

Luther Burbank, Invader of the Realm of Pomona: The Man Who Teaches the Survival of the Unfittest

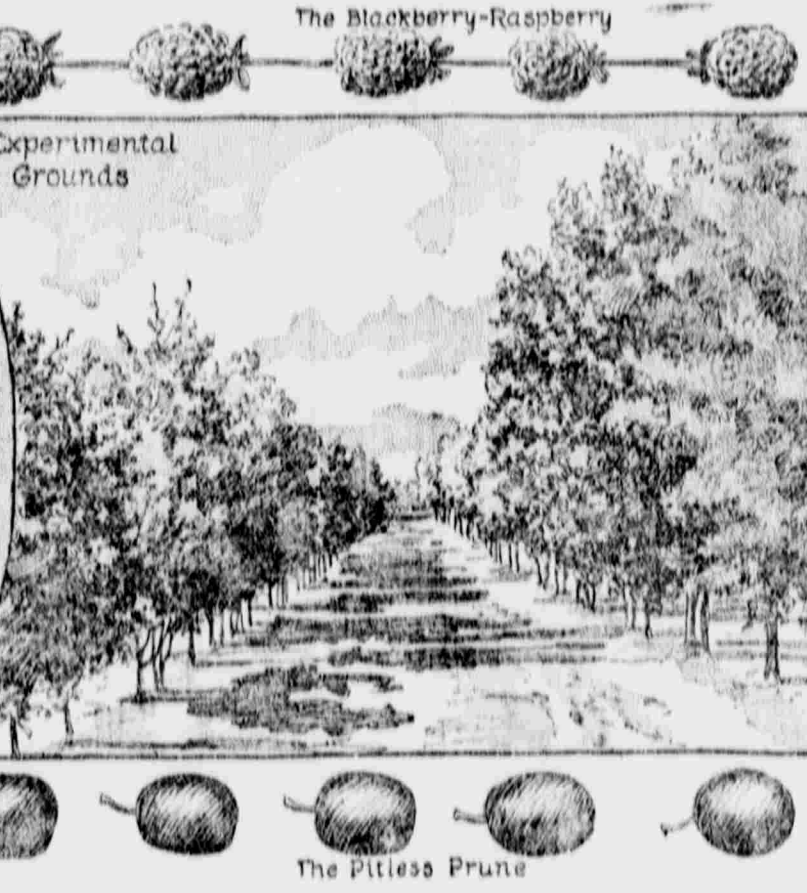
THE recent grant of a large fund by the Carnegie Institution to Luther Burbank, the California horticulturist who has originated a large number of fruits and flowers during the last thirty years, is a step toward the substantial encouragement of scientific research which well deserves approval. This is especially true from the fact that the beneficiary about ten years ago abandoned his large and exceedingly lucrative business as a commercial seedman and florist to devote himself entirely to horticultural experimentation. To that end he converted his famous seed farm at Santa Rosa, Cal., which had been brought to a state of wonderful productiveness by the untiring effort of his own, into one of the most original and satisfactory experimental stations in the world. The preliminary sacrifice involved in the change at once established Mr. Burbank's sincerity and devotion to his field of research.

Mr. Burbank has produced about 2,000 different varieties of fruits, flowers and shrubs. Most of this work has been done at Santa Rosa, and the various processes of selection and inbreeding have involved the inspection and sorting of countless thousands of specimens. While it is a fact that a great many of his additions to the flora of the earth have proved to be scientific curiosities rather than practical contributions to the general supply, there are some notable exceptions. He has made it evident, however, that the coming generations will be supplied with abundant and luscious fruits of which the present moment knows nothing whatever.

A greater number of new fruit forms have made their appearance in the last year or two than ever before. Some of them are the result of experiments conducted by the agricultural department, and a few are due to other individuals

investigators, but most of them have been produced by the wand of the magician at Santa Rosa. A wide range of experimentation begun many years ago seems to have culminated recently. These horticultural researches require much time. The hybrids must be propagated from seed, and it is years before many fruits come into bearing and either confirm or dash the expectations of their originators. Within a few months there have been born at Santa Rosa a thornless cactus, an orange which will thrive in northern latitudes and a flower which will not fade.

