

MEDICINE

Anti-TB Drug Reported Similar to Streptomycin

► A NEW AND promising anti-tuberculosis drug has been introduced.

Called kanamycin, it has been found to exhibit many of the properties of another tuberculosis fighter, streptomycin. Of 12 patients who received kanamycin, two were reported definitely improved. Exactly what role the drug played in the improvement has not been determined.

The remaining ten patients exhibited signs of favorable alteration of disease symptoms, Dr. Kenneth Wright of the Onondaga Sanatorium, Syracuse, N. Y., reported.

However, 50% of the patients became resistant to the drug within 60 days. The remainder became resistant within 120 days.

The resistance was about the same as that observed with streptomycin when this drug, the first effective tuberculosis fighter, was used alone, he said.

Streptomycin is now used with isoniazid or PAS, para-amino-salicylic acid. Future studies of kanamycin, in combination with other drugs, may yield better results, Dr. Wright told SCIENCE SERVICE. The 12 patients who were tested with kanamycin received that drug alone.

Kanamycin was first discovered in Japan in 1957 by Dr. Hamao Umezawa of Tokyo University. It is made from a mold related to that from which streptomycin and another antibiotic, neomycin, are derived.

Dr. Wright delivered his report at the 54th annual meeting of the National Tuberculosis Association in Philadelphia.

Science News Letter, May 31, 1958

VETERINARY MEDICINE

"Pigloo" System Helps Save Young Pigs

► IGLOO-LIKE homes for pigs can greatly reduce disease and death loss—some 23% of all pigs born in this country die before weaning.

Developed by Clarence Whitworth and James S. Collins of Nutrena Mills, Inc., each eight-foot-diameter wooden house, complete with exercise pen, is actually an individual maternity ward for the mother pig and her offspring.

The house is designed so that the sow cannot crush the infant pigs when they nurse. Since "non-family" pigs are not kept in the same building, the usual livestock diseases that afflict young pigs are virtually eliminated. The sow also builds up antibodies that are passed on to her litter.

The "pigloo" is part of a unique housing and management system that takes advantage of known principles of antibody protection, natural birth and physical protection of the young pigs. Tested with on-the-farm production of 5,000 animals at various test sites, the pigloos are credited with reducing disease loss from more than 10% to almost zero and cutting death loss from crushing of infant pigs from 14% to less than 2%.

Initial construction cost of housing is also reduced greatly. A farmer's labor require-

ment for producing 900 pigs a year is cut in half. In addition, the system permits planned breeding so that the farmer can increase the yearly number of litters produced by each sow.

The pigloo system is expected to "bring economic advantages so striking as to result in a complete revamping of the nation's hog producing industry," James C. North, president of Nutrena, said. It is described as a low-cost system in which the independent hog raiser can produce the lean-meat type hog now in demand for year-round marketing.

Science News Letter, May 31, 1958

MEDICINE

Test Diagnoses Diabetes Within Half Hour

► A NEW DIAGNOSTIC test for mild cases of diabetes has been developed.

The test, a timesaver, consists of injecting sodium tolbutamide into the patient's vein. The response of the blood sugar level can be analyzed 20 to 30 minutes later, the Veterans Administration reported.

Non-diabetics show a rapid decline in blood sugar level whereas the level in diabetics falls much more slowly. The curves of the readings of blood sugar level after the injection made possible a diagnosis of diabetes with an accuracy of about 95%.

The principle of the test is based upon the presumed ability of sodium tolbutamide to stimulate the insulin-producing cells of the pancreas to release more insulin, thereby lowering the blood sugar level. This was reported by Drs. Roger H. Unger and Leonard L. Madison of internal medicine of the University of Texas Southwestern Medical School and the Dallas VA hospital.

Science News Letter, May 31, 1958

PSYCHIATRY

Doctor Should Babble With Babbling Child

► A DOCTOR should babble with a psychotic babbling child, Drs. Robert C. Prall and I. Hyman Weiland of the Eastern Pennsylvania Psychiatric Institute, Philadelphia, told the American Psychiatric Association meeting in San Francisco.

This procedure was recommended as a method of making contact with the inaccessible child who cannot talk meaningfully and seems frightened and completely withdrawn. The doctors described their work with 15 boys and five girls who either had no use of speech or who used words in a meaningless and babbling way.

