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Luther Burbank's Spineless Cactus

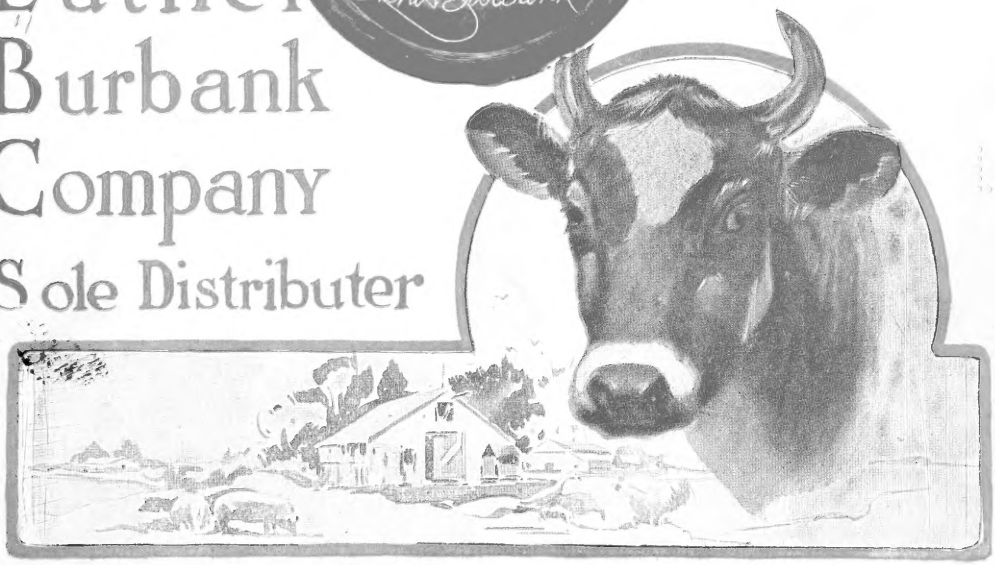
Season 1914

THE LUTHER BURBANK COMPANY

Luther Burbank

The Luther Burbank Company

Sole Distributer



General Offices: Burbank Bldg., Market and Beale Sts.
San Francisco, California

BURBANK CACTUS BOOK

SEASON 1914

PUBLISHED BY

The Luther Burbank Company

SPINELESS CACTUS : SEEDS : PLANTS : TREES

Sole Distributer of the Burbank Horticultural Productions

SUCCESSOR TO

LUTHER BURBANK

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IMPORTANT ANNOUNCEMENT

On account of the constant addition of new varieties, the nursery and seed stock of The Luther Burbank Company is now the largest and most complete in the West and one of the very largest in America. The Spineless Cactus stock is the only complete and by far the largest in existence. The reasons for this are the unusual facilities for plant propagation, the extensive experiment and proving grounds, the seed farms and nurseries in various sections of the State and a highly specialized organization.

The Luther Burbank Company is the sole distributer of the Burbank Horticultural Productions, and from no other source can one be positively assured of obtaining genuine Burbank creations. Luther Burbank is now freed from all encroachments upon his time and energies which the introduction of his productions entailed and now devotes his entire efforts to the creation of new forms of plant life and improvement of old.

Each day brings Luther Burbank new honors and a steadily increasing admiration, not only for what he has done, but for the new things he is accomplishing in plant production. His original creations are no longer confined to his own proving grounds or an immediate environment. Through The Luther Burbank Company, the world at large now procures the latest materializations of Burbank's distinguishing genius.

Many hundreds of these productions, absolutely new to mankind and more useful and valuable than those now known, are already complete and await introduction.

To give each purchaser a guarantee of receiving original Burbank creations, this corporation has originated a trade-mark, a facsimile of which will be seen on the front cover of this catalog. The name "Burbank" has been so indiscriminately and fraudulently used by unscrupulous dealers that it has been in danger of losing, in a measure, its true significance. Each package of seed and each plant sent out from this company has this trade-mark on it. All fraudulent users of the same will be vigorously prosecuted and any information that will give knowledge of its misuse will be welcome. This trade-mark is your protection. It is a guarantee.

The requests for additional cactus which we have been receiving from growers in all sections of the country are the best evidence of the constantly increasing desire for genuine Burbank Spineless Cactus. This demand is not based on sentiment. It exists because planting Burbank Spineless Cactus means assured profits.

Owing to the phenomenally heavy demand the past season, the available supply of genuine Luther Burbank Spineless Cactus has been greatly diminished, with the result that one must secure his wants at as early a date as possible to avoid the possibility of disappointment.

THE LUTHER BURBANK COMPANY.

The Luther Burbank Company
San Francisco, Cal. U.S.A.

A Message from Luther Burbank

A man must confine his efforts to one occupation if he is to do it well.

To be a successful creator of new forms of plant life and a successful merchant is beyond the limit of one man.

Such is my case.

I must either confine myself entirely to selling my new varieties of plant life and leave the development alone, or confine my efforts to new forms and improved varieties, without distributing them to the world and making them of practical usefulness.

I prefer to devote my entire energies to production.

Plant life is my one absorbing thought night and day.

In view of these circumstances, a corporation has been formed which will manage, market, and carry on exclusively the business of selling the various new forms of plant life which I have evolved or which I may hereafter create. This corporation is the sole distributer of the Luther Burbank horticultural productions, and from no other source can one be positively assured of obtaining genuine Luther Burbank creations.

It is called The Luther Burbank Company. To give each purchaser a guarantee of receiving original Burbank productions, this corporation has originated a trade-mark. The name "Burbank" has been so indiscriminately and fraudulently used that it has been in danger of losing in a measure its true significance. Every package of seed and every plant sent out from this corporation will have this trade-mark on it for your protection. All fraudulent uses of the same will be vigorously prosecuted and any information that will give knowledge of its misuse will be welcome.

(Signed) Luther Burbank

November 1, 1912.

LUTHER BURBANK

The Man and His Work

Who Luther Burbank is and what he has done has been told in a myriad of books, publications and periodicals of every sort.

Of him Dr. L. H. Bailey, Professor of Botany in Cornell University, says: "It is an honor to California that Luther Burbank is its citizen. He is all that he has ever been said to be and more."

David Starr Jordan, chancellor of Leland Stanford Junior University, California, says: "Luther Burbank is the greatest originator of new and valuable forms of plant life of this or any other age."

Hugo De Vries of Amsterdam, Holland, probably the leading botanist of the world, says: "In all Europe there is no one who can even compare with Luther Burbank. He is a unique great genius."

Theodore Roosevelt says: "Mr. Burbank is a man who does things that are of much benefit to mankind."

Professor E. J. Wickson, for many years Dean of the Department of Agriculture of the University of California, says: "No other man has given to horticulture so many valuable things as has Luther Burbank."

Luther Burbank was born in Massachusetts in 1849. From his early youth, he had always been interested in the study of nature, particularly of plant life, and prior to his coming to California in 1875, he developed the potato which bears his name.

Establishing himself at Santa Rosa, he then began his systematic development of new types of fruits, flowers and vegetables. His methods include breeding from selected individuals of a species which show unusual qualities, the inter-breeding of different types within a species, or "crossing," the inter-breeding of different species, or hybridization, and the development of "mutations" or types which originated from new conditions and causes often unknown, but which remain constant. Of these methods Mr. Burbank says: "Hybridization, followed by selection is the shortest plan by which valid new species can be produced." But merely to set down the method of the man is little encouragement to either the layman or the expert; for Burbank's genius lies in the distinguishing ability to perceive the valuable points, often latent in a plant, which it is desirable to develop.

Among his greatest achievements is the perfecting of the Burbank Spineless Cactus. After experiments covering sixteen years, this type was perfected. It is palatable and eagerly sought by cattle, hogs and poultry and in it will perhaps be the solution of many of the great feeding problems of the world. We herewith enumerate a few of the many other creations that have been the basis of his well-merited fame:

THE PHENOMENAL BERRY, introduced in 1893 and now a favorite on the Pacific Coast, a cross between the California dewberry and the Cuthbert raspberry.

THE HIMALAYA BERRY, originated 15 years ago at Santa Rosa, by selections from seeds brought from the Himalaya Mountains. This plant bears four times more fruit per plant by weight than any other berry. The delicious flavor of this berry and its wonderful keeping qualities make it the most profitable for shipping.

THE PATAGONIA STRAWBERRY with its distinct flavor, which connoisseurs have pronounced superb.

THE PLUMCOT, an absolutely new fruit, unlike any other fruit ever grown on earth before. It has as its base a wild American plum, Japanese plum, and an apricot. This work was originally commenced by experimentation in the crossing of the plum and the almond, but the

plum-apricot promising more satisfactory results, the first experiments were discontinued. There are a great number of varieties of this new fruit—sometimes the flesh is yellow, sometimes pink, and sometimes crimson. It has pits sometimes like the apricots and sometimes like the plum. The fruit is highly colored and the flavor is indescribable, being as unique as it is delicious.

Luther Burbank has accomplished more in the development of new and in the improvement of old varieties of plums than all others combined. Ninety-five per cent of all new plums introduced the past twenty-five years that have become standard are Burbank productions, although five times as many were introduced from other sources. This record speaks volumes for the genius of Luther Burbank.

THE STONELESS PLUM: For many years there was growing in France a tiny plum with only the suggestion of a pit. By breeding this plum with others in order to increase its size, beauty and flavor, a satisfactory plum has been produced, through which one may cut in any direction with a knife. The pit has disappeared, although there still remains a soft inner core, which is found in the interior of every pit, and which resembles in this plum the seed of an apple, but softer.

THE BURBANK PLUM, introduced 20 years ago and now more generally known and more widely known than any other plum of any name or kind. Although better plums have since been produced by Mr. Burbank, they have not yet supplanted this old well-known favorite.

THE SANTA ROSA PLUM: It received the gold medal at the Lewis and Clark Exposition.

THE BURBANK CHERRY: The earliest of all large cherries; were bought in 1908 at auction for $15 per 10-pound box in the Eastern States and later at $7.50 per 10-pound box in carload lots. The next year (1909) they were sold in Philadelphia for $31 per 10-pound box. This cherry is not only the best of all early cherries, but will hold its own among cherries of any season.

THE PINEAPPLE QUINCE: Introduced in 1899 and acknowledged to be of unequaled quality, having a distinct pineapple flavor.

THE OPULENT PEACH is widely recognized as the best in quality heretofore produced.

WALNUTS: Mr. Burbank produced a walnut with a shell like paper, which could be readily crushed in the hand; but it was found that the shell was so thin that the nuts were totally destroyed by the birds, and Mr. Burbank was obliged to retrace his steps and increase the shell of his walnut before he could place it on the market. Mr. Burbank has also taken the tannin out of the walnut meat, the tannin being a coloring matter in the walnut which has a disagreeable flavor. Among the most useful of Mr. Burbank's experiments in walnuts are the production of the Royal and Paradox varieties. These are rapid growing walnuts and are very valuable commercially for timber purposes. They attain a great size, individual specimens growing 70 to 80 feet in height and 2 to 3 feet in diameter in 16 years. The wood is of good quality and can be used for the finest finishing purposes, and consequently commands a large price in the lumber market. They are disease resistant. An important feature is the furnishing of superior stock for top grafting, by which method a grove of English walnuts is hurried several years in arriving at maturity on account of the very rapid growth.

THE BURBANK POTATO: The Burbank potato, the first great production of Mr. Burbank, was produced in Massachusetts in 1873, and, though it received little attention at first, it is to-day grown each season by the millions of bushels and is more and more supplanting all the other varieties of potato. If he had never done anything but produce this potato, he would be entitled to the profound gratitude of his countrymen. Although Mr. Burbank has achieved so much with his potato, he has perfected new and superior varieties, some of which are ready to be placed on the market.

THE CRIMSON WINTER RHUBARB: This rhubarb was rejected by all growers at first because of its new and unique qualities, and was wholly unap-

preciated, but to-day in warm climates it is generally recognized as the rhubarb par excellence, and it has rightly been named the "mortgage lifter." Fortunes have been made in growing it in California and Florida.

THE GIANT RHUBARB: The last of all Mr. Burbank's rhubarbs just introduced, and which it is predicted will excel the original crimson winter rhubarb 400 per cent. It will outyield any other rhubarb known at least 3 to 1.