Mr. Burbank's most famous production, one that has made his name familiar in all countries where it is grown, was the Burbank potato. This was his initial achievement in the world of horticulture, and he was only fifteen years of age when it happened. He sold his interest in the successful vegetable to a prominent seed firm, and the Burbank became the most widely cultivated potato ever grown. Some years ago, long after he had developed his magnificent California seed farm, Mr. Burbank added frost to his reputation by introducing a stoneless plum. This fruit bears a fully developed kernel, but there is no hard shell. One may bite into this plum without hesitation and enjoy the nutty flavor imparted by the soft kernel. Mr. Burbank is confident that he could banish the shell from the kernel of any fruit and that he could even produce a walnut without a shell. It would be a matter of ten years, he stipulates. He exhibited recently a blackberry bush presenting a perfectly normal appearance save that it bore white berries instead of black. He considered this of so little moment that he did not feature it. It was the result of the application of Darwin's theory inversely—the survival of the unfittest. He persisted in selecting those berries which in ripening did not become pure black. Each trial brought lighter fruit, and in time it was perfectly white. Mr. Burbank admits that he examined carefully 25,000 blackberry



bushes before he found one bearing fruit sufficiently light colored to warrant further procedure and that he repeated this great undertaking for several years. This experiment demonstrates the truly scientific drift of the man's mind. He knew that no marked commercial benefit could be derived from a successful outcome of the matter, but his recompense was the less sound triumph of the enthusiast.

One of the remarkable fruits introduced by Mr. Burbank is the plumcot, a permanent cross between the apricot and the plum. This is distinctively a new species of fruit, and it differs greatly from either of its progenitors. Another new hybrid which promises well is the pineapple quince, and the peach almond is still another.

The operation of hybridizing two fruits requires no special skill. It is a process long understood by gardeners and consists in taking the pollen from

the flower of one and dusting it into the stigma of the flower of another. Time and patience are the requisites to which must be added great selective capacity. Months and even years of labor and infinite care often result in nothing. Mr. Burbank confesses that several years ago he experienced a failure that rather disconcerted him. He treated the blossoms of apple, pear, quince, strawberry, cherry and other fruits with the pollen of the native California dewberry and gathered seeds from all of them. These he sowed and secured at least 5,000 seedlings. More wonderful plants, he declares, were never seen. Some bore strawberry leaves, others pear leaves; some were provided with spines, and others were perfectly smooth. Very few of them flowered, and out of the entire lot only two bore fruit, one kind resembling a pale blackberry and the other a rich mulberry. A crushing finale to the experiment was

the fact that neither fruit contained a single seed. It was a matter of years, but nature was avenged.

Some of Mr. Burbank's best efforts have been accomplished in the way of modifying the habits of fruits and flowers. He has converted tropical and subtropical species into temperate zone kinds and has prolonged the bearing season of some old favorites and advanced that of others. He has provided many hitherto perishable dainties with long keeping qualities, improved flavors and enhanced form and beauty. Perhaps the most useful modification produced by this necromancer in the realm of Pomona and Flora is that of shortening the fruit bearing age of slow growing fruits. The most noticeable instance of this is to be found in the new chestnut, which bears well formed nuts eighteen months after the seeds are planted.

Luther Burbank was born in Lancaster, Mass., about fifty years ago. As a boy he worked in the Ames plow factory and invented a valuable appliance which resulted in the offer of a partnership if he would remain. He had already become so fascinated by horticulture that he declined the flattering proposal.

Soon after the seedling orange appeared a Colorado orchardist, John F. Spooner of Grand Junction, Colo., conceived the idea that what had been done with the citrus fruit might possibly be duplicated with the apple. With that end in view he began a series of experimentation which covered a period of several years. As a result he succeeded in obtaining five trees which produced seedless and coreless apples.

The new tree is hardy and may be grown in any climate. It is like the ordinary tree save for the fact that it is apparently flowerless. The fruit is dark red with yellow dots and as a winter variety compares favorably with the one than the Ben Davis. The lack of blossoms makes it practically a wormless fruit.

ROBERT SWEET.

Where Lewis and Clark Camped.

PORTLAND—Great Falls, the thriving Missouri river city of Montana, upon the site of which Lewis and Clark camped on their memorable journey to the Pacific 100 years ago, is awake to the fact that much national interest clusters about its site and vicinity, and the Great Falls Commercial club has taken steps to get the world many important facts regarding the city. To this end a large set of attractive folders has been prepared, to be distributed at the Lewis and Clark exposition.

