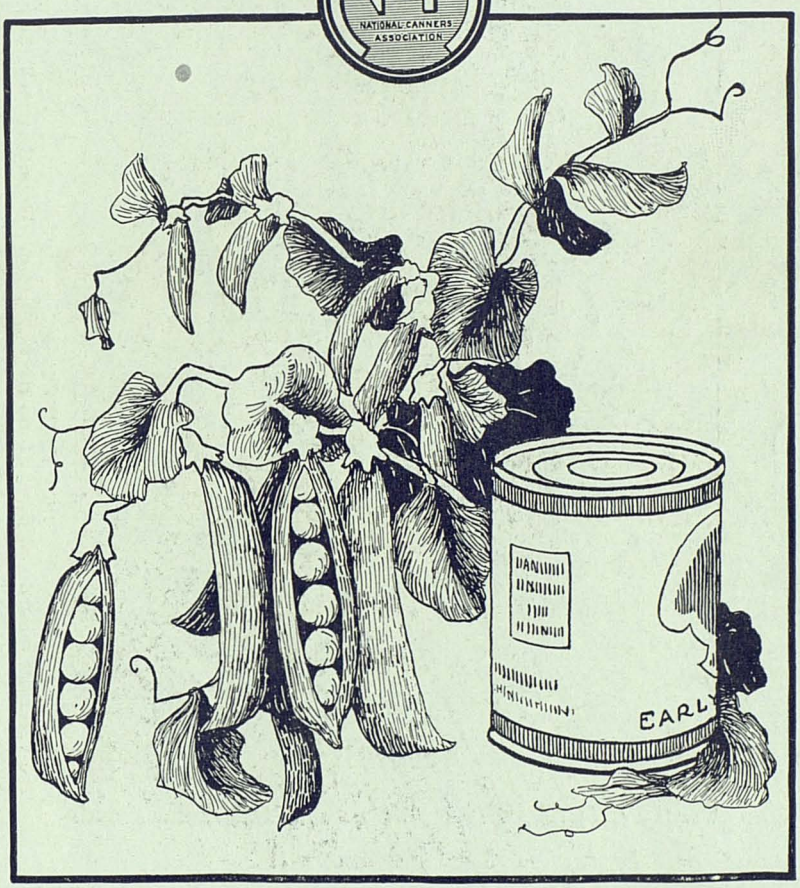
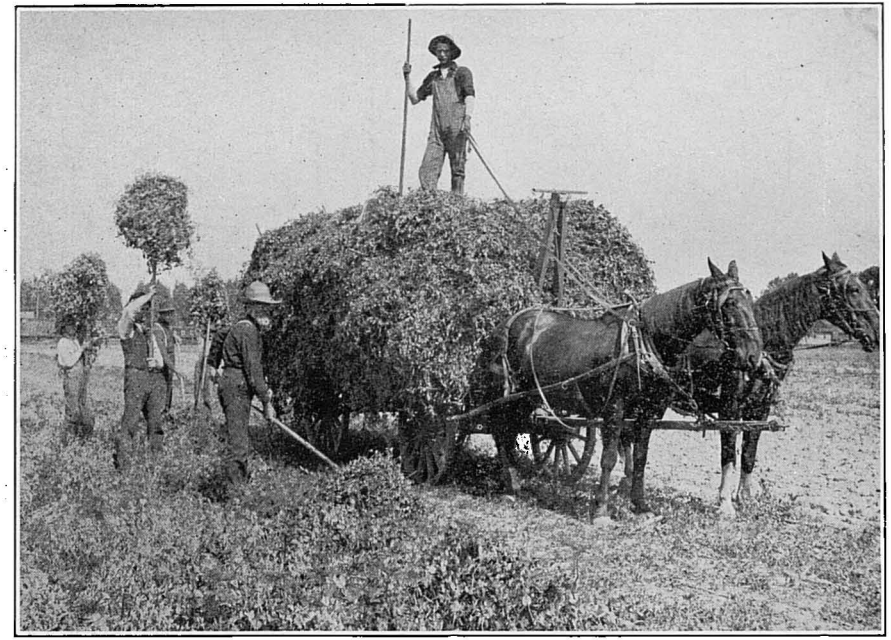
CANNED PEAS