MUSKMELON: He has a variety of muskmelon which ripens late in the season and is somewhat larger than the ordinary muskmelon, and if picked when ripe will keep like the Hubbard squash—all winter. The flavor of this melon, which is named the "Christmas Cassaba Melon," is not at all unlike that of the original muskmelon and is delicious.

Mr. Burbank has also improved corn, tomatoes, melons, and other vegetables almost too numerous to mention.

FLOWERS

THE SHASTA DAISY: This perhaps is the most widely known of Mr. Burbank's flower creations, and is a cross between the wild field daisy and the Japanese and English daisy. The flowers are from 5 to 7 inches in diameter. There are distinct varieties of these daisies, fluted and double and single. Because of their great beauty, their hardihood, and their long flowering season, these flowers seem destined to take the place of the chrysanthemum in the public favor.

THE GIANT AMARYLLIS: Mr. Burbank took the original Amaryllis, with its flower about 4 inches in diameter, and after 30 years of selection and hybridization has produced a flower averaging from 8 to 10 inches in diameter, sometimes reaching the marvelous growth of 12 inches. In creating a flower as large as this it is necessary to create a plant stocky enough and with a stem sufficiently strong to hold as large a blossom. These flowers range from light scarlet, pale pink, glistening crimson and deep fiery scarlet to snow white flaked with crimson.

THE BURBANK ROSE received the gold medal at the St. Louis Exposition as the best bedding rose.

THE TARRYTOWN CANNA was awarded the gold medal at the Panama-American Exposition as the best and freest flowering canna in existence. It is to-day a standard and generally acknowledged worthy of the award made.

THE CRIMSON ESCHSCHOLTZIA: Mr. Burbank has taken the golden California poppy, and by selection has produced a crimson poppy of marvelous beauty, blooming throughout a long season. Perhaps no other single achievement of Mr. Burbank's illustrates his marvelous powers of perception more than the production of this flower. Taking a California poppy, which has the slightest suggestion of crimson, Mr. Burbank, by patient and long-continued selection, has produced and fixed this beautiful crimson poppy. Every season myriads of these may be seen growing around his home.

THE SHIRLEY POPPY: Mr. Burbank has done an immense amount of work with the Shirley poppy, looking particularly to producing delicate colors and shades and well-shaped, cuplike flowers, particularly those having crinkly edges. Anyone in cold words cannot describe the gorgeousness or delicacy, as the case may be, of these beautiful poppies. One of the prettiest of all the Shirley poppies is one with a white center; not a glistening white nor a dead white, but a white subdued with an undertone of some other almost concealed color, with a fringing of pink, which fades away into the white center. Some of these flowers have petals so delicate as to be almost transparent. The greatest novelty among these poppies is one of pure blue, secured by a long series of selections.

Luther Burbank's achievements can hardly be judged by their practical usefulness alone, although pretty nearly everything he has done has in one way or another a strong utility side. His researches, the data furnished for the study

of influences of heredity and environment and the actual production of new species are of inestimable value to the science of biology and the establishment of the truth of the theory of evolution. In 1904 the Carnegie Institute in recognition of his services granted him an allowance of $10,000 annually for ten years to aid his experimental work, but this sum in no way met the necessities of his unusual experimentation. With the establishment of THE LUTHER BURBANK COMPANY of San Francisco several years ago, the sole distributer of the original Luther Burbank horticultural productions, the great work of Luther Burbank progresses every day undeterred by the trifling or the larger mental disturbances that made it impossible for Burbank to give all his time to the complete unfolding of his genius.

The Public May Now Participate in Luther Burbank's Genius

Through the offices and activities of The Luther Burbank Company a general distribution of the original productions of Luther Burbank is made possible and the entire world may now enjoy the results of his genius and his forty odd years of scientific and practical horticultural work.

Of Luther Burbank's distinguished past accomplishments in horticulture the world knows much. His work to-day is of an even import. Removed as he is at present from the distracting influences that formerly encroached upon his creative work, he now devotes his time exclusively to origination. The burden of finding avenues of distribution for his productions and the details connected with the same have been lifted from his shoulders. To enable the general public to participate in and enjoy Burbank's extraordinary horticultural creations is the function of The Luther Burbank Company.

The process of obtaining sufficient seed from an original Burbank production is an interesting one. Thousands and thousands of plants are grown, thousands and thousands of plants eliminated and discarded. On the Experiment Farms will be found plants that are tagged and labeled with what are to the public unintelligible signs and symbols, but to Luther Burbank these markings tell a story of exquisite care and experimentation. It is the story of results and when the signs read right, the one plant out of the many thousands shows that a new variety has been created.

The few ounces of seed that result or the few feet of grafting wood, as the case may be, are then taken by The Luther Burbank Company and propagated in sufficient quantities for introduction throughout the world at the lowest possible cost. Thousands of dollars are expended to produce a single creation. Up to date this kind of work represents an outlay of a quarter of a million of dollars. If only a few of a kind were introduced, the price would be prohibitive, yet the real value of every original Burbank production is represented by all that goes before in its history. Only because of the magnitude of the propagational work of The Luther Burbank Company is it possible to produce these novelties in such quantities as to bring original Luther Burbank creations within the reach of all. Naturally, years must elapse before sufficient quantities of seeds of certain varieties can be obtained for general distribution. During all that time the true reproductive and germinating qualities of the seeds or plants are determined, so that there can

be no question as to their quality when finally offered to the public.

When he withdrew from all other endeavor than creational work, making The Luther Burbank Company of San Francisco the sole distributer of his productions, he did so with the certainty that mankind in general would receive the benefits of all that he had accomplished. It was his great ambition to give the man and woman who owned or rented a modest cottage and also the practical grower the opportunity to grow his new orchard and field varieties, the utility of which the world has and is proving day by day.

How to Secure Burbank Productions

1. By ordering from the catalogs of The Luther Burbank Company, the sole distributer of original Burbank horticultural productions. The 1914 Burbank Seed Book, the Burbank 1914 Nursery catalog, and the Burbank Spineless Cactus Book tell of many wonderful new and valuable horticultural productions for the first time available to mankind. These may be obtained without cost by addressing The Luther Burbank Company, 304 Burbank Building, San Francisco, California, U. S. A.

A WARNING

During the past season many purchasers of cactus have been imposed upon by various unscrupulous and wholly unreliable individuals and "corporations" through the sale of half-wild, worthless cactus, misrepresented as "genuine Burbank cactus." This is both an injury to the buyer, who is thus defrauded and an injustice to Luther Burbank.

To combat this evil a trade-mark seal, a facsimile of which appears on the cover of this book, is on each package of plants distributed by The Luther Burbank Company, THE SOLE AUTHORIZED DISTRIBUTER of Luther Burbank Horticultural Productions, as a guarantee that you are obtaining genuine Luther Burbank Productions. Look for this seal. It is your protection against fraud and misrepresentation.

THE LUTHER BURBANK COMPANY HAS NO AGENTS OR LOCAL REPRESENTATIVES FOR THE SALE OF SPINELESS CACTUS.

You must deal directly with this Company if you desire to be assured of obtaining genuine Burbank Cactus. All purchases are acknowledged directly from the General Offices of the Company in San Francisco.

The Spineless Cactus

The greatest inconvenience and injustice is not misunderstanding, prejudice, envy, jealousy, ignorance or ingratitude, but that purchasers are so often deceived by various unscrupulous dealers who, taking advantage of the name "Burbank," hoist on the public green carnations, hardy bananas, half wild, thorny cactus, for Burbank thornless ones, blue roses, seedless watermelons, cigars, soap, real estate, magazine articles, **obtaining money or positions under false statements of having been in my employ, and a thousand other similar schemes;** and by outrageous misrepresentations or the change or addition of a word or two from the correct descriptions, deceiving purchasers, even when a genuine product of real value may happen to be offered.

Wise planters produce their cuttings and plants from the original source. Tons of so-called "thornless" cactus cuttings have been sold to unsuspecting customers as "Burbank's" or "just as good as Burbank's" by a few dealers who well know that they are not in any respect what they claim for them.

Luther Burbank

History of the Spineless Cactus

By Luther Burbank

For more than fifty years I have been quite familiar with "thornless cactus" of many species and varieties. In fact, one of the first pets which I had in earliest childhood was a thornless cactus, one of the beautiful Epiphyllums.

The Phyllocactus and many of the Cereus family are also thornless, not a trace to be found on any part of the plants or fruit. Thus the somewhat indefinite popular name of "spineless cactus" has been used by persons unacquainted with these facts, for be it known that "thornless cactus" is no more of a novelty than a "thornless" watermelon.

But among the Cacti, which grow to an immense size with great rapidity and which can be readily cultivated in garden, field or desert, no thornless ones were known and very little interest taken in the cacti of any kind, either thorny or thornless, as to their agricultural or horticultural value until some seventeen years ago, when the work of improvement was taken up on my experiment farms, and improved smooth, rapidly-growing varieties had been produced and made known.

Some of the best growers among these will produce five to ten times as much weight of food as will the wild thorny ones (which some ignorant or unprincipled dealers have recommended for cultivation), under exactly the same conditions. These wonderful results were not unexpected as the genus Opuntia is a

surprisingly variable one, even in the wild state.

The best botanists—even those who have made the Opuntias a special study—declare it to be one of the most difficult genera to classify, as new forms are constantly appearing and the older ones so gradually and imperceptibly merge together. The facts, without doubt, are that their ancestors had leaves like other vegetation and were as thornless as an apple tree, but in ages past were stranded in a region which was gradually turning to a desert, perhaps, by the slow evaporation of some great inland lake or sea.

Being thus stranded, the plants which could adapt themselves to the heat and drought which as the years passed by became each season more and more severe, survived, at first by dropping the leaves, thus preventing too much evaporation, leaving the fat smooth stems only to perform the functions of leaves.

The Opuntias even to this day always shoot out very numerous rudimentary leaves, which persist a few days or weeks and then, having no function to perform, drop off. These rudimentary leaves which always appear for a time on the young slabs are often mistaken for big thorns by those who are not familiar with the growth and habits of the plant.

But the Opuntias had yet to meet another enemy; desert animals were hungry for their rich stores of nutriment and water, so the rudimentary leaves were supplemented by the awful needle-like thorns placed at exactly the right angles for the best defense.

Some seventeen years ago, while testing the availability of a great number of proposed forage plants from the various arid regions of the world with a view to the improvement of the most promising, I was greatly impressed with the apparent possibilities in this line among the Opuntias, both as forage plants and for their most attractive, wholesome and delicious fruits, which are produced abundantly and without fail each season.

These fruits, which are borne on the different species and varieties, vary in size from that of a small peanut to the size of a very large banana and in colors of crimson, scarlet, orange, yellow and white, and also shaded in various colors like apples, pears, peaches and plums, and with more various attractive flavors than are found in most other fruits except, perhaps, the apple and the pear, the product of a single plant being often from 50 to 200 pounds per annum, some bearing one crop, others two or more each season like the figs, the first or main crop ripening as the second comes into bloom on the same plants.

The Opuntias from root to tip, are practically all food and drink and are greatly relished by all herbivorous animals, and for this very reason have had to be on the defensive, and perhaps nowhere in the whole vegetable kingdom have such elaborate preparations been made; the punishment inflicted is immediate, the pain severe and lasting, often ending in death, so that all living things have learned to avoid the Opuntias as they do rattlesnakes, and notwithstanding their most delicious and nourishing fruit, produced unfailingly in greatest abundance, have never before been systematically improved by the agriculturalist and horticulturalist as their merits so well deserve.

By my collectors and others, for the earliest experiments in this work, the best Opuntias from all sections of Mexico, from Central and South America, from North and South Africa, Australia, Japan, Hawaii and the South Sea Islands, were secured. The United States Agricultural Department at Washington, through my friend, Mr. David G. Fairchild, also secured eight kinds of partially thornless ones for me from Sicily, Italy, France and North Africa, besides a small collection of Mexican wild thorny ones which were in the Government greenhouses at the time. Besides these I had the hardy wild species from Maine, Iowa, Missouri, Colorado, California, Arizona, New Mexico, Dakota, Texas and other States.

All these were grown and their agricultural and horticultural values studied and compared with great care.