The inside covers of these folders contain tersely written facts, offering the salient features of the journey of Lewis and Clark at Great Falls, the ex-

important point for the shipment of beef and mutton. It is surrounded by a great wheat growing country. There are free homesteads to be had; improved farms cheap; both irrigated hay farms and bench grain farms. The Sun river irrigation scheme that has been undertaken by the government will irrigate 35,000 acres of as fine land as the plow ever turned. Nearly all of this land is open to entry, subject to the rules of the department.

THE SHARPENED SWORD.

Close upon the heels of the change in the bayonet will come a change in the type of the saber furnished the cavalry troops of this country. The present article issued is criticized as too heavy for effective use, and there are officers who are in favor of abolishing the saber entirely as of little more value than the dress sword of infantry. The special committee of the general staff will not recommend the abandonment of the saber, but there are destined to be some important changes in the weapon. In the first place, it will

be required that the saber be kept in a sharpened condition, which appears to be unusual in the service at present. Then, it may be reduced in weight and fitted in a scabbard which will not dull its edge. No one really believes the saber has accomplished anything of importance in battle, and the information acquired from our sources of advice in Manchuria are to the effect that the situation respecting the saber has not altered on account of the collision between the Russian and Japanese troops. The saber has its undoubted value as an influence upon troops, both those who carry that weapon and those who are attacked by cavalry, in addition to which no one who loves the picturesque rejoices in any proposition that will deprive the mounted soldier of the gleaming blade.—New York Tribune.

ON THE TRANS-SIBERIAN.

"Two engines are required on heavy grades, and special twenty-wheel locomotives are used on the hilly section," writes William Greener concerning the

Trans-Siberian railway, in his book, "A Secret Agent in Port Arthur." "Hot water is kept night and day at most stations, and trains suffer severely from the inclement weather. The double windows are perpetually frosted, often the vestibule doors become fast, great patches of frozen snow adhere to the roofs, the slides and panels are hidden under a thick white hoar, and long streaming icicles hang from the roof to the bogie truck where the water from the tank for the heating apparatus in each carriage has splashed over during the day's run. At every large station there is a special gang of attendants, who attack the train vigorously on its arrival, they use hammers and crowbars, iron rods heated red, long flaming torches, scalding water and even light fires of shavings under the carriages to free the brakes, and little by little thaw out the working parts of the frost-bound train.

THE SCIENTIFIC SPIRIT.

Andrew Carnegie admires the scientific spirit—his generous gifts to science are a proof of that. Nevertheless to his keen humor this spirit offers itself as a good prey, and Mr. Carnegie often rails very wittily at scientists and their peculiar ways.

"The late—the late—but I won't mention the poor fellow's name," said Mr. Carnegie at a scientists' supper. "The late Blank, as he lay on his deathbed, was greeted one morning very joyously by his physician.

"Poor Blank's eyes lit up with hope at sight of the physician's beaming face. There had been a consultation on his case the day before. Perhaps, at last, the remedy to cure him had been found.

"My dear Mr. Blank," said the physician, "I congratulate you."

"Blank smiled.

"I shall recover?" he said, in a weak voice tremulous with hope.

"Well—not exactly," said the physician. "But we believe your disease to be entirely novel and unique, and, if the autopsy demonstrates this to be true, we have decided to name the malady after you."

Half Price SALE!

NO HALF WAY PRICE CUTS IN THIS SALE—FOR WE'VE STARTED OUT TO DO THE BIGGEST THREE DAYS BUSINESS IN OUR CAREER, AND IF BARGAINS EVER BROUGHT CROWDS THERE'LL BE THE GREATEST KIND OF A STORE CROWDING FOR THE NEXT THREE DAYS.

The Progressive House, New York Cash Store.

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ABSOLUTELY FREE!

WITH EVERY TWO DOLLAR PURCHASE, during the next three days, we will give our customers an order on a leading photographer of this city (Mr. Newcomb) for one carbon photograph, mounted in an art folder. The sitting shall be by appointment, and the finished picture is guaranteed to be the quality and finish as sold by Mr. Newcomb at \$10.00 and \$12.00. (See Samples in Windows.)

Unlike all offers of this kind that usually have such conditions as paying extra for a frame, or a little extra for some better finish—this offer is made Absolutely Without Any Strings Tied to it, and Positively Without Conditions. Your Photograph Taken and a Finished Art Carbon Photograph Delivered to You on Our Order Absolutely Free. The signed order will be given to our customers who purchase merchandise to the value of \$2.00. This offer is good for three days only.

