

MEDICINE

Progress in Missiles Has Advanced Medicine

➤ **MISSILE DISCOVERIES** have proved "good medicine," Surgeon General O. K. Niess of the U. S. Air Force told a meeting of Association of Military Surgeons of the United States in Washington, D. C.

Gen. Niess said that a derivative of hydrazine, developed as a liquid missile propellant, had been found useful in treating tuberculosis and mental illness.

"Another missile discovery has been modified to produce a means of rapidly lowering blood pressure to make operations safer," he said. Civilian heart specialists believe a small missile valve may be used to replace a defective valve in the human heart.

Electronic equipment for missiles and for space currently is being adapted to measure body temperature and blood flow.

Besides these important medical contributions made through missile development, Gen. Niess credited aerospace medical research with "a great impact on general medicine" by its pioneering in such areas as the cause and effect of stress, fatigue and tension.

Space medicine is influencing the development of medical instrumentation and methods used in diagnosis, observation and therapy, he said, by speeding the improvement and miniaturization of many appliances used in diagnostic procedures.

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PUBLIC HEALTH

Influenza Vaccination Urged for Aged and Ill

➤ **PROTECTION** from influenza for the aged and chronically ill through immediate vaccination is urged by the Public Health Service Advisory Committee on Influenza Research.

Although the National Office of Vital Statistics has not yet reported an influenza outbreak this year, Asian flu accounted for some 86,000 excess deaths in three epidemic waves in 1957-1958 and again in the early months of 1960. Almost 60,000 excess deaths were recorded in the six-month period from October to March, 1957-1958. The 1960 epidemic caused an excess of over 26,000 deaths.

Routine immunization is recommended for all persons 65 years of age or older, for pregnant women, for patients of all ages who suffer from heart, lung, kidney or metabolic disorders.

The U. S. Public Health Service says that although influenza may not be more likely to attack persons in these groups than others, it is more likely to threaten their lives. Bacterial complications are more frequent in patients with cardiovascular, kidney and pulmonary diseases, and influenza alone puts severe stress on heart and lung functions.

The adult dosage recommended by PHS of the commercial influenza vaccine, which is a killed virus preparation made up of different strains, is one cubic centimeter injected under the skin on two occasions

two or three months apart.

Since the typical flu "season" begins in November, extending through February or March, the Public Health Service advises early vaccination. Each fall prior to Nov. 1, booster shots should be given.

There is only one word of warning on the allergy reactions to be expected. The vaccine is produced in eggs, so the Advisory Committee has advised against vaccination for persons unable to eat eggs or chicken because of food allergy, or for those who have had a definite allergic reaction on previous inoculation of an egg vaccine.

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Drugs Combined to Treat High Blood Pressure

➤ **THE FIRST** large-scale controlled test of newer antihypertensive drugs in general use has been announced by the Veterans Administration after nearly two years of research in eight VA hospitals. Dr. Edward D. Freis of the Washington, D. C. VA hospital, was chairman of the study which involved some 320 patients with high blood pressure.

Patients with severe and moderately severe cases were given combinations of the tranquilizer reserpine with each of three nerve-blocking drugs—mecamylamine, chlorisondamine and pentolinium tartrate. All three were about equally effective in producing significant reductions in blood pressure.

But undesirable reactions varied slightly, producing slightly more dryness of mouth and bladder difficulty with mecamylamine than the other two drugs. Chlorisondamine treatment caused some visual disturbance.

Patients with mild and moderately severe high blood pressure were given a reserpine-hydralazine combination, which was more effective than reserpine alone.

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NUTRITION

Taste of Fish Affected by Water

➤ **YOU HAVE HEARD** of fishy water, but the water from which fish are taken may influence the flavor of the fish.

Taste tests conducted by the University of Wisconsin food nutrition specialists, Ruth Baldwin, Dorothy H. Strong and J. H. Torrie repeatedly compared the flavor and aroma of baked fish caught in different locations. Results showed that the tasters frequently gave poorer flavor and aroma scores to fish taken in streams below the entry of effluent from industrial plants such as paper mills. But fish caught in a shallow, muddy lake were rated about the same as those taken from a deep, cold lake.

The researchers emphasized that the tests did not yet prove that the effluent from the factories actually caused the poorer flavor, as other conditions could have existed that affected the flavor and aroma.

