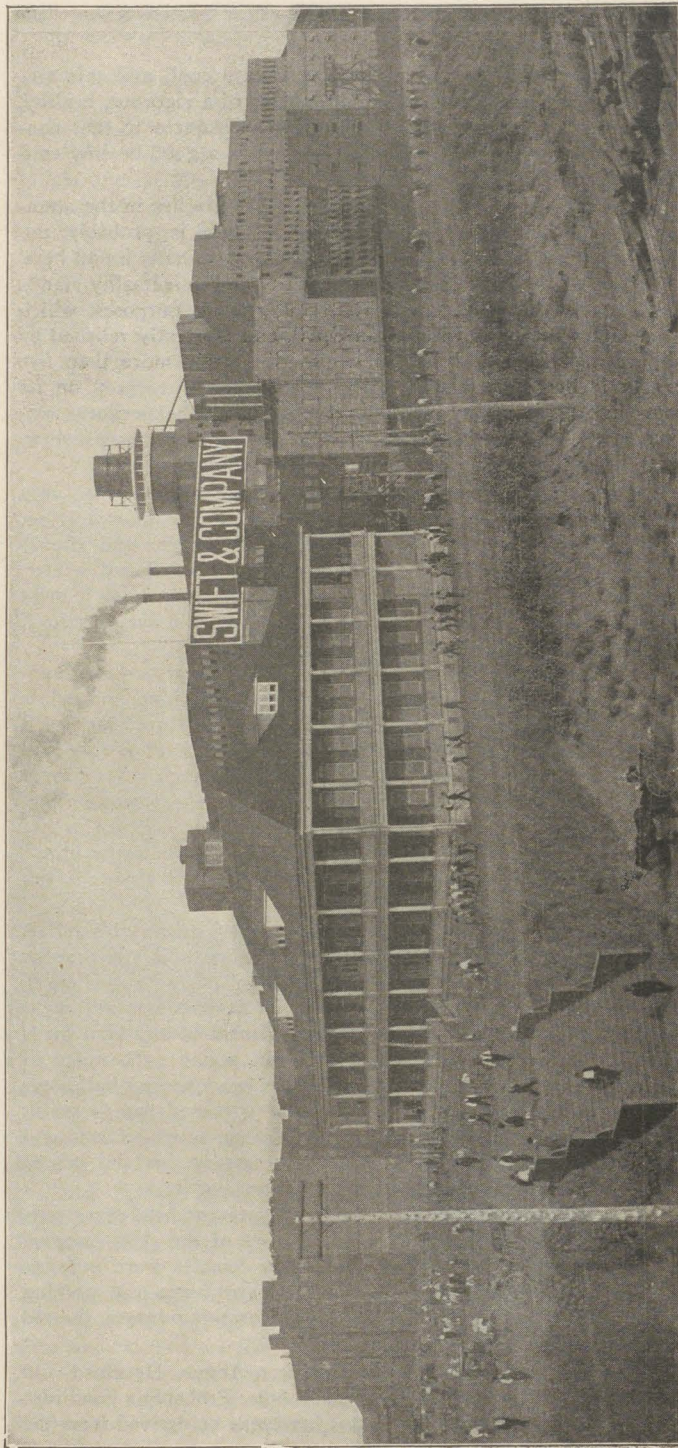
"Next probably comes the curly mesquite, which is also very abundant on these plains, and in the habit of growth closely resembles the true buffalo grass; matures on its roots and affords excellent pasturage for all kinds of stock in the fall and winter. No grass stands drought better than this; at such times it dries up and appears dead, but in a few hours after a warm rain it becomes green to the ends of the smallest branches.

"The different varieties of grama grass are also very abundant here and make excellent pasturage. The blue and white grama are unsurpassed for grazing purposes, and no other grass better withstands the trampling of the stock, and they also cure in the turf into splendid hay. Other valuable species of grass abound here, among which may be mentioned the blue stem and bunch and sedge grasses (which are most in evidence where there is a large proportion of sand in the soil) and many others which afford excellent grazing and are more or less mixed with those already mentioned.

"It is our firm conviction that no country under the sun is better adapted than this is to the stock farmer. This conviction is grounded on fifteen years' experience in raising cattle on it. The present owners came into possession of it before any wells had been bored or fences built or improvement of any kind made upon it. Now there are over 300 wells, about 1,500 miles of splendid barbed wire fences, eight division headquarters buildings, and numerous line riders and windmill greasers' camps on it, besides general headquarters, two town sites, several farms and other improvements, and everything necessary for the proper care of the immense cattle herds now occupying it.

