PLANT BREEDING BY THE GOVERNMENT

Uncle Sam Has Developed a Hardy Orange & Luther Burbank's Work With Fruit.

ber, the head of the laboratory of ant breeding, and with other scientists what is being done to produce new es and fruits. Dr. Webber has deted his life to this work, and under the on of the Secretary of Agriculture s and his associates are accomplishing They have produced new cotons, tobaccos and grains, and they have discovered an orange which will grow about 200 miles farther north than any we now have. At present the or-anges of the United States are grown ost altogether in the southern half of Florida and in a comparatively small part of California. This will extend the oringe region northward throughout Georgis and into South Caroline, the Gulf many other parts of California. It will make it possible for every Southern farmer of these regions to have an orange grove in his back yard, and oranges will

ndence of The Sunday Orein.)-I spent today at the Agricultural artment, talking to Dr. Herbert J.

took about ten years to produce this How it came about is as fol In 1894 and 1895 we had a terrible frost which destroyed the orange groves of Florida. The trees were frozen down to the ground, and upon looking back it was found that such frosts had come from time to time and destroyed everything. The department then tried to find a hardler orange which would withstand the cold, and Dr. Webber, with Professor W. T. Swingle, who were then worksor W. T. Swingle, who were then working for the department in Florida, were
siven this task. After a time Professor
Swingle dropped out, but Dr. Webber continued and produced the oranges which he
showed me today. The first work that
was done was the selection of lardy
trees. They picked out the toughest and
tried to breed tougher ones by seed selection. This was very slow, and they
looked around to see if they could not
find types with which they might cross
breed.

be as common there as apples are throughout the North.

with was a hardy little orange tree which grown as far north as New York. There some on Long Island and several in Agricultural Department grounds. Agricultural Department grounds, tree is grown for bedges. It is known the Trifolite orange, and it has a f about as big around as a baby's but as sour as vinegar and as bitter put se sour as vinegar and as bitter pall. It is, however, a perfect orange shape, and is really an orange, al-ugh net fit for eating. They took this and marked it to the sweet orange of Florids, and after many trials have now produced the trees which grow and fruit 300 miles farther th.

The new orange is three inches in diamster, it is a good eating orange, although a little bitter. It can be propagated by budding, and can be easily spread throughout the southern portion of the United States. Our navel oranges all me from a tree which was sent here m Brazil and grown in the agricultural couses. That tree was the father of seedless orange industry of Califor-These trees will be the fathers of large all over the South.

Orange-Lemons and Pomelos.

in crowsing these trees several other vaoranges were produced. The seed from the union had to be first plantseed from the union had to be first planted, and as it takes about as long for an
opamic tree to yield fruit as it does for
an apple tree, it has been several years
before the department could know whothar it had anything or not. The first fruiting came this year. One variety was the
fluss orange, named after the late Secrutary Rusk, of which I have already
written was an orange-lemon. Another was an orange-lemon of just about the size of the Rusk orange, of just about the size of the Rusk orange. This orange is as sour as a lemon, and it tastes not unlike one, having a delicious flavor slightly different from the

trange has a fruit which might be called orange has a fruit which might be called the orange pomelo, or the pomelo orange. This fruit is about the size of a large or-ange, but it tastes comewhat like a cross between the orange and the pomelo. It will grow in these same localities, and will make a fine breakfast food. In short,

LE TANGELO OR NEW M GLOVE GRAPE FRUIT and the other a fine orange tree, have been produced three good varieties of trees which will give the greater part of the South oranges, pomelos and lemons.