The first step in making contact with such children, they found, was to join with them in their babbling. Next it is necessary to give them support by protecting them from their overwhelming impulses and by reassuring them of the permanence of objects.

Next an attempt should be made to help the child to distinguish between what is real and what is a part of his personal dream world.

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IN SCIEN

PUBLIC SAFETY

U. S. Policy on Halting Bomb Tests Is Changing

► THE UNITED STATES policy on testing hydrogen bombs is due for a change.

The change, which will be an outright halt, is expected in early summer when the current series of nuclear tests in the Pacific is concluded. Russia has already stopped nuclear weapons tests with the qualification that the halt would hinge on U. S. and British actions.

Although the U. S. policy reversal will come too late to carry the world-wide propaganda advantage it could have had, it will, nevertheless, be a step in easing international tensions. It will also help to curb the fears of many persons of all nationalities who are concerned that hydrogen bomb tests are so poisoning the earth's atmosphere that future generations will carry the burden of unfavorable genetic effects caused by the increased radioactivity.

The policy reversal will have these same effects, although perhaps to a lesser degree, if the U. S. nuclear test cessation is contingent upon stopping of tests by all other nations.

It is expected, however, that the U. S. will not qualify its suspension of hydrogen bomb tests, but that the decision will be a unilateral one.

Such an announcement might pave the way for reopening negotiations with Russia leading towards an end to the Cold War and the armaments race, with an adequate inspection system for policing the agreements when this is necessary.

Cessation of hydrogen tests, when this is finally accomplished by international agreement and with adequate inspection control, will bring one benefit not often considered: some tests can be conducted in a cooperative effort to explore possible peacetime uses of fusion bombs.

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NUTRITION

Spinach Contains Less Iron Than Carrots

► SPINACH has long been overrated as a source of iron.

Potatoes, squash and carrots contain more iron per portion than does spinach, Dr. William Bolton, associate editor of *Today's Health*, a publication of the American Medical Association, reports in the May issue.

Some years ago, spinach received an exaggerated rating as an essential food. The pendulum of time has now swung the other way, he states.

However, good aspects of the vegetable include the fact that it is a good "filling food" with a low calorie content, and it contains a moderate amount of vitamin A, as do most green vegetables.

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CE FIELDS

PUBLIC SAFETY

Radium Dial Watch Can Use Up Radiation Limit

► SOME LUMINOUS dial wrist watches contain enough radium to subject their owners to nearly two-thirds the maximum permissible level for exposure to hands and forearms.

This is the warning of Dr. J. L. Haybittle of the Radiotherapeutic Centre at Addenbrooke's Hospital, Cambridge, England, in *Nature* (May 17).

Dr. Haybittle borrowed some luminous dial watches from friends and tested them for radiation. They ranged in radium content from 0.01 to 2.2 microcuries.

The 2.2 microcuries of radium watch recorded a dose-rate of eight milliroentgens per hour. Assuming the watch is worn for 16 hours a day, Dr. Haybittle says, the skin would receive nearly two-thirds the permissible level.

"Should such watches," he warns, "become more popular with the public, then luminous watches would be second only to diagnostic radiology in the amount of radiation they contribute to the gonads."

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MEDICINE

New Type Lung Disease Plugs Air Passageway

► A NEW DISEASE of the lung has been reported by a group of pathologists.

The disease, called "alveolar proteinosis," is characterized by a stoppage of the air sacs when a protein-like material rich in fats plugs the air cells of the lungs. This was reported to the National Tuberculosis Association meeting in Philadelphia by Dr. Samuel H. Rosen of the Veterans Administration, Armed Forces Institute of Pathology, Washington, D. C.

Twenty-seven cases of the disease have been reported. The first case was observed at Massachusetts General Hospital five years ago. The majority of the cases have been seen within the past three years, most of them very recently, Dr. Rosen added.

At the onset of illness, some of the patients exhibited the symptoms associated with pneumonia. The most common complaint of the patient is shortness of breath and usually coughing.

No microorganisms have been found to be the cause of the disease. Treatment with antibiotics or corticosteroids does not appear to alter the course of the disease and, since the disease spreads through both lungs, surgery is not possible, Dr. Rosen pointed out.

The investigators are speculating that the disease is due to the inhalation of a foreign particle. The only clue to support this theory is the fact that four of the patients worked in lumber yards, while two were electricians.

Most of the patients are young adults, 20 to 40 years old. One is a child of two and one-half years. There have been eight deaths among the 27 known victims.