Their preparation, nutritive value and uses



NATIONAL CANNERS ASSOCIATION
Washington, D. C.
1929



PEA HARVESTING

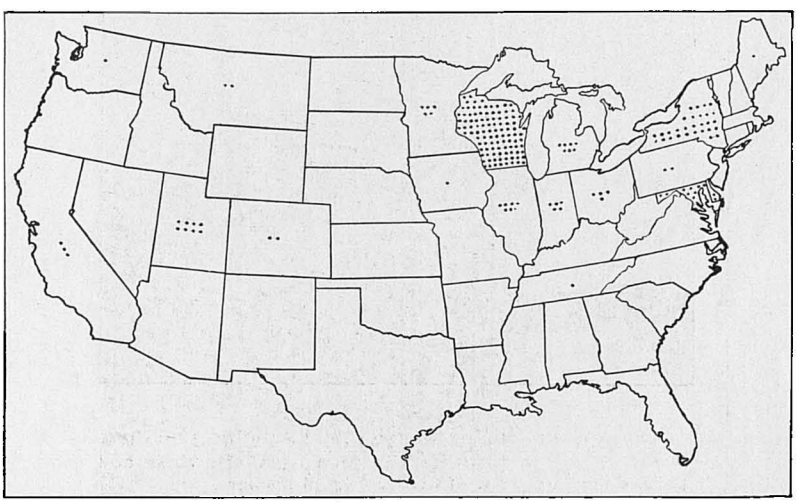
The vines are mowed and hauled from the fields to machines that shell the peas.

CANNED PEAS

Their Preparation, Nutritive Value, and Uses

Peas were once a treat enjoyed during a comparatively short season of the year; in fact, they were a luxury except to those with gardens of their own or able to buy them at prices beyond the purses of many a family. Now they are a staple to be had the year round, and at prices within the reach of practically everyone.

This change took years to accomplish, and it could not have been effected without the development of commercial canning. Until machines replaced hand labor it was utterly impossible for



WHERE PEAS ARE CANNED

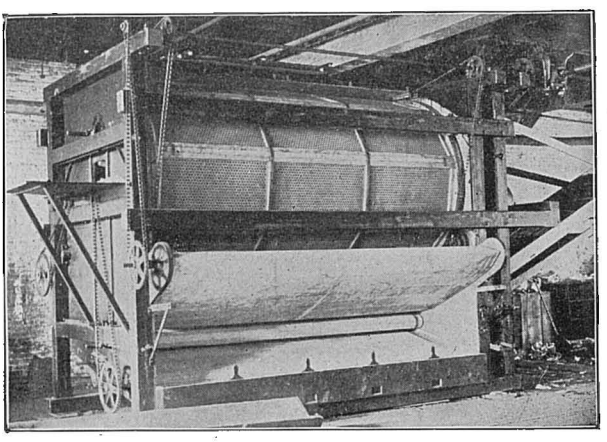
Each dot in the map represents a production of approximately 100,000 cases or 2,400,000 cans of peas.

canneries to enlarge their output to any considerable degree, even if a market could have been found for a product which was necessarily high in price because of the labor required. With machines to do the harvesting, shelling, cleaning, washing, filling into cans, sealing in cans, sterilizing, labeling, and even boxing for shipment, the output is limited only by the quantity of peas available for canning and by the demand of consumers.

Few vegetables enjoy so great a popularity as peas. And they are deservedly popular, for besides appealing to the taste they have a high nutritive value and, as revealed by recent research, are rich

in three different vitamins. It is particularly interesting that peas canned by the process used in commercial plants have a higher content of one of these vitamins than peas bought in the market and cooked by the usual home methods.

