

MEDICINE-AAAS

Bacitracin Goes on Trial

Tests will be made in nine different cities of the new anti-germ chemical to determine the best way of using the remedy before it goes on sale.

► BACITRACIN, one of the new anti-germ chemicals of the penicillin class, is now becoming available in sufficient quantities to get special trials in nine different cities, its discoverers, Dr. Frank L. Meloney and Miss Balbina A. Johnson of Columbia University College of Physicians and Surgeons, revealed.

The trials are carefully planned to show the possibilities and best ways of using the new remedy before it goes on sale generally. At the same time, the U. S. Food and Drug Administration is setting up tentative standards and specifications for potency and safety.

The nine cities selected for the clinical trials of the new drug are: New Orleans, San Antonio, Rochester, Minn., Madison, Wis., Cincinnati, New York, Philadelphia, Baltimore and Charlottesville, Va. They were chosen in order to get a wide variation in climate, temperature, general physical condition of patients and differences in economic level. All these factors, Dr. Meloney explained, can affect the results of treatment.

Favorable results have been obtained in 86% of the 186 cases of surgical infections already treated by local application of bacitracin. These cases ranged from boils and styes to such conditions as cellulitis and chronic osteomyelitis.

Bacitracin is an antibiotic, or anti-germ chemical from a germ, obtained from a strain of *Bacillus subtilis* found in the tissue removed in cleaning up the wound in a compound fracture case. Because the patient's name was Tracey, the discoverers named the strain of bacillus the Tracey strain and the antibiotic it produced bacitracin.

It was used at first to treat surface infections by local application. It has now been purified so that it can be safely given by injection in cases in which the infection has spread beyond the local area and is involving the body generally.

Develop Many Antibiotics

► ANTIBIOTICS, or drugs like penicillin and streptomycin, are being developed at a bewildering rate; yet the

future holds challenges that scientists have not yet begun to meet, Prof. Selman A. Waksman of Rutgers University, pioneer in this field, declared. Molds and bacteria that produce only one antibiotic apiece are outdistanced now by species that produce as many as half-a-dozen.

Among the needs that must be met, Prof. Waksman listed antibiotics that will attack filterable viruses, and others that will act against abnormal tissue growths like tumors. It is also desirable to overcome the development of resistance in certain bacteria to the action of antibiotics. Finally, we still need to find out how antibiotics work.

Decay Immunity Factors

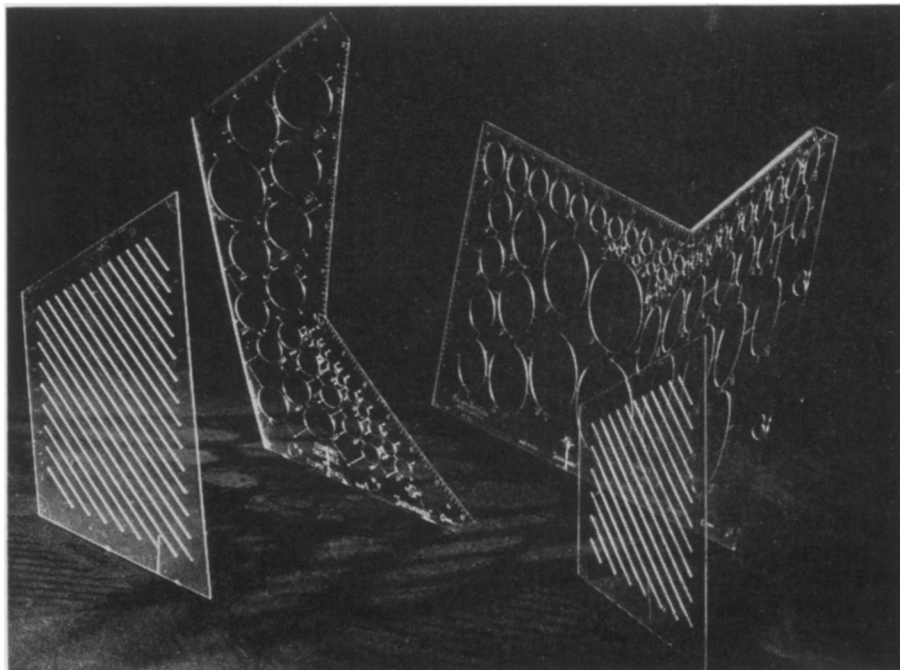
► SIX factors that make teeth immune, or resistant, to decay were reported by Dr. L. S. Fosdick of Northwestern University Dental School.

These factors are none of them like

the blood substances that give immunity, or resistance, to measles. There are probably no anti-decay substances in the blood. They may exist in the saliva, but so far no one has discovered them. But some people have teeth that are immune to decay and others have periods when their teeth do not decay. Prisoners in German and Japanese concentration camps, for example, had caries, or tooth decay, before but not during the time they were in the camps. Reviewing present knowledge of tooth decay, Dr. Fosdick finds the following six factors in decay immunity:

1. A copious or at least moderate flow of saliva.
2. Ability of the saliva to neutralize acid.
3. The concentration of calcium and phosphorus in the saliva.
4. The anatomy of the mouth and teeth. Perfectly arranged teeth that meet correctly for chewing and biting and that have few pits and cracks or teeth that are widely separated, so that they are relatively self-cleansing, have less tendency to decay.
5. The dental plaque, a tenacious covering on the teeth, and the bacteria in it.
6. The natural resistance of the teeth to acid decalcification.

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