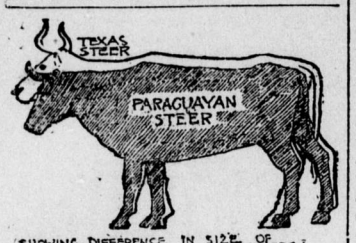
SOUTH AMERICAN CATTLE GROWERS THREATEN OUR SUPREMACY AS BEEF PURVEYOR TO THE WORLD.

IS South America destined to supersede the United States as the great provider of beef for the world? Each year South America increases in importance as rival to the United States as a producer of beef. There are now in the Argentine, Paraguay and Uruguay fully 30,000,000 cattle, and in the United States 44,000,000. While the cattle ranges of the United



SHOWING DIFFERENCE IN SIZE OF TEXAS AND SOUTH AMERICAN STEERS

States are becoming more and more restricted each year, there are in the South American countries named vast regions suitable for cattle raising which have not as yet been utilized. In Texas now the cattle no longer roam over vast ranges, but are practically kept in pastures, the grazing grounds being inclosed in miles upon miles of wire fences. The old-time cowboy, too, has become largely a "fence rider," patrolling the outside of the inclosures to see that the fences are not broken down, and that the cattle are not lost, strayed or stolen. Many cowboys have emigrated to South America, where they have taken up their old free life alongside of the native gauchos on the wide-swept pampas.

In Paraguay a large region called the Chaco has just been opened up to stock raising. It lies in the northwest corner of Paraguay, between the Paraguay River, a navigable stream, the Pilcomayo River and the Bolivian boundary. The climate is healthful, and though it is warm there in summer, it is never as hot as it was in New York last summer.

The prairies are clothed with a variety of good grasses ,and the Chaco lands are acknowledged to be the best fattening grounds in all Paraguay. Good land can be bought in the Chaco for $1000 a league, and one league will support 100 cattle, and two herds of 1000 each can be fattened on it in a year. All the expenses of raising cattle there are ridiculously small compared with the expense in the United States. A man can put steers on the range in Paraguay, all expenses paid, at a cost of $8.50 a head, and these he can sell when fattened for $12.50 a


TEXAS COWBOY.

head. Experienced cattle men in the Chaco have cleared as much as $8000 the first year on an expenditure of $10,500. They put in $1000 for land, $8500 for cattle and $1000 for labor and other expenses. Living and labor in Paraguay cost about one-eighth as much as they do in the United States. The gauchos are paid $3 a month in the Chaco. In the United States the cowboy's wages used to be

$30 a month. The gaucho's food, which is supplied to him, costs about $3 a month. Cowboys are furnished with food costing $10 a month.

The cattle of Northern Paraguay are similar to the Texas cattle, being of fully as good stock and much tamer and more easily managed. Though there are now in Northern Paraguay only enough cattle for a small beef industry, their numbers are rapidly increasing, and in three or four years this region bids fair to be the centre of a great beef industry.

All that is needed to "boom" the cattle raising industry of this part of Paraguay is an outlet for the beef. With the extension of railways and the increase of river navigation this can readily be obtained, and the cattle of the little interior republic will join with the herds of the Argentine and of Uruguay in furnishing the "roast beef of old England" to the world in competition with the United States. Excellent "stocking cattle" can easily be brought on to the ranges of the Chaco from the Brazilian province of Matto Grosso, which adjoins the Paraguay border.

Cattle diseases in the favored land of Paraguay are seldom seen. In the north they are unknown. In the south one occasionally runs across cases of "black leg," but even then only among calves, and the percentage of such cases is never alarming. Loss of cattle owing to the cold of winter or to a dry season is unknown.

It will be seen that Northern Paraguay is an ideal place for the raising of cattle. As yet, of course, these South American regions have not the facilities for transportation which the cattle districts of the United States possess, but it is only a question of


THE TEXAS METHOD.


