

MEDICINE

Fresh Evidence Reported For Streptomycin Over TB

► FROM the bodies of patients who died of tuberculosis comes fresh evidence for the power of streptomycin, medicine's new weapon against the great white plague.

The evidence is presented by Drs. Archie H. Baggenstoss, William H. Feldman and H. Corwin Hinshaw of the Mayo Clinic and Foundation in Rochester.

It is the kind of evidence, from microscopic examination of TB-infected brain, lungs, liver and spleen, that is especially convincing to medical men.

The patients died of miliary and meningeal tuberculosis. In these forms of the disease the germs are widespread throughout the body, and the meninges which cover the brain are also attacked. Before the discovery of streptomycin, patients attacked by these severe forms of TB always died.

In the dead bodies of four such patients who had been treated with streptomycin, the Mayo scientists found evidence of regression and healing of the tuberculous spots in lungs, liver, spleen and eye which in one case had been affected.

Development of widespread tuberculous meningitis apparently was checked in one case and either prevented or cured in two other cases.

The scientists also looked for evidence of damage from the drug. They found no sign of it with the possible exception of kidney damage in one case.

Their observations, they state, offer "further encouraging evidence" of the effectiveness of streptomycin as a TB remedy and "some hope for the effective treatment of two hitherto consistently fatal forms of the disease."

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FORESTRY

"Wetter" Water Produced For Fighting Forest Fires

► MAKING WATER wetter is the latest method of fighting forest fires.

To those of you who think that water is already wet enough to put out fires, it can be explained that the so-called "wetting agent" is a chemical that reduces the surface tension of the water so that it will flow better, spread out, and soak into materials instead of form-

ing beads and remaining on the surface as droplets. Thus the "wetter water" will penetrate and get things soaking wet better than ordinary water.

The U. S. Forest Service is experimenting with several of these wetting agents in the hope that, added to water, they may be useful in putting out small fires especially in grass, needles and weeds and for "mopping up" the smoldering fire on the ground after blazes in the trees have been put out.

Many wetting agents are now known and have been used as detergents in place of ordinary soap and in the textile industry to facilitate dyeing.

Among those being tried out in forest fire fighting are Drench, P-2N sulfonate, and Tergitol.

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CHEMISTRY

X-Rays May Solve Mystery Of Structure of Proteins

► SCIENTISTS may learn how proteins, the building blocks of our bodies, are put together by using a new method of mapping atoms in complicated crystals. X-rays and mathematics are teamed up in the new method developed by Drs. David Harker and J. S. Kasper of the General Electric Research Laboratory.

A beam of X-rays is shot through a crystal, which is made up of atoms arranged in some regular pattern, the experimenters explained. Atoms in the crystal diffract the X-rays to give a similar pattern on a photographic plate. From the relative darkness of the spots in this pattern, the exact arrangement of the atoms in the crystal can be mathematically calculated.

You can see for yourself how this works by holding a fine silk handkerchief or umbrella against the light from a distant street lamp. Sometimes a cross-shaped set of colored bands appears around the light. X-rays are very much like ordinary light, except that the waves in X-rays are shorter. The fibers in the silk affect the light beam just as the rows of atoms in the crystal affect the X-ray beam.

Electron beams produce similar diffraction patterns and can sometimes be used in place of X-rays. The new method works only on crystals which have some sort of symmetry, but this includes about 98% of all crystals, the scientists pointed out.

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IN SCIENCE

CHEMISTRY

Solvent Selects Acetylene From Mixture of Gases

► ACETYLENE, one of the most valuable of industrial gases, can be concentrated out of the mixture of carbon monoxide, methane and other gases resulting from one production method by passage through a derivative of furfural which has a selective solvent action for this one particular gas. Discovery of this useful property in the solvent won patent 2,424,987 for Dr. Robert M. Isham of Okmulgee, Okla. Best compound for the purpose is tetrahydrofurfuryl acetate. Patent rights are assigned to Danciger Oil and Refineries, Inc., of Fort Worth.

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INDUSTRY

Alaska's Waste Salmon To Yield Valuable Products

► YEAR-ROUND industry for turning Alaskan salmon wastes into valuable products, including vitamins and drying oils, is being planned in a \$47,000 project announced by the Department of Commerce's Office of Technical Services.

Hormones, amino acids, and resin bases will probably be on the list of recoverable products, valued at an estimated \$5,000,000 to \$10,000,000 annually. Alaska Fisheries Experimental Commission will do the work under contract with the industrial research and development division of OTS. The Commission's task is to find out just what chemicals can be recovered from the fish wastes and sold.

The Fish and Wildlife Service of the Department of the Interior and the Alaska Committee of the Department of Commerce are cooperating on the project.

Year-round storage of the wastes is another unsolved problem. Fish heads, tail pieces and inner parts are now being dumped into the sea or allowed to rot at the canneries. Byproducts plants would help Alaskan fish canneries and open more all-year jobs for fishermen in Alaska's biggest industry. The project also is being planned to help conserve fish resources.