Have you ever seen a Tangerine orange? It is a little orange with a loose skin so fastened to it that it is some. It is a little orange with a loose skin so fastened to it that it is some. It is a little orange with a loose skin so fastened to it that it is some. It is a side of the skin glove erange. The skin can easily be taken off and the sections of the fruit pulled apart and eaten. You know also the grapefruit, or Pomelo, which has a delicious acid flesh, but a bitter, tight-sticking skin. Both fruits is are sold in the markets. Dr. Webber and his assistants have married this little Tangerine orange tree to the Pomelo, and they have produced a Pomelo which, although not so large as the ordinary Pomelo, la of a good size. It has a loose is skin, so that you can tear it off with your fingers as you can that of the Tangerine orange. The flesh of the new Pomelo in the plant is some delicious than that of the Pomelo fiself. It is sweeter than the Pomelo, and more julcy and acid than the Tangerine, and it contains the bitter principles of the grape fruit slightly reduced. It might be called a kid-glove grapefruit.

Uncle Sam's New Babies.

These produced are among the most promising of Uncle Sam's new babies.

These produced are among the most promising of Uncle Sam's new babies.

These products are among the most

good healthy infant of this kind is worth more to the country than the cost of that department for a number of years. In the marriage of cottons. Dr. Webber has united the long staple sea island cotton with the short staple upiand cotton and has thereby produced a medium staple cotton which will grow on the uplands. The Egyptian cotton has also been cross-bred with Uncle Sam's product, and the probability is that we will raise the \$11,000,000 worth of Egyptian cotton, which we now imdelicious flavor slightly different from the temporary in the same size, as can be seen by a photograph I give of several tubes showing the amount of juice in each fruit. This orange-lemon can be grown wherever the Rusk orange can be grown wherever the Rusk orange can be grown, and it will give orange-lemon orchards to millions of families throughout the South where lemons cannot now be grown.

Another of the trees produced by marrying the Triffoliate orange with the Florida grange has a fruit which might be called grow all over the South. In the same

These products are among the most promising of Uncle Sam's new babies. They are really the output of the Agricultural Department and any one good healthy infant of this kind is they brought the biggest prices and others just when there was the least demand. He made a careful selection of seeds and after a time produced violets which flowered just at the right time and in the largest number per plant. The result was the hotbed paid a good dividend. He had then shown the success of his experiment and sold out. His successor paid no attention to plant selection and in a short time he was making no more out

The Romance of the Potato.

kentucky blue grass, whereby they hope to get a rich sod which will grow all over the South. In the same houses they are breeding clovers with alfalfas and also lettuces and different varieties of flowers which have a com-The Marriage of the Lettuces.

One of the strange things is the marriage of the lettuces. There are

THE SABLACKEERES BURBAN

lous prices, and it is still one of the most valuable potatoes we have.

It was the Early Rose which was the mother of the Burbank hoat of the Burbank hoat of the Burbank, who was a named after Luther Burbank, who was a all kinds. One day while walking through

a field of Early Rose potatoes he saw a sends of plants and cutting them down need pod, on one of the plants. He watched it carefully, thinking he would save the seed and plant them. The field was near where he went to school, and he examined the pods from day to day until they should be ripe. He was expecially anxious about them, for, although such seeds are often found on other varieties of potatoes, they seldom occur on the Early Rose. One morning when the looked for the pod he found it had that many people are glad to pay that on the Early Rose. One morning when he looked for the pod he found it had disappeared. His heart fell, but he got down on his knees and hunted the fleid over. He cried over his less and went every day for a west to the field looking for this seed pod. He finally found it about 16 feet away hidden under another vine. It had evidently been knocked off by someone passing rapidly. He kept the seed pod and the next year planted the seed. From the pisnts which grew he secured the one which produced the Burbank potato, which is now known throughout the world.

Burbank's Wonderful Discoveries.

As he grew older Burbank became still more interested in plant production. He worked for a time in the shops of the Ames Plow Company, in Hassachusetts, and there invented improvements in woodworking machinery which were so

woodworking machinery which were so valuable that his employers offered to multiply his wages 20 times if he would stay with them. He decided, however, that he cared more for plant breeding than for shopwork, and finally went to California, where he started a plant-breeding form. He has the form that california, where he started a plant-breeding farm. He has this farm, just outside Santa Rosa, Cal., and upon it has produced some of the plant wonders of the world. He has produced no end of flowers, vegetables and trees, as well as new varieties of fruits. He has maras new varieties of fruits. He has married the plum to the apricot, and got what is known as the plumeot. He has made a white blackberry, and has taken the common field ox-eyed daisy and made the Shasta daisy, a beautiful flower, many times as large. The Sharta daisy will grow out of doors, and will bloom several months every year. He has originated new calls lilies and a great variety of peaches, apples, pears, plums and nuts, as well as valuable trees, fruits, flowers and destructive fungus and insect and vegetables. and vegetables.

