

MEDICINE

Kidney Stones Dissolved

An improved solvent, formerly used to clean calcium salts from dairy equipment, is proving helpful to sufferers from kidney stones, Faye Marley reports.

➤ **SUFFERERS** from recurring kidney stones are now being helped by an improved solvent formerly used to clean calcium salts from the pipes of beer and dairy equipment. The insoluble "stones" are similar in humans and commercial products.

Hemiacidrin is the generic name of the solvent produced by Dr. Alfred R. Globus, director of medical research for the Guardian Chemical Corporation, Long Island City, N. Y., under the trade name Renacidin, now used to clean kidney catheters and even to dissolve kidney stones.

"Hemiacidrin is not recommended to replace surgery," Dr. Globus said. "It is particularly valuable, however, as an aid to surgery and in patients unable to undergo kidney operations. It has been especially helpful with paraplegics (patients with paralysis of the legs and lower part of the body), the aging and those with heart trouble for whom surgery would be dangerous."

It was Dr. William P. Mulvaney, assistant professor of surgery at the University of Cincinnati College of Medicine, who first suggested to Dr. Globus that hemiacidrin might be developed in a purified form to clean the "indwelling" catheters of chronically ill patients with non-functioning bladder. Unless cleaned with the solvent, the catheters must be removed every week or so, with discomfort and some danger.

"The solvent is most commonly used for cleaning the catheters," Dr. Globus said, "but a double catheter can now be used under careful medical and nursing care, to administer the solvent in a tube introduced directly into the kidney, which can dissolve some common kinds of kidney stones."

Dr. Mulvaney exhibited a large plastic kidney display at the American Medical Association clinical meeting in Los Angeles, showing how hemiacidrin washes over the kidney stone and dissolves it.

There are numerous tiny nuclei of kidney stones that cannot be seen even during an operation, but the solvent can wash them away and keep them from growing.

Last year some 180,000 persons were admitted to hospitals in the U.S. with kidney stones, which form in the bladder and urinary tract as well as in the kidneys. Hemiacidrin breaks up calcium and increases the solubility of normally insoluble calcium salts through the formation of water-soluble complexes.

Dissolving kidney stones has been a dream of doctors for centuries, Dr. Mulvaney said, but until recently it has been impractical because of irritation by the solvents or the prolonged time required.

Stones continue to recur in some patients and surgery is repeated. However, it may come impossible to reoperate effectively.

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New Treatment Found

➤ **HOPE** for longer and more active lives will result from a new treatment for the incurable wasting disease called muscular dystrophy. It affects more than 200,000 persons in the U.S., one-third of whom are children who could not have been expected to reach their 18th birthday.

Although disclaiming any cure, Dr. Robert M. Dowben of Northwestern University Medical School, Chicago, told the clinical meeting of the American Medical Association at Los Angeles that eight of the 37 patients he had treated appeared to gain some strength.

Using a digitalis preparation along with a synthetic steroid compound that is not available for general use, Dr. Dowben aimed at building up leaky muscle cells that tend to lose essential proteins. He also prescribed daily exercises.

It took six years of testing various compounds on 1,000 mice to come up with the two-pronged treatment, composed of the steroid known chemically as 1-methyl-delta-1-androstenolone and digitoxin, the digitalis compound.

Referring to his experience with dystrophic mice, the Northwestern professor said the disease probably cannot be halted permanently, but will not progress as fast.

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Supersonic Travel

➤ **SUPERSONIC TRAVEL**, predicted for the 1970's, will make thunder-like sonic booms a commonplace. It is, however, expected to pose a few medical problems, none insurmountable.

