

NUTRITION

Honey Used for Sugar Improves Baked Goods

► **HONEY SUBSTITUTED** for part of the sugar in commercial baked goods improves color, flavor and texture, research at the Kansas Agricultural Experiment Station, sponsored by the USDA, has shown.

Based on the results of the tests, tentative specifications have been drawn up for the honey most suitable for each type of baked goods. Since honey is a natural sweet, and therefore its properties vary widely, it was feared that such differences would prevent its wide use in commercial baking. The three-year study proved this fear was unfounded.

The research program was conducted to find a wider market for honey, and thus furnish an incentive to keep the beekeeper in business. Loren B. Smith and John A. Johnson of Kansas State College performed the experiments.

Science News Letter, October 31, 1953



Ready for Spring

► **NEXT SPRING'S** Easter bonnets and dainty gowns are already being made, and shortly after Christmas they will be moving onto the merchants' shelves. But even the fabricators of fashions are not more forehanded than the herbs and shrubs and trees of the woodlands. Practically every flower and leaf that will gladden our eyes next April and May is already in place, and only awaits the signal that will be given by the returning sun and the warm spring rains.

Preparation for next spring's flowers, as a matter of fact, began immediately after last spring's flowers had faded, and in most plants went on even while fruits and seeds were ripening. The leaves of plants like dog-tooth violet and trillium, that stood all summer long with no flowers to grace them, were busy all the time making food and sending it down into underground bulbs, corms and rhizomes. In the meantime, buried growth-points were forming up into the beginnings of buds, enfolding the embryonic structures of another crop of flowers. When the new growing season comes on, the food reserves will be liquidated and poured into the task of speeding the unfolding of the new flowers.

Something of the same sort goes on all over the branches of woody plants that blossom early in spring, like dogwood and redbud, and the lilacs and forsythias of our gardens. In the axils of this year's leaves, or at the twig-tips, the buds of next year's growth form during the summer. Already in them are the beginnings of next spring's bloom.

Only by provisions like this can we have spring flowers at all. Flowers are expensive things: they need a great deal of food for their structure, and more for the energy expended in the rapid process of blossoming. Most plants have to make their own food, which is the job of mature leaves. If flowers come before the leaves, or while the leaves are young and small, the food will have to be stored ahead of time.

The whole process of forcing flowers, so that we have a foretaste of spring even in

winter, is based on this fact. We bring bulbs or cut branches indoors, giving them as nearly spring-like conditions of temperature, moisture and light as we can provide. These stimuli cause the unlocking of the natural food cupboards, and release the chain of events that ends in the early unfolding of the flowers.

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PHYSICS-ENGINEERING

Full-Scale Atomic Reactor Ready in 1956-7

► **IN 1956 or 1957** some 60,000 kilowatts of electrical energy produced by a full-scale atomic reactor will be the first major peaceful production of atomic energy.

When Commissioner Thomas E. Murray of the Atomic Energy Commission made known in a Chicago speech that this atomic power plant is under construction, it became the fourth major effort of the AEC in the power field. It will be installed at some atomic energy plant.

Three atomic power plants for submarines are well along, one by Westinghouse which is to propel the Nautilus, and two by General Electric, one of which is a land-based prototype and the other to be placed in the Seawolf.

Two other reactors are producing power, somewhat incidentally: the breeder reactor in Idaho and the homogeneous reactor at Oak Ridge.

The new reactor and prime bid for peaceful use will be a Westinghouse production. It is the power plant that was originally planned for a Navy aircraft carrier. Congress authorized the AEC to proceed with a peaceful application of this reactor plan when the Navy decided not to go ahead.

A pressurized water reactor, the new 60,000 KW job is somewhat like the other Westinghouse atomic "engine" which uses water for moderator and coolant. The two General Electric power plants use liquid sodium metal as the heat transfer medium.

Private industry is not yet ready to enter into full-scale atomic power reactor construction as a risk venture, even if the atomic energy law were modified. For this reason, the government is taking this major step in atomic power.

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