While the consumers of peas are numbered by the millions, comparatively few people are very familiar with the pea-canning industry, its materials and methods. The purpose of this pamphlet is to supply this information, and along with it some suggestions in the form of recipes for the use of canned peas.



THE VINER

Pea vines as they come from the field are fed into this machine, which separates the peas from the vines and pods, doing the work of over 200 hand shellers.

LOCATION AND GROWTH OF THE INDUSTRY

Pea canning was first attempted on a commercial scale in Maryland just before the Civil War. Following the war it developed, slowly at first and then with greater speed, as machines were devised to take the place of hand labor. Its greatest growth has come within the last ten years, and in 1924 the output of canned peas was exceeded by that of only one other commodity —canned milk.

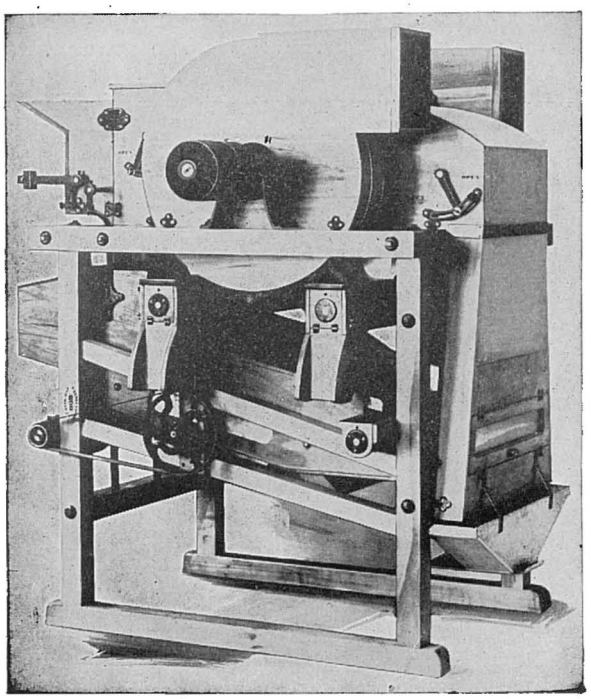
The 1928 pack of canned peas in the United States was 430,000,000 cans, holding about 1¼ pounds each, or 537,500,000 pounds. This is about four cans, or five pounds, of canned peas for each person in the United States.

The location of the industry which is influenced largely by conditions of climate and soil, is shown in the outline map of the

United States on page 3, in which each dot represents an output of 100,000 cases or 2,400,000 cans of peas (or approximately that amount in states where only one dot appears).

VARIETIES OF CANNING PEAS

The garden pea (so called to distinguish it from the field pea used as a farm crop) has a great many varieties, a number of which have been especially developed for canning. Peas for canning



THE CLEANER

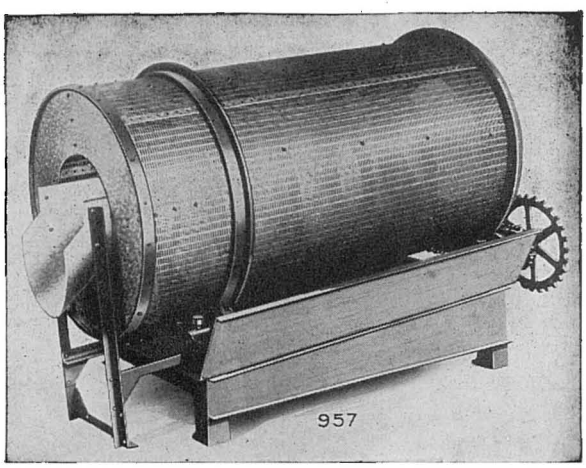
The fresh shelled peas from the viner are fed into this cleaner, which has a fan and agitating screens that remove bits of leaves, pods and other light material.

are divided into two classes—the smooth, early peas, which include the Alaska and Winner varieties, and the "sweet", wrinkled types which mature somewhat later, such as Admiral, Horsford, and Advancer. After they are canned, the Alaska peas may generally be distinguished from the other types by their more uniformly round appearance.