"The female foundation stocks of the present herd were purchased from about central Texas, and were of the class common to that country at that time; with these females were put fine bulls from the northern states, and for many years past nothing but pure bred bulls have been purchased for this purpose, the old inferior animals being annually weeded out.

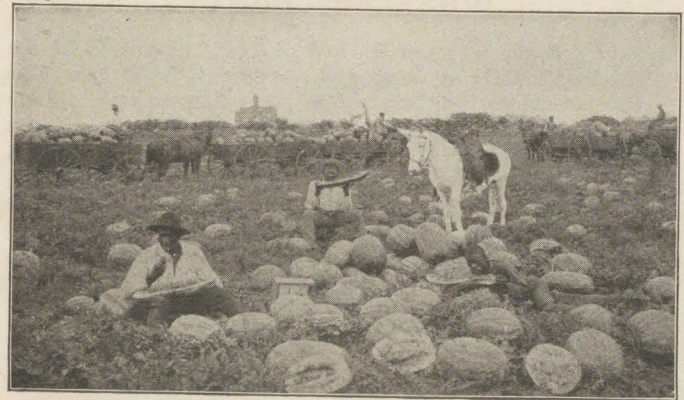
"The breeds in use are the Aberdeen-Angus, Hereford and Shorthorn, and they have all done well here. Probably a good idea of the improvement wrought in this herd may be derived from the



SWIFT & COMPANY'S PACKING HOUSE AT FORT WORTH.

statement of the fact that in 1887 the aged steers (three and four years old) netted between \$16 and \$17 in Chicago, and steers two years of age have been netting in recent years \$30 on the ranch. It is generally conceded that in cattle raising in the southwest a larger percentage of calves may be expected than in the northwest, and that on the ranges of the northwest cattle at maturity may have greater weight than they would have farther south, but here there is, because of its southerly latitude, the condition favorable to large calf crops, and because of its high altitude the condition favorable to greater weight, so that both of these favoring conditions are combined here in probably a greater degree than at any intermediate point.

"While this section is now given up chiefly to breeding stock, it is very likely soon to become a good feeding country as well. We do not advertise it as a strictly farming country, but there have been produced for several years past excellent crops, such



A TEXAS WATERMELON FIELD.

as sorghum, millet, alfalfa, Kaffir corn, Milo maize, Jerusalem corn, etc. Kaffir corn may be depended upon to produce thirty to forty bushels per acre, and some Indian corn has produced from twenty-five to thirty-five bushels per acre.

"A field of sorghum on the high table land near the headquarters of this ranch at Channing, in Hartley county, produced, in 1900, 7,030 pounds to the acre, 'as pretty feed as anyone ever saw,' and other crops were about equally good. All this without irrigation.

"It must be remembered, too, that nearly all these farming experiments are conducted on cattle ranches in a rather desultory sort of way, the farm getting attention, as a general thing, only when the ranch work proper did not demand it. With a better knowledge of farming operations and more familiarity with the most suitable methods and times of plowing, planting, cultivating, harvesting and care for the crops which time will give, it is reasonable to expect even much better results.

"Splendid garden truck is raised here. Vegetables, such as cabbage, beets, onions, turnips, potatoes and melons of all kinds, grow in great abundance. The melons are quite as good as the Vernon or Rocky Ford melons.

"In view of all these facts we firmly believe that for those parties who have energy and means enough to engage in stock farming on a ranch of 2,000 acres or more, and who are seeking a new and desirable location where they can follow this vocation profitably, no portion of the United States offers greater inducements than this. It is equally well adapted to horses, sheep and all other domestic animals, as it is to cattle. It is undoubtedly a fact that the stock farmer in this section who has properly attended to his business of stock raising, with farming as an auxiliary, has made more money for the capital invested and the labor expended than the farmer in any other part of the United States.

WHEELER COUNTY

Is located in the northwestern part of Texas in what is known as the Panhandle, just west of Greer County, Oklahoma. The surface is comparatively level, being just rolling enough to drain well. The soil is black loam and dark red sand, covered with mesquite and sage grass. The soil is deep and very productive. The numerous streams that traverse the county have wide bottoms of sub-irrigated land. The underground water supply is excellent, being of the sheetwater variety, pure freestone, and found at a depth of 25 to 150 feet. The principal crops are corn, Kaffir corn, Milo maize, macaroni wheat, oats, alfalfa and cotton. Fruits and vegetables do well. Experiments made this year show good results were attained in growing sugar beets.

