What the Government Has to Say---A Page of Special Articles

Bulletins Issued by the United States Department of Agriculture of Interest to the Northwest; Suggestions Covering a Wide Range of Activities; Result of Federal Investigations, Etc.

Sour, or Bitter, Orange Makes a Palatable Jelly

SPECIALISTS of the Bureau of Chemistry, of the United States Department of Agriculture in the course of experiments have observed that the hitherto useless fruit of the sour or bitter orange can be made to yield a highly palatable jelly which promises to afford a use for a large amount of this wasted fruit. This fruit is too bitter to be eaten raw.

The chemists, however, found that the pulp or interior of this orange, with the unusually bitter skin removed and with the addition of twice as much sugar, would jell into an amber-colored product not quite so bitter as bitter orange marmalade but having some of the characteristic flavor of that conserve.

The method of making the jelly is described as follows:

Take all the pulp of the orange, including the seeds. Add to it twice its volume of water and boil it until the pulp falls to pieces. Strain the mixture through a cotton or canton flannel jelly bag and add to the strained juice twice as much sugar by weight as there was original fruit pulp. Boil down this mixture until it reaches the "jell point." Put while boiling hot into clean glasses and seal the same as is the practice with other jellies.

The chemists recommend the following test as a simple one to determine when fruit sirup has reached the "jell point": "Make a thin, flat stick or a small paddle, about an inch broad, and whittle this down to a straight edge. Dip the paddle or stick into the jelly mixture and remove it. Hold the end down, and if the mixture has reached the jelling point, it will be noticed that the liquid will not drip off in drops but will flake off; that is, a strip of jelly will fall off from the paddle in one mass."

The sour orange has been used extensively as a stock on which to bud the commercial citrus fruits. It was introduced into the Gulf States by the Spanish colonists for this purpose and during the intervening years has spread considerably by natural seeding, as it is a very vigorous tree and grows particularly well in low, moist ground.

There is a considerable qauntity of fruit from these trees which has hitherto been of little or no use and the chemists believe that the publication of the process for converting the fruit into jelly will enable owners of sour orange trees to do some profitable preserving and possibly may lead to the making of the product on a commercial scale.

Study Is Made of Helpful and of Destructive Birds

THE biological survey has studied the economic status of birds, largely through the method of analyzing the food in their stomachs to determine whether their feeding habits were helpful or destructive to agriculture. As a result of this study, 11 birds were added to the lists of bird enemies of the boll weevil, making a total of 64 thus far discovered.

In the matter of the alfalfa weevil, 45 species of birds as well as frogs, toads and the salamander were found to feed upon this beetle. The most active enemies of the weevil among the birds are the Brewer blackbird, the Western meadow lark, the valley quail, and the English sparrow. Of vertebrate enemies other than birds, the Rocky Mountain toad renders good service in destroying breeding adult insects in Spring and larvae later in the year.

An examination of the stomachs of 600 birds seems to indicate that birds are of no value as enemies of the full-grown range caterpillars. Mammals, particularly the skunk, seem to be the important enemies of this pest.

In addition, the bureau made investigations of the economic relationships of the birds of Porto Rico and, in co-operation with the Smithsonian Institution, studied the birds of Panama.

Study was given also to methods of attracting birds and encouraging them to build nests and live about human habitations. A Farmers' Bulletin telling how to build attractive bird houses and attract birds in other ways, is now in course of preparation.

The bureau also has given much attention to a study of bird migration, and is completing a bird census.

During the year permits were issued for importing 475,392 birds, among which were 368,676 canaries, 36,760 partridges and 4148 pheasants. There was a noticeable increase in the importation of partridges, as a number of states, including Iowa and Oregon, are experimenting in the introduction of these game birds for restocking purposes.

During the calendar year 1914, the Forest Service reforested 1074 acres of burned over land in Oregon. To do this required the planting of 600,000 trees. It is expected that three times that many will be planted out during 1915.

Careful Filtration Good to Remove "Eels" From Vinegar

VINEGAR makers who have been troubled with the nematode known as "eels" have written for remedies to the United States Department of Agriculture, and in response the department's specialist suggests that the "eels" may be removed from the vinegar by filtration, as the eggs and larvae and all forms of the eel are too large to pass fine filters. Coarse filter paper may be used for this or sand put in a receptacle with a cloth or other porus bottom.

It is always easy to test the filters, by saving out a little of the filtered vinegar and allowing it to stand for a few days, when, if still eel-infested, the eels will make their apperance.

It will be found advantageous, in examining filtered vinegar, to use some sort of centrifuge, an apparatus somewhat similar to the Babcock milk tester. In this way a relatively large quantity of vinegar can be quickly tested for eels. These centrifuges are made by a large number of firms for various purposes, and the cheaper forms, such as will be suitable for this purpose, are not expensive. The operation is very simple—directions will be furnished by the manufacturer.