THE NEW ORANGE LETEN AND AN

ORDINARY LESSON SHOWING JUICE FROM EACH.

> of cats, 1,500,600 extra bushels of barley. 21,000,000 extra bushels of potato

What Plant Breeders May De. Here is what Luther Burbank says plant breeders may do: "Cultivation and care may help plants to do better work temporarily, but, by breeding, plants may be brought into existence which will do better work always, in all places, and for all time. Plants are to be produced which will perform their appointed work

Gets \$10 an Hour for Private Talks.

I met the other day a man who had just visited Luther Burbank. He tells me that the people who live near by cannot understand him. They look upon him as a harmless idiot, who is raising thou-

FRANK G. CARPENTER.

PEN PICTURES OF THE SOUTHERN OREGON

Mid-Winter Beauty and Glory of the Ocean Beach as Seen by Alma A. Rogers.

figures of export or import. We sator pronounced his handlwork good. Here, then, was the land of our desire, for sere the lotus blooms again and sways its sleeping, yellow sandhills as shall fade away. If you come once, if

never fade awast. If you come once, it you feel the spell, be assured you will never rest until you are back again.

On horseback, by team or on foot—you take your choice if you mean to wander farther afield than the little town of Florence, where the hotel beds are clean and food is sauced with a rich broque that and the sauced with a rich broque that and the sauced with a rich broque that are your landlady to you forever on her kind heart! It was a blessings on her aim heart. It was misty morning when we bade her good-by. Our carriage consisted of a common box wagon over, whose wheels we climbed into a real spring seat behind the carrier of the United States mails, whom had engaged to take us up the coast. Summer a stage is run to the end of magon road, but this is discontinued Winter, and the mall transported on

in Winter, and the mall transported on horzeback, a deputy performing that service on the day in question.

There is no mud. The broad-tired wheels sink with a gentle crunching into the soft mand and we are borne along as luxuriously as in a \$2000 automobile. It is good too, after the cordurary. Besides, we are not touched with the modern madness for speed. The jog of our stout team is quite rapid enough. Climbing the slope of the little city we catch the beau of the is quite rapid enough. Chimbing the slope of the little city we catch the heat of the surf at the top of the ridge, muffled by the thick growth of spruce and scrub pine that enclose us in a primeval stillness. Louder it booms, the road winds down cipse and closer, until the vast roll of whitening breakers sweeps before us. It is for this we have inuged, and now we lisk no more. Yet more awaits us.

refused to come, and until it does the bumped from continually turning its back one country must perforce continue to slumber. To the uncommercial minds of two said light-ficked vistas: a morning sky fellow-travelers this, however, was matter for secret rejoicing. We cared not at a former of expected or import. We all for figures of export or import. We sought a spot where nature lay a dream-ing, fresh and untouched as when the from the wagon side; rhododendrous crowding the hollows and banking the roadway in such profusion that the senses are atterly beguiled and imagination creates that bloom and fragrance which here the lotus blooms again and sways its subtle intoxication. Day by day the charm sinks deeper as we drink in the bracing purity of the air and fill our inner vision with such pictures of sea and sky and sleeping, yellow sandhills as shall measure. Surely here, on still nights, when the winds are hushed and the great when the winds are hushed and the great dome filled with star-burning lamps might lome filled with star-burning tamps, might the voice of the Silence that abides at the heart of things speak to the soul wakened into hearing. On the edge of the garden was set a tiny cabin of driftwood, sheltered from the wind and open to the sun the breakers rolling in long swells over the wet beach. It seemed a fitting cradle for a spirit to be born into the flesh whose beautiful hand should bear the white flower of truth before the wear; ones who wander in the desert seeking.

