

## DENTISTRY

# Hidden Tooth Decay

**Bacteria, not their acid, are the cause of caries, new research suggests. Evidence indicates germs may penetrate tooth enamel in minute thread-like chains, making microscopic hole.**

► **TOOTH DECAY** may become widespread inside a tooth before it can be detected by the dentist.

This is one implication of a departure from the conventional theory of dental caries which results from research conducted by Valerie Hurst and Drs. Harry E. Frisbie and Max S. Marshall of the University of California College of Dentistry.

The most widely accepted idea of tooth decay holds that an acid produced by bacteria (*Lactobacillus acidophilus*), makes holes in the enamel and gradually destroys the softer, inner dentin. If this is correct, the damage first appears on the tooth surface where the dentist can see it in the early stages.

But the California scientists say acid erosion may not account for all caries. They have reported evidence that bacteria may directly penetrate the enamel in minute thread-like chains, then spread out and destroy the dentin. The original hole in the enamel may be too small to be detected by the dentist.

The new theory has been developing for

a number of years. First, the late colleague of the three California scientists, Dr. James Nuckolls, found that the thickness of enamel on the teeth varied greatly from one point to another. It had been thought that enamel was of uniform thickness, and was too tough for bacteria to penetrate on their own at any point.

In a recent series of scientific papers, the three California scientists have presented evidence that bacteria can penetrate the enamel, apparently at thin spots, either in thread-like chains or spearhead concentrations. Bacterial invasion, then, may be the first step toward caries, rather than acid penetration.

The scientists believe the lesions they produced in hamsters' teeth more closely resemble the early microscopic pattern of tooth decay than those in experimental caries produced by acid. They point out that the acid conditions of the test tube are not likely to be present in nature.

The researchers report that their evidence for direct bacterial invasion is not yet complete, and they are continuing their work.

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## EMBRYOLOGY

# Siamese Twins Not Rare

**It is estimated that they occur once in every 50,000 births. Frequency in past decade probably no more than you might expect with increased birth rate.**

► **BIRTH OF** head-joined Siamese twins in the Andrews family in Chicago may make many persons wonder whether we are having more of such births than formerly. In actual numbers, perhaps yes. But such conjoined twins have never been extraordinarily rare. One authority estimated they occur once in every 50,000 births. The ratio is probably the same if the increase in number of births in the past decade or so is considered.

Attempts to separate Siamese twins have undoubtedly increased. Modern advances in anesthesia and surgery make possible many more such operations. The earliest attempt at surgical separation is said to have been made by Dr. Farius of Basle, Switzerland, in 1689. A famous case early in the present century was that of the Radica-Doodica sisters separated at the age of 12 because one had developed tuberculosis. This sister died, but the other survived and remained in good health.

A long-time survival for one of a pair of separated Siamese twins is reported by Dr. Ian Aird of the University of London, England. These sisters were separated in 1912 at the Military Families Hospital, Portsmouth, England. One, aged 41, was alive and well last spring. She still carries the scar of the separating operation on her hip. The other sister died of pneumonia at the age of four months. Had penicillin or sulfa drugs been available, she might be alive now.

Cortisone, famous as an arthritis remedy, might be good medicine for Siamese twins being separated in future, Dr. Aird suggests. He recently separated a pair born in Kano, Nigeria, but brought to London for the operation. The babies came through the operation in good shape but an hour later one collapsed and died. Examination after death showed the only possible cause of death was the adrenal gland which was about a third its normal weight. The sur-

living twin, Dr. Aird thinks, may have been responsible for the greater part of the production of cortisone for both twins and the one that died had not enough adrenal gland tissue to withstand the shock of the operation.

Siamese twins have been successfully separated eight or nine times since 1912, according to medical records. There may have been more cases, however. When the union between the twins is only of skin, flesh and perhaps cartilage, the separation is likely to succeed. Dr. Aird has heard of several such cases with successful separation just after birth which were not thought worthy of medical record.

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## ENTOMOLOGY

## Cooler Weather Lessens Insect Damage to Crops

► **COOLER WEATHER** was responsible for a decrease in the damage to crops by insects across the nation at the end of September, the U. S. Department of Agriculture's economic insect survey section reported.

Insects, which were very active this past summer, are rapidly disappearing from the scene and preparing, in their individual ways, for the winter.

However, a few pests are still attacking some crops and popping up around the country.

The lesser cornstalk borer was the most troublesome, attacking beans in several southern states.

South Carolina and Florida were hardest hit. Area farmers around Quincy, Fla., reported that they expected a 75% loss in their bean crop this fall because of the lesser cornstalk borer's infestation.

Other insect highlights reported were:

Attacks on lespedeza in South Carolina and Georgia by the lespedeza web worm.

The first report of the European earwig in Maine. The earwig usually attacks ornamentals near homes and in gardens, and annoys humans because it finds its way into houses on plants and flowers.

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## ICHTHYOLOGY

## Flying Fish May Travel To United States in Cans

► **CANNED FLYING** fish may be available soon on the American market.

The establishment of a flying fish canning industry has been proposed in the Barbados Island in the West Indies, where this strange aviation-minded fish is a popular food.

It is hoped that surplus flying fish will be canned and exported to the United States, Canada and Venezuela after the needs of the Island are met.

An official at the U. S. Fish and Wildlife Service reported that fresh flying fish makes a very fine dish and tastes somewhat like smelt.

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