Vinegar eels always come from eggs or larvae of other eels. These exist in nature in orchards, finding sustenance in decaying fruit which goes through alcoholic and acetic formations, as in the case of manufactured vinegar. When the eels are introduced in the manufacture of vinegar, it is usually through the use of rotten or imperfect fruit.

Once the eels are in the works they collect in any part where there is sufficient stray vinegar to furnish them with nourishment. Any crevice, even of the most minute character, may furnish them an abiding place. Hence all such crevices or collecting places should be abolished.

It is useless to expect vinegar to remain free from eels unless the establishment is kept perfectly clean. The vats or other receptacles in which eels have been found should be thoroughly disinfected by heat, when it is not working. This can be done, either by using team or boiling water which should be applied copiously through a pipe, or in case of the water, with ladles, to all the surfaces and crevices where eels might accumulate.

More Douglas fir is used than any other wood in the world.

Giant Seaweed in Pacific Contains Very Much Potash

ALL along the Pacific Coast from Mexico to Alaska there is a vast quantity of fertilizing material in the form of giant seaweed known as "kelp." "This material," says an investigator in the Uniter States Department of Agriculture's new bulletin (No. 150), if treated by a process similiar to that used to convert the waste from fish canneries into fertilizers, will yield a commercial fertilizer of particular value because of its relatively large content of potash."

Any scheme for using kelp on a large scale as a fertilizer must be based on some method of concentrating its valuable constitutents, because green kelp contains so much water. Investigations seem to show that at present, considering the economic conditions on the Pacific Coast, kelp may be best prepared for the trade merely by drying and grinding.

Even wet kelp, which contains 85 per cent moisture, contains 2 1-2 per cent of potash, where stable manure, alfalfa and cowpeas all contain less than one per cent. Drying, however, increases the percentage of potash to 15.8 per cent. This commercial product also has 1.6 per cent of nitrogen and some phosphorus. On the retail market of the Pacific Coast the total value of a ton of kelp should be, according to estimates, $22.94. In the eastern wholesale market it should bring $16.45.

The main fertilizers termed "potash carriers" today used in this country are the German potash salts. Laboratory tests have shown that kelp is quite as effective as the potash salts, and dry kelp would enter the trade as a "potash carrier" to compete with the imported products.

Kelp has been used as a fertilizer for centuries in the British Isles, and has been so valued there that lands carrying kelp harvesting privileges brought special prices. In New England also kelp has been found valuable.

The kelp on the Pacific Caost differs from the seaweeds of the Atlantic because of their much greater size. Already this produce of the sea gardens of the West has been used in Alaska, particularly in fertilizing potatoes and on truck gardens. Near San Pedro, Cal., kelp has been harvested mechanically and shipped in the crude, undried condition to the ranches and orchards of that part of the state.

Bird Machine Economical of Energy

THERE is an aerial machine far more economical of energy than the best aeroplane invented, and that is the bird known as the golden plover. This bird, according to the United States Department of Agriculture's new bulletin on "Bird Migration," can fly 2400 miles without a stop, making the trip in not quite 48 hours, and using only two ounces of fuel in the shape of body fat.

A thousand-pound aeroplane, if as economical of fuel, would consume in a 20-mile flight not the gallon of gasoline required by the best machines but only a single pint. The fact that the screw propeller of the aeroplane has no lost motion, while the to-and-fro motion of the bird's wings appears to be an uneconomical way of applying power makes the fact regarding fuel seem even more strange.

Even the little humming bird can do better than the aeroplane, for in its migration across the Gulf of Mexico it flies over 500 miles in a single night. Nearly all birds, in fact, show in their soaring and sailing that they are proficient in the use of several factors in the art of flying that have not yet been mastered either in principle or practice by the most skillful of modern aviators.

Defying Gravity.

A vulture or a crane, after a few preliminary wing beats, sets its wings and mounts in wide sweeping circles to a great height, overcoming gravity with no exertion apparent to human vision even when assisted by the most powerful telescopes.

The Carolina rail, or sora, has small, short wings apparently ill adapted to protracted flight, and ordinarily when forced to fly does so reluctantly and alights as soon as possible. It flies with such awkwardness and apparently becomes so quickly exhausted that at least one writer has been led to infer that most of its migration must be made on foot; the facts are, however, that the Carolina rail has one of the longest migration routes of the whole rail family and easily crosses the wide reaches of the Caribbean Sea.

Ocean Flight Easy.

