

DENTISTRY

New Saliva Test Indicates Likelihood of Tooth Decay

Six Simple Rules Offered to Insure Tooth Health; Weather Conditions Possible Factor in Endocarditis

EVERY individual carries in his own saliva a clue on how well his teeth will last, according to research reported by investigators at the Northwestern University Dental School before the meeting of the Chicago Dental Society.

By making chemical tests on this previously hidden clue in the saliva, the Northwestern research group has been able to ascertain susceptibility to tooth decay with almost perfect accuracy in more than 750 cases. The technique gives dentists a new research method to study decay.

Dentists said that the new advance in the study of tooth decay will make it possible for future research workers to determine the exact effect of a particular food or a health measure on decay susceptibility. Eventually diet and other factors which may play a part in causing tooth decay can be controlled so that an individual may hope to be relatively free from tooth decay.

Go Easy on Concentrates

Already the Northwestern research group, which includes Dr. Edward H. Hatton, Robert H. Blackwell, Dr. L. S. Fosdick, Dr. H. O. Hansen, Dr. George W. Tauscher and Charlotte Epple, have advanced tentative opinions on diet in a general way and tooth decay. They support these rules for teeth health:

1. Eat the simple, natural foods rather than the refined or processed foods.
2. Reduce refined and highly purified carbohydrates to the necessary minimum. This means cutting down on sweets and other "rich" foods.
3. Eat plenty of fresh fruits and vegetables to obtain the necessary vitamins and minerals.
4. Use a high supply of good grade protein foods, including milk, milk products and glandular meats, such as kidneys, liver and sweetbreads.
5. Take accessory vitamins only in off seasons when fresh fruits and vegetables are unavailable or expensive. Vitamins A and D may be given during the winter months.
6. Use mineral tablets, calcium or

phosphorus only under professional direction.

The Northwestern group discovered differences in the comparative rates of acid production in saliva from decay-immune and decay-susceptible patients. Then they developed a chemical analysis which takes four hours so that the dentist can determine just what an individual's saliva will do.

The test itself is relatively simple. All the patient has to do is chew gum to stimulate saliva and the dentist obtains a small amount for three tests. One portion is used for a calcium analysis; another is tested for quantitative bacteriologic counts and the third is sealed in an eight-inch test tube with one-tenth gram of powdered human tooth enamel. This last test tube is kept at body temperature and shaken for four hours and then examined to see what it has done to the powdered enamel.

The saliva of persons immune to tooth decay dissolves practically no calcium, the scientists found, while the saliva of susceptible persons dissolves large amounts of calcium. It is on the basis of this reaction that the degree of susceptibility to tooth decay is estimated.

A method of checking decay that has already started in a tooth was reported by Dr. Bert G. Anderson of the Yale University School of Medicine. Results are similar to those seen in cases where decay has been arrested or checked spontaneously.

Smoothing Rough Places

Dr. Anderson removes the decay and those portions of the teeth that favor accumulation and retention of food and debris and smoothes them down so they can be used for chewing. This apparently gives a chance for natural forces to prevent any further decay in the particular tooth.

Chewing, Dr. Anderson believes, is an important aid to the arrest and healing of dental caries.

Weather conditions may play a part in causing endocarditis, a form of heart disease that is often related to focal

infections of the teeth, Drs. William F. Peterson and Alexander Nedzel of Chicago stated.

Bacteria, Drs. Peterson and Nedzel believe, are likely to localize on the heart valves in late winter and spring and after periods when the blood pressure levels have been unusually high; in other words, when the valve flaps have been pressed together under greater pressure than normal. Study of case histories suggested the weather factor in the causes of the condition. By way of confirmation, the two scientists reported laboratory studies on animals.

The heart valves of the animals were "sensitized" by giving large doses of pitressin, which raises the blood pressure and "causes more brusque impingement of the heart valves against each other."

Such local injury would cause increased permeability and greater adhesiveness. Staphylococci and streptococci were then injected into the veins. When this was done during the winter a definite localization of bacteria on the heart valves followed and characteristic signs of endocarditis were observed.

The problem is of interest to dentists, it was pointed out, not only because the teeth often are the focus of infection which causes the heart ailment but because the heart ailment influences the type of treatment that is given.

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AVIATION

Two National Soaring Meets Planned for Present Year

TWO NATIONAL soaring meets will be held this year in place of the single national meet which has climaxed previous years of soaring, Dr. Karl O. Lange, vice-president and contest manager of the Soaring Society of America, has announced.

The 50 planes and 150 pilots that turned up at Elmira, N. Y., traditional home of sailplane contests in the United States, last summer so taxed the capacity of Harris Hill and the other points from which flights were made that novices and experienced pilots will be split up and will hold separate contests.

Novices will have their own meet from August 29 to September 7 at Frankport, Mich., under the title of the American Open Soaring Meet. The Ninth Annual Soaring Contest will be held at Elmira between June 25 and July 10. Pilots will have to meet qualifying tests sufficiently stiff to eliminate

all but skilled pilots using high-grade equipment.

American soaring has progressed to the point where minimum contest standards in effect for the national soaring meet next summer equal those in effect in Germany, homeland of motorless flight, Lewin B. Barringer, general manager of the Soaring Society of America, told its national convention.