Many so-called thornless or partly

thornless ones were obtained, but not one among the thousands from all these sources was free from thorns and spicules, and even worse, those which were the most promising in these respects often bore the poorest fruit, were the most unproductive of fruit or produced less fodder, or were less hardy than the wild thorny species and varieties.

The first work was to select the best of these, cross them, raise numerous seedlings, select the best of these and so continue hoping for improvement.

One of the first and not unexpected facts of importance to be observed was that by crossing, the thorns were often increased rather than diminished, but not so with all. Some very few still became even more thornless than their so-called thornless parents with greatly increased size and quality of leaves (raquettes or slabs), and among them a combination of the best qualities of both parents with surprising productiveness of slabs for feeding.

The work is still in progress, but on a still larger scale and now these improved Opuntias promise to be one of the most important food-producers of this age, some of these new creations grown from the same lot of seed yielding fully ten times as much feed as others under exactly the same conditions.

Old half thornless ones have been grown for ages. Among the very numerous wild seedling Opuntias, partially thornless ones have appeared from time to time and these have been growing generally unnoticed here and there in every part of the earth where the thorny ones grew, the seeds no doubt scattered by birds and other agencies. Some of these

The Wild Thorny Cactus

bore fairly good but seedy fruits and have been locally cultivated for ages, but have never received specific horticultural names or descriptions, though the fruits of these and the thorny ones have long been used extensively as food and are the principal source of food for millions of human beings in Southern Europe, North Africa, Mexico and other lands, for about three months in each year.

Systematic work for their improvement has shown how pliable and readily moulded is this unique, hardy denizen of rocky, drought-cursed, wind-swept, sun-blistered districts, and how readily it adapts itself to more fertile soils and how rapidly it improves under cultivation and improved conditions.

Some one asks: "Won't they run wild again and produce thorns, when placed under desert conditions?"

Has the "Burbank" plum, which though introduced twenty-two years ago, and is now more widely grown than any other plum on this earth, shown a tendency to be different in Africa, Borneo, Japan, Egypt, Madagascar or France? No, it is the same everywhere and the residents of Chicago, Auckland, London, San Francisco, New York and Valparaiso consume them in great (and rapidly increasing) numbers of carloads each season. The same may be said of the later introduced Wickson, America and numerous other plums, and of my improved fruits and flowers, which are extensively grown in all civilized countries, and are generally replacing the old and heretofore standard varieties.

It will be so with these "new creations" in Opuntia. Tens of thousands of others not now ready to be distributed are under test, this catalog partially describing only the beginnings of a great work with the Opuntias, which in importance may be classed with the discovery of a new continent.

Does this work, which has been only just briefly outlined, mean anything?

Intelligent people everywhere know well that it means a new agricultural era for whole continents like Australia and Africa, and millions of otherwise useless acres in North and South America, Europe and Asia.

And now during the past few years the United States Department of Agriculture has dispatched agents to all parts where cacti grow to look up this matter among those who had for years been feeding the wild, thorny ones to their stock with good results when properly prepared by fire, though it is acknowledged that thus prepared, a portion of their nutritive value is lost and though the dangers of loss from feeding to stock are lessened, are not by any means made safe, even by singeing or any other process, while many of these new thornless ones are as safe to handle and as safe to feed as beets, potatoes, carrots or pumpkins.

But let it be understood that these thorns are not growing on the wild Opuntias for ornament any more than poison fangs, teeth, claws and stings are possessed by various animals.

They are for defense, and when deprived of these defenses they must be protected from stock like any other feed grown in farm, fields or gardens.

Still some doubter who has no knowledge of desert conditions or of these new plants will say, "Will it pay?" Does anything pay? Some people seem to think that corn, wheat, oats, barley, cotton, rice, tobacco, melons and potatoes pay.

How many tons of hay, beets or potatoes can be raised each season on an acre of good soil? Yes, well, by actual weight in the summer of 1906 in the cool coast climate of Sonoma County, Cal., on a heavy, black "adobe" soil, generally thought wholly unsuited for cactus, my new Opuntias produced the first year, six months from single rooted leaves, planted about June 1st, an average of 47½ pounds per plant or one-fourth acre, yielding at the distance planted (2½ x 5 feet), at the rate of 180,230 pounds, over ninety tons, of forage per acre.

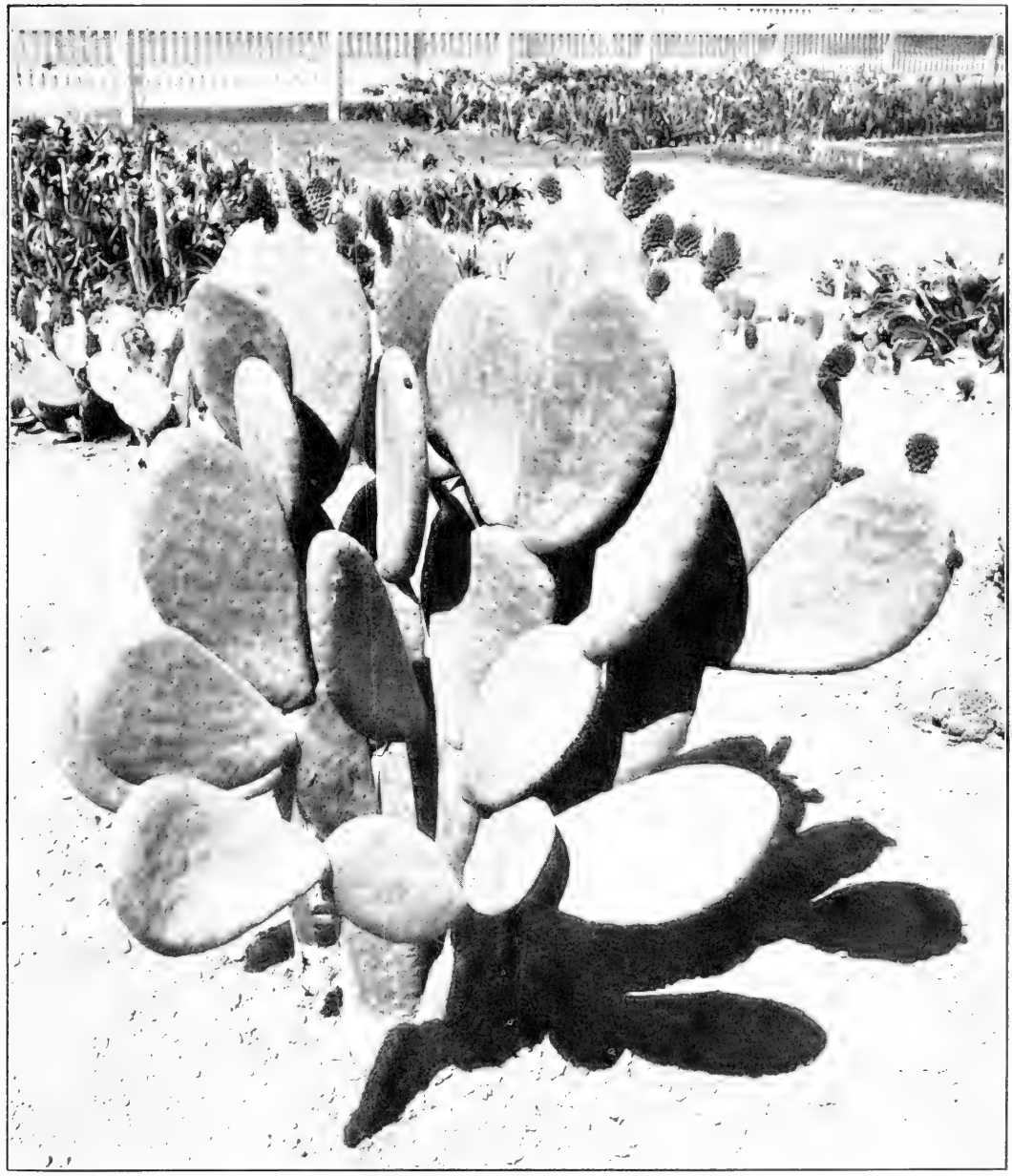
Some of the best varieties produced very much above this average.

Though planted much too closely for permanent field culture, yet these notes are of interest on a subject of which little has been known.

These Opuntias are always expected to and do produce nearly or quite double as

much feed the third and succeeding years as they do the second season of planting. Yet, I would not expect one-fourth the above yield on desert soil without irrigation, but would expect nearly or quite twice as much as the yield mentioned above in a very warm climate with one or two light irrigations each season.

The leaves are to be fed to stock at any season throughout the whole year when most needed, and in countries where great numbers of valuable stock are lost in times



The Spineless Cactus

of unusual drought, will be of inestimable value and will also prove of enormous value in less arid countries as a common farm or orchard crop, even on the best agricultural soils.

The small, hard, wild thorny cactus has been a common every-day food for horses, camels, mules, oxen, growing and beef stock, dairy cows, pigs, and poultry for more than fifty years.

Though millions have died from the thorns,* yet no systematic work for their improvement had been taken up until some seventeen years ago; now agriculturists and horticulturists in every land are deeply interested, and the governments of many countries are taking measures to secure a stock of the improved Burbank Opuntias to avoid if possible the too common occurrence of famines, for the Opuntias can remain uncultivated and undisturbed year after year, constantly increasing in size and weight until needed; then each acre will preserve the lives of a hundred animals or even human beings for months until other food can be obtained.

The wild cactus is generally prepared for stock by singeing the thorns with fire, yet this never destroys all of the thorns.

Those who have fed the wild cactus extensively acknowledge that cattle are often seen with blood dripping from their mouths, and that their throats and tongues become at last inflamed, very painful and hard, like a piece of sole leather.

How would you enjoy being fed on needles, fish-hooks, toothpicks, barbed-wire fence, nettles and chestnut burrs? The wild, thorny cactus is and always must be more or less of a pest.

Millions of cattle, sheep, goats, hogs, ostriches and other animals have been destroyed by it.

The Burbank Cactus will withstand flood, drought, heat, wind and poor soil better than the wild ones and will produce one hundred tons of good food where the average wild ones will produce ten tons of inferior food.

Dry seasons, which are certain to come, have been and will continue to be the source of irreparable loss to stock raisers.

Many of the owners of the great stock ranges have seen the necessity of some insurance against these fearful losses and are devoting certain tracts to these new cactus plants to avert this danger as well as for supplementing the usual feed.

Professor J. P. Leotsakos says in regard to the cactus: "The old, somewhat thorny fruiting cactus is, in my native country, one of the principal foods for both opulence and poverty during three months of the year when it is abundant. These pear fruits are delicious, exceedingly nutritious and healthful. I would rather, by far, have half a dozen of them for breakfast than the best beefsteak or any other food. The fruit of these perfected cacti is the best fruit food for man or beast, and Mr. Burbank is a great benefactor in perfecting the cactus. If he lived in Greece a monument would be erected to him in every city. I have never seen in all the world such an astounding crop of fruit as I saw on Burbank's new varieties of truly spineless cactus at Santa Rosa, California."

Professor J. P. Leotsakos is a graduate of the Royal Classical College of Athens and a teleiofoitos of the law department of the University of Athens, and belongs to one of the best-known families of contemporary Greece. His father was the commander of the revolutionary army that brought about the deposition of King Otho in 1862, afterwards an aide-de-camp to the present King George, and finally Senator from Lakonia in the Greek Parliament at Athens. — D. N. Botassi, Consul-General of Greece.

"To Luther Burbank has been granted the knowledge, supreme beyond other men, of the susceptibility of plants to vary under the influence of new environments, delicate manipulation and intelligent direction." — Scientific American.

*The wild cactus is prepared by boiling or steaming in Australia in times of drought, but even though great loss of stock is sometimes reported when thus prepared, some are saved from otherwise certain starvation.

Feeding Wild Thorny Cactus to Sheep in Times of Drought. Often Death Was the Penalty, Due to the Thorns—But Many Sheep Were Saved.

Results of Feeding Wild Thorny Cactus in Various Parts of the World

The results of feeding wild, thorny cactus in various parts of the world are here given for the purpose of showing that the wild thorny cactus, after the mechanical removal of the thorns, is an excellent forage, though greatly inferior to the Burbank Forage Cacti. As a commercial possibility, however, wild thorny cactus is unprofitable to cultivate on account of the slow growth and the expense attached to the necessary removal of the thorns.