Great care is taken in the selection of seed to ensure a good yield of uniform and satisfactory quality. Much of the pea seed is grown in the Northwest by companies that make a specialty of canner's seed, while some canners also raise all or a portion of their own seed. It is customary for canners to supply their growers with seed in order that they may secure a dependable product of uniform quality.

METHOD OF CANNING

You perhaps remember how, as a child, you helped your mother shell peas from pods picked by hand in the garden, and how the



THE WASHER

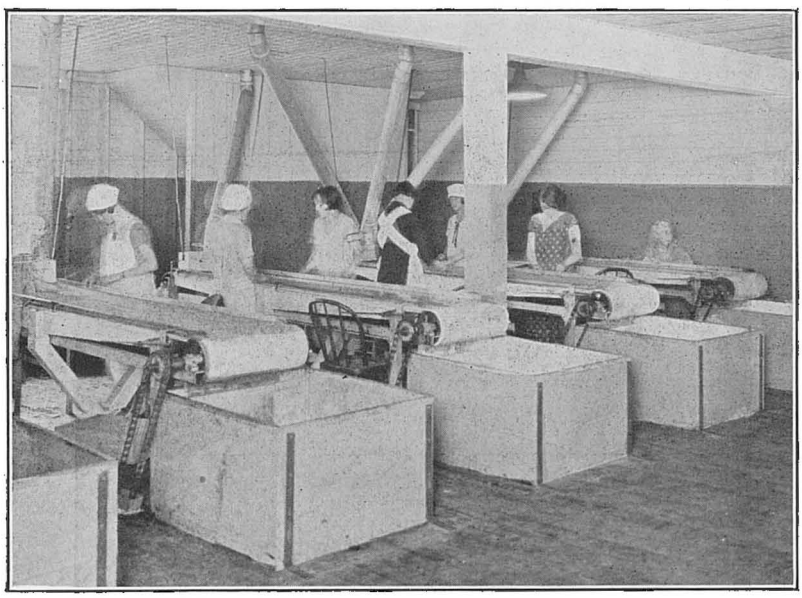
The cleaned peas pass through this washer—a perforated, revolving cylinder, inside of which are sprays that wash the peas and separate out split peas, skins, etc.

peas varied in size, one or two big ones in the middle of the pod, with others running down in size to the tiny ones at the end. Both picking and shelling were rather tedious tasks.

Nowadays all this is changed, through methods and machinery introduced by the canning industry. When the peas are well grown but still tender the entire pea vine is cut by mowing machines or pea harvesters and the vines are hauled to the factory or vining station. Here they are placed in a viner—a machine that does the work of perhaps 200 persons working by hand—which shells the most delicate and tender peas without injury.

It is wonderful indeed to see the tiny peas, as they are shelled by the viners, rolling down the canvas aprons and then passing through the cleaner, where fans blow out the small pieces of pods or leaves.

Next the peas pass through washers and on to the graders—large horizontal cylinders with perforations of various sizes—



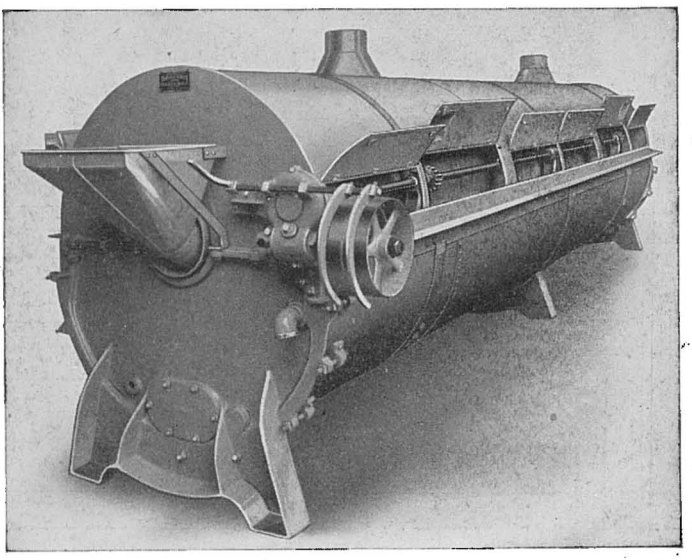
PICKING TABLE

The different lots of graded peas are fed separately on to the moving belts of these tables. Women inspect the peas as they pass, to ensure that only perfect material goes to the blancher.