The cattle business has been the principal industry of the county and is still an important factor. About two-thirds of the lands of the county are in large bodies; the balance being held by farmers. The price of land ranges from \$3.50 to \$10 an acre. The county has ten public schools. The Rock Island System crosses the south side of the county from east to west reaching the towns of Benonine, Fuller, Shamrock, Story and Ramsdell.

GRAY COUNTY

Is situated in the northwest block of the Panhandle. Half of the county is prairie lands, the other half hills and valleys. There are black sandy and sandy soils, with some waxy soil on the plains. There is timber on less than 5 per cent of the county, and that is cottonwood, walnut, cedar, hackberry and elm. The North fork of Red river, with the McClelland and other streams and numerous springs, makes a good supply of water. Good water is found at 30 to 300 feet. Stock raising has always been the principal industry, but now the country is being rapidly settled up by farmers. The principal crops are cotton, Indian corn, macaroni wheat, oats, Kaffir corn, Milo maize, millet and sorghum. Broom corn and all vines do well. Melons and vege-

tables of all kinds can be raised in great abundance. Experiments in sugar beet culture this season have been very successful. Lands are sold at \$3.50 to \$10 per acre. Public schools are located throughout the county. The Rock Island System runs from east to west along the southern part of the county. The towns in this county on the Rock Island System are McLean and Alanreed.

DONLEY COUNTY.

This county lies in the northwest portion of the state in what is known as the Panhandle. The surface is an elevated plain, gradually breaks off into small hills, with small and large valleys between. The soils range from black waxy, chocolate, black sandy and red clay sandy to a special soil known as the Donley County loam, a dark gray soil, which is mellow, deep and moist.

The native timber is very limited. There is an abundance of

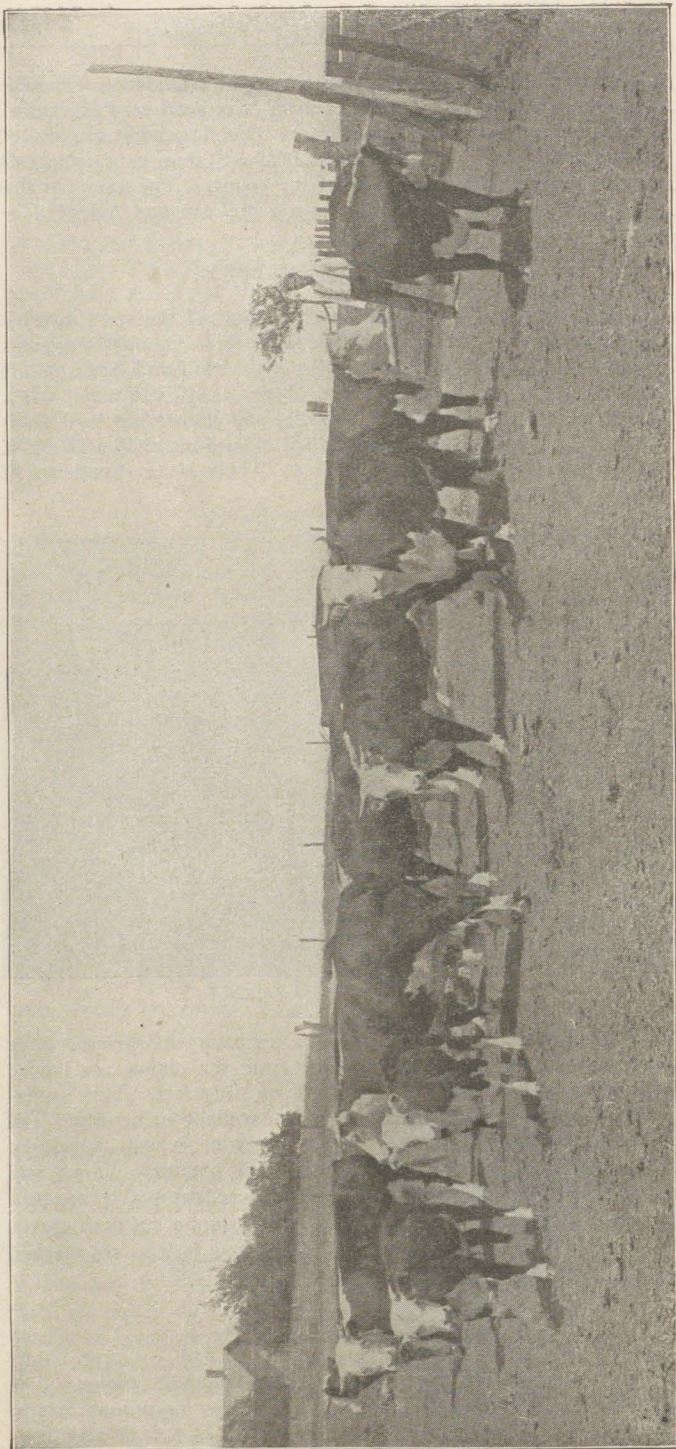


MEAL TIME ON THE RANGE.