After the garden of delight comes the open. Low sandhills tufted with sallal and creepers hide the oceau, the but the is discontinued of white and it ransported on Whiter, and the mall transported on Whiter, and the mall transported on Whiter, and the mall transported on the storm-beaten planes crowded at the storm-beaten planes crowded to the storm the storm the storm the storm the storm under the contrastile to the country state of the beat the country state of the country state of the storm under the country state of the storm under the country state of the storm under the country state of the storm under the country state of the country st the storm-beaten pines crouch still closer to earth in an appealing struggle with environment. Over to eastward-our course is due north-spurs of wooded foothills divide many fertile

ly twinkle over the wet sand. The rapid motion combined with their gray and shite coloring produces so striking an effect of revolving light that one feels the name should be twinklebird, instead of sandpeep. We are told they make delicious potpie, one bird to a dainty mouthful. But we want no four and twenty baked in our nie.

Under the protecting shoulder of the first chain of tall headlands pushing northward, in an angle where the foothills twist over to the sea, lies an open mead. Upon the mead is a cottage and to this cottage are we bound. It stands on a high grassy bank, directly facing the ocean. At the bank's foot is a protective, wide barrier of driftwood, the battered trunks stark, white and chaotic. Curving about the driftwood, like an arm bent at the el-bow, runs the brook, flowing down from the canyons far back in the hills, and in its earlier course supplying fresh water to the household. Then a glorious stratch of wide yellow sand, whereon the surf beats ceaselessly. and where for days, too delightful to count, we two roamed at will.

The cottage is not only by the sea. but it is of the sea. A ship's cabin fashioned the many-windowed sittingroom, washed ashore years and years ngo, before Summer tourists flocked to Oregon beaches. The other rooms are largely toll of the deep. The cap-

inter country of the Siusiaw is as a shrube sand and sky as nature has here larged in enchantment. It lies hound and shackled by its isolation, rationary waiting the master magicians, steam and of these master magicians, steam and tend to meet with master of the planted in a garden of delight. Flooded by and, clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and files. Their excellents in the neating of the mastery of the will excellent waves were already seather. The versables flourish the master waves and sallal. The crowded pages of a full book of the bottom lands is of alluvial rich days when the linear properties in the least chapter of form the result of the waves were already seather. The versables flourish waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and clean, vivide waves, looking for luncheon of bugs and files. The mastery of the will the waves were already seather. The limit waves waves and sallal. The clean the master waves and sallal the sold waves are set chapters in the file head and six are the will the waves were already seather. The limit waves are the crowled pages of a full book of life, runs the mystery of the great deep that still holds both the man and the woman under its spell. The sea is nature's supreme teacher.

It reveals many things if you sit down beside it and wait and listen. Not that it is ever quite familiar. It brings infinity too close to our limita-tion for that. But yet it wraps us in peace, for beside it

God's greatness flows around our incomplete-

Round our restlessness, His rest. Morning, noon or night it is never twice the same. The waves that are ultramarine now will change to tur-quoise or scanymph's green if the

wind veer within the hour.
When the east wind blew, I understood way Kipling wrote his splendid song of the sea, "White Horses." That flying spray blown back over the crest of the breakers is perfectly sugges-tive of the streaming manes and tails of snorting chargers, racing neck and neck until the thunder of their hoofs reverbrates upon the shore. As wave after wave falls into line, one can feel the flery impatience of fresh rivals entering the lists in a mighty contest of the racers of the sea.

Orth-deep in hissing water
Our furious vanguard strains—
Through mist of mighty tramplings
Roll up the fore-blown manes—
A hundred leagues to beward.
Eve yet the deep hath silred.
The grosning rollers carry

ment to feet the cottage whirled out to a sea. Suddenly the wind changed, a blast tore down the rift in the hills and eastward, caught up the foam wall, cut it into fantastic shreas that filled the sky, and with stinging whips beat back the vield 200 bushels to the acre, and we wantered the control of the waves to bounds.

the right to knock on our front door.