SOUTH AMERICAN GAUCHO.

time when they will have them, and then can the United States hold its own in the export of beef? Just now a combination of capital is said to have acquired practical control of the Texas cattle industries. If this combination should put up the price of beef there would be an additional incentive for the development of the South American cattle industries. The South American field is just now appealing to cattle men in a manner which promises the most important results ultimately.

Cheapness of production down there is an especial inducement to investors. One does not need to have a great deal of money to start with either. It is no place for a poor man, on account of the low wages, but a man with a capital of $2500 has an excellent opportunity to lay the foundations of a fortune.

Many people in Paraguay have good cattle lands, but not the money to stock them, and these lands they will sell cheap. So great is the demand for money to invest in ranching in Paraguay now that capitalists command their own prices, and sometimes get as high as thirty or forty per cent. for their loans. Carrying foreign cattle

to South America to cross with the native breeds is already a big business. When the native breeds are crossed with a foreign one the cattle grow larger and attain their full development sooner.

That great land of cattle ranges, the Argentine Republic, is as large in area as Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon and California together, and how much of the country still remains available for exploitation may be judged from the fact that only about six per cent. of its 240,000,000 acres of land available for agriculture—15,000,000 acres—is under cultivation. The value of animals and their products exported by the Argentine increases at the rate of about $4,000,000 a year. Uruguay, though a comparatively small nation, has excellent grazing grounds, and four years ago was reported as having 5,881,402 head of cattle on its ranges, a number which has increased considerably since.

Southern Brazil joins with the Argentine, Paraguay and Uruguay in competing with the United States for the cattle trade. In the State of Rio Grande do Sul the cattle industry is already important, and is growing every year. The country is favorable for cattle raising, labor is cheap and living costs little compared with living in the United States. Land for cattle raising purposes can be bought low and ports for shipping cattle abroad are easy of access.—New York Press.

The Development of Railroads

From the earliest times until the second quarter of the last century there was no change in the methods of artificial locomotion. The maximum speed per hour under the most favorable conditions was ten or twelve miles. Then came the railroad and steam locomotive,and in less than fifty years speed had been raised to fifty and sixty miles an hour.

Not only that, but it was made possible to carry hundreds of passengers safely and promptly for enormous distances. Although the steam engines of to-day dates back to 1784, when James Watt obtained his patent, yet all its principal improvements are of American origin. The total steam horse-power of the world is estimated at about 65,000,000, of which the United States can lay claim to almost one-third.—New York World.

The Velocity of Light.

The first attempt to measure the velocity of light was made in 1849. In 1862 a more careful and extremely elaborate experiment was made by the same scientist with the co-operation of another, both being Frenchmen, whereby the velocity of light was found to be 185,157 miles per second. This result seemed so startling that American scientists attempted similar experiments, which only served to confirm Professor Foucault's results and to make his accurary and care seem the more marvellous.

This once determined, it was adopted as the only adequate means of measuring the distance of the earth from the sun, and it is in its applicability to this that the chief importance of this very important discovery consists.—New York World.

War Too Expensive to Last.

War and conquest do not pay. The appreciation of the fact is more vivid than ever it was before, and out of the turmoil of the close of the nineteenth century has come a firm and stable adjustment of ideals which holds high promise for the twentieth. Russia, long regarded as the menace to European diplomacy, under the young Czar shows unmistakable aspirations for peace and industrial development. The German Emperor has changed the role of war lord for that of the promoter of enterprise and the foster-father of commerce. What the preachers of peace could not impress upon the nations the precipitators of war have written in blood and fire, and the lesson is learned.—Engineering Magazine.

OCEAN TELEPHONING.

Great Future Predicted For the Invention of a University Professor.

Ocean telephoning is not only feasible, according to electrical engineers who have studied the discovery of Professor M. I. Pupin, of Columbia University, but the prediction is made that within the lifetime of the present generation the sound of the human voice may be made to encircle the


FORM OF THE COILS.
(Attachment used by Professor Pupin to his telephone.)

globe. Officials of the American Bell Telephone and Telegraph Company maintain profound secrecy as to the invention and the experiments which they have been conducting, but admit the purchase of Dr. Pupin's patents.

