

PUBLIC HEALTH

Chef Founds Canning Industry

Although victorious in war, France was losing its battle with disease. An obscure chef won the 12,000-franc prize offered for finding a way to keep food fresh a long time.

By ALLEN LONG

► WHEN THE housewife snatches her can opener from its place and prepares to fix a meal, she is using a remarkable tool. For the can opener has opened far more than cans. It literally has opened new lives for thousands of soldiers and sailors who, without canned foods years ago, might otherwise have died of scurvy, a disease as formidable as the enemy.

It also might be said that the can opener is a sort of time machine. With a whirl of a handle, the can opener adds or subtracts months from the calendar, giving the housewife foods that are scarce at the time she is fixing the meal.

But without the can, its opener would be useless. And without Napoleon Bonaparte, a French chef named Nicolas Appert and a 12,000-franc prize, the new bride who never learned to cook might pass through a longer period of culinary embarrassment.

It all began in 1795 when France was fighting desperately in Europe. Although France conquered her enemy, she suffered heavy losses of troops due to scurvy and other diseases. Soldiers and sailors ate salted meat and bread, but something was wrong with the diet. Fresh food seemed to be the answer.

The French governing body offered a 12,000-franc prize to the citizen who could find a way to keep food fresh over long periods of time.

Nicolas Appert, an obscure confectioner and chef, tackled the problem. Currently, the vast multi-billion dollar canning industry is celebrating the 200th anniversary of their founder's birth, Oct. 23, 1752.

No Scientific Training

Appert had no scientific training to help him find a way to preserve food. And even if he had, it probably would not have helped him. Little was known of bacteriology in those days. He found out how to can foods long before Louis Pasteur was able to explain why the method worked.

After studying the problem 14 years, Appert came up with the theory that if food were sufficiently heated and then sealed in an airtight container, it stays edible.

He canned his first successful foods in glass bottles and in jars with wide mouths. The bottles were filled and then sealed with hand-cut corks. Wire tied the corks in place. Then the jars were put in boiling water and the food was cooked.

Samples of Appert's canning were placed aboard ships and were sent around the world. When opened after the ships had returned, the food was still good. Emperor Napoleon Bonaparte personally awarded the 12,000-franc prize to Appert.

The canning business caught on quickly in Europe. An Englishman, Peter Durand, patented a tin-plated iron canister which was a crude form of the tin can as it is known today. Bryan Donkin and John Hall used those cans to preserve food by Appert's method.

Actually the tin can was too sturdy. The dainty housewife had to exert brute force with hammer and chisel to open one. It was almost like cracking a safe.

Meanwhile, Englishmen were packing their bags and heading for the fast-growing United States. William Underwood, one of these men, landed in New Orleans. He was unsuccessful in getting any local backing for a canning operation there. He headed north with his idea, walking because of his empty wallet.

About 1,400 miles and many disappoint-

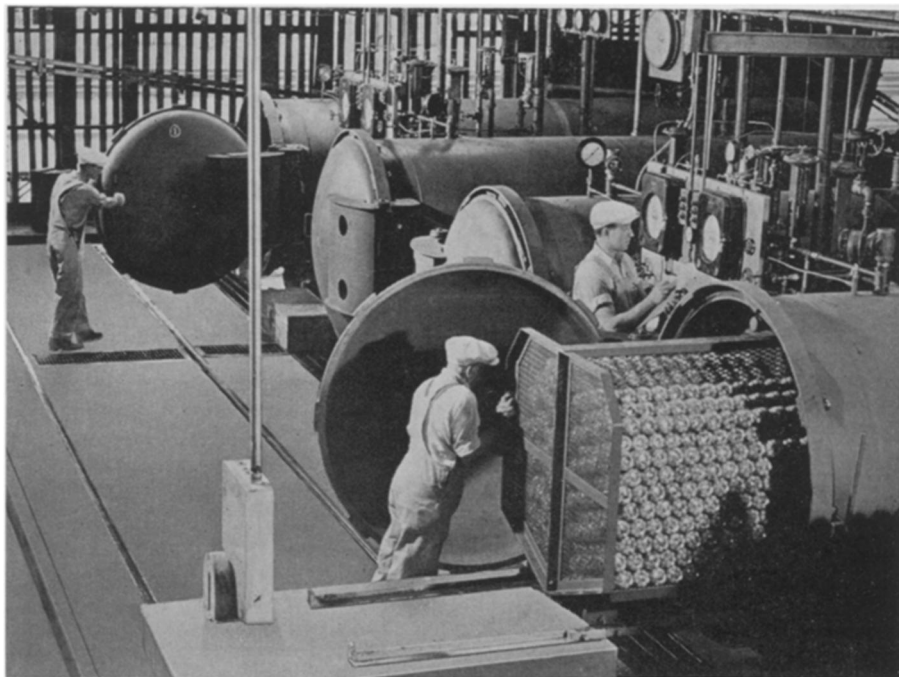
ments later, he arrived in Boston and finally was able to establish a small cannery where he packed fruits, pickles and relishes in bottles. Most of his product was sold in South America and in the Far East. Americans had not accepted canned foods at that time.

Other persons interested in the canning business began spotting canneries here and there across the country. Inventors went to work and produced newer and better tin-plated cans. By 1856, the United States had canned milk.