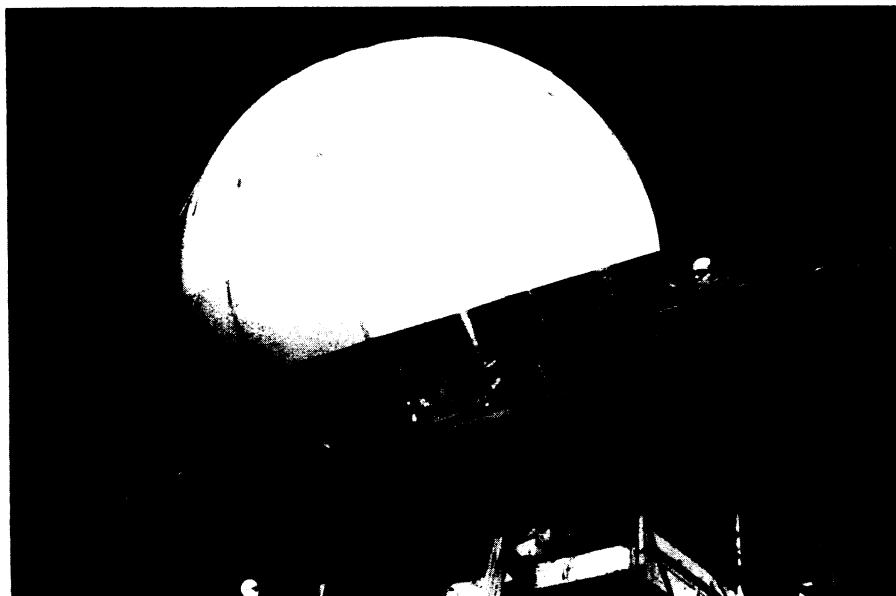
The biggest stumbling block, Dr. Donald H. Stuhling, chief, aviation medicine, The Boeing Company, Seattle, told the clinical meeting of the American Medical Association in Los Angeles, will be the noise of the "sonic boom" phenomenon.

The first supersonic jets may cruise at altitudes approaching 75,000 feet and carry 150 passengers 3,500 miles at three times the speed of sound. Jet transports now cruise often at 40,000 feet at speeds slightly under the speed of sound. With public acceptance of the sonic boom, a noise resembling two claps of thunder to persons on the ground, Dr. Stuhling said the most critical operational milestone of supersonic transport will have been passed. The noise is caused by shock waves radiating from faster-than-sound aircraft.

Time change also will require some adjustment, however. It would take a traveler about a week to adjust to Rome time, leaving Los Angeles, for example, at eight in the morning and finding himself in Rome five hours later at 10 p.m. Both physical and mental efficiency may be undermined.

The high cruising altitude of supersonic jets will require a new system for supplying emergency oxygen in case cabin pressurization is lost, for even a brief period. One solution might be an air scoop that would open automatically under the fuselage to restore partial pressurization while the plane

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AUTOMATIC ANTENNA—This inflatable antenna, stored underground will rise and inflate automatically for operation after a nuclear attack has leveled other buildings. An engineer inspects the aluminized film section of the nine and a half foot structure being developed by Goodyear Aircraft.

AMA Meeting

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descends. This device, with the use of individual oxygen supplies, would provide an adequate margin of safety.

Short-term bursts of radiation associated with sun flares, another potential source of exposure, could be avoided by using the flare warning network of ground-based radar stations, solar observatories and neutron monitors being established in support of the national space program.

Future radiation weather satellites may provide as comprehensive a preflight radiation forecast as is anticipated for inflight weather. Such advance radiation forecasting would limit crew exposures to less than 25 per cent of that accepted for radiation workers and virtually eliminate all risk to passengers.

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Weight Lifting Advised

► IT TAKES regular major muscle flexing for aspiring athletes to get strength to train for setting new world records of the future.

Prof. Laurence E. Morehouse, director of the University of California's human performance laboratory, Los Angeles, told the American Medical Association conference in Los Angeles that weight lifting is good for almost any kind of sport training.

"The key to improvement in power is tension," he said. He recommends one intense muscle contraction a day or even only twice a week to improve strength. Light muscle contractions repeated a thousand times a day will not improve strength in the normal person.

Other information given the physicians concerned with sports:

Coaches and trainers should be taught resuscitation and heart massage techniques so they can handle emergencies among athletes—Dr. Robert O. Bauer, Los Angeles.

A good pair of lungs, a level head and stamina are basic requirements for persons who engage in the sport of scuba diving—Dr. L. M. Morrisset, El Cajon, Calif.

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Suicide Rate Changes

► SUICIDE is more common among the well-paid population today. Thirty years ago it was more prevalent among Americans in the low-salaried working class.

The suicide rate in San Francisco is two and a half times that of the country as a whole, and the rates are also high in Oakland, Calif., and Los Angeles, as well as in Seattle, and Portland, Ore. In general, however, rural and urban areas now have the same suicide rate. Thirty years ago cities recorded a rate nearly 60 percent higher than rural sections.

Dr. Louis I. Dublin of Winter Park, Fla., a medical statistician who spoke at the clinical meeting of the American Medical Association in Los Angeles, estimated that perhaps as many as two million persons in this country have attempted to take their lives at least once.