The price paid is said to be between $400,000 and $500,000 in cash, and an annual royalty of $15,000 during the life of the patents, which is seventeen years. This would aggregate nearly three-quarters of a million dollars, and is probably the largest sum ever paid for any invention.

"In my estimation the invention of Dr. Pupin is the greatest since that of the telephone," said Stephen L. Coles, managing editor of the Electrical Review, who has been watching the development of Professor Pupin's work for five years and is familiar with the theory and its application to commercial uses.

Dr. Pupin is one of the foremost scientists in the United States," Mr. Coles said. "His experiments have been thorough, and he has demonstrated beyond a shadow of a doubt that telephoning any distance over land or under water is practicable. At present we can talk, say, one thousand miles over specially constructed land lines and short distances under water.

"It was considered a great achievement when we first talked with Chicago, but with Professor Pupin's system of induction coils at regular intervals along the line it will be possible to talk under the Hudson River, but telephone cable messages are limited to short distances. By using Dr. Pupin's system a telephone cable to Europe or any distance becomes practicable.

"It is difficult to summarize his invention so that it can be grasped by the lay mind, but it consists in taking the elements of impedance in an ordinary telephone or telegraph line and balancing them against each other so that their effect is neutralized and a clear passage is left for the transmission of electrical waves.

"In all probability the first use of the new system will be on long distance land wires."

According to the Electrical Review "the essential feature of the invention, following the elaborate mathematical analysis of the subject by Dr. Pupin, consists of the application of inductance and capacity to such a circuit in a way that is, to all intents and purposes, equivalent to a continuous distribution of these qualities, but which is, at the same time, practically possible and commercial."

Professor Pupin's experiments were conducted at Columbia University. He constructed an artificial line two hundred and fifty miles long and tested it with various forms of induction or "choke" coils.

A Cruel Plutocrat.

"Mister," said the large, strong man who inherited his pride from a long line of noble ancestors, "I hate to ask you for it, because I never done a thing like this before. I've been around lookin' for work all day. I wouldn't lie to you about a thing like this, mister. But if you ever tried to find a job in a bank, or some place like that, and nobody would offer to you any kind of work except drivin' a team or shovelin' coal, you know how it is yourself. I ain't no common beggaar, mister. I've been used to better things. I was brought up refined. I know I ain't got no right to ask you for help, but I'm ashamed to go home lookin' this way, and if I can only get a little assistance now I'll show you some day that you done right when you let your heart be touched. If you can let me have twenty-five cents to get a clean collar and a ——"

"Well," the man who was about to step into his carriage, interrupted, "I'm like the German Emperor to-day."

"How's that, mister?"

"I've decided to give no quarter. Drive ahead, John."—Chicago Times-Herald.

An American Girl's Sang-Froid.

A remarkable instance of sang-froid occurred in Paris a few days ago, says the Paris Messenger. A fire broke out about 3 a. m. in a house of the Square de l'Opera. Long before the arrival of the fire brigade the lady who occupied the room had saved herself. She was aroused by a smell of smoke; she perceived the curtains in the room in a blaze, and she immediately opened her bedroom window, and, without the slightest ceremony, pitched into the street her clothes. She then, simply clad in her chemise, descended into the street by means of a rope she attached to the balcony of her bedroom. By the time the fire brigade arrived the lady had dressed herself and was none the worse for her descent, except sore hands, from which the skin had been removed in her daring descent. The lady in question was an American, who had only arrived in Paris a few days before.

FARMERS' CORNER

Rules for Feeding Stock.

Each farmer must make his own rules for feeding, as the amount of food required by animals, even when of the same breed, and of nearly the same age and weight, differs widely. Some animals are very dainty, while others will accept any kind of food offered. The standard rules for feeding according to live weight are valuable to a certain extent, but in all flocks or herds some animals will eat much more than others, hence the wants of each individual must be observed and the animals fed accordingly.