The popular belief that birds under ordinary circumstances find ocean flight wearisome, and that after laboring with tired wings across the seemingly endless waste they sink exhausted on reaching land, is disproven by facts, according to the new pamphlet. It seems rather that the powers of locomotion with which nature has endowed many birds are so wonderful that under normal conditions they can easily cross the Gulf of Mexico at its widest point and even pass without pause over the low, swampy coastal plain to the higher territory beyond.

So little averse are birds to an ocean flight that many fly from Eastern Texas to the Gulf Coast of Southern Mexico though this 400 miles of water journey hardly shortens the distance of travel by an hour's flight. Thus birds avoid the hot, treeless plains and scant provender of Southern Texas by a direct flight from the moist, insect-teeming forests of Northern Texas to a similar country in Southern Mexico.

Where Do Birds Migrate?

Everybody knows that birds when they migrate in the Fall generally "go South," but knowledge is seldom more specific. The department's new bulletin brings out the fact that while some birds go to Florida or the West Indies or Mexico, others, such as the bobolink and rice bird, go as far south as Paraguay and the southern part of Brazil.

Much has been learned about bird migration but much yet remains to be learned, and the following is one of the most curious and interesting of the unsolved problems. The chimney swift is one of the most abundant and best-known birds of eastern United States. With troops of fledglings catching their winged prey as they go and lodging by night in tall chimneys, the flocks drift slowly south joining with other bands, until on the northern coast of the Gulf of Mexico they become an innumerable host. Then they disappear.

Did they drop into the water or hibernate in the mud, as was believed of old, their obliteration could not be more complete. In the last week of March a joyful twittering far overhead announces their return to the Gulf Coast, but their hiding place during the intervening five months is still the swift's secret.

In spite of the low rates charged for the use of the forests, the Tongas National Forest is self-supporting almost twice over. Twenty-five per cent of this income reverts to the Territory for schools and roads.

Cheddar-Process Cheese Is Better Than Ord

THAT Cheddar-process cheese, p up in air-tight cans, has certa vantages over cheese handled in the nary way, is the conclusion reach the Dairy Division of the United S Department of Agriculture, after a of tests which were continued a n of years. This method, in the opin the specialists, seems to meet the n of handlers who have been trying to vise some individual package for kind of cheese or a method of ma that would eliminate cutting and w between the factory and the consu

As a result of the experiments found that it was commercially pra able to press the cheese in hoops of diameter, cut it into pieces of a weight, and seal it in airtight tin This provides a sanitary package keeps the cheese from exposure to or contamination, and prevents loss weight by evaporation. In addi these advantages there is no rind, w of course, is always a loss.

The extra cost to the manufacture is estimated, is about 2 cents for and cans; a part of this cost, how is offset by the fact that there is no on account of evaporation and rind.

Cheese cured in cans has certain of superiority that, besides its cleanl recommend it to many consumers. soft enough to spread and when ripened has a well-developed Ch flavor. If there are facilities for ke it cool it should prove to be popular camping parties and on boats.

Also farmers who live at some di from stores would find canned ch be convenient, as it enables them to in a supply that will last and keep for or two months in cold weather.

When cheese is packed in an air can, the formation of gas that is acteristic in cheese ripening some causes swelling of the can, but this not necessarily indicate that the ch are unfit for consumption.

Cheese handled in this way is as ishable as any other cheese, and sh not be allowed to stand in a warm too long before using; this is a p which should be made clear to use ers, who may think that a cheese in this manner will keep indefinitely length of time that cheese of this can be kept depends very largely on temperature.

The lower the temperature the natural fermentation of the ch checked. At a temperature of 40 d Fahrenheit canned cheese probably remain good for several months.

At the present time one of the cheese factories in Wisconsin, in co eration with a cheese dealer, is endeavoring to extend its trade in this product.

The Clever City Chap.

I am a little farmer,
And a city chap came on,
We formed a slight acquaintance
But not for very long.
I kept my eyes wide open
And his object I espied,
Was to make some easy money,
Which he very soon contrived.
He opened up an office,
Some real estate to sell,
And everybody he could beat,
He beat them pretty well.
My neighbors out across the Gulf
Through him have lost their home
And I am out some hundred bones
Which to him I did loan.
Now he's gone, the office closed,
And also my hard cash,
So now the soil I'll have to dig,
In Whatcom County, Wash.

Blaine, Wash. —Mrs. N. J. Ho

(This author certainly tells a truth which is applicable to almost little community of the Pacific North Why should this be true? We are an interesting fellow who went into tain community, built a shoe factory ground given him by the city was furnished by the citizens of the before the factory was complete he sold 50,000 pairs of shoes to the local chants and collected the money for We also wonder why this should be When we undertake to analyze this tion, which is not only true of the Northwest but of the entire United we throw up our hands in despair. haps some of our contemporaries can plain.—Ed.)

Red alder is now being used in matches, and western juniper has found to make good pencils.