water throughout the county. There are plenty of springs, while other streams of water, which come from the plains, are tapped by sinking wells to an average depth of sixty feet. This underground supply is inexhaustible. It is excellent in quality. The principal crops are cotton, corn, macaroni wheat, sorghum, Kaffir corn, millet, oats, sweet and Irish potatoes, onions and sugar beets. Melons of all kinds and of excellent quality are produced in abundance. Stock raising is done upon quite an extensive scale. The growing towns of Evans and Jericho are reached by the Rock Island System.

CARSON COUNTY.

This county is in the center of the Panhandle proper. The county is mostly a level prairie, traversed by numerous creeks. There is no timber in the county. The soil is a dark clay, cov-



ANOTHER HERD OF NORTHERN TEXAS CATTLE.

ered with mesquite grass. An inexhaustible supply of good water is had at depths ranging from 200 to 300 feet. About one-third of the country is in large pastures. The county is rapidly filling up with farmers from the East, who are making a success in raising all the small grains. The principal crops are oats, macaroni, wheat, Kaffir corn, millet, sorghum, Indian corn and sugar beets.

There are seven public schools and good churches throughout the county.

The towns of Groom, Cook, Raymond and Yarnall are growing very fast and are located on the Rock Island System.

POTTER COUNTY

Is situated in the midst of the Panhandle of Texas. Amarillo, the county seat, is the western terminus of the Choctaw district of the Rock Island System.

There has been a marked influx of population into the county, especially into Amarillo during the last few years. While the country may be considered strictly a prairie country, there is considerable timber along the creeks and branches. The surface is generally level, broken now and then with small cañons. The soil is a chocolate loam and very fertile, always producing a good crop of forage for stock, such as Milo maize, Kaffir corn, sorghum and various grasses. Stock farming has been very successful. The summers are pleasant and the winters usually mild. Good crops of macaroni wheat, corn and oats have been harvested. The country has proven to be well adapted for vine crops, watermelons, cantaloupes, pumpkins, etc. The cattle of the county are nearly all high grade and there are many thoroughbred herds. The city of Amarillo has excellent public schools and seven churches. It is the most important town in the Texas Panhandle, having a population of about 4,000. It has 39 business houses, about 500 railroad employes and the usual complement of mechanics and artisans; three weekly papers, three banks, a commercial club, six hotels, three lumber yards, seven wholesale establishments, waterworks, electric lights, etc.

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The Western Trail.—A twelve-page paper devoted to the development of the great Southwest. It contains true and interesting letters from people who have settled there. It is printed on best quality of paper and finely illustrated. Published every month. Subscription price 25 cents a year.

