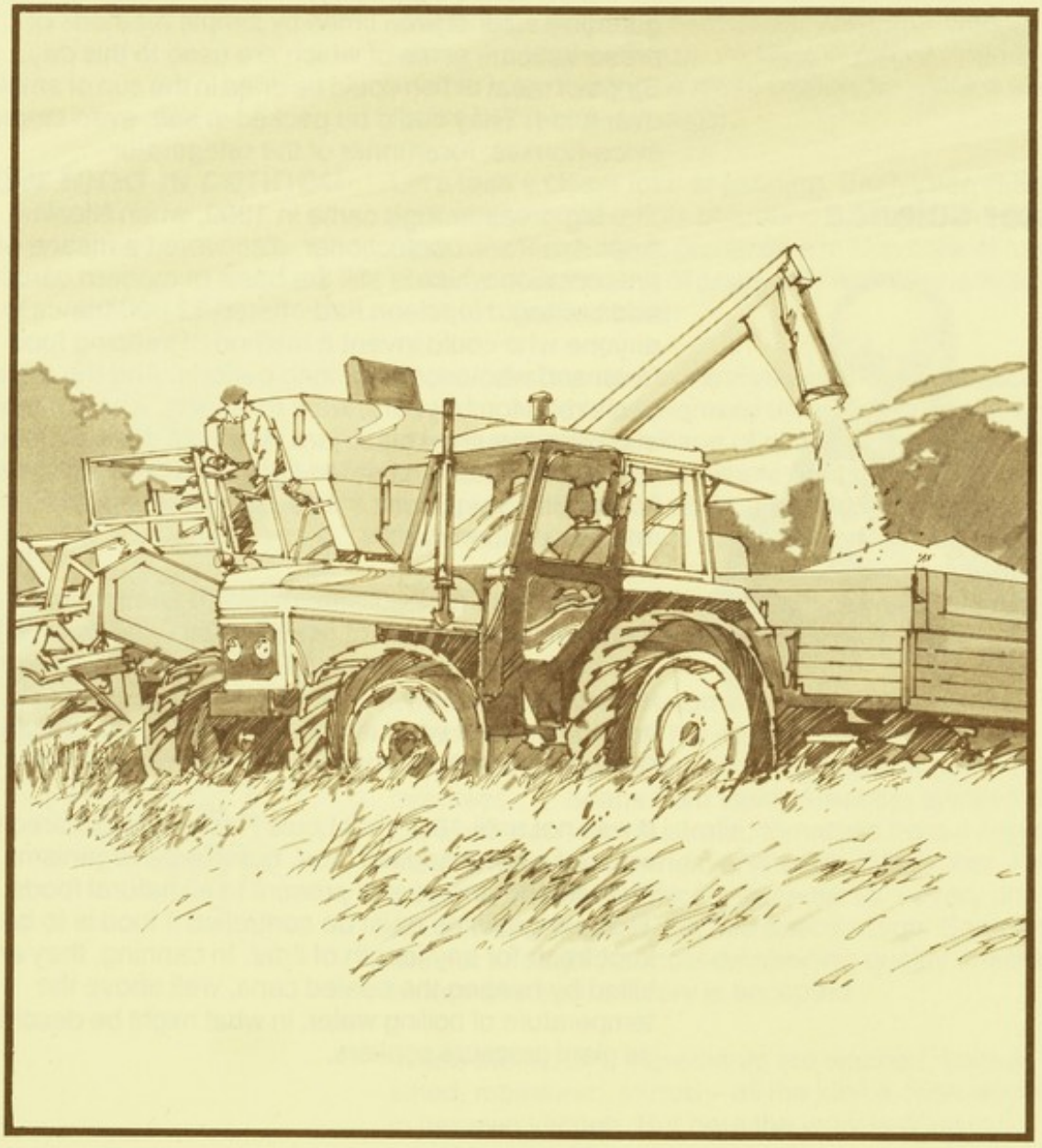
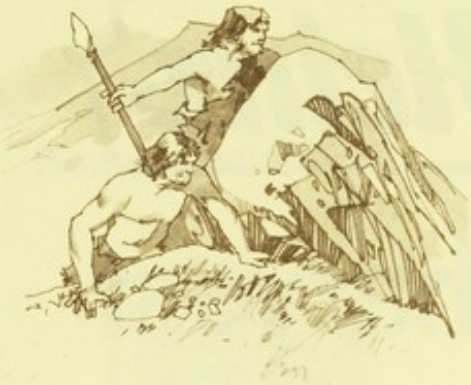
Preserving the harvest / Heinz.