An Important Crop.

Grass is always an important crop and also an evidence of good farming, as no soil will produce a large crop of grass every year unless the land is well manured or treated with fertilizers. Grass is the foundation for all other crops, as it not only produces pasturage and hay, but furnishes sod for the assistance of the crops that follow. When the land is in grass it is really mulched and humus accumulates. The shading of the soil by the grass is beneficial and the roots go down deep into the subsoil for plant food which is brought to the surface, deposited in the plants and thus rendered available for another season.

Menu for the Hens.

Laying hens like a variety of food, and with sufficient exercise and good, comfortable quarters will be much better on a varied diet than on one made up of the same kind of food each meal. Here is a bill of fare for one week for 25 hens: Sunday, breakfast, mash; dinner, one pound green cut bone; supper, one quart wheat; Monday, breakfast, mash; dinner, a little wheat scattered in litter about 10 a. m.; supper, one pound green cut bone; Tuesday, breakfast, mash; dinner, one quart oats scattered in litter at 10 a. m.; supper, one quart cracked corn; Wednesday, breakfast, green cut bone; dinner, one pint barley scattered in litter; supper, one quart wheat; Thursday, breakfast, mash; dinner, buckwheat scattered in litter; supper, one pint cracked corn; Friday, breakfast, mash; dinner, green cut bone; supper, mixed grain; Saturday, breakfast, mash; dinner, chopped vegetables; supper, one quart cracked corn.

To prepare the mash, take equal parts of bran, ground oats and corn meal, with one-third as much clover, one large spoonful of pulverized charcoal and a little salt. Pour boiling water over it, cover and let it steam over night. Mix the vegetables in it before feeding. Chop potato parings, cabbage, beets or other vegetables, any one of which will do for feeding. Use onions sparingly. Do not mix the mash too soft, but have it crumbly. Feed while warm and give warm water to drink in cold weather.—New England Homestead.

Worthless Land Made Valuable.

A large swamp near Lima, N. Y., which a few years ago was not considered worth $5 per acre, has been drained at considerable expense and is now considered worth from $100 to $200 per acre. It has been mostly devoted to growing the two crops of celery and onions. These swamps may be used for many years without applying fertilizer, as the muck is a deposit of decayed vegetable matter further enriched by the washing of fertilizing matter from the surrounding higher lands. Celery and onions both like this kind of soil, and the onions can send their fibrous feeding roots down as deep as they please. There is another advantage in growing these two crops together. There can be scarcely too much moisture for the celery short of absolutely flooding the ground for days at a time, which is prevented by the drainage, and consequently if there is too much water for the onions the celery will make a good growth, while in a hot and dry season like the past, the celery crop may be small, but the onions will make all the better growth and yield a tremendous crop, 1000 bushels to the acre having been grown on some plots there, it is said. Thus, if one crop fails to yield a profit, more may be expected from the other, while in an ordinary season both may do well, the celery finding water enough at the surface, and the deeper rooting onions plenty lower down.

Proper Location of Farm Buildings.

When stables run east and west and the animals are arranged in two rows facing a central passageway, those animals upon the south side get the benefits of all the sunlight, while those upon the north side get none at all. In combination barns used for storage and stable, where the cattle are kept under the scaffolds, it is better to give them the southern exposure rather than the northern, for the objections to the wide range of temperature do not offset the stimulating effect derived from direct sunlight upon the animals or the disinfecting action it has in the stable. In the storage of excrement about stables every precaution should be taken to guard against contamination of the air of the stable or the air introduced into it to take the place of the foul air removed.

To secure effective ventilation in any building, two sets of openings are necessary, namely, inlets for the admission of pure air and outlets for the removal of impure air. When the artificial system is employed, especially where heated air is the motive force, the inlets should be located in the walls near the ceilings, the outlets in the floor on the same side of the room as the inlet. In natural ventilation, where cold air is brought in, the inlets should be in the walls near the floor line, the outlets in the ceilings, roofs or walls above.