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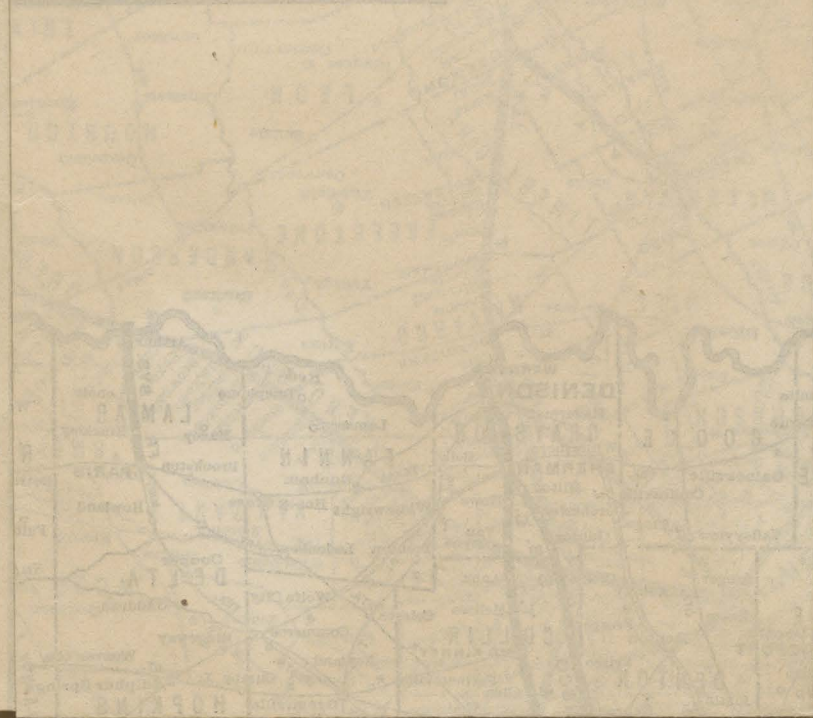
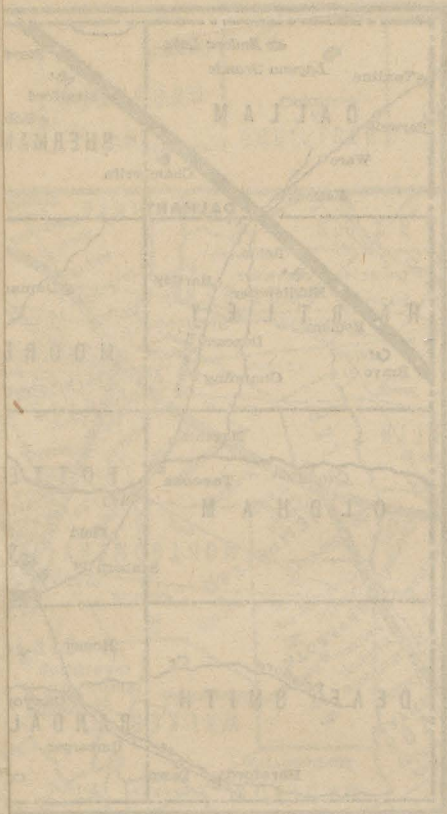
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