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THE FIELDS

DENTISTRY

Teeth Can Be Replanted Usually Only in Children

➤ IF JUNIOR falls down and knocks out a tooth, it can be replanted in his jaw. Not so, however, if his Dad gets a tooth knocked out.

Replanting of a tooth knocked out of its socket is successful only for children and usually fails in adults, Dr. Joseph T. Hartsook of the University of Michigan School of Dentistry reported at the meeting in Boston of the American Dental Association.

The shorter the interval between the accident and the time the child and his tooth reach the dentist, the better. First step in the replanting procedure is to take an X-ray to make sure the roots of adjacent teeth have not been damaged.

Care is taken to keep the tooth in good condition before replanting.

If the young patient is under school age, he is given a general anesthetic while the root canal is being sterilized and filled and the tooth replanted.

After replanting the tooth is held in place by wires attached to the sound teeth next to it. In many cases the tooth takes root again in two to four weeks.

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WILDLIFE

Too Much Water for Ducks Reason for Short Season

➤ TOO MUCH water, even for ducks; that is the news behind the news of the curtailed shooting season and sharply reduced bag limits established for this year by President Truman's proclamation. Detailed reports from the Canadian Department of Mines and Resources received at headquarters of the U.S. Fish and Wildlife Service confirm and extend the conclusions of American field biologists as to the growing seriousness of the duck shortage.

The same weather pattern that produced the disastrous Corn Belt floods drowned out large areas in the Canadian nesting grounds from which come most of the ducks that fly over the

shooting-blinds in the eastern part of the United States.

In other Canadian duck nesting areas water conditions are much better but prospects for next fall are just as bad. Nesting sites are there aplenty, and more than enough water and duck food; but the breeding population is either greatly depleted or missing altogether.

The only region where both duck population and breeding conditions are anything like normal is in southern Alberta and Saskatchewan. Ducks from this part of Canada fly mostly over the western states.

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AERONAUTICS

GCA Equipment To Become Permanent CAA System

➤ RADAR ground control approach equipment to aid airplane landing in overcast weather, has proven so successful during trial at the national capital's airport, and also at New York and Chicago commercial airports, that all three are now to be made permanent.

The tryout equipment, known as GCA, was loaned to the U. S. Civil Aeronautics Administration for these installations by the Army Air Forces. By mutual agreement, they have now been donated outright. Civilian personnel, trained by Army men, will operate them.

GCA was developed during the war at the government's laboratory on the campus of Massachusetts Institute of Technology, and widely used in America and abroad, both by the Army and the Navy, in bad-weather landings. It is a system in which planes approaching a landing strip are spotted by the GCA land crew while still in the air, perhaps 50 miles away, by scanning radar equipment. The ground crew then gets in touch with an approaching pilot by ordinary radio and directs him to the proper position for immediate approach and on the downward glide until he is near enough the ground to see the strip and make the "touch" on his own.

Thousands of safe landings have been made by Army and Navy pilots on landing fields so enclosed in fog that they were entirely invisible from the air. The equipment is expensive, and its primary use at commercial airports will probably be as an assist to other instrument landing equipment and will be used in particularly dense weather.

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ZOOLOGY

Two Coyotes Entertain Yellowstone Park Visitors

➤ TWO COYOTES in Yellowstone National Park have been giving the bears keen competition for the tourists' attention—and food. During the past few weeks they have been begging for food along the main park highway between Midway Geyser Basin and Nez Perce creek, some 10 miles from Old Faithful geyser.

The coyotes have caused traffic jams seldom excelled by the so-called "bear jams". The two coyotes have been photographed extensively.

Yellowstone visitors in the past were lucky to even see a glimpse of gray coyote stalking his prey off the sagebrush plains or darting among the timber. However, the coyotes give the tourists a fine vocal show nearly every night with their loud yipping and barking.

For coyotes to beg for food and pose for pictures along the road has been until now unheard of in Yellowstone's colorful history.

This diamond anniversary year of the founding of Yellowstone Park finds two "little wolves" putting on a very unusual show, much to the delight of visitors.

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ANTHROPOLOGY

South African Ape-Man Had Beginnings of Chin

➤ FIRST PERSON in the world to stick out his chin was the very ancient ape-man of Sterkfontein cave in South Africa. Newest discovery of remains of this puzzling race is an almost complete lower jaw of a large male, only eight feet from the spot where the skull of an old female was found.

Drs. R. Broom and J. T. Robinson of the Transvaal Museum, describing this relic in the journal, *Nature*, state that "on the lower part of the front of the jaw there is a little bony thickening which might be regarded as an incipient chin." Lack of chin is what makes so many prehistoric races look unattractive to modern man.

Other features of the jaw are decidedly human, especially the teeth and the joint with the skull. "The whole jaw," state the discoverers, "is practically a human jaw."

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