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EVERY DEPARTMENT IN THE STORE WILL PARTICIPATE IN A GREAT HALF PRICE SALE FOR THE NEXT THREE DAYS. EVERY ITEM QUOTED IN THIS ADVERTISER IS GUARANTEED AS ADVERTISED—OR YOUR MONEY BACK.

The Progressive House, New York Cash Store.

UNDERSKIRTS!

FINE MOHAIR UNDERSKIRTS—HEMSTITCHED AND TUCKED FLOUNCE, REGULAR \$6.00 EACH, HALF PRICE—

\$2.95

SILKOLINES.

Mill End Lengths of Drapery and Art Silklines in lengths up to 8 yards. They are the quality you cannot find at less than 15c yard, HALF PRICE—

7½c

Egyptian Gauze.

Rich Silk Stripes Egyptian Novelty Cloth in oriental colorings. Something new for Waists and Suits; 75c a yard, LESS THAN HALF PRICE—

29c

SHIRT WAIST SUITS.

SILK SHIRT WAIST SUITS OF EXTRA FINE MUSLIN TAFFETA IN PLAIN, PINK STRIPES AND CHANGABLE EFFECTS, MADE EXTRA FULL WITH SHIRRED WAISTS AND SKIRTS. THEY SELL FOR \$5 THE SUIT. FOR THIS SALE HALF PRICE—

\$12.50 \$2.25

WHITE WAISTINGS.

Rich and New Effects in Mercerized Cotton Waistings, interwoven with narrow and wide Silk Stripes, 60c and 75c values, LESS THAN HALF PRICE—

25 cts.

FRENCH ORCANDIES.

Only 35 pieces of these rich French Organdies left. The daintiest and most beautiful of the wash fabrics. Guaranteed 50c values—

19 cts.

CORSETS.

Any of our High Grade Corsets and Girdles, including the "W. B." "Royal Worcester," "Premier," "Bon Ton" and "American Lady."

HALF PRICE

SATEEN LINING.

Mercerized Sateen Linings in all colors and blacks; they are mill and lengths up to 6 yards, 30c and 35c values; LESS THAN HALF PRICE—

15c

CORSET COVER EMBROIDERIES.

WE PLACE ON SALE MONDAY MORNING 45 PIECES OF EXTRA WIDE SWISS EMBROIDERY. THEY ARE WIDER AND A BETTER QUALITY THAN THE LAST LOT WE PUT ON SPECIAL SALE AT 35c. FULL 17 INCHES WIDE AND WORTH 75c THE YARD. LESS THAN HALF PRICE (PER YARD)—

25 cts

INDIA LINONS.

40 inches wide fine India Linons, selling at 25c and 35c the yard; LESS THAN HALF PRICE—

12½ cts.

LACES.

Have taken all our finer Laces and Insertions in Cotton, Linen, Silk and Wood Fibre Novelties in values up to \$1.50 a yard, LESS THAN HALF PRICE—

50 cts.

MEN'S SHIRTS.

Men's Colored Percale Dress Shirts, 50 different patterns to select from; regular \$1.25 and \$1.50 values, LESS THAN HALF PRICE, (each)—

59c

PLATT VAL LACES.

New and Pretty Laces in 4, 5 and 6 inch widths, selling at 20c and 25c the yard; HALF PRICE (per yard)—

10c

SPECIALS!

35c Nail Brushes
75c and \$1.00 Dressing Combs
10c Black Silk Thread

SPECIALS!

17c
40c
5c

SPECIALS!

35c Boxed Mikado Soap
15c H. & H. Soap
75c Steel Brushes

25 cts.

17c

7c

38c

EVENING GLOVES.

All elbow and shoulder length evening gloves.

HALF PRICE

HOSIERY.

Any pair of Ladies' Silk and Lace Embroidered Stockings will be sold during this sale at—

HALF PRICE

NEW YORK CASH STORE

BED SPREADS.

Twenty five only offered in this sale. Fine, extra size Marseilles Quilts that cost \$3.00 in any store in the city; HALF PRICE—

\$1.50

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One Thousand yards of Check Dish Toweling, Purchased to sell at 5c the yard. For this sale HALF PRICE—

2½ cts.

JEWELRY.

Any Belt Buckle, Pin, Hat Pin, Brooch and Safety Pin will be sold during this sale at

Half Price.

STOCKINGS.

All out sizes in Ladies' Hosiery will be closed out at—

Half Price.