For hundreds, probably thousands, of years, the great, rapid-growing, desert thorny cactus has furnished food for stock and fruit for men, especially in Southern Europe, Northern Africa, Australia and the United States.

The whole plant furnishes nutritious food in abundance, yet great pain and often death was the penalty for using it. In addition to the slabs, which furnish the forage, the fruit produced many tons to the acre, is very valuable as a stock food, owing to the high percentage of sugar.

The slabs of the wild cactus are covered with a mass of stout thorns, often from one to two inches in length, and as sharp as needles.

Frequently, in times of drought, the hunger-driven livestock endeavored to reach the rich succulent slabs, so jealously guarded by the thorns, and as a result would often be seen with blood dripping from their mouths.

Stockmen and herders, for hundreds of years, have availed themselves of this source of food supply, and it is frequently a common sight to see men gathering from the desert the slabs, which are to be fed to cattle, sheep and hogs.

The custom has been to burn or singe the thorns or spines from the slabs before feeding to the stock. The process of singeing was necessarily a slow and expensive

one, and this expense, coupled to imperfect results in ridding the slabs of all the thorns, was the only obstacle to a greater use, for otherwise the forage properties of the wild, thorny cactus are excellent and most satisfactory to the stockmen.

A sort of gasoline blow-torch has been used with considerable success, particularly in the southwestern portion of the United States and in Australia. Boiling, as well as singeing by other methods, has been resorted to and with such success than many thousands of cattle and sheep have been saved from certain starvation during droughts.

However, no method has been wholly satisfactory, as it seems to be utterly impossible to get rid of all the thorns and do it on an economical commercial scale.

In North Africa, according to M. A. Johanne, in the Journal D'Agriculture Tropicale (Paris), the thorny cactus is considered a forage plant of great importance in the feeding of stock. The wild cactus has been taken under cultivation, and plantations have been cultivated for a period as long as fifty years, and the plants are still vigorous and productive. By adding a very small quantity of chopped straw to the slabs, excellent results are had in feeding beef cattle, milch cows, goats, etc.

From Hawaii the manager of one of the largest ranches writes:

Haleakala Ranch,
T. H.,
April 17, 1905.

Editor Butchers' and Stock Growers' Journal:

I read with much interest in your issue of the 30th ultimo the article on "Cactus-Fed Beef."

On this ranch we have one paddock of twelve hundred acres covered very thickly with cactus or prickly pear; there is also a slight growth of Bermuda grass growing. In this paddock are pastured, all the year round, four hundred head of cattle and about seven hundred hogs. The cattle only get water when it rains; this is during the months of December and January; the other ten months they subsist entirely and solely on the fruit and young leaves of the

Using the Gasoline Torch to Singe the Thorns from the Wild Thorny Cactus so the Cactus Could Be Fed to Live Stock—An Expensive Process, but Practiced by Many on Account of the Food Value of the Cactus

Collecting Wild Thorny Cactus, to be Used as Cattle Feed

cactus, which they help themselves to. It is a remarkable fact that during the dry months of the year we get more fat cattle per cent from that paddock than from any of the others.

I consider cattle fed on cactus like these are to have as fine flavored beef as any I have tasted in San Francisco or New Zealand.

The hogs, with the exception of a light daily ration of corn, fed to keep them tame, live exclusively on the young leaves and fruit, which are fed to them by herders, and thrive wonderfully.

L. Von Tempsky,
Manager Haleakala Ranch Co.

In Texas, William St. Clair, a successful cattleman, who has for years been using the wild, thorny cactus for cattle food, writes:

"We find it very poor policy to put the slightest limit on the amount our cows get. The more they can eat, the better they thrive, and the more milk they give. There is nothing that sets them back more than a shortage of cactus. If we happen to be short of milk, the cause is almost invariably traced to the lack of cactus."

H. W. Giddens of the Giddens Stock Farm, Texas, says:

"Cactus produces a good, rich, grass-colored butter, without any odor or flavors. We feed in the field, and simply singe the spines."

Actual feeding tests with a large number of stock have been held where the chief food for the stock consisted of wild cactus. It was found that under adverse conditions the gain in weight was very satisfactory and the cattle thrived exceedingly well. The cattle were handled in the same manner as the ordinary stock, and were shipped into the Eastern market, where they brought the highest prices.

Innumerable instances might be cited in addition to the foregoing which show the satisfactory results of feeding the wild, thorny cactus, aside from the disadvantage occasioned by thorns.

Luther Burbank Among His Spineless Cactus Plants at Santa Rosa

The Results of Luther Burbank's Work on the Thorny Cactus

Mr. Burbank early perceived the tremendous possibilities of a cactus without thorns developed to a commercial state and set about the task of producing such a cactus. He has more than accomplished the aims he had in mind when seventeen or eighteen years ago he first conceived the idea of developing the wild, thorny cactus into a satisfactory and easily handled forage. The Burbank Forage Cactus, considered in all its possibilities, is destined to become one of the world's most important stock foods.

The economic effect of Mr. Burbank's achievement in taking the half-wild, thorny cactus and turning it into a remarkable commercial forage plant cannot be overestimated. In summing up briefly what Mr. Burbank has accomplished may be stated:

First. The feeding of the wild, thorny cactus in itself is beyond the experimental stage, such cactus having been extensively utilized for hundreds of years in the various parts of the world as a forage, for all classes of livestock. But one thing prevented its utilization on a wider scale, namely, the thickly set thorns which were very dangerous and which inflicted injury to any animal that fed on cactus from which they had not been removed.

Second. Mr. Burbank has removed this obstacle. He has produced rapid growing cactus free from the mass of long

hard annoying thorns which prevented its extended commercial use as a forage.

Third. He has also increased the food value of the cactus very materially.

Fourth. He has also developed enormously the productivity of the cactus.

Fifth. Mr. Burbank has increased the yield of fruit very greatly, and has developed the sugar content.

These results are all achieved without special conditions of culture, care or attention.

The remarkable ability of the Burbank Cactus to thrive with very little moisture is one which makes millions of acres of heretofore unprofitable land available for the production of very profitable crops of cactus forage. On these lands alfalfa and hay could not produce a crop.

The value of land is fixed by its productivity. This means, in other words, that the result obtained in the supporting or feeding of livestock from a given acre of land establishes the value of that acre. The Burbank Forage Cactus, growing under favorable conditions, will produce enough forage per acre without irrigation to support the year around more livestock than any other forage generally grown, including alfalfa.

As the surrounding conditions become more favorable, the productivity of the cactus is increased. In other words, cactus is a crop that is adapted to both cheap land and high-priced land. The better the soil and general conditions, the greater the yield.

It has many advantages over other crops, the chief one being that it is a green succulent forage for livestock THE YEAR ROUND. In other words, it is a natural silage, as it can be gathered in the green state at any season of the year. It does not have to be harvested at anv particular season, and if immediate use is not contemplated, the cactus will continue to grow if left in the field. There is no need of harvesting and storing as would be the case with any other forage crop.

Spineless Cactus is something which is new, and on account of this there are very few who have had extended experience in handling or caring for the cactus, therefore it is inadvisable to accept the advice of those pretending to be informed, but whose knowledge is limited. Those who plant cactus are urged to read carefully the instructions covering the culture and the handling of the cactus as set forth in this book, which have been prepared under the general direction of Mr. Burbank, who is the creator and only recognized authority on the Burbank Forage Cactus. Cactus is not like any other plant, therefore it cannot be handled like the average plant or as the judgment might dictate. The care and culture of cactus, while very different from the ordinary plants, yet is so simple that one following directions should have little difficulty in obtaining satisfactory results.

"That the millions of acres of desert land overgrown with cactus may be made a source of large revenue, seems almost incredible, but stranger things have happened. Unless Burbank be badly mistaken, the spineless cactus is destined to become one of the most useful of plants, furnishing abundance of food for man and beast in regions which have been regarded as too sterile and desolate for any form of stock raising or farming. And the profitable conversion of the common form of the plant into alcohol seems even better assured."—"The Sacramento (Cal.) Bee."

"The production of these new spineless fruiting cacti is, in my opinion, as important to the world as the discovery of a new continent."—Judge S. F. L., San Jose, Cal.

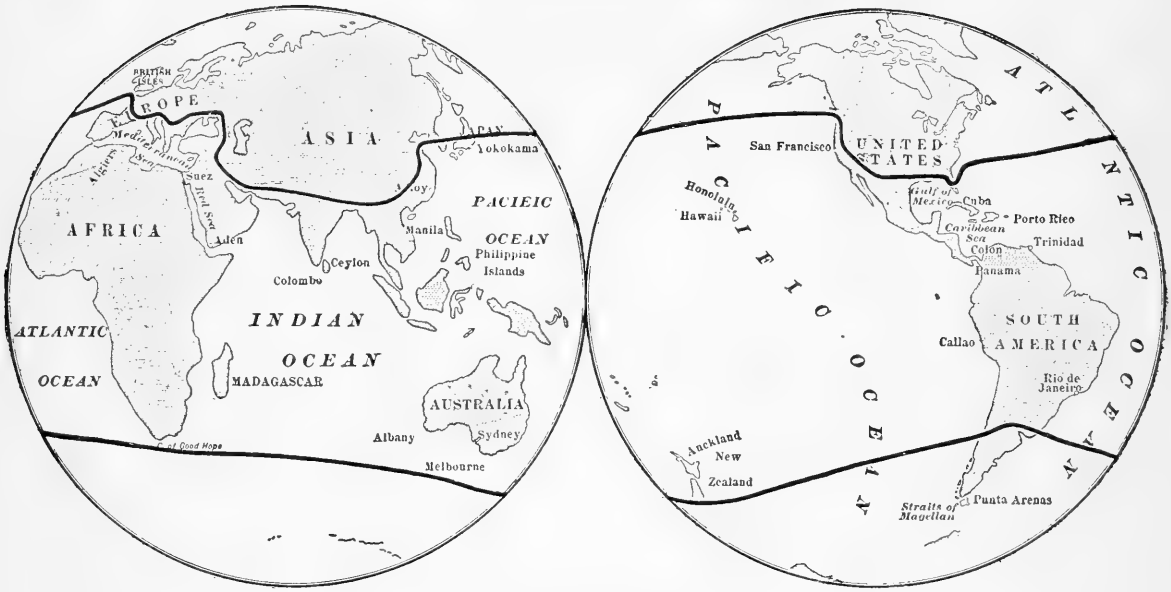
RESTORING THE LAND

There is every prospect that before the life's work of Luther Burbank has ended he will have seen thousands of square miles of desert lands of the world trained to a profitable condition of fertility through the medium of his spineless cactus. The British Government is considering the feasibility of introducing Mr. Burbank's hybrid plant in the Sahara Desert, with a view of eventually forcing the most unprolific district in the world to support life.—"Register-Leader," Des Moines, Iowa.

THAT SPINELESS CACTUS IS A SUCCESS HAS BEEN PROVEN AT YUMA.

"The growing of spineless cactus is no longer a desert dream, or the figment of the imagination. This desert wonder is being grown in the desert lands adjacent to Yuma and some surprisingly good results are being obtained." —"Times," Bouse, Ariz.

Where Cactus Can be Successfully Grown



Map of Globe, Where Cactus Can Be Grown

Cactus can be grown close in along the coast of California, south to San Diego, in the great valleys of California, in a considerable part of Southern Arizona, Southern New Mexico, Southern Texas, Southern Louisiana and Florida. In a general way, this is the part of the United States best adapted for cactus culture.

Maps of the Globe with cross lines indicating the northern and southern limits for the successful cultivation of the new Burbank Cactus plants for fruit and forage; it will be observed that the whole continents of Africa and Australia, most of South America and the southern part of North America, Southern Europe and Asia and most of the thousands of islands of the seas are included in the territory where they can be grown; even this great territory, including more than three-fourths of the inhabitable land of the earth is being somewhat extended by the production of hardier varieties. This work is progressing slowly but very surely.

"Burbank's thornless cactus is certainly proving itself to be the modern vegetable marvel. Nothing like it has ever been produced before. Its vitality surpasses the limit of belief, for nothing in the vegetable world has ever shown such wonderful resistant capacity, such reproductive powers, such exuberance of growth."—"Standard," Eureka, Cal.

"On one of our experimental farms, in this State, we have some of Mr. Burbank's thornless cactus growing side by side with the best varieties of the government's thornless cactus, distributed last spring.