It was also found in the tests that weight, length or the sex of fish did not seem to affect either flavor or aroma.

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IN SCIENCE

MEDICINE

Suggests Standard Terms For Artificial Parts

➤ **DISCUSSIONS** of artificial kidneys, hearts, and lungs have become so confusing some scientists see the need for a standard naming system for man-made body parts.

The problem, says Dr. Willem A. van Bergeijk of the Bell Telephone Laboratories, Murray Hill, N. J., is that scientific reports invariably compare the artificial device with the real organ. In such cases, the reader gets lost and cannot tell whether the writer is referring to the device or the "prototype."

To dispel the literary fog, Dr. Bergeijk suggests in *Science*, 132:1248, 1960, using the suffix-mime, in conjunction with the root word for the organ represented. Thus an artificial kidney would be a nephromime. The system could also be used to name mathematical models of organs and functions.

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PALEONTOLOGY

New Findings Support Evolutionary Theory

➤ **THE IDEA** that there were two paths of evolution, one of which led to mammals and man, has received new support.

Dr. Nicholas Hotton, paleontologist of the Smithsonian Institution in Washington, D. C., reported that the two evolutionary lines are distinguishable from differences in changes in the structure of the jaw. These changes in turn affected the structure of the middle ear.

Both evolutionary lines made experiments to establish themselves on dry land and adapt to this kind of existence, Dr. Hotton's studies show. In many cases the smaller cold-blooded animals, presumably the most active, were most successful in achieving this.

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OCEANOGRAPHY

Silver-Plated Cable Used for Ocean Probe

➤ **A FIVE-MILE LENGTH** of silver-plated cable will enable naval oceanographers for the first time to study ocean depths for long periods of time. The cable, produced by Electrical Cable Works of U. S. Steel's American Steel and Wire Division, Worcester, Mass., was silver-plated for greater conductivity.

The cable will connect a remote-controlled underwater device with a U. S. Marine Corps "Ontos" tank, an electro-mechanical arm that simulates the motions of a human arm. The undersea vehicle will be used for observations of the sea floor, collection of samples and installation of deep-bottom instruments.

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CE FIELDS

MEDICINE

Allergies Discovered To New Penicillin

► TWO PATIENTS have shown extreme sensitivity to the new "synthetic" penicillin called phenethicillin.

Because allergy to penicillin makes its use difficult, if not impossible, in some patients, the new product raised hope that it could be used safely in patients who previously had shown allergic reactions to penicillin.

Both patients who reacted unfavorably to the new penicillin were women, Drs. Leo H. Criepp, University of Pittsburgh School of Medicine, and Herman Friedman, Temple University School of Medicine, Philadelphia, reported in the *New England Journal of Medicine*, 263:891, 1960.

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ASTRONOMY

New Variable Star Discovered in Orion

► A NEW VARIABLE star has been discovered in the constellation of Orion by the Chilean astronomer de la Vega, after whom the star is named.

The new variable, so-called because its brightness varies over a period of time, is of fifth magnitude and can be seen with the naked eye as a faint object to the right of Orion's belt.

The constellation Orion is visible low in the east late in the evening sky. Right ascension of the new variable when discovered was four hours, 59.5 minutes; declination, plus zero degrees, 35 minutes.

Discovery of the new star, de la Vega, on Oct. 25 was reported to astronomers in the Western Hemisphere by Harvard College Observatory.

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ZOOLOGY

How Hermit Crab Selects Home Explained

► HOW THE HERMIT CRAB—the intertidal creature that takes over unoccupied shells—selects its home has been explained by Dr. Ernest S. Reese, a University of Hawaii zoologist.

Dr. Reese said the crab's taste in dwellings is inborn and its choice is determined by a meticulous and seldom varied "house-hunting routine."

The routine is as follows: When the crab is old enough for a home of his own, his vision can distinguish an object that contrasts with its background coloration. The object must have a rough exterior so the crab can grasp and maneuver it.

Weight now enters the picture. Since the crab must carry its dwelling about, it tends to select an object that has a certain

ratio to its weight. As the crab grows, it will periodically select larger objects to maintain this ratio.

By now the crab, through his tactile and kinesthetic (muscle) sense, will have determined that the object is a shell of a particular species. His innate discriminatory capacity in this respect leads it to favor a particular species of shell.