which separate them according to size. The big peas are brought together in one lot, and the intermediate and small sizes in other lots, so that instead of having a mass of peas of all sizes, the canner has them divided into five or six sizes, ranging from the petit pois (the smallest) to the telephone. Why? For the same reason that you select potatoes of uniform size when boiling them whole. Small peas cook quicker than large ones; therefore, by grading the peas, the canner is able to cook each size the proper length of time.

From the graders the peas of different sizes are fed on to wide, moving belts or picking tables, where women pick out broken or defective peas or any foreign material that may have passed through with the peas.

The next step consists in "blanching" or parboiling the peas, which is done by feeding them through horizontal revolving perforated cylinders, about half submerged in boiling water, where the peas are given a preliminary cooking, the length of which depends on the size and tenderness of the pea. This cook also removes the sticky coating that is present on all green peas and



THE BLANCHER

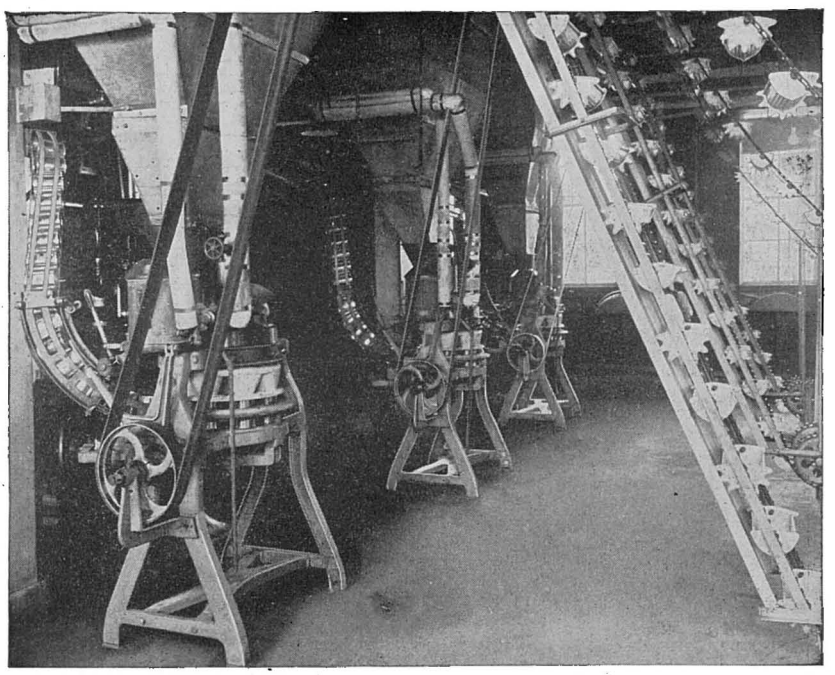
The cleaned, washed and graded peas are fed into this machine, which is a perforated, revolving cylinder partially submerged in hot water. This gives the peas a carefully regulated, preliminary cook before they are sealed in the cans.

gives them a clearer liquor in the can. After the blanching, the peas are thoroughly rinsed in cold water and carried to the fillers where they are automatically measured into cans with a certain amount of hot brine and then immediately sealed and "processed" or sterilized in large pressure retorts at a temperature of about 240° Fahrenheit.

The process, being one of the most important steps in canning, is automatically controlled to give the proper time and temperature requisite for each product. Immediately after removing the cans from the retorts, they are cooled as rapidly as possible, to

prevent overcooking, by immersing them in tanks of running water or by spraying them with water. When cool, they are ready for labeling and packing in cases.