"The rate of increase on the part of the poorest of the Burbank cactus as compared to the best of the government cactus is about fifteen to one."—"Enterprise," Silver City, New Mexico.

"While I have long been impressed with your work, I am now overwhelmed with the vast amount of good which you have been able to accomplish. I respect your work above all that has ever been done for horticulture."—Professor. Wm. B. Alwood, Virginia College and Experiment Station.

The Spineless Cactus for Forage

For all Livestock Including Poultry

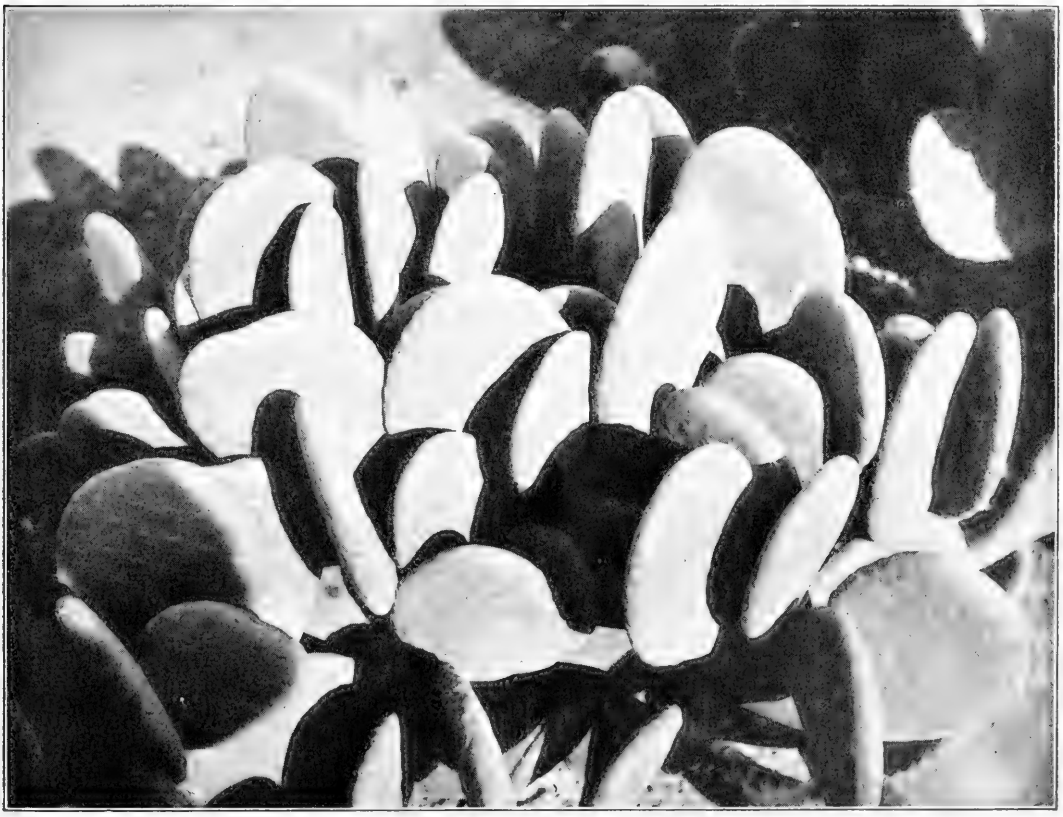
The leaves or slabs of the spineless cactus are used for food for all kinds of stock including poultry. The whole plant, both the leaves and the fruit, almost without exception, finds immediate favor with all herbiverous animals.

They actually prefer it to almost any other food. More than that, it makes a superior quality of beef and exceedingly rich milk. This is not surprising as the cactus is one of the richest foods known in sodium, potash and magnesium, which are the principal salts found in milk.

These valuable organic salts are found in the cactus more abundantly than in any other food.

The fact is often observed that animals, when fed on cactus, improve in condition more than can be accounted for by the usual chemical analysis for food values. It has been a matter of much study by chemists until it was discovered by actual experiment that the organic mineral salts, known as sodium, potash, and magnesia aided in the digestion of food, which was not otherwise assimilated and utilized by the animal.

"The Burbank Spineless Cactus will prove especially valuable in feeding dairy cattle, as it will furnish a succulent feed throughout the entire year, so that an even flow of milk can be obtained."



A Single Burbank Cactus Plant

A Single One-Year-Old Plant, Showing the Remarkable Productivity of the Burbank Cactus—Forty-four New Slabs Produced from One Original Cutting as the Result of One Year's Growth.

"When fed with a little cotton-seed meal or other concentrated food or used with about fifteen pounds of good alfalfa hay, it will prove the ideal feed by which dairymen may obtain the same quantity and quality of milk in January as in June.

"Even now, the best butter is being made from dairy herds fed on singed wild cactus with only three or four pounds of cotton-seed meal per day or its equivalent; while some of the best beef cattle have been fattened on the same rations, and sheep, hogs and calves are being prepared for the market on an exclusive cactus diet."

"Some of the best herds in Southern Texas have thrived on a continuous roughage ration of prickly pears (cactus) and have kept in the best of condition, with a rather heavy concentrated ration of cottonseed meal and rice bran." "In one instance a herd of 80 to 100 cows had no other roughage for nearly two years. No inconvenience was apparent and the milk flow was good."

"In all Europe there is no one who can even compare with Luther Burbank. The time will come when he will be as well known and as highly cherished in California as he now is among the scientific men of Europe. He is a unique, great genius."—Hugo De Vries, of Amsterdam, Holland, the leading botanist of Europe.

"The man who always does most says the least. Your good works will bless humanity long after you have said 'Good night.' Your work is always a source of inspiration to me, and I am continuously wondering, 'What will he accomplish next?'"—Col. G. B. Brackett, Pomological Chief U. S. Department of Agriculture, Washington, D. C.

Showing the Remarkably Heavy Yield of Burbank Cactus—Field Scene at Santa Rosa

The Annual Yield

In the summer of 1906 in the coast climate of Sonoma County, California, on the black heavy adobe, a soil thought wholly unsuitable for cactus, there was produced the first year six months from single rooted leaves an average of forty-seven and one-half pounds per plant, yielding at the distance planted, at the rate of 180,230 pounds or over ninety tons of forage per acre.

The Burbank Cactus will produce nearly double as much feed the third and succeeding years as they do the second season of planting.

Of course, it would not be expected that there would be more than one-fourth of the above yield on desert soil without irrigation. Still there could be expected almost twice as much, as mentioned above, where the climate is warm and where there are one or two light irrigations each season.

FEEDING HOGS BURBANK FORAGE CACTUS
These Hogs Gained Three-quarters of a Pound Each per Day—The Result of the Feeding Is Shown by the Following Affidavit

RESULT OF FEEDING CACTUS TO EIGHT HOGS, AT SANTA ROSA, UNDER THE SUPERVISION OF THE SANTA ROSA CHAMBER OF COMMERCE

May 30, 1913, to June 22, 1913

AFFIDAVIT

This test was conducted near Santa Rosa, California under the general supervision of representatives of the Santa Rosa Chamber of Commerce.

There were eight pigs in all, divided into two pens. These pigs were of no special breed, being common stock taken from hill pasture, where their main foods were green grasses, roots and whatever is usually found by pastured hogs, the hogs being more or less wild. The test would have shown better results had thoroughbred hogs been chosen.

Pigs ranged from 35 to 80 pounds in weight. In one pen cactus was fed exclusively, and in the other cactus with a very small

amount of rolled barley and bran. The cactus used was taken from Mr. Burbank's experimental farm, being old stock which had been discarded. From the first, the pigs ate cactus readily. In the beginning it was thought necessary to supply all the water the pigs would drink, but it became apparent that very little water was necessary, and was almost entirely discontinued, with more beneficial results. From 20 to 30 pounds of cactus were fed each day to each pen. The pigs ate up all that was offered them, care being taken not to feed too much. Enough cactus was cut from the field to last several days, and was cut up in small portions by running it through a slicer just before feeding time.

NET INCREASE IN WEIGHTS OF HOGS

	May 30, 1913	June 22, 1913	Net Gain
	Pen No. 1		
4 hogs	195½ pounds	257 pounds	61½ pounds
	Pen No. 2		
4 hogs	274½ pounds	331 pounds	56½ pounds
Total	470 pounds	588 pounds	118 pounds

Twenty-two days' net gain for eight hogs was 118 pounds.

The net gain per hog for 22 days was 14 2-3 pounds, an average of two-thirds pound per day.

Condition of pigs good, and in every way showed proof that cactus makes an excellent and satisfactory green fodder, the cactus supplying a good succulent ration for growing hogs.

During tests of pigs, a thoroughbred Berkshire sow, with four suckling pigs, was put upon a diet of cactus and rolled barley. Through lack of a proper supply of milk this sow had lost several of her litter, and the remaining four were in poor condition. The sow responded quickly to the cactus feed, giving a decided increase in flow of milk, the result of which was shown in the rapid growth and good condition of the suckling pigs. The small pigs soon learned to like cactus and ate it greedily.

The foregoing statements and facts are true to the best of my knowledge and belief.

JOHN RINNER, President,
Santa Rosa Chamber of Commerce.

EDWARD H. BROWN, Secretary,
Santa Rosa Chamber of Commerce.

Subscribed in my presence, this 22nd day of June, 1913.

(Seal) CHARLES M. KELLOGG,
Notary Public, in and for Sonoma County, California.

A Demonstration of the Superiority of Burbank Cactus as a Feed for Cows and Hogs

Result of Feeding Burbank Spineless Cactus at the Certified Dairy, Owned by H. R. Timm, at Dixon, California

Affidavit

As Feed for Dairy Cows

	Milk Lbs.	Cactus Lbs.
September 2, 1912	37	10
September 3, 1912	36	22
September 4, 1912	34½	38
September 5, 1912	37½	67
September 6, 1912	42	75
September 7, 1912	44	75
September 8, 1912	45	72
September 9, 1912	47	76
September 10, 1912	46	74
September 11, 1912	45½	76

The above is the result of a test in the feeding of Burbank Spineless Cactus to a dairy cow, made at the H. R. Timm Dairy, Dixon, Cal. The test was made during a period of ten days to find out the real value of cactus as a milk-producing food.

As the dairy herd was being fed on the best kind of green alfalfa and alfalfa hay, it would hardly be expected that a cow would increase in milk when cactus was substituted for the green feed. On September 2, the cow was taken from the herd and placed on a ration of cactus and barley, and a light feed of alfalfa hay. Within four or five days she ate it without any grain and soon reached a gain of ten pounds of milk daily.

As Feed for Hogs

On September 13, 1912, two three months' old pigs, weighing together 190 pounds, were given a feed of Burbank Spineless Cactus.

The slabs in the beginning were fed to the pigs whole and were torn to pieces and greedily eaten by them.

On the evening of September 21 the pigs weighed together 210 pounds, showing a net gain of ten pounds each over a period of eight days. During this period they received in addition to the cactus possibly five pounds of alfalfa, but nothing else.

The physical condition of the pigs at the end of the test was excellent, being the same as when pastured on alfalfa.

I consider it a splendid substitute for green alfalfa when fed with a small amount of alfalfa hay. And I consider it doubly valuable as a cow food on account of the fact that it can be harvested and fed during the winter months when there is no other green feed. H. R. TIMM.

State of California,
County of Solano—ss.

H. R. Timm, being first duly sworn, deposes and says: I have read the attached statement of facts and know the contents thereof, and desire to state that the same are true to my own knowledge, information and belief.

H. R. TIMM.

Subscribed to and sworn to before me this 3rd day of December, 1912.

WINFIELD R. MADDEN,
Notary Public in and for Solano County, California.

NOTE: Mr. Timm is the president of the First National Bank of Dixon and the owner of one of the largest and best known certified dairies in the West.

Blooded Dairy Cows Feeding on Burbank Forage Cactus. Cows from this Herd on a Burbank Cactus Ration Increased Their Milk Flow Ten Pounds per Day Over a Green Alfalfa Ration.
(See Affidavit Opposite.)

Some Comments by Our Customers

San Diego.

The Luther Burbank Company.