Having discovered the shell's aperture by then, the crab will insert his abdomen. If this is a proper fit, the crab has found a home.

In principle the househunting routine of a hermit crab may not be far different than that of a careful housewife. The main difference is that the crab's taste is a matter of genes and not of culture, Dr. Reese explained. Dr. Reese was formerly on the staff of the University of California at Los Angeles.

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CHEMISTRY

Find 4,000 Degrees Is Technetium Melting Point

► ONE MORE CONSTANT of nature has been determined. The melting point of technetium, element 43, the first element made in the laboratory by man, has been found for the first time. It is within 50 degrees of 2,200 degrees centigrade (about 4,000 degrees Fahrenheit).

The determination was made on a fraction of an ounce of the element loaned to British scientists at the University of Oxford by the U.S. Atomic Energy Commission laboratory at Oak Ridge, Tenn. It was made by Drs. E. Anderson, R. A. Buckley, A. Hellawell and W. Hume-Rothery, who report results of their investigation in *Nature*, 188:48, 1960.

Technetium does not occur naturally on earth. It has been found in stars, including the sun, and is produced artificially as a radioactive substance by atomic bombardment of molybdenum or as a fission product in nuclear reactors.

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MEDICINE

Cancerous Fluids Treated by Yttrium

► A COMPOUND, colloidal radioactive yttrium silicate, has advantages over radioactive gold in the treatment of malignant fluids in lung and abdominal cavities.

Six patients treated with the yttrium chemical got relief for five to 19 months, Prof. J. Walter of the University of Sheffield, England, reported in the *British Medical Journal*, Oct. 29, 1960.

He said that if experience confirms the safety of the new compound, it could replace radioactive gold in body cavity treatment. Prof. Walter reported that the new compound is less of a radiation hazard for personnel than radioactive gold.

The advantages of yttrium over gold, he says, include superior surface penetration of the beta particles as well as less radiation hazard owing to absence of penetrating gamma radiation.

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MEDICINE

Drug Controls Blood Fats In Diabetic Patients

► TABLETS containing heparin have been successful in controlling blood fats for some diabetics, Dr. John K. Finley, Hahnemann Medical College, Philadelphia, reported at the Southern Medical Association meeting in St. Louis, Mo.

Dr. Finley, a specialist in eye disorders, said the damage to tiny blood vessels of the eye, which makes diabetes the second-ranking cause of blindness in the United States, appears to be due to an excess of fats, rather than sugar, in the blood. It has long been believed, Dr. Finley said, that the insulin which keeps blood sugar under control will also control blood fats.

In four of five patients treated with heparin for 18 months, improvement was seen in the eye lesions, but Dr. Finley's study is preliminary. He said three to five years of additional treatment may be required to "clarify the results of correction of the fat transport disorder."

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MEDICINE

Antibiotic From Japan Fights Deadly Infection

► A JAPANESE-DEVELOPED antibiotic called Colistin is as effective as but less toxic than Polymyxin B against the deadly pseudomonas infections, scientists of the University of Washington, Seattle, have reported.

Pseudomonas is a species of bacteria outstripping staphylococcus in frequency as a cause of fatal infection in hospital patients.

Drs. C. Evans Roberts Jr., Henry A. Kuharic and William M. Kirby said studies in the United States over the past two years had shown Colistin (sodium colistinmethanesulfonate) to be active against a number of gram-negative bacterial disease-producing organisms.

They reported to the Conference on Anti-Microbial Agents in Washington, D. C., results of treatment of 20 adults and children with severe pseudomonas infections, in most cases unresponsive to other antibiotics.

Injections with Colistin resulted in complete eradication of the pseudomonas infection in 11 of the 20, while an additional four showed definite improvement. In two of the patients the results could not be determined, and in only three did the infections fail to respond.

From two to six milligrams of Colistin could be given as opposed to a maximum dosage of 2.5 milligrams of Polymyxin B.

Urinary infections were present in all 20 patients, but in addition to kidney disease, illnesses included acute bacterial endocarditis (inflammatory heart disease), acute inflammation of the lungs, meningitis and bacteremia (bacteria in the blood).

The investigators concluded that Colistin is a relatively safe and effective antibiotic in treating pseudomonas infections. The Society for Industrial Microbiology is sponsoring the conference.

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