

DENTISTRY

New Dental Caries Test

► A SIMPLE new 15-minute test that shows whether or not a patient's teeth are likely to develop cavities has been reported by Dr. G. W. Rapp, head of the department of biochemistry and physiology at Loyola University, Chicago. A dentist can make the test in his office.

The test, which shows color reaction to a single enzyme, reductase, was tried on 250 school children for 12 months.

The children chewed paraffin wax to stimulate the flow of saliva and to remove debris from the mouth. A saliva sample was then taken and mixed with a definite quantity of a reagent called diazoresorcinol which initially has a blue color.

As the reductase enzyme acts upon the reagent in an atmosphere of restricted oxygen content, Dr. Rapp said, the color is changed from blue to red. If the enzyme activity is very high, the red color is converted to a colorless form in 15 minutes.

Another phase of the test, which included

toothbrushing (no special kind of tooth paste), showed results that Dr. Rapp said would convince even the skeptic that brushing the teeth does some good.

But no one yet has proved that brushing the teeth can prevent tooth decay, and Dr. Rapp explained that it is not yet possible to state accurately which microbes are primarily responsible for destroying tooth substances.

Certain products of the biological activities of the microbes rather than the organisms themselves seem to be responsible.

It is for this reason that a study of certain enzymes rather than of the cells has produced a workable, rapid and useful test that gives the dentist a diagnostic tool, Dr. Rapp said. The test is especially useful for children because their caries susceptible teeth have not all been altered by dental treatment. Dr. Rapp's findings appear in the *Illinois Dental Journal*, 31:290, 1962.

• Science News Letter, 81:372 June 16, 1962

ANTHROPOLOGY

New Fossil Men Reported

► SIX MORE kinds of fossil men have been unearthed in China under the Communist regime. This gives a new view of the population of that area from about a million years ago up to about 10,000 B.C.

American scientists have learned the new facts about modern man's evolution in China from the publication in *Science*, 136: 749, 1962, of a round-up of recent discoveries of human fossils in China. The report was written by Dr. Kwang-chih Chang, Chinese-born anthropologist who has been living in this country long enough to obtain a Ph.D. degree from Harvard and is now instructor in anthropology at Yale University.

Some anthropological work has been known to be going on in China since the Communists took over the country, but it has been extremely difficult to receive scientific publications on this work in the United States.

Prior to the period reviewed by Dr. Chang, *Sinanthropus* was the only known early hominid form from China. This is the famous Peking Man whose fossil remains were lost during World War II and were never recovered. Between *Sinanthropus* and modern man (*Homo sapiens*) there was a tremendous hiatus, except for an isolated tooth, in the fossil record of man in China.

Now there are six additional relatively well documented human forms of Pleistocene age to fill the hitherto blank space. The Pleistocene is the geological period that ended some 10,000 years ago and endured for more than a million years before that.

Four of these, Dr. Chang reported, have certain affinities with Neanderthal. The other two, Liu-chiang and Tzu-yang are *Homo sapiens* but have some features that anthropologists call "primitive" or "archaic."

Now scientists face the task of comparing

and cross-dating these finds with comparable fossil forms elsewhere.

One limb is pruned off the human family tree by Dr. Chang's study.

"It now appears clear that *Gigantopithecus* can be removed from the family tree that leads to modern man," Dr. Chang said. This is the form represented by three giant anthropoid teeth which the anthropologist G. H. R. von Koenigswald bought in a Hong Kong drugstore as "Dragon bones."

But this form is fascinating and highly significant in its own right, Dr. Chang declared. Its possible relationship to the African ape-men, the australopithecines, should be closely examined.

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SPACE

Pads and Spikes Make New Non-Echo Chamber

See Front Cover

► THE NON-ECHOING chamber covered with large clusters of sponge-rubber spikes and pads of plastic the size of sofa cushions, seen on this week's front cover, has been developed for space research.

The chamber, constructed at the University of Michigan, Ann Arbor, permits ultra-sensitive radar measurements under simulated space conditions.

The soft materials absorb microwave energy so completely that virtually no energy reflects from the room's surfaces to interfere with the radar equipment.

Microwave echoes in the chamber are expected to be one millionth as large as an ordinary steel-reinforced room.

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Do You Know?

Man has synthesized 11 elements, including the latest, element 103, since 1940.

Viscose rayon was the first man-made fiber to be produced commercially in the U.S., followed by rayon acetate and nylon.

Biochemists have been successful in stopping and delaying the aging process in baby chicks and mice by introducing amino imbalances into their diets.

A tiny electronic device is being developed that will translate the electricity involved in muscular activity to detectable and measurable radio waves.

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