A description of this kind cannot show what marvels of ingenuity this pea-canning machinery is; peas are now carried



FILLING MACHINES

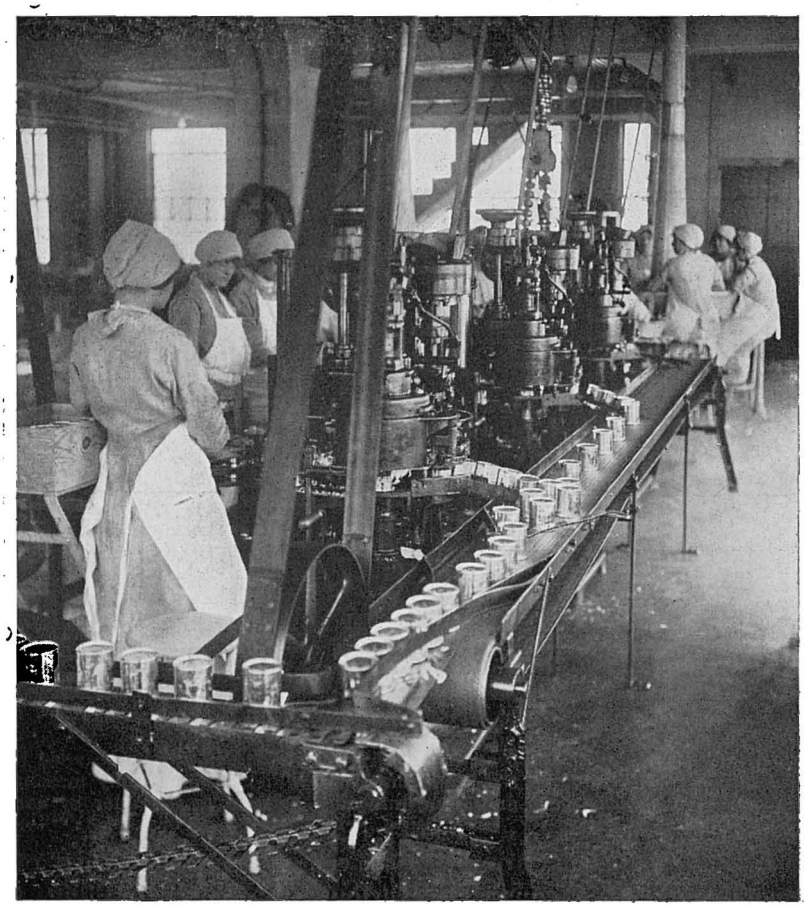
After the blanching the peas are given a final spraying and are carried by conveyors (at the right) to the filling machines, which automatically measure the proper amount of peas and brine into cans brought to the filler by conveyors (on left).

through all the steps from vine to can without the touch of a human hand. All through the various steps after grading, the different sizes must be kept separate, which means a large amount of equipment to handle the peas promptly.

NUTRITIVE VALUE OF GREEN PEAS

Canned peas are simply cooked peas which can be kept indefinitely and which have practically the same composition as peas cooked in the kitchen. Heat and hermetic sealing are the only means of preservation used.

"The green or immature pea and bean are among our most valuable green vegetables," says the United States Department of Agriculture in Farmers' Bulletin No. 121, "and fully deserve the place they now hold on our bill of fare."