Heinz

Preserving the harvest



The bad old days

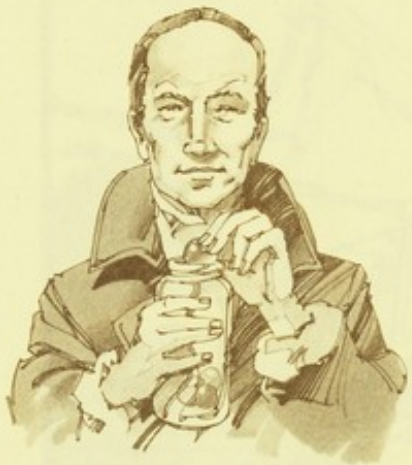


Life for our stone-age ancestors was pretty grim. Just keeping themselves fed was an ever-present problem. Their meat came from any wild animal they were able to kill with primitive weapons. If the hunters came back empty-handed, the family went hungry or searched for berries and roots.

Big steps in man's quest for an assured food supply came when he learned to herd a living larder of animals, then to settle in one place long enough to grow a few simple crops. But he still went hungry in winter because he could not preserve the harvest.

As the centuries slipped by, man found ways of guarding against lean times by simple methods of preservation – some of which are used to this day. Strips of meat or fish could be dried in the sun or smoked over a fire. They could be packed in salt, even stored in ice-houses, forerunner of the refrigerator.

Enter science



The big breakthrough came in 1809, when Nicolas Appert, a Paris confectioner, discovered a means of preservation which is still the basis of modern canning and bottling. Napoleon had offered 12,000 francs to anyone who could invent a method of keeping food fresh and wholesome for long periods. And the prize, unclaimed for 14 years, went to Appert, who put food into wide-mouthed glass jars, which he covered loosely with a cork. He then heated the jars to drive off the air (which he thought was the cause of food deterioration) and sealed them tightly.

The next year, an Englishman, Peter Durand, used a metal canister instead of glass – hence the word 'can'. The cans often burst because no one at that time really understood just *why* the method worked, or exactly how long and at what temperature the foods should be heated. So canned food was treated with suspicion.

It was not until 1857 that Louis Pasteur discovered it was not air that spoiled food, but minute organisms – the bacteria and yeasts present in all natural foods. These organisms must be controlled if food is to be kept fresh for any length of time. In canning, they are killed by heating the sealed cans, well above the temperature of boiling water, in what might be described as giant pressure cookers.

Pasteur's discovery meant the way was clear for the canning industry to take off. And that's just what it did. But it was not until the early 1930s that canned foods began to be part of the everyday lives of ordinary folk.

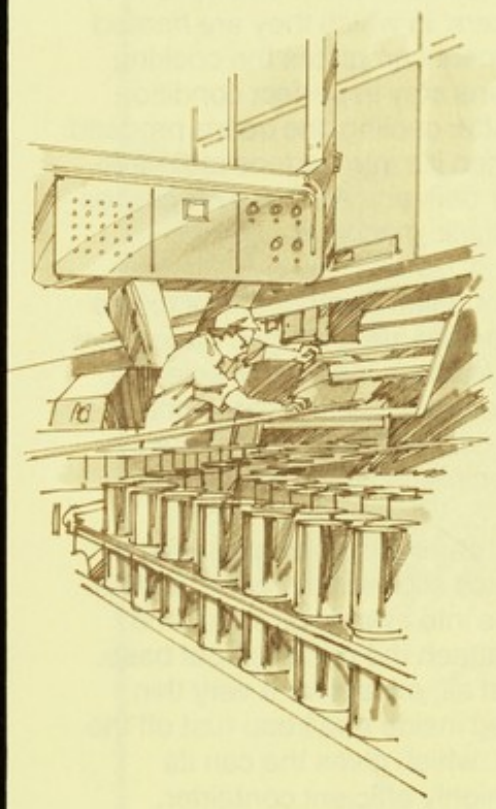
Modern methods

Today, foods are preserved in a number of ways – some, as in canning and bottling, by heat sterilisation; some by keeping the food in a state unsuitable to the growth of micro organisms. These organisms remain dormant if they are kept very cold (frozen foods) or very dry (dehydrated foods).