I secured some of your famous spineless cactus and planted them about August 1, 1912, and will say they have done well. I also secured later one of the fruiting kind and planted same about September 1, 1912. Up to the present time has thrown out a phenomenal growth between 30 and 40 leaves. Some of the latter are now traveling fast between the one and two-foot mark in length, and if it keeps on I expect to see it grow clear over the top of my bungalow. T. M.

Angleton, Texas.

Last year we secured a small shipment of your spineless cactus, most of the cuttings, altho set out quite late in the season and having had an extra amount of wet weather to contend with, have done well. A number of the plants have from twelve to sixteen new leaves or slabs. C. E. T.

Sonora, Mexico.

The Luther Burbank Company.

We have your spineless cactus here. They are in the third year. Some of them seven feet high and are doing fine. T. L.

El Ranch Del Oro.

The Luther Burbank Company.

We have one (cactus) plant here and it certainly has grown tremendously this summer. It is fully equal to the picture you sent. The big fat leaves, taken off occasionally, have given us lots of smaller plants.

I have some land near C——, where I figure to plant in another year. K. B. N.

The Luther Burbank Company.

. . . Thank you for your courtesy in the matter. It is a pleasure to deal with a company which lives up to its promises.

Very sincerely yours,
H. L. S.

The slabs I bought from you in May, 1912, and sent to Porto Rico are doing wonderfully well since they, after a year there, were transferred to the Government grounds in Mayaguez.

(Signed) J. D. Sulsona,
40 East 42d Street,
New York.

Of Easy Culture and Rapid Growth

Burbank's Spineless Cactus Always Grown from Cuttings, Never by Seeds

Everybody knows that Baldwin apples, Bartlett pears and our favorite peaches, plums and cherries can not be raised from seed; just the same laws hold true with the improved Opuntias, but fortunately they can be raised from cuttings in any quantity with the utmost ease — more truly they raise themselves, for when broken from the parent plant, the cuttings often attend to rooting without further attention, whether planted right end up, bottom up, sideways or not at all.

Best results are secured by planting the lower half of the cuttings below the surface of well-prepared, dry, warm soil.

No form of plant life perhaps responds more readily to kindly treatment than the Opuntia. This is demonstrated in the faster, heavier and generally better growth possible through a moderate amount of cultivation, the keeping down of grass and weeds, especially during the earlier periods of growth. Larger yields of finer fruit and more and tenderer pads are the result of proper treatment.

People who are not acquainted with the cactus often mistake the numerous pointed leaflets on the undeveloped slabs for spines. These, having no function to perform, soon drop off. They are as different from spines as blossoms are from leaves.

Spineless Cactus, especially fruiting, may, under certain conditions, bear spicules, which are simply small, fragile and easily detached spines, in varying number but not enough to interfere with their being fed to cattle without previous preparation. Plants may under cultivation produce a few spines of no particular consequence.

The leaves of these new cactus should be shrunken slightly or wilted at least before planting (except in absolutely dry deserts or in very warm summer weather). Meantime, an earlier and more rapid growth will be secured by plowing and harrowing the land as for any other crop.

Comparative Value of Cactus Forage

There is not any particular price for cactus forage, simply because there is not any for sale. And yet the question is often asked, What is it worth? The best answer that we can give is that Burbank Forage Cactus will produce enough feed per acre, without irrigation, to support more livestock than any forage generally grown, with or without irrigation. As cattle always follow feed, there should be an ever-present market for cactus forage wherever it is grown.

Is man also to redeem the desert for civilization? The French will test Burbank's spineless cactus on Sahara and the desert islands of Mayotte, off Madagascar, and the English and Germans will try its virtues in their South African possessions. Burbank's creation is declared to be palatable not only to cattle, but to man, and it thrives on areas that are hopelessly arid, provided there be plenty of heat and light.

It would be an almost crowning achievement if, by his genius, man, after these thousands of years, were able to announce the doom of the desert.—"Journal," Portland, Ore.

The Burbank Forage Cactus Supplies all the Water the Animals Need

There is the further consideration that the cactus supplies the animal with almost all the water it needs.

In Hawaii and Mexico, cattle have been known to subsist for six months on a cactus diet without a drop of water.

The following letter from Robt. Hind tells of his 20 years' experience in feeding cactus without water:

Puuwaawaa Ranch,
Hawaii, May 17, 1913.

The Luther Burbank Company,
San Francisco, Calif.

Gentlemen: I am very happy to conform to your request for a statement from me regarding my experience with the feeding of the wild thorny cactus upon my ranches in the Island of Hawaii, during the past twenty years.

First of all, I wish to emphasize that all my cactus-feeding experience has been with the wild thorny cactus, the old-fashioned spiny variety, and not with the Spineless Cactus. This variety thrives on my ranches on the poorest soils. I am told that it is a native Hawaiian plant, or was introduced there very many years ago. The only difference between this cactus and the Burbank Spineless Cactus is the absence of the spines on the latter.

Cattle on my ranch have been fed on the thorny cactus for as long a period as fifteen years, and have thrived on such feeding. I have had to depend upon my cactus patches almost entirely for stock feed during the dry seasons, and I have found it to be unexcelled for this purpose. The very best results are obtained when cactus is mixed with a small quantity of dry feed, such as dry grasses, old hay, etc., but this is not absolutely necessary. While using my cactus chiefly as a reserve for the major portion of my herd, I find even when I have a fair amount of other feed I could add spiny cactus to it, and the cattle did better than if they had other feed without the cactus. I do not raise any other form of green food.

Perhaps the most peculiar and significant fact concerning cactus as stock food is that it supplies all the water the animals need. Horses and live stock on my ranch, fed with spiny cactus, thrive wonderfully without any water whatever. I have good fat cattle that have never seen water and do not know how to drink it when offered to them. I have other cattle which I have imported from the United States, and which have not tasted a drop of water since being fed on the cactus. They have lived for years without water, and are at fat as any grass-fed cattle in the United States. They make just as good beef as you can get in any restaurant. As a matter of fact, some of my ranges are absolutely devoid of springs and water, yet the cattle go year after year thoroughly content with the cactus food, from which they receive sufficient water to supply all their physical needs.

My hogs always thrive better on a cactus feed than when they are fed on dry feed with water. The general physical condition of the stock is most excellent. Some of my cattle feed on the cactus the year round, the number being governed by the available supply. But not only is the cactus a much sought after food by the hogs and cattle. I have about 1000 turkeys which subsist chiefly on cactus slabs and the fruit which the cactus bears in considerable quantities. These turkeys do not get a drop of water.

I have lost quite a few head of cattle, due to the spines, but the number is not very great in comparison to the number of cattle that feed upon it.

I find that cactus is a splendid milk producer. There is something in the cactus that seems to help the flow of milk. What it is I do not know, but I do know that it has a positive beneficial effect, other than the mere food value.

My own experience with the spiny cactus led me to investigate the Burbank Spineless Cactus, and it is my opinion that the Burbank Spineless Cactus is very much superior. I planted some three years ago a number of plants of the Spineless Cactus obtained from Mr. Burbank, and they have thrived remarkably well, but I have preferred to conserve these plants for future use, and to extend my acreage. As you know, I have just purchased a very large quantity of the Burbank Spineless Cactus, and I look to this to furnish me with the means of practically doubling the amount of livestock on my ranges and to furnish them with a forage which is unexcelled. Another advantage in the cactus forage is that you do not have to harvest at any particular season, and if you so desire the growth may accumulate year after year until actually needed.

I should much prefer to feed cactus every day in the year, allowing the cattle to have all they care to eat, but, as I said before, my great concern is that my supply is limited. I consider cactus one of the very best forages for semi-arid or dry countries.

Yours very truly,
(Signed) ROBT. HIND.

Note.—Mr. Robert Hind is one of the largest and most successful ranchers in the Hawaiian Islands, controlling over 50.000 acres of land. He has been engaged in raising livestock for over twenty years and has several thousand head of cattle, several thousand sheep and hogs and a large number of horses. He is progressive and believes in blooded stock and has from time to time imported the finest types of Herefords and Polled Angus cattle.

Burbank Cactus Leaf and Fruit

The New Burbank Cactus for Fruit

The old thorny varieties of the fruiting cactus are too well known to need description. The fruits are the principal food for millions of people during three or four months each year. The fruits of the Burbank Fruiting Cactus are greatly superior to the old kinds, and can be raised for one-tenth the cost of producing other fruits.

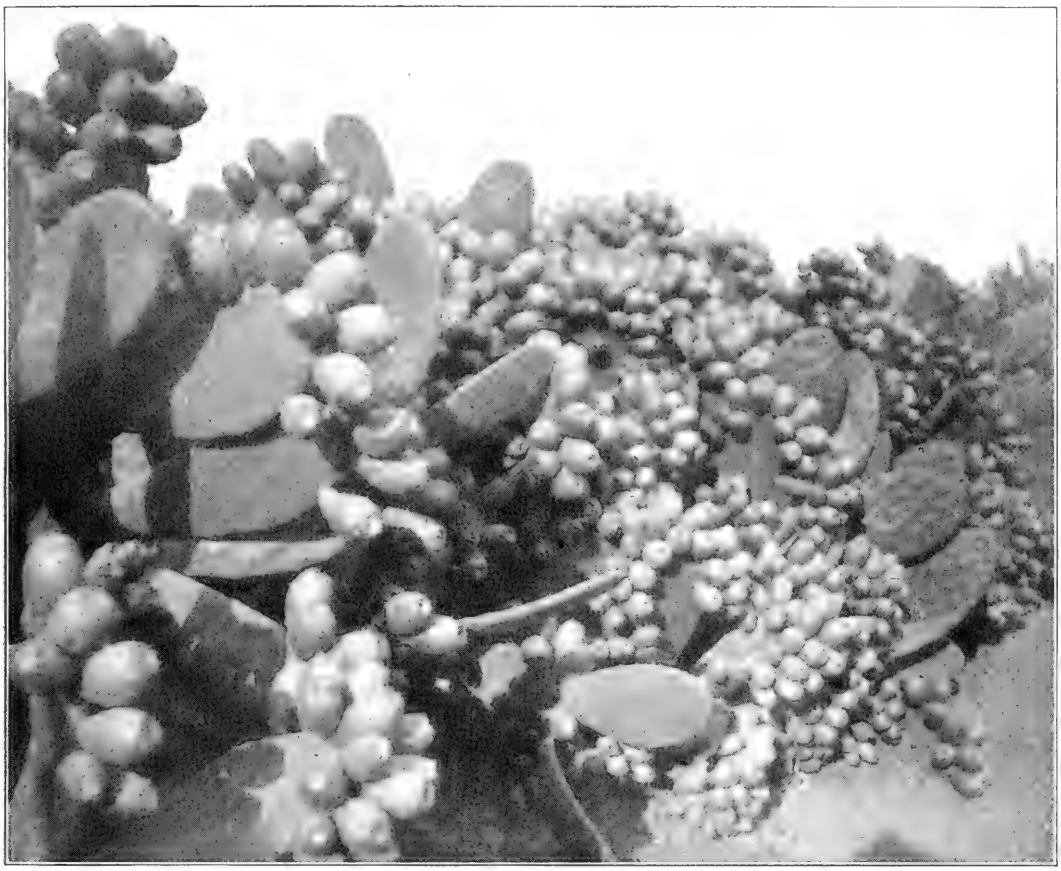
The fresh fruit of these improved varieties is unique in form and color, exceedingly handsome, unusually wholesome (the large amount of vegetable salts they contain being regarded as very beneficial), and far superior to the banana in flavor. There is never a failure in the crop, which can be shipped as safely as the other deciduous fruits. The fruit can be gathered and stored like apples, and some kinds will keep in excellent condition from four to five months. Samples packed in ordinary packing boxes without ice, were shipped to Chicago, New York, Boston, and Washington and kept in perfect condition.

Most delicious jams, jellies, syrups, etc., in enormous quantities, at a nominal cost, are made from the fruits alone or in combination with other fruits, besides various foods and confections, such as Tuna honey (Miel de Tuna), Tuna butter (Melcocha), and Tuna cheese (Queso).

Opuntias have been used (even the thorny ones), for making confectionery by the Mexicans and others for a long time. Some of the finest candies of Mexico are candied cacti of various forms.

The juice from the fruits of the crimson varieties is used for coloring ices, jelly and confectionery; no more beautiful colors can be imagined.