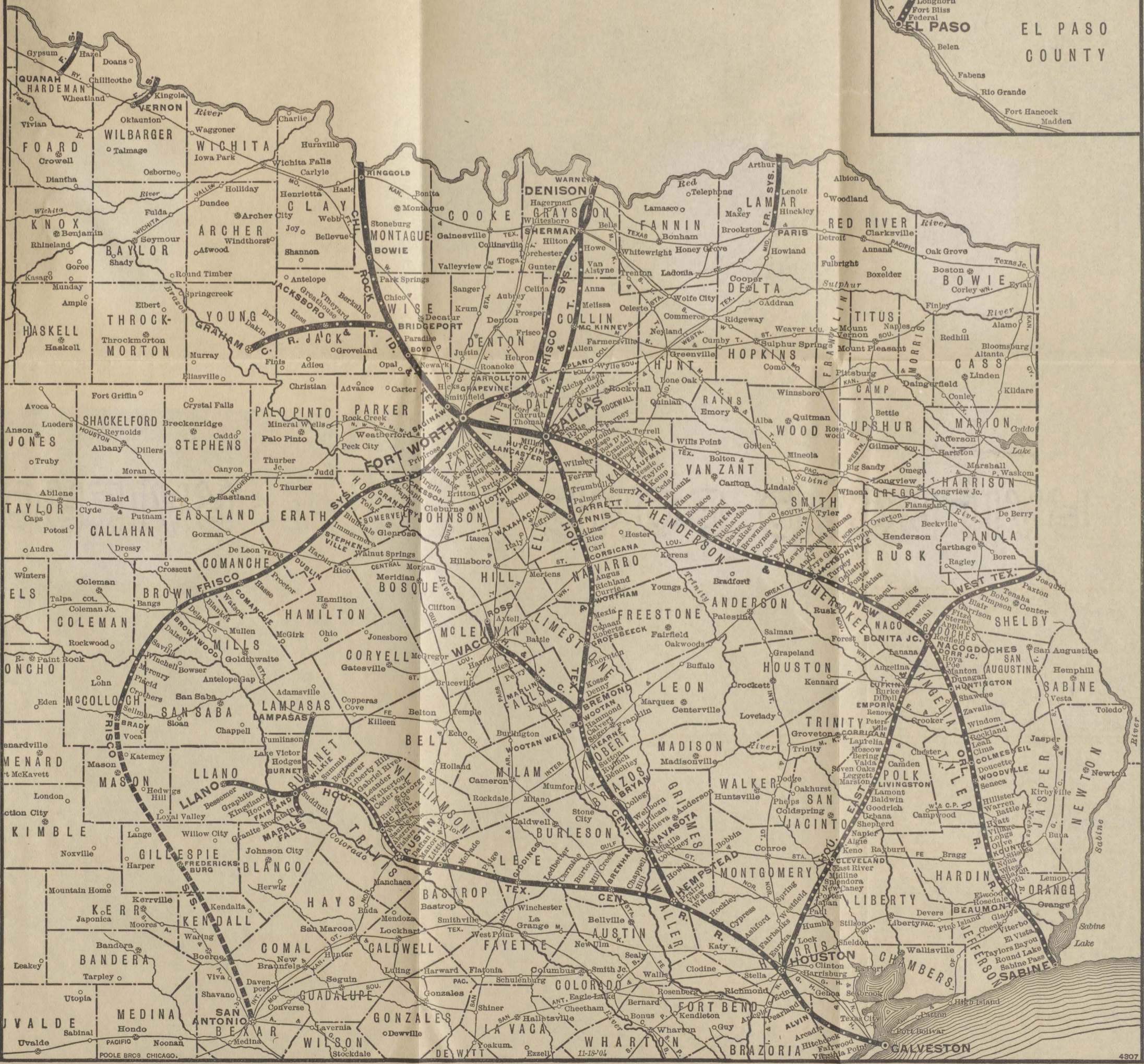
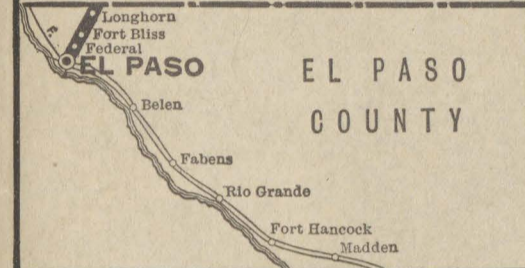
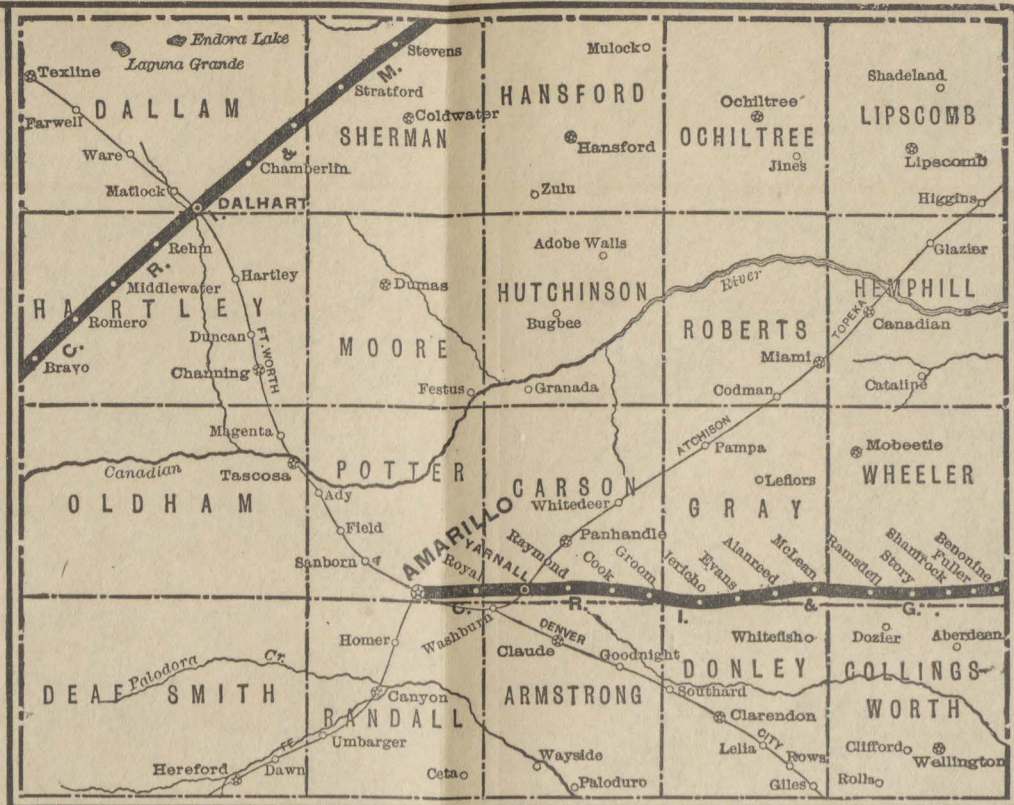
MAP SHOWING THOSE PORTIONS OF

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