The inlet and outlet most commonly met with is the shaft or duct. In its construction there are certain general rules that should always be observed. A round shaft is preferable to a square one, as it has greater carrying capacity, there being no dead corners. A smooth one is better than one that is rough, the velocity of the current, all other conditions the same, being greater in the former than in the latter. To insure action a duct should be as short and straight as it is possible to have it. Those of too great length are usually useless unless artificial heat be used in them to create a circulation of air. Those placed on the south side of a building, where they are exposed to the heat of the sun are more efficient that those placed on the north side. The introduction of angles should be avoided as much as possible. Each right angle put in reduces the velocity of the current one-half. When it becomes necessary, as it frequently is, to change the direction, a rounded elbow may be used to good advantage, it being claimed that it will not lessen the velocity as much, there being no square angle for the air to strike against.—J. B. Paige, in American Agriculturist.

Death from Handling Fertilizers.

In view of the general use of bone dust as a fertilizer by farmers and gardeners, the following case of anthrax is of interest. Anthrax is a very fatal disease due to a special bacterium. It usually occurs in animals, chiefly cattle; but sometimes the germ gains entrance into the human body, and almost invariably causes death. Owing to the trades in which it usually occurs, it is commonly known as wool sorters' or rag pickers' disease. This man was a farmer, who had some slight itching eruption on the chest, which he frequently scratched. For two weeks before his death he had been engaged in sowing different kinds of grain along with artificial manure in the shape of bone dust, his hands, of course, were covered with the latter, and he frequently used them for scratching. In a few days he noticed a small pimple. This gradually grew larger and became swollen and inflamed. The skin grew darker, being almost black in patches; his face was dusky and livid; he suffered greatly from difficulty of breathing and died four days after the onset of the disease. The physician who had charge of the case, after a careful examination of the possible sources of infection, concluded that the man had infected himself by scratching some of the bone dust into the skin on his chest. The obvious moral to be drawn is that great care should be used in handling artificial manures, and that especial precautions should be taken when there is an open sore or cut on any portion of the body likely to be brought in contact with the fertilizer.

Winter Dairying.

During the winter months a wise dairyman will always give his cows winter care.

I mean by this that his attention to his dairy will not be governed by the vagaries of the weather.

Some men let their milch animals run promiscuously over the fields every bright or warm day during the cold season, but even if they own and control cows it would be a misnomer to call such persons dairymen.

I wish to place a great emphasis on the importance of warm housing, and regular feeding and watering of cows from now until grass grows again.

On account of the possibility of inviting tuberculosis, do not tolerate a damp or poorly ventilated stable.

I think that bovine tuberculosis is propagated more extensively through the mediums of unsanitary stables than any other cause. Of course the winter months when the cows are closely confined gives rise to the most danger in this direction.

Pure, healthy milk must be obtained in order to make first-class butter, so you see the hygiene of the stable is all important.

Healthy cows cannot long remain so in unhealthy surroundings, nor when fed or watered irregularly.

Never trust the care of your cows to a cheap or inexperienced hand; that is, if you are in the dairy business for improvement in milk products and for personal profit.

The dairies throughout the land that are paying the best profits today are those that are minutely supervised in every detail by their owners.

The dairyman who assists in his own milking, and personally does or assists in all of the care and feeding of his cows, is, if he is truly in earnest, seldom forced to declare that dairying is a failure.

Mix plenty of energy into your dairy work this winter, and never go to bed at night without feeling absolutely certain that every cow in your stable is not hungry or thirsty, or forced to lie upon a damp, filthy floor and breathe vitiated air.

In your laudable efforts to maintain stable warmth do not sacrifice ventilation, but happily combine the two, to the end that pure, healthy and profitable milk may result.—George E. Newell, in American Cultivator.

Commissioner of patents Duell is authority for the statement that "hundreds of applications for patents on automobiles and parts are received at the patent office every week."