Important During Civil War

The Civil War revealed dramatically for the first time in America just how important canned food was. Armies were fed from the can, and as discharged soldiers returned to their homes, they spread the word about the foods they had eaten. Soon the public began accepting canned foods and the canneries upped their business about six times.

From that point on, the canning business leaped ahead with great strides due to American ingenuity and resourcefulness. The pressure cooker which cut food processing time was invented. Automatic machines began scraping salmon, husking corn, peeling tomatoes, and even picking



CANNERY COOKING OPERATION—Workmen here are loading big pressure cookers, called retorts, with hermetically sealed cans of food that will be cooked according to scientifically developed techniques, then cooled quickly to prevent over-cooking.



FATHER OF CANNING INDUSTRY—Because of his discovery of the canning principle, Nicolas Appert, whom Napoleon presented with a 12,000-franc prize, has been called the "benefactor of mankind."

peas without removing the pods from the vine. Conveyors began carrying the product through canneries then operating on an assembly line basis.

Soon meats were canned in Chicago, shrimp in New Orleans, sardines in Maine, salmon in Alaska and pineapples in Hawaii.

Today's modern housewife can buy almost anything in cans from A to Y—from abalone, a sea food, to youngberry juice. Included among available canned products are bamboo shoots, a Chinese dinner, dandelion greens, water chestnuts, and even ham and eggs.

Employs Half a Million

From Nicolas Appert's initial discovery has sprung an industry which in the United States alone provides work for half a million persons and which benefits millions more. The Encyclopedia Britannica says: "The method of preserving food in tins or other containers is probably defensible as the greatest of all inventions in historic times."

It is no wonder that Napoleon personally presented Appert with the 12,000-franc prize.

BIOLOGY TEACHERS: HAVE YOU TRIED INSECTS?

Many insect tissues are as representative as are those of mammals, and have the additional advantage of being unusually clear. Among the many we have prepared, we list the following:

1. Spermatogenesis,
2. Oogenesis,
3. Salivary gland,
4. Digestive mucosa,
5. Striated muscle,
6. Malpighian tube,
7. Single neuron,
8. Fat body, etc.

THE AGERSBERG BIOLOGICAL LABORATORY
Centralia, Illinois

Through the years, the canning business has sought to maintain a high-quality product. To do that, it has had to have high-quality food from the farmer.

Harvesting Services Provided

Research work sponsored by the canning industry has helped bring about improved flavors and appearances of fruits and vegetables, new types of hybrid sweet corn, the stringless bean, solid red beets (instead of beets having alternate bands of red and white), and several new cling peaches that combine deep flesh and small pit with an appealing color and flavor.

Canners have helped educate farmers to the task of proper fertilization and harvesting techniques. Canners' field men frequently give advice on the selection and planting of seeds, and the fungicides and insecticides to use during the growing season. Sometimes they even show farmers how to operate new mechanical harvesters.

Because many small growers cannot afford to own and operate harvesters, power sprayers and dusters, many canners provide those services at cost to help the growers produce better foods for the canneries.

Research Saves Scarce Tin

In addition to research aimed at better foods, the industry also seeks to find better techniques for itself. Today's tin can is a far cry from the rugged container of the early 1800's. It now is made of sheet steel coated with just enough tin to keep the canning juices and the atmosphere from attacking the steel. Further research points to a possible saving of scarce tin if the outside of the can is coated with less tin than the inside.

Even atomic energy may enter the canning business. "Cold sterilization" of foods by various forms of radiation, including that from atomic fission products, possibly could become a canning industry procedure. Research workers are studying that possibility.

Science News Letter, October 18, 1952

Nine separate islands in Rio de Janeiro's Guanabara Bay are being joined with filled-in earth; the project will result in "University City," a proposed school that can enroll 10,000 students.

YOUR HAIR

Its Health, Beauty and Growth

By Herman Goodman, M.D.

A medical specialist tells you what to do to save and beautify your hair, stimulate healthier hair growth, and deal with many problems, as: Dandruff—gray hair—thinning hair—care of the scalp—baldness—abnormal types of hair—excessive oiliness—brittle dryness—hair falling out—infection—parasites—hair hygiene—glands—diet—coloring—and myriad other subjects concerning hair.

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PSYCHIATRY

Much Interest, No Money For Psychiatric Research

➤ JUST ABOUT everyone in this country is interested in psychiatry, but almost no one is willing to dig down into his pocket to support psychiatric research.

As a result, "research in psychiatry is starving to death," Dr. Lawrence S. Kubie of Yale University School of Medicine and the New York Psychoanalytic Institute charges in a report to the American Association for the Advancement of Science in Washington.

Dr. Kubie gives figures showing that psychiatric research is way behind other medical research in funds, space and personnel. Referring to these, he says:

"When we look at our figures we need no longer feel surprise that, in spite of all the popular talk about psychiatry, not one of the psychiatric discoveries of the past 50 years was made in this country."

The costs of clinical care for psychiatric research, he estimates, should be \$100 to \$200 per bed per day, instead of the present "paltry" \$20 to \$30. Of the \$100 to \$200, three-fourths should go for research personnel and research activities.

Science News Letter, October 18, 1952

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