Accelerated freeze drying is a modern development in which food is first frozen and the water content evaporated by gentle heat under vacuum – without letting the food unfreeze. Pickling in salt or vinegar is another way of killing off micro organisms – which also dislike being boiled in sugar.

How food is canned

Let's take a closer look at canning. Each year, British people eat the contents of around 6,000 million cans. Each *day*, Heinz alone produces a million cans of baked beans, a million cans of soup, and well over a million cans of other varieties.



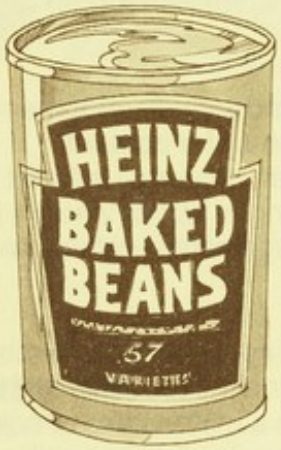
Technical advances in canmaking and production methods have revolutionised the industry: a canning plant is now a wonderland of space-age science. Even so, the basic process is simple enough – it's home cooking on the grand scale. But instead of serving up the meal as soon as it's ready, the manufacturer puts *his* creation into a can, seals it, and sterilises it by heat so that the contents will stay wholesome, tasty and nutritious for a long, long time.

Vegetables and fruits come to the plant fresh from selected farms. They are grown to perfection and harvested at their peak. Other ingredients come from overseas . . . beans from North America; spices from the East; rice from Australia; tomatoes from a ring of Mediterranean countries, and so on. Altogether, Heinz buys hundreds of different ingredients – every one of which has to meet a detailed specification. Samples are put through the most demanding quality checks before any bulk delivery is accepted.

Inside the factory, ingredients are washed, sorted, sifted, measured, stirred – all the jobs a cook would do in her own kitchen. But here the work is done by gleaming machinery.

A computer selects the ingredients for many products. The operator keys in the recipe, and the computer calls up exactly-measured quantities of the required powdered and liquid ingredients – which are automatically whisked through stainless steel pipes to mixing and cooking vessels.

Beans backstage



Let's concentrate on beans – which are hard and dry and white when they arrive at the factory. Already well sorted and checked, they go through more sorting processes on the production line itself. They are riddled for size, blown to remove any dust, passed under magnets. Every single bean is electronically scanned for colour, tumbled over a series of 'waterfalls' to settle out any bean-size white stone that may have survived earlier sortings. Then the beans are blanched in hot water before baking.

On they go to the filling lines, where they are automatically measured into open cans, to receive their spicy tomato sauce, prepared nearby. Once the lid is crimped on, the sealed cans are fed continuously into giant 'pressure cookers' in which they are heated to 240°F. The heat treatment completes the cooking and ensures that the beans stay in perfect condition until the can is opened. After cooling, the beans proceed to labelling machines. Then it's into cartons and off to the warehouse, ready for delivery. All these processes are handled by fully-automatic machines.

Fully-automatic? Well, not quite. Tasters check to see that flavour, colour and texture are just right. Laboratory technicians put samples through a series of scientific tests. Plant cleaners thoroughly clean every piece of equipment after every production shift. And there's a detailed specification for cleaning each machine.

Into the can

Elsewhere in the factory, canmaking is carried out by automatic machines, which slice sheets of tinplate for the 'bodies', roll the strips into cylinders, crimp and seal the side seam and attach the punched-out base. The 'tin' is not really tin at all, except for a very thin coating to protect the food inside and keep rust off the outside. The rest is steel, which gives the can its strength and makes it a highly efficient container.
At Heinz, quality control means just what it says.

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