

CHEMISTRY

New Candy Has Protein

Sweets incorporate as much as five per cent of the protein, derived from soybean, in hard taffy and as high as eight per cent in creams.

► **CANDY** that parents can urge their offspring to eat, instead of trying vainly to stop them, is the newest offering of chemists in the U. S. Department of Agriculture. The scientists have changed the sticky sweets into better-balanced foods by the addition of protein to their present all-carbohydrate makeup.

Dr. Louis B. Howard, chief of the Bureau of Agricultural and Industrial Chemistry, states in his annual report, just issued, that a clean-colored, tasteless soybean protein has been prepared and that it has been possible to work as much as five per cent of this into the familiar pulled hard taffy that children love. Soft candies, like nougats and cast creams, can now be made with protein contents as high as eight per cent.

Chocolate-coated marshmallows richly flavored and colored with raspberry puree are another yummy-sounding delicacy dreamed up by the Bureau's chemists.

However, the Department of Agriculture's laboratories are not being turned into one vast candy kitchen. Many products of great industrial promise, even if not so sweet, have been turned out during the past year.

One of these is a strong strawboard that may become useful in packing crates in place of the increasingly costly wood veneer now used. Eventually straw may also get into the building business, competing with the cane-bagasse and wood-fiber sheets now familiar. Since more than three-quarters of the 70,000,000 tons of straw annually produced in the United States goes to waste at present, there appears to be plenty of raw material available.

Dark, unappetizing color in both cottonseed oil and cottonseed meal can be practically eliminated, chemists at the Southern Regional Research Laboratory in New Orleans demonstrated. Two pigments found in cottonseed kernels were the cause of most of this color, and it was found possible to get rid of them by simply adding moisture when the stored seed was cooked in steam-jacketed pans.

One of the two pigments, known as gossypol, has been blamed for the slight

poisonous effect of cottonseed meal that has limited the use of this otherwise excellent source of protein in animal feeds. Hens fed on cottonseed meal produced by the new method laid a higher percentage of hatchable eggs than similar birds fed on the old-process meal.

Paint-brushes made from milk are now a possibility. At the Eastern Reg-

ional Research Laboratory at Philadelphia, casein fibers are being produced that compare favorably with natural bristles as paint-spreaders. One commercial firm has a pilot plant for their production in operation now, and as soon as manufacturing kinks can be ironed out will put the new-type brushes on the market.

Sumac leaves, at present valued only for their red beauty in autumn, bid fair to get a job at the tannery. Analyses show that they contain high percentages of tannin. The lining of pecan shells, that has such a puckering effect on your mouth if you chance to get a bit of it, is another possible source of tannin which is being investigated.

Science News Letter, January 24, 1948

DENTISTRY

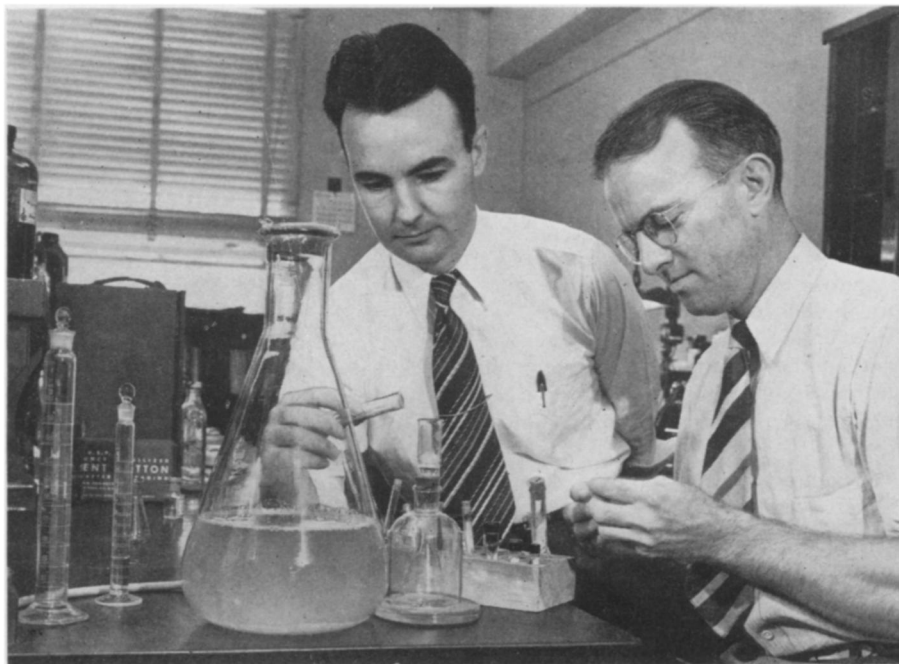
Decay Preventive Tested

► **THE** sweetest method yet proposed for preventing toothache and tooth decay is going on trial in a special colony of rats kept by Dr. James H. Shaw at Harvard School of Dental Medicine.

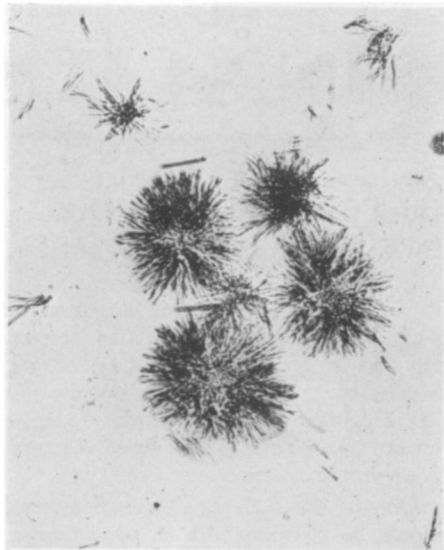
The method consists in adding a rare sugar, glyceric aldehyde, to ordinary sugar. For preventing tooth decay in humans, the plan calls for adding this

or some other effective chemical to sugar at the refineries. Then every piece of candy eaten, and every lump of sugar would carry its own decay preventive.