Will colors ever be put upon canvas such as we saw nightly at Copelands reflected on the wet beach when the tide was ebbing? An evening in particular I recall when the sallal and dead fern covering the high, bare rounded headlands glowed in translucent lights of purest ross-brown and shadowed emerald. The clay strata of the banks melted into The clay strain of the banks melted into beaten gold. Mosses and lichens encrusting boulders imbedded in the cliffs, became vivified, and the dunes mellowed. The sea was a fire opal. The evening star rose over the hills, the slender crescent of a new moon shone in the clear, deep blue of the heavens. Every loanimate object radiated a golden glow. Painted on the wel beach were all the tints of earth and sky and sea commingled in an unspeakable giory of color.

A favorite run was to the tall headlands where the jutting cliffs continually waves and weather. Here great boulders skirf the shore and the beach ends, lifted suddenly up into the headlands. We played hide and seek with the ilde among the coves, and once mussels are change in shape under the crosion of the coves, and once mussels were gathered from a huge rock. Mussels, by the way, are a most delicious variety of shell fish, far surpassing the clam family. But they should be eaten not long out

But they should be eaten not long out of sait water.

We were frequently accompanied on our excursions by a coilie puppy with a baby face and an excess of joy indicated by animated attempts to catch his own black tail. Poor little Sport! He are decayed salmon, after the waynardness of his kind and age, and the united skill of all his friends failed to avert the fatal catastrophe. Here are both rue and rosemary to his memory, and in the paradise of small dogstes whither he has gone, may no shade of the royal chinook tempt his shade to do battle.

The ranch of our friends, like others

yield 500 bushels to the acre, and we wan-After this, we put a codicil to our desire for the spectacular, defining vigorous conditions under which only it would be acceptable, and positively denying it garden products. We were told a story ing hen was discovered setting on her eggs in a hollow she had pecked out of its side! But I took this story on trust and pass it on in the same way

The weather continued delightful during our stay, warmer and sunnier by far than in the Willamette Valley. Awaking the morning of departure to the patter of rain, which proved only a warping, we had sudden visions of being storm bound in a country that knows no bridges Fording is done in genuine primitive fashion, with the added danger of the tide, roads following the coastline wher-ever practicable. With real regret we left the cottage-by-the-sea and

Hugh Macnaghten, in Speciator. In Switzerland one tidle day. As on the graze at noon we lay. Came a grave peasant child, and store Watching the strangers eat their food. And what we offered her she tool Is stience, with her quiet look.

And when we rese to go, content,

Without a word of thanks she went.

Another day in sleet and rain I chose the meadow path again.

And partly turning chanced to see
My little guest friend watching me
With eyes half hidden by her hair. Blowing me kisses, unaware That I had seen, and still she work The same grave aspect as before.

And some recall for heart's delight A sunrise, some a snowy height, And I a little child who stands And gravely klases both her hands.

Beyond Imaginable Worth.

New Orleans Times-Democrat. What to give for a kies!

Is the joy of the household, for without it no happiness can be complete. How sweet the picture of mother and babe, angels smile at and commend the thoughts and aspirations of the mother bending over the cradle. The ordeal through which the expectant mother must pass, how-

ever, is so full of danger and suffering that she looks forward to the hour when she shall feel the exquisite thrill of motherhood with indescribable dread and fear. Every woman should know that the danger, pain and horror

of child-birth can be entirely avoided by the use of Mother's Friend, a scientific liniment for external use only, which toughens and renders pliable all the parts, and assists nature in its sublime

work. By its aid thousands of women have passed this great crisis in perfect safety and without pain. Sold at \$1.00 per bottle by druggists. Our book of priceless value to all women sent free. Address BRADFIELD REQULATOR OO., Atlanta, Ga.