For the old fruiting, Opuntias or Prickly Pears, eighteen thousand pounds of fruit per acre is found to be a common crop, while on good soils the Burbank fruiting varieties have produced at the rate of more than twice as much. The fruits differ in various ways, like apples, plums or peaches. By analysis, they are found to contain from six to fourteen per cent sugar, besides a small amount of protein and fat, also aromas and flavors. Some contain more of these, some less; all de-



Burbank Cactus in Fruit—Showing the Enormous Yield of Fruit rich in Sugar

sirable qualities are greatly increased by scientific breeding and selection for this purpose, as with the apple, peach, sugar beet, and other fruits, grains, and vegetables.

Some of the earlier varieties ripen in June and July, the later ones in August, September, October and November and through the winter. Most of them commence bearing about the third year from cuttings.

The general practice to prepare the fruit for use is by brushing with a whisk broom or rubbing with a coarse cloth, then cutting a thin slice from each end through the skin, then slitting from end to end when the skin may be readily removed, leaving the solid, sweet flesh ready for use; another way is to slice through the center of the fruit from end to end and remove the flesh with a spoon.

"Mr. Burbank's greatness, and the magnitude of the value of his achievements are recognized the world over by men best capable of understanding and appreciating both the man and his work."—Congressman E. A. Hayes.

It is said by David Starr Jordan, Chancellor of Leland Stanford Junior University, California, that:

"Luther Burbank is the greatest originator of new and valuable forms of plant life of this or any other age."

The Kind of Climate and Land Needed for Cactus Culture

Climate

Cactus will not thrive where the ground freezes over an inch in depth or where the temperature stands as low as fifteen degrees above zero for any great period. Heat is not of serious consequence.

About six to eight inches of rainfall are required for the best cactus culture, although cactus will do well on three to five inches per season.

It is not necessary that the rainfall should be regular. The precipitation of rain can be once in four years or even as infrequent as once in ten years.

The Kind of Land

Cactus plants do not necessarily require rich land. The climatic conditions are more important than the soil.

The land need not be what is generally denominated fruit or agricultural land.

Cactus will stand as much white alkali as any plant which grows.

Newly Planted Cuttings Showing the New Growth—Fifteen New Slabs on One Plant

How to Grow the Burbank Cactus

FULL CULTURAL DIRECTIONS

What to Plant—Cuttings or Seeds

Cactus should always be raised from cuttings, never under any circumstances from seed.

Where to Plant

These new Burbank cacti can be planted in any part of the earth where the thermometer does not go lower than 15 degrees above zero and where the rainfall is not over 40 or 60 inches, or less than 3 to 4 inches. In localities where the rainfall is continuous and heavy the cactus sometimes suffers from decay of the leaves. It is not in any way particular as to soil, growing in any soil in which any other plant will grow if it is not too wet. Good agricultural land, like corn land or vineyard land, is especially good, and will, of course, produce a larger crop than poorer land. Temperature and moisture are the two important matters to look after; soil is of little consequence compared with these.

When to Plant

Cactus should never be planted, transplanted or moved during rainy winter weather, which is just the time to plant nearly all other trees and plants. If planted at this season they very promptly decay, especially if it happens to be cold at the same time that it is damp. The two together are death to the cactus when moved at such seasons and under such conditions. The best months for planting are the warm dry months extending in Central California from April to November. The actual seasonal conditions govern always. Planting after November is satisfactory when there is little rainfall, and much sunshine and the land is dry.

How to Plant

The cuttings consist of slabs, sometimes called leaves. These weight from two to five pounds, according to variety. It is always best to plant a whole slab. While those that are divided will sometimes grow fairly well, it is not economy to divide them. Better results are always obtained by planting whole slabs. As before stated, this must be done during the warm months. Every slab, if properly planted, will root in from four to six weeks, promptly, surely and without

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CACTUS ERA INEVITABLE

"The cactus era is just opening. Ten or twenty years hence many well-informed men believe the cactus will have supplanted and displaced alfalfa throughout a great area of the civilized world. Why? Because the cactus will grow with little or no irrigation, upon any kind of soil, with infinitely less attention than alfalfa must have, and will produce far greater results in yield of fodder.

"The romance and marvel of the Burbank Cactus would fill a large book. The story of the sixteen years of patient effort employed by that wonder-worker, Luther Burbank, justly calls for a place in literature.

"Imagine, if you please, a man collecting the cacti of the world, selecting from all of these varieties the best, then growing millions of seedlings, crossing and recrossing them, selecting and reselecting, and, finally, after sixteen years triumphantly evolving from this patient, laborious process and from millions of discarded cacti, seven plants which were not only free from spines, but which possessed the growing and feeding values for which he had so long striven. This, in a nutshell, is what Luther Burbank did with the cactus. Sometimes out of 100,000 seedlings he destroyed 99,999. The remaining individual he watched and tended as carefully as a mother her nursing babe. Patience, infinite patience, had to be added to the Burbank genius, the truly Spineless Cactus.

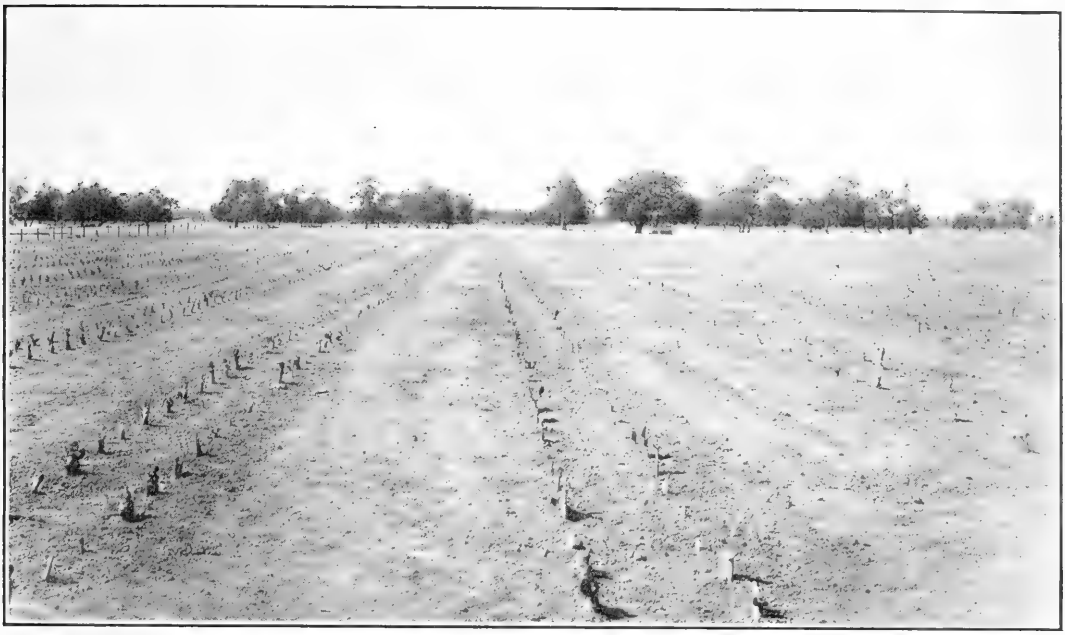
"Of those anxious ones who have endeavored to detract from the merit of this, the greatest of the Burbank triumphs, we will say nothing. The Burbank Thornless Cactus speaks for itself. It will, by its wonder-working accomplishments. best answer all critics, whether malicious or ignorant."—Ex.

This Shows the Remarkable Productivity of the Burbank Spineless Cactus—Beginning the Second Season

fail, if properly treated. Unlike all other plants, it is best that the cuttings should be wilted a little, though in hot weather they will grow without wilting. They can be wilted in any ordinary warm climate if placed flat on the ground here the sun does not strike them from 11 to 2, or any little shade which protects them from the burning, fiery heat of the mid-day sun. When the parts that have been cut in removing from the old plant have become dry and seared over, they may be planted at once, one-third under the ground and two-thirds above, either straight up or slanting at any angle. This is absolutely all that is necessary in planting cactus. If the cuttings happen to be a little bruised in shipping, the bruised places should be cut away and during the summer time will heal over at once. In the winter time such bruised places will promptly decay.

Preparing the Ground

Very ordinary kind of soil will do for the cactus, though as with all other plants, the better it is the better they will grow. The ground should be plowed and harrowed and allowed to become quite dry on the surface before the cuttings are planted. In planting the cutting, it is well to dig out all moist earth with a trowel or spade, and to have dry dirt around the lower part of the cuttings, as they root much quicker in dry dirt than in moist, strange as it may appear. Many failures of cactus cuttings have been caused by planting in too damp soil, or irrigating too soon after they are planted. In planting for forage, it is well to make double rows three feet apart, and these double rows should be about ten or twelve feet apart and in these double rows the cactus should be planted alternately, as in this way they help to hold



SHOWING METHOD OF PLANTING CACTUS
Double Rows—Twelve Feet Apart, With Cuttings Spaced in Three-Foot Squares in the Double Rows—By this Method a Wagon Will Reach Four Single Rows in Gathering the Cactus for Feed

each other up better and have more room to grow, especially while young. Cactus may be planted on hillsides in very hot climates on the north sides. They thrive best on the south sides in cold climates. The cactus is especially valuable as an adjunct to alfalfa, as it will grow on ordinary land with a very small amount of water, where alfalfa would be sure to die out. Under such conditions, the cactus will thrive where alfalfa cannot be grown. Nothing can be superior to the cactus for this purpose, as it improves year by year. Cactus should never be planted in the shade or wet land. In some cases, where there is an extreme cold spell of weather the tips of the leaves will sometimes freeze. When thus frozen all the decayed parts should be cut away as soon as possible, and as soon as a sunny day comes the plants will heal over and no further damage will be done, while if the decayed portions are left on the plants a part or the whole plant may sooner or later be involved with the decay.

Cost of Setting Out Spineless Cactus

In Europe cactus has been set out by hand labor, and the cost is estimated to be about $5.00 per acre.

One man can set out 1000 slabs a day in ground previously well prepared. In a country where traction engines can be used and large tracts set out, the cost should not exceed $5.00 per acre.

Cultivation

Cultivation during the first season or two is of advantage to cactus, especially on dry ground. Irrigation is sometimes permissible after they get a good start, but not until they are well rooted. Cactus will thrive with one-tenth the water which alfalfa requires.

When to Harvest

One of the principal features of the cactus is that they can be allowed to grow year after year until needed in a dry sea-

HARVESTING CACTUS

The Crop Has Been Cut from Plants in Foreground, Which Will Immediately Start a New Growth, Crop after Crop thus Being Produced Indefinitely from the Original Plant

son, or in case of a shortage of feed, then can be harvested by the wholesale. On good land more tons of it can be obtained per acre than on fire to ten acres of other forage. In harvesting for ordinary, regular feeding, it is well to cut off the top and side leaves with a long knife, hatchet or other tool, and feed to the stock as needed. It may be fed at any season of the year without regard to season—summer or winter, spring or fall.

Yield

The first season, if cuttings are set out early in the season, say June, each should make five to ten or fifteen new cuttings. The second season twice as many as that, and the third season three times as many. The cuttings may be replanted as soon as they are hard and thoroughly ripened.

How to Feed to Live Stock

Cattle or any kind of horned stock are especially fond of the cactus, but as with all other new feeds, some refuse at first, but soon learn to eat it greedily. It is best fed to them either whole, or better still, the slabs may be rapidly run through a cutter and a little bran or sprinkling of meal will induce those animals to eat it that do not at first understand it. Poultry are also fond of it and will seat it at once, if it is sprinkled as for stock, and afterwards greedily for green feed. Hogs

invariably like it when used to it. It is particularly valuable for growing animals and or milch cows, as it increases the quantity and improves the flavor of milk at once. But cactus, like almost all other food, requires other food with it. It is quite succulent and moist, and some dry alfalfa or other hay is excellent, or a little oil meal, bran or even dry weeds. It has the same effect on cattle or growing animals as green feed of any kind, but does not bloat animals like alfalfa.

Harvest

There is no occasion to harvest the cactus before hand, because it is always in good condition. There is no occasion for storing it, because it is always good from January 1st to December 31st.

Like all other crops that are worth cultivating, it should be fenced. No crop worth growing can be grown otherwise. If it is good, animals soon find it out, as they will every other crop that is raised for them. They should never be turned loose in the cactus patch; no one would turn stock into a beet or pumpkin patch, as they would injure the plants. They would also injure cactus plants, for they would greedily eat their tops, stems, roots and branches.