Other investigators of this new disease include: Drs. Benjamin Castleman and Richard Thomas N. Hunt, both of Massachusetts General Hospital, Averill A. Liebow of Yale University Medical School, and Frank M. Enzinger, also of the Armed Forces Institute.

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NUTRITION

Odorless and Tasteless Flour Made From Fish

► FISH FLOUR BREAD is being offered by South African bakers.

The flour is reported to be completely odorless and tasteless by the U.S. Department of the Interior's Bureau of Commercial Fisheries. In areas where protein foods are scarce or expensive, the process may offer a fairly simple way of adding protein to the diet.

The raw material for the flour is prepared by an extraction process from crude fish meal. Five or more extractions are made with a solvent mixture consisting of 90% industrial ethyl alcohol (96% strength) and 10% ethyl acetate. Each extraction is followed by a wash in clean solvent. Drying in hot air or by vacuum frees the flour from all traces of solvent.

The final flour has a light brown color and all the "biological value" of the protein is unaffected by the process.

South African fishermen bring in a total catch of some 500,000,000 pounds of fish in a good year. It is estimated that 10,000,000 pounds of fish flour a year will be required to supply demand. A two-pound loaf of the new bread contains about two percent fish flour.

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ENTOMOLOGY

Device Shows Sky As Seen by Insect

► A DEVICE to show the sky as seen through an insect's eye has been built by two Canadian scientists.

It reproduces the pattern of polarized light from a blue sky, they report in *Nature* (May 17). Thus the instrument enables the human eye to detect aspects of light perceived by insects.

Dr. J. A. Chapman of the Forest Biology Laboratory, Victoria, B. C., Canada, devised the viewer with which the sky is observed through a rotating Polaroid-covered slit.

The device is expected to be a valuable aid to entomologists studying insect behavior in determining how the environment appears to the insect's sense organs. Only recently did scientists learn that the eyes of arthropods are sensitive to changes in the polarization of light, and that many insects use the plane of light polarization from a blue sky for orienting themselves.

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BIOCHEMISTRY

Chemical Found Only In Malignant Tissues

► A CHEMICAL existing only in cancerous tissue has been discovered.

Finding a compound exclusively in malignant tumors and never in normal tissues will greatly contribute to the diagnosis of malignant tumors. Equally important, it should lead to uncovering the secrets of cancerous growth and the discovery of a way to control cancer.

The chemical, malignolipin, is a phospholipid, a fatty substance that contains phosphorus. Malignolipin is never found in the normal tissues, such as cattle brain or whole bodies of normal mice, five Japanese scientists report in *Science* (May 16).

Malignolipin was discovered during an investigation of the chemical nature of the extracellular small bodies in cancer tissues that were constantly attracted to protoporphyrin III, a component of protoplasm. The chemical is composed of choline, spermine, phosphoric acid and fatty acid.

It is abundant in highly malignant tumors and in the rapidly growing part of a tumor. It is scarce in dying tumors or in the degrading parts of tumors.

The researchers are Drs. Takekazu Kosaki, Tadao Ikoda, Yoshimaro Kotani, Shinya Nakagawa, and Toshiko Saka, all of Mie Prefectural University, School of Medicine, department of biochemistry, in Tsu City, Mie, Japan.

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NUTRITION

Find No Evidence for Changing Fat Intake

► NO CONCLUSIVE EVIDENCE has been found that the fat consumption of the average American should be curbed, according to a report by the National Academy of Sciences.

A great deal more definitive research into the nutritional role of fats and their possible connection with cardiovascular illness is necessary before any major American dietary changes can be recommended, the National Academy of Sciences-National Research Council reports.

Population studies indicate that diets high in fat are correlated with higher levels of plasma cholesterol and with increased cardiovascular disease. However, decisive proof of the causal relationship is lacking because of the many variables entering into the data, according to the report.

Until it is clearer which fats are more desirable nutritionally and which, if any, are undesirable, major changes in the American diet are not recommended.

The report, entitled "the Role of Dietary Fat in Human Health," was prepared by the Committee on Fats in Human Nutrition of the Academy-Research Council's Food and Nutrition Board. Chairman of the committee is Dr. Paul L. Day, professor of biochemistry at the University of Arkansas. Dr. Willis A. Gortner, biochemist for the Department of Agriculture, assisted.

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