

## DENTISTRY

# Banishing Toothache

Sodium fluoride treatment developed by two Boston dentists is found to provide relief of toothaches due to exposed dentin, a common cause of dental pain.

► BANISHING TOOTHACHE due to exposed dentin, common cause of dental pain, has apparently been achieved by a new sodium fluoride treatment.

Reporting successful experiments to the American Dental Association, Drs. William H. Hoyt and Basil G. Bibby of Boston, declare that "after short treatments, teeth that had caused trouble for years ceased to be sensitive (*Journal American Dental Association*, Sept.). Soon patients were commenting voluntarily on the satisfactory results of the fluoride applications, and requesting treatment of the remaining sensitive teeth."

Use of the chemical was first suggested by Dr. E. H. Lukomsky, of the Stomatological Clinic, First Moscow State Medical Institute, in Moscow, Russia. But the English translation of his report

revealed few details and no results. Taking up the suggestion, the American scientists started research which has now included treatment of a large number of patients, including a well-controlled group of 70.

Of the 70 patients, all had exposed dentin desensitized in at least some of the teeth except for two cases. The case of one failure was complicated by persistent hemorrhage, the other by inflamed pulp.

Results of the research have now been confirmed by a number of dentists who have begun to use the treatment in their practices, the dentists report. Treatment seems equally effective on all types of teeth regardless of the patient's age.

Success achieved in dulling the pain of naturally occurring sensitive dentin, the bone-like main substance of teeth,

led to use of the treatment in relieving pain in sensitive areas caused by preparing cavities for filling. Desensitization was complete within one to five minutes and the filled teeth, which are often sensitive for days, were able to tolerate heat and cold at once.

But the dentists found themselves up against the disadvantage of causing intense pain and a sensation of extreme cold for a short time when the 33% sodium fluoride paste ordinarily used was applied to freshly exposed dentin. The problem was solved by first soaking the cavity with two weak solutions of the chemical before finally applying the pain-killing paste.

"While it is too early yet to assess accurately the value of sodium fluoride in desensitizing dentin," the dentists explain, "the observations recorded seem to demonstrate that should it have no other uses than those already demonstrated, it will have a valuable place in dental practice."

No logical explanation can be offered yet as to why sodium fluoride has this remarkable effect and, since it is a toxic drug, dentists are warned to use the treatment with caution pending further study.

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"ALLIGATOR"—This amphibious tractor developed for use by the U. S. Marine Corps in landing operations combines the features of a tank and armored landing boat. The dual vehicle protects men and vital equipment in landing on a hostile shore as well as in crossing swampy terrain.

## MEDICINE

## Decline in Rheumatic Fever In England During the War

► ONE GOOD THING the war may bring us, if our experience is like that of our allies in England, is a decline in rheumatic fever. This disease, which usually makes its first attack on children between five and 15 years of age, damages the heart and is a potent cause of death from heart disease among young adults.

This disease has been on the decline in England for some time, Dr. J. Alison Glover, Temporary Medical Officer of the Board of Education, reports in an English medical journal, the *Lancet* (July 10). Since the war, the decline has continued at a somewhat accelerated rate, he finds. In 1939 the crude death rate from rheumatic fever for all ages was 23 per 1,000,000. In 1942 it was barely half that, 12.1 per 1,000,000. The number of patients in hospitals has also been much reduced and doctors believe the severity of the illness is also less.

Dr. Glover suggests three reasons why the war may have put rheumatic fever

on the run; 1. The decrease in poverty caused by abundant employment in wartime. 2. The greatly increased provision of milk for all children and of solid meals for school children. 3. The long "changes of air" due to evacuation of children from congested cities to the country.

The last two causes are not likely to affect us much in this country, but the first, decrease in poverty because of wartime employment, is and this

cause, Dr. Glover believes, has been the most important in accelerating the decline of the disease during the war.