Fruiting Cactus

Fruiting cactus is planted just the same as forage cactus, except that it should be planted a little wider apart, as they grow to an enormous size and live to a great age, and it is well to keep them pruned low. They will spread so that if planted three feet apart in the narrow rows and twelve feet apart in the wide rows they can be harvested most conveniently. The fruit is at its best during September, October and November, though some varieties continue to bear throughout the winter and spring, in fact, throughout the entire year.

How to Prepare and Eat the Fruit

Do not handle with the bare hands. Take each fruit on a fork and with a sharp knife cut off both ends, and, still holding the fruit by the fork, cut through the peel avoiding the little bundle of bristles; then with the knife push the peel from the oval-shaped mass of pulp within. Cactus fruit is very wholesome and nourishing and can be eaten in great quantities with benefit. The seeds are to be swallowed as with tomatoes. The fruit is much more delicious when cold.

"Burbank's thornless cactus is now being cultivated at Kiamuki, and plants are being taken from there and sent to the other islands. This new form of cactus is growing well and there are hopes that it will grow rapidly on the other islands, especially in the cattle districts.

"As a food product the cactus appeals to cattle as one of the most attractive foods found in the pasture lands. Even the thorny cactus is eaten by them."—"Commercial Advertiser," Honolulu, T. H.

"That the Chamber of Commerce of the city of San Diego does most heartily endorse the efforts to spread the new Burbank fodder, thornless cactus, throughout the Southwest, thereby rendering highly productive vast areas of arid and semi-arid lands, and thus still further demonstrating the agricultural importance of this section of the country."—Resolution adopted by San Diego Chamber of Commerce.

House of Representatives, United States.
Part of Cong. Record.

LUTHER BURBANK AND HIS WORK

From the Speech of
Hon. Everis A. Hayes
of California
In the House of Representatives.

SPINELESS CACTUS

No more important thing has recently occured in agriculture than the successful production of the rapid-growing, edible spineless cactus by Luther Burbank. After sixteen years of expensive and costly experimentation he has produced a new and most valuable cattle food for the world. For many years it has been the custom in Africa as well as in those parts of America where it abounds, to feed to cattle certain varieties of the prickly pear cactus after the spines have been burned off. This burning, of course, greatly increases the cost of fodder. The food value of this spiny cactus for stock has been known by cattlemen, who have grown and used it for some years.

Mr. William Sinclair, a successful cattle-grower of Texas, writes: "We find it very poor policy to put the slightest limit on the amount of cactus our cows get. The more they can eat the better they thrive and the more milk they give. There is nothing that sets them back more than a shortage of cactus. If we happen to be short of milk the cause is almost invariably traced to the shortage of cactus."

The great desirability of the rapid growing and edible spineless cactus for cattle food has been recognized all over the world.

Of all stock food, the Burbank improved spineless cactus is by far the most prolific.

It is adapted to almost any soil where the temperature does not go below 18 degrees above zero, and it will stand a great amount of heat.

Cactus is the only fodder that furnishes green, succulent feed all the year.

Another source of great value in the Burbank improved spineless cactus is its fruit. It is a fall and winter fruit of attractive colors—crimson, scarlet, yellow, white and variegated. It is a sure bearer; a good packer and shipper; very healthful, and of a flavor which many prefer to that of bananas or figs. It contains 8 per cent to 16 per cent of sugar; is a great fattener for hogs and cattle. Poultry also is extremely fond of it.

These make fine jellies, jams and glacé fruits, and can be used for coloring ices, jellies, confectionery, and so forth.

In an experimental way, from the Burbank improved spineless cactus, paper pulp and wood alcohol have been produced. But the greatest value of Burbank improved spineless cactus will be that it will make highly productive and valuable vast tracts of land now barren because of insufficient rainfall, not only in Southern California and Arizona, the natural home of the cactus, but also in South America, Australia, India, Egypt and elsewhere.

For example, are large tracts of land practically bare and worth but $10 to $15 per acre. The annual rainfall is about five or six inches —making the land semi-arid. On this soil, without irrigation, is produced enough, with a few pounds of chopped straw, bran or other roughage, to keep four cows per acre all the year. This same land, when so situated that it can be irrigated and planted to alfalfa, keeps about one cow per acre annually and is now selling for $200 per acre. In other words, Burbank improved spineless cactus will give $15-an-acre land a greater earning power than alfalfa on $200-an-acre land.

Alexandria, Egypt, April 23, 1908.

"Please be kind enough to send us offer for one or more varieties of plants and the amount of money we will have to send to you for posting a lot of leaves to Egypt.

"His Highness, the Khedive, is keenly interested in the question of your Opuntias and will be glad to see a success of our future experiments."—Charles Chevalier de Blumencron.

SAMPLES OF VARIOUS COMMENTS ON THE WORK.

"Mr. Burbank's first publication on economic cacti serves to set at rest many groundless suppositions as to the character of the work he has had under way for years on these plants. Some persons, forgetting that Mr. Burbank has made up to now no official announcement of his work, jumped to the conclusion that he had merely hit upon one of the common nearly spineless forms of Opuntia Ficus Indica. Others more dishonest have been offering for sale so-called 'Burbank Thornless Cactus,' despite the fact that not a single plant or seed of Mr. Burbank's new creations has left his grounds up to a few weeks ago.

"Mr. Burbank was perfectly well aware at the inception of his work on the opuntias that there were many forms nearly thornless, and he has even brought to light one kind, grown in many countries, that has neither spines nor spicules. It is not of much value, however, as it is a rather small plant and not hardy. The new forms are much more rapid growers and are also more hardy."—Dr. Walter T. Swingle, U. S. Department of Agriculture, Washington D. C.

Special Information

So much has been written about the spineless cactus and so many are deceived with the old cheap, half-wild varieties which are so often offered as "Burbank's" or "just as good as Burbank's" that it seems necessary to have them distributed direct from the originator and under correct descriptions so as to avoid as much as possible any misunderstandings, exaggerations or misstatements such as heretofore have been carelessly, ignorantly or wilfully made. Utterly spurious "Burbank's Thornless Cactus" has been offered for sale by dishonest parties for six years or more, not only in America, but also in Europe, Africa and Australia.

In producing these new Opuntias more than seventeen years and much thought, labor and capital have been expended, thousands of crosses have been made, and many hundred thousands seedlings and crossbred seedlings raised. The finished product is receiving a royal welcome everywhere by those who know.

Few of the cacti are of any economic value except the Opuntias; of these there are more than one hundred and fifty species and innumerable varieties; all probably originally natives of the Western Hemisphere and were cultivated by the Indians long before Columbus discovered America. No class of plants are more easily grown, soil is not of much importance, and cultivation almost unnecessary.

The cactus yields big, luscious slabs, weighing from one to seven pounds each, which can be cut at any time, summer or winter. There is no particular harvest season, therefore, no necessity to harvest and store.

The selection of ordinary Opuntia cuttings is of some importance. Those who have grown them on the shores of the Mediterranean for hundreds of years always select "bearing wood" if fruit is the object, and the least thorny and bristly leaves if a plantation is to be produced for forage; even some of the partially spiny ones may be made less so by careful selection of cuttings, but this labor is wholly useless since the new Burbank varieties are offered.

When alfalfa was generally introduced about twenty years ago, many wiseacres declared it was "no feed for milch cows." Many declared alfalfa would bloat cattle to a dangerous degree and was wholly unsafe to feed. In some of the Eastern States alfalfa is now being introduced and is encountering considerable prejudice, strange as it may seem. Agricultural colleges are sending lecturers abroad for the purpose of educating farmers in the use of alfalfa. Yet to-day the value of land planted to alfalfa alone in California represents many millions of dollars.

It has been proved that the poorest of the Burbank spineless cactus varieties are so far superior to any of the old half thorny ones that no comparison with them can fairly be made.

Our New San Francisco Headquarters

With the establishment of new headquarters at Market and Beale Streets, San Francisco, The Luther Burbank Company enters the general seed and nursery field with every improved facility for meeting the general demand in these two lines.

The ground floor of their new building in San Francisco is devoted to the salesrooms, a continuous exhibit of original Luther Burbank creations and the most complete lines of spineless cactus, seed and nursery productions in the West. The executive offices are located on the second floor.

Owing to the increased interest in original Burbank creations, a constantly changing Burbank horticultural exhibit is maintained in the new headquarters. As the fruiting or blossoming periods arrive, specimens are brought from the Company's various proving grounds, nurseries and seed farms and attractively displayed in the store. On account of the extensive window space on both Market and Beale Streets and the unique interior arrangement, this store is one of the great horticultural attractions in the United States. In reality it is a continuous Burbank exposition. As an adjunct of this exhibition, a new feature has been introduced—the Stereopticon Hall, where are shown Burbank novelties by direct color photographs in connection with stereopticon projections.

A service department is also installed, at the head of which are men of wide experience in practical horticulture. Their advice, which is given gratuitously, extends to every phase of the growing of fruits and flowers, as well as the difficult problems in landscape gardening.

None the less instructive is the display of original Luther Burbank Spineless Cactus. A visit to this store by anyone interested in practical horticulture or floriculture cannot help but prove of great interest and practical value. The comfort and convenience of all visitors has been provided for in every way, especially out-of-town visitors, by the installation of a reception bureau. You are cordially invited to visit us in our new business home.

How to Order

Wherever it is possible to do so, use the order blank.

Fill out all the information that the blank spaces call for.

Be sure to write your name plainly. Give postoffice where you receive your mail, including county name. State plainly the town or point where you receive your freight.

Give the name of the railroad or express company from which you receive your freight. State whether to ship by freight or express. In the absence of specified instructions, we shall use our judgment.

Usually orders will be shipped by freight unless otherwise specified. An exception to this rule will be where the package is small, when it may be shipped by express. No shipments are made by mail.

You will be notified of shipment. Allow a sufficient length of time for the package to arrive, and then if it does not arrive notify the railroad or express company, showing the bill of lading. Also notify us by mail and we will send a tracer after it.

We are not responsible in any manner after we have delivered the shipment in proper condition to the carrier. We will do all in our power, however, to straighten out any difficulty. All claims for defective or damaged goods must be made immediately upon receipt of same.

Nothing will be sent C. O. D.

All remittances must be either postal orders, bank drafts or certified checks, properly made out to this company.

No agent or representative of The Luther Burbank Co. has authority to make special terms or to vary the printed conditions or statements as contained in this or other catalogs or publications issued by this company. All special conditions or arrangements must be taken up with and confirmed by the officers of the company at the general offices only, in San Francisco.

We do not warrant in any way, express or implied, the contents, or the description, quality, productiveness, or any other matter of any seeds, bulbs, plants or trees sold by us and we will not in any way be responsible for the crop. If the purchaser does not accept these goods on above terms, no sale is made thereof, and he must return them at once, and money will be refunded.*

The Luther Burbank Company

GENERAL OFFICES

Burbank Building, Market and Beale Streets
San Francisco, California

*Standard form of guarantee adopted by leading seedsmen and nurserymen of the United States.

A WARNING

MANY new trees, plants and seeds are grossly misrepresented by a few dealers who trade on the reputation of reliable firms, often doing a thriving business by selling trees and plants in localities where they very well know that they cannot thrive; this and the substitution of inferior or wholly worthless trees or plants under the name and reputation of good ones has been, and is now being carried on persistently and systematically by several parties who victimize those who deal with them by trading on the reputations of reliable firms and good trees and plants.

An especially cruel form of this is the persistent pushing of the Spineless Cactus, Crimson Winter Rhubarb, and other tender plants for cold climates, which cannot live where the ground freezes an inch in depth.

It should be the duty and privilege of every good citizen to aid in exposing and routing all who are obtaining money under these false pretenses.

Having been in business almost forty years, millions of trees and plants raised in my establishment are now bearing fruit, not only in the Western United States, but everywhere on earth where the sun shines and trees can be grown. Does this forty years' record of just dealing mean anything, and is it surprising that such a reputation should be worth trading on? *Counterfeit coins are not counterfeited—it is the genuine ones that are misrepresented.*

Luther Burbank

Trade Mark Registered

This seal is on each package of genuine Burbank plants or seeds and it is your protection. Look for it.