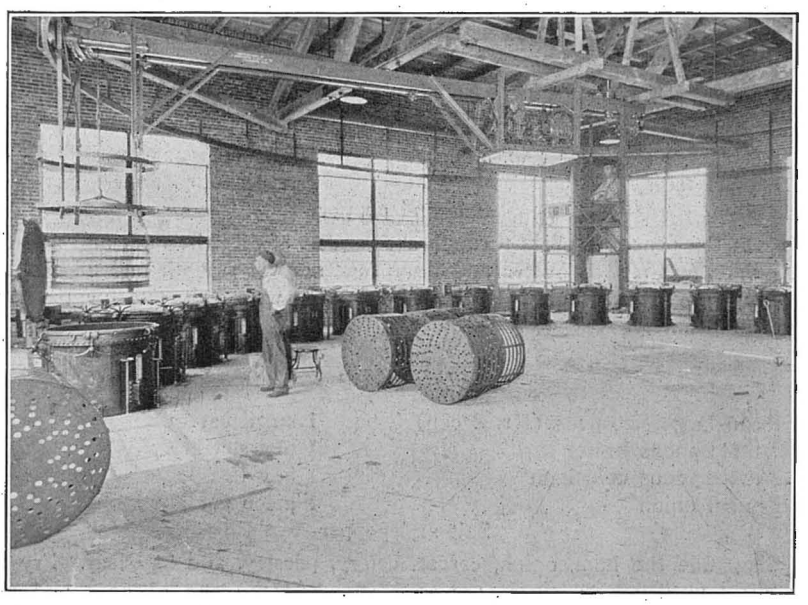


CAN CLOSING MACHINES

The filled cans are conveyed to this machine, which automatically puts on the cover and fastens it to the body with a rolled seam that is air-tight.

The peculiar value of peas and other legumes as distinct from most vegetables lies in their unusually large content of protein. In addition, recent research has revealed that canned peas are rich in all three of the vitamins A, B, and C. In this research work

no evidence was found that vitamins A and B are affected by the canning process, while the vitamin C content of canned peas is not much less than that of raw peas. The destruction of vitamin C by home cooking, that is, cooking in open vessels, was found to be considerably greater than by canning. Moreover, these studies develop a good reason for the canning of peas while green, for ripe peas contain no appreciable vitamin C and very little vitamin A.



THE RETORTS

The sealed cans are placed in retorts and heated under pressure at about 240° F.

Cooking the raw peas in an open vessel decidedly reduces the vitamin C content of the peas, but the reheating of canned peas, either in the can or in another vessel, can be done without appreciable destruction of that vitamin, especially if the peas and liquid in the can are heated together. This is apparently due to the absence of oxygen in the contents of the can.

Canned peas help in planning a well-balanced meal, and are adapted for use either for soup or as a vegetable, a salad or a garnish. They are easily prepared and are an essential part of a well-stocked larder.

RECIPES

In most of the following recipes the quantity of peas to be used is indicated by size of can. Peas for use in the home are usually packed in No. 2 cans, holding 19 ounces or 2½ cupfuls. The No. 1 can holds 10 ounces or 1⅛ cupfuls.

As previously mentioned, peas are commonly graded into five or six sizes and two methods of designating size are in use. The smallest peas are known as No. 1, tiny or petit pois; the next size is No. 2, or extra sifted; the next is No. 3 or sifted; then come No. 4 or early June, No. 5 or marrowfat, and No. 6 or telephone, the largest size canned. The term "telephone peas" is also used to designate peas which are not graded for size, but which show the natural variation in size of peas in the pod.

CREAM OR PEA SOUP

1 can large size peas (No. 2 can)
1 quart milk
1½ tablespoons butter
2 tablespoons flour
Salt and pepper

Heat the peas and press through a colander. Scald the milk and add the pea pulp. Rub melted butter and flour together till smooth and add to the soup. Stir constantly until thickened. Season with salt and pepper and serve immediately.

PEA SOUP

1 can large size peas (No. 2 can)
2 tablespoons butter
2 tablespoons cold ham
1 small onion
1 small carrot
1 piece celery
1 bay leaf
1 piece parsley
Salt and pepper

Chop fine the ham, onion, carrot, celery, parsley, and bay leaf. Fry all this in fat until golden brown, not scorched. Add the can of peas and one pint of boiling water. Put soup through colander. Bring to boiling point. Serve with croutons. Grated cheese may be added at table if desired.