A great many of the unsuccessful will try again, he said, adding that on the basis of a recent study, ten per cent will eventually succeed. Men and older persons are more successful in taking their lives than women and young people.

"The unsuccessful often make sure they will be discovered and saved before it is too late," Dr. Dublin said. "They are crying for help and sympathy."

He urged more intensive investigation of attempted suicides, and more suicide prevention centers such as exist in Los Angeles and are being planned in Indianapolis and Tulsa, Okla.

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RADIOLOGY

Radiation Measured Over Entire Human Body

► THE FIRST whole-body radiation counter capable of recording separately the amount of radiation in 18 different sections of the body is now in operation at the National Institutes of Health (NIH) in Bethesda, Md.

The new instrument, installed in the NIH Clinical Center, will make possible more sensitive, more accurate and more detailed studies involving low levels of radiation.

The device, together with a second counter designed to sort out and identify the particular isotope or isotopes present in the body, is used in two specially-constructed rooms of six-and-a-quarter-inch-thick armor plate salvaged from old battleships. This is necessary to keep background radiation at a minimum, since modern steel may contain some radioactivity.

Among the types of research seen for the new counter are investigations of blood and metabolic disorders.

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ZOOLOGY

Bees Dance Fast If Memory Lingers

► A BEE'S memory determines the tempo of its tail-wagging dance which indicates the distance to a honey source.

German scientists have mathematically shown that the bee's dance is faster and more furious for short distance runs to honey. It slows down if the distance is longer and the bee tends to "forget."

It was found that for longer distances the bee forgets a certain fraction of the path in relation to the round trip path. If a maximum path to honey for a bee is chosen the tempo of the dance for a fraction of the distance is the same as in shorter distances. As fractions of the distance are forgotten, the dance tempo slows down correspondingly.

This research is reported by Prof. Karl von Frisch of the Zoology Institute of the University of Munich and Prof. O. Kratky of the Institute for Physical Chemistry at Graz University, Austria, *Die Naturwissenschaften*, 49:409, 1962.

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GENERAL SCIENCE

Science Youth Activities Panel for AAAS Meeting

► SCIENCE YOUTH activities, including science clubs, fairs and talent searches, will be explored at the annual meeting of the American Association for the Advancement of Science when it convenes in Philadelphia, Pa., Dec. 26 to 30.

A special panel discussion to be held in the Reception Room of the Bellevue-Stratford Hotel on Saturday, Dec. 29, at 2:00 p.m., has been arranged by Leslie V. Watkins, executive secretary, Science Clubs of America.

Panel members will be Dr. Thomas E. Bowman, Jr., surgeon, Camp Hill, Pa.; Clifford A. Shaw, director, community affairs of the Providence Journal, Providence, R. I.; and Dr. Jacob L. Rhodes, head, physics department of Lebanon Valley College, Annville, Pa. Dr. Watson Davis, director, Science Service, will preside at the meeting.

Science teachers and club sponsors, science supervisors, guidance counselors, science fair committee members, and Science Talent Search cooperators are invited to attend the session at the AAAS meeting and to participate in the discussion.

Other meetings for science educators will include a session on Experimentation and Measurement to be held Friday, Dec. 28, at 9:00 a.m. in the Bellevue-Stratford Hotel sponsored by the National Science Teachers Association in cooperation with the Pennsylvania Science Teachers.

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MEDICINE

Canada Medical Services Unified For Armed Forces

► A THREE-YEAR operation to unite Canada's military medical services was pronounced a complete success in Washington, D.C., by Rear Adm. T. B. McLean, Surgeon General, Canadian Forces. Similar administrative suturing to tie together the medical parts of U.S. military forces is under serious consideration.

The unification of Canadian Army, Navy and Air Force medical sections has resulted in a thriving whole in which function now takes precedence over service demarcation, Adm. McLean told the Association of Military Surgeons of the United States.

Each of the three Deputy Surgeon Generals of the Canadian Forces Medical Service is identified by the function he administers rather than by the military branch to which he may be assigned. The functions are general medicine, surgery and preventive medicine. Functional operation without regard to branch of service has made possible more efficient use and dispersal of medical personnel and equipment with the result that Canadian armed forces and their families are getting far better medical care at less cost to the nation. Needless duplication of medical installations so that each service can equal the medical facilities of the other now is part of "an antiquated past," Adm. McLean said.

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