Summarizing progress made during the past year, Mr. Barringer revealed that sailplane pilots must conform to

minimum flight standards of five hours' duration, 3,500 feet for altitude or 35 miles for distance. The provision will eliminate all but high performance sailplanes from the meet.

A Soaring Society expedition will be based at Wichita Falls, Texas, from April 10 to May 8 to test flight conditions over the great Southwest plains area. The period of testing will be climaxed by a goal flight contest from Wichita Falls to Tulsa, Okla., a distance of 215 miles.

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ARCHAEOLOGY

Dead Men's Heads Carved On Ancient Temple in Peru

See Front Cover

DEAD men's heads on a prehistoric temple wall!

This is grim evidence of religious head-hunting in ancient Peru, reported by Donald Collier, young archaeologist, who has returned from making some remarkable discoveries in company with Peru's most noted archaeologist, Dr. Julio Tello. Mr. Collier, son of Commissioner of Indian Affairs, John Collier, is preparing his report for the Institute of Andean Research, which he represented.

The weird art subjects were discovered, Mr. Collier said, when the expedition unearthed a remarkable ceremonial terrace of stone on the coast of northern Peru. On some stones, they found carvings of warriors making vigorous gestures. Other portraits had no bodies but were mere cadaverous-looking faces "all cut off obviously under the chin."

"The supposition is that they had human sacrifice," he explained, "and one form was to take human heads—whether heads of their own people or those of enemies, we don't know."

Mr. Collier describes the stone temple, its art, and the cemetery nearby as all revealing a new kind of culture, unlike that of other Indians who lived in Peru before the great Incan Empire was formed. These ancient Indians who built the stone temple lived perhaps 600 A.D., or around 900 A.D.—dating them is mere guesswork, Mr. Collier says. Aside from three kinds of pottery buried in strata of earth, there is nothing to suggest passage of time, or any particular era.

This is the first discovery of a temple of giant stones on the coast land of Peru. Such temples were built in Peru's

mountains, but coast tribes used adobe architecture.

"This is the first indication," he said, "that some of the highland people came to the coast to live and built a temple, because it must have taken several years to construct the terraced pyramid with these blocks ten feet high and several feet thick."

The mysterious stone workers had a highland background. But where they got their art ideas, and their plain style of pottery making, and their simple ideas of burial—very different from the elaborate mummy-wrappings of some Peruvian graves—is still to be traced, so that science may fit these unknown Indians into the pattern of Peru's prehistory.

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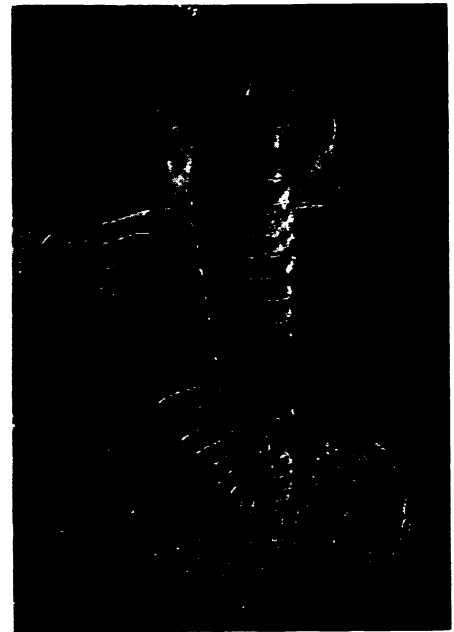
GEOLOGY

Ancient Rocks Identified By Two Trilobite Genera

ROCKS of a geological formation half a billion years old, scattered from Alabama to Labrador, have been identified as belonging to the same system by fossils they contain, of two genera of trilobites, which are distant relatives of lobsters and crabs, long since extinct. The rocks, of early Cambrian date, have also been shown to be similar to others in Scotland and Greenland.

The investigations were carried on by Dr. C. E. Resser of the U. S. National Museum and Dr. B. F. Howell of Princeton University. The key trilobites, whose flattened external skeletons were found in the rocks, belong to the genera *Wanneria* and *Olenellus*.

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CALENDAR MARKER

One of the trilobites that made possible the dating of widely separated sandstones as of the same age.

ETHNOLOGY

Pueblo War Songs Link Indians With Far East

EVEN in their music, American Indians have preserved small clues suggesting Oriental ancestry.

Not that Indians are to be thought of as descendants from Chinese or Japanese civilization. Their stemming off from an ancestral tree goes far back to Mongolian-type tribes that roamed to the northeast tip of Siberia and thence, from time to time, crossed into the northwest tip of Alaska. After that they were Americans, and their descendants "Indians." They brought some crafts and customs with them. They learned many new ones in America, and some groups like the Mayas evolved high civilization.

Anthropologists are greatly interested to detect what Indians owed to Asia, and from what parts of that homeland they gleaned their old culture.

Now, it develops that Indians in the Southwest had a psychological trick in war songs, of raising the song a semitone as it progressed and keeping it there to the end. It was exciting. And remarkably enough, Japanese used the same device in stirring warriors by song.

Miss Francis Densmore, who has studied music of many Indian tribes, first noted this similarity when Pueblos were singing old war songs recently for her to record. Reporting this and other similarities between Indian and Old