BUTTERED PEAS

1 can medium size peas (No. 2 can)
1 tablespoon butter
Salt and pepper

Heat the peas thoroughly in their own liquor, drain part of the liquor off and add the butter and seasonings. Serve as a vegetable or use as a garnish with meat loaf, lamb chops, or other meats.

CREAMED PEAS

1 can medium size peas (No. 2 can)
¾ cup milk
1 tablespoon flour
1 tablespoon butter
Salt and pepper

Melt the butter, remove from stove and add flour. Stir till smooth, then add milk gradually and heat. Add drained peas and season with salt and pepper.

PEA CROQUETTES

1 can large size peas
1 tablespoon butter
1 tablespoon flour
½ cup milk
1 egg
Salt and pepper
Bread crumbs

Heat the peas in their own liquor, drain and press through sieve. Blend the flour and butter together, add milk and stir until boiling. Season, add yolk of egg, turn on plate to cool. When cold, form in neat croquettes, brush with beaten egg, roll in bread crumbs, and fry in hot fat. Serve hot with tomato sauce.

PEA ASPIC

1 can large size peas
1 small onion
1 sprig parsley
½ tablespoon salt
2 hard boiled eggs
1 stalk celery
1 envelope gelatine
Paprika

Boil peas in their own liquor with the onion, celery, and parsley chopped fine. Add salt. Rub through a sieve, bring to boiling point. Dissolve the gelatine in the liquor, add the paprika. Wet the mold pan, line with slices of egg, pour the peas in the pan and when cold and firm cut in cubes.

PEA SOUFFLE

1 can large size peas
3 tablespoons melted butter
2 cups milk
1 tablespoon sugar
3 beaten eggs
Salt and pepper

Drain the peas. Put into double boiler, season, add sugar, and cook until very soft. Rub through colander, add butter until you have a smooth paste, add eggs to milk and beat this liquid gradually into the peas, whipping all very light. Turn into buttered baking dish, cover and bake 15 minutes, uncover and bake to a delicate brown. Serve hot.

BAKED PEAS

1 can medium size peas
4 eggs
Butter
Salt and pepper

Heat peas in their own liquor, drain, pour in shallow baking dish, add the seasoning. Break eggs over peas, dot with bits of butter and bake ten minutes in hot oven. Serve in baking dish.

PEA PATTIES

1 can peas prepared as for "Creamed Peas"

Bake rich pie pastry in patty pans or muffin rings. Put patties into oven just before time to serve and warm them through. Fill with creamed peas and serve hot.

PEA SALAD No. 1

1 can small sized peas (No. 2 can)
2 tablespoons chopped onion
4 tablespoons cream cheese (grated)
4 tablespoons sweet pickle
Lettuce
Salad dressing

Cut cheese and pickles into small pieces. Mix with peas. Add salad dressing and serve upon lettuce leaves.

PEA SALAD No. 2

1 can small sized peas (No. 2 can)
1 cup celery
Lettuce
2 apples
Walnuts
Mayonnaise

Drain the peas, cut celery and apples fine, mix with the peas and pour over them a boiled mayonnaise dressing. Arrange on lettuce leaves and garnish with walnuts. French dressing may be used if desired.

SANDWICH FILLING

1 can peas, medium size
½ cup chopped walnuts
¼ cup chopped celery
Mayonnaise

Heat the peas in their own liquor, drain and mash until smooth. Add the walnuts and celery and enough mayonnaise to moisten. Spread on graham bread.

PEAS FOR GARNISHING

For plain garnish, heat peas thoroughly in their own liquor, drain, add butter, salt and pepper. When the peas are coated with butter trim the heated platter holding chops, meat-loaf, fish, etc., with rows of peas.

THIS BULLETIN

(No. 99-A Revised)

Is the fourth in a series of popular, illustrated bulletins on products of the canning industry. Those previously published are:

Canned Corn
Canned Fruits
Canned Tomatoes and Tomato Products

Copies of any of these may be secured without charge on application to the National Canners Association, 1739 H St. N. W., Washington, D. C.