The plan was proposed by Dr. L. S. Fosdick of Northwestern University Dental School at a meeting of the American Public Health Association (*See SNL, Oct. 18, 1947*).



DISCOVERERS OF CHEMICAL CURE—Dr. T. D. Fontaine and Dr. G. W. Irving, Jr., are inspecting tomatin, the antibiotic made from juice pressed from leaves and stems of the tomato plant, which they developed at the U. S. Department of Agriculture's experiment station at Beltsville, Md. (*See SNL, March 22, 1947.*)



TOMATIN CRYSTALS — They have been found effective against athlete's foot fungi and other fungus growths and parasitic yeasts which cause disease in man and animals, including the fungi that produce skin and scalp ringworm.

Adding the chemical to sugar would stop tooth decay by checking the ferment which causes acid to be formed from sugar in the mouth, Dr. Fosdick explained. The acid, if not promptly neutralized, breaks down tooth enamel, removing the calcium, or lime, which makes it hard. Cavities form and the decay process sets in.

Announcement of the tests at the Harvard rat colony of Dr. Fosdick's method was made by Dr. Robert C. Hockett, scientific director of the Sugar Research Foundation.

Results of the tests should be known by May, he said. If the method works in rats, there is every reason to believe it will work in human mouths.

Glyceric aldehyde, the chemical to be added to sugar for preventing tooth decay, is such a rare substance that only two pounds of it are known to exist anywhere in the world. Almost all of this two pounds is in the possession of the Sugar Research Foundation. Dr. Fosdick obtained a small vial of it, made before the war in Europe, through the efforts of Dr. H. O. L. Fischer, son of the distinguished carbohydrate chemist, Emil Fischer. Dr. Fischer made the rest of it available to the Sugar Research Foundation as part of the program to discover uses for some of the 10,000 close chemical relatives and derivatives of common sugar.

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MEDICINE

Histadyl Is Ally of Drugs

This newest comer to the anti-allergy group prevents side reactions from such life-saving remedies as penicillin and streptomycin when given with them.

➤ PATIENTS no longer need to be excluded from the benefits of such life-saving remedies as penicillin and streptomycin because of allergic reactions. A new synthetic drug called Histadyl prevents their formation when given with other drugs in treatment, Dr. M. H. Mothersill of the medical department of the Lilly Research Laboratories, told the Indiana Section of the American Chemical Society meeting in Indianapolis.

The usefulness of many drugs has been limited because of the increasing number of side-reactions which accompanied their administration in patients. Dr. Mothersill treated such a group of 16 patients suffering from drug allergies with Histadyl given by mouth and found that it produced sufficient relief for the patients to tolerate the reaction-causing drug for "indefinite periods." Only one patient in this group failed to gain relief.

The dramatic action of Histadyl was demonstrated in a seven-year-old girl who had to have streptomycin, according to Dr. Mothersill. She was able to take one gram of the remedy daily for

three months with this new ally, but when the anti-allergy compound was withdrawn, the girl had skin eruptions which caused intense itching and burning.

Other conditions for which this latest member of the anti-histamine family of drugs is effective, are hay fever, food allergies, allergic headaches and even in some cases of reaction following blood transfusion.

Such side-reactions as drowsiness and lightheadedness were the only undesirable effects of the new drug. The physician declared that "rarely did these symptoms interfere with the patient's ability to continue the routine." Five patients examined expressly for the purpose of determining any accumulative bad effects from the drug, showed no evidence of damage to the blood, heart, liver or kidneys, although they had been taking the drug daily for three months.

But the physician believes that a study of a larger group of patients is necessary before it can definitely be assumed that no bad effects will follow.

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MEDICINE

Surgery Remedies Sterility

➤ MANY of the younger men in Europe who were sterilized by surgical operation under the Nazi regime can have another operation which will permit them to become fathers if they wish, Dr. Vincent J. O'Connor of Northwestern University Medical School declares.

The second operation may be successful in from 35% to 40% of the patients, he reports in the *Journal of the American Medical Association* (Jan. 17).

The figures are based on his own experience and that of 750 surgeons among 1,240 to whom he sent questionnaires on the subject. The possibility of success will depend, he states, on the freedom of the tissues from previous inflammation.

The normal male sex glands continue to produce spermatozoa, or male germ cells, for an indefinite period after the sterilizing operation. In one of Dr. O'Connor's patients an operation 18

years after the sterilizing operation was successful in restoring the patient's ability for parenthood.

The hopeless view taken by medical as well as lay and religious groups on the possibility of Hitler's victims being restored to normal after the sterilizing operation should be revised, Dr. O'Connor thinks, and surgical aid offered to those who request it. The reason for the hopeless view, it appears from his report, is that no one surgeon has had much experience with the corrective operation. This is because in the past most of the sterilizing operations have been done at the request of the patient and few of them have ever wanted to have their fertility restored.

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An even number of rows of grain are found on nearly all ears of corn.