The main cause of the decline, however, is in his opinion of a more subtle nature and is a change in the relationship between man and the streptococcus germ which plays an important part in rheumatic fever, though scientists have not yet agreed whether or not this germ causes the disease.

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#### NUTRITION

## Electrons To Dehydrate

The moisture content is reduced to only one per cent by use of radio-frequency energy in a new process of food dehydration.

➤ BETTER food dehydration through use of radio-frequency energy to drive out the moisture has been developed. The process makes possible for the first time removal of 99% of the moisture content from a compressed vegetable block, reports Vernon W. Sherman of Federal Telephone and Radio Corporation, who developed the method in cooperation with the Office of the Quartermaster General of the Army.

Evidence indicates that vegetables dehydrated by the electronic method will not deteriorate over a period of one to two years even in hot, humid climates.

As a first step, 80% of the water content of vegetables is removed by conventional dehydration. The vegetables are then compressed into blocks from which the remaining moisture is reduced to one per cent by radio-frequency energy in a partial vacuum. Since other methods of drying require the exposure of as much of the vegetable surface as possible, this process of compressing the vegetables into tight blocks, prior to drying them further, is unprecedented. It is done to concentrate a large amount of food in a small magnetic field for reasons of economy.

About five per cent moisture is generally left in the food by ordinary dehydration using hot air, which involves danger of spoilage, especially in the tropics. Attempts to reduce this moisture content by warm air often give the dried vegetables a tough, blackened skin, called "case hardening," but this does not occur when radio-frequency energy of the proper wavelength is used. Drying is accomplished in about an

hour. The shortwave energy is actually turned on only a part of this time. Due to the speed of the process, apparently, the vitamin content of the dried foods is reported to be unusually high.

The temperature throughout the foods being dried is said to be remarkably uniform, unlike the difference between the outside and inside of food under dehydration by other methods. Electronic drying is well adapted to automatic straight line production, and from laboratory results engineers calculate that one pound of water may be removed electronically as described with less than one kilowatt hour of energy, costing about one cent, which compares favorably with the cost of other methods.

Plans are being considered for construction of a 50-kilowatt electronic food-drier, which would handle six tons a day of dried food, equivalent to perhaps sixty tons of fresh food, to test the new food dehydration method on a commercial scale.

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#### BOTANY

## Bulging Palm Trunks Have Varied Uses

➤ ONCE IN A WHILE we find nature in a curiously generous mood towards mankind. In western Cuba and on the Isle of Pines, for example, there is a species of palm tree with a big hollow bulge about half-way up its trunk that gives it the quite appropriate name of "palma barrigona" or belly palm. Botanists know it as *Colpothrinax Wrightii*. This bulge is of no discoverable use to

the palm itself, but the country people living in the limited area where it grows find it handy for a wide variety of purposes.

Cut out of the trunk with enough of the solid portion to keep both ends closed and with a bung-hole cut through one side, it becomes a very practical barrel. With a larger opening hacked into the side, it is a watering-trough for livestock. With one or both ends cut off and the openings loosely covered with boards, it is a satisfactory beehive of the more primitive sort. Set on end with the top open, it is a container for any kind of dry materials. Cut across the middle and the two halves upended, it becomes a pair of flowerpots. It has even been made into small canoes by splitting lengthwise.

This remarkable palm is described and pictured in a book recently published by the Botanical Institute of the University of Montreal under subvention of the Atkins Institution of the Arnold Arboretum. Beautifully written in limpid and simple French, excellently illustrated, it appears under the authorship of two leading Canadian botanists, Frère Marie-Victorin and Frère Léon, both of the Brothers of the Christian Schools. The former is at the University of Montreal, the latter at LaSalle College in Havana.

The book, titled *Itinéraires botaniques dans l'île de Cuba*, is simply a day-by-



**BULGING** — Cuba's curious belly palms show their bulging figures to advantage in silhouette against a sunset sky.