

MEDICINE

High Antibiotic Doses Cause Death in Six

► SIX YOUNG WOMEN with pregnancy complications of pyelonephritis, a kidney inflammation, died of a fatal liver disease caused by overly high doses of the antibiotic tetracycline.

All the patients were Negro, ranging in age from 15 to 29, four University of Arkansas School of Medicine physicians reported in the *New England Journal of Medicine*, 269:999, 1963.

The tetracycline, which is widely used for a variety of infections including syphilis, chronic bronchitis, pneumonia, scarlet fever, septic sore throat and osteomyelitis, was injected after the patients all showed severe kidney infection.

Four of the young women were pregnant—from 18 to 30 weeks' gestation. Of the other two one had delivered a baby one day before death and the other 12 days before death.

Temporary improvement was seen after the patients were treated by the obstetrical service of the university's medical service in Little Rock, but jaundice occurred later and autopsies on all of them showed known toxic effects of tetracycline. The liver of each showed fatty change caused by these poisons.

Drs. John C. Schultz, James S. Adamson Jr., Wayne W. Workman and Tom D. Norman reported the study, which was supported in part by grants from the National Institutes of Health, Bethesda, Md.

• *Science News Letter*, 84:328 Nov. 23, 1963

CONSERVATION

Slaughter Is Tarnishing Golden Eagle Population

► THE BRIGHT GLORY of the golden eagle may diminish from North American skies if man continues his nonselective shooting and trapping of this bird.

The total population of this regal bird in North America is now less than 10,000, said Dr. Walter R. Spofford of the State University of New York at Syracuse.

Thoughtless practices, such as shooting the birds from airplanes, spreading poisons and using steel traps should be prohibited, he told the 59th annual meeting of the National Audubon Society in Miami, Fla.

His recommendation that the birds be shot "only from the ground" was endorsed by the society and sent to Secretary of the Interior Stewart L. Udall. Sheep and goat ranchers make war on the golden eagles because they believe the birds kill large numbers of lambs and kids during the late-winter lambing season.

Congress passed a golden eagle act in 1962, permitting the Secretary of the Interior to prescribe control measures in any state when requested to do so by the governor.

Some ranchers in Texas and New Mexico have urged Secretary Udall to lift the ban on shooting eagles from airplanes, but Dr. Spofford, considered the nation's foremost

authority on this eagle, recommends further limits on shooting.

Methods now used to kill the birds are "non-selective," he said, "and destroy many innocent eagles as well as other valuable wildlife."

At one time the golden eagle was found across Europe, Asia and North America, mostly in the mountain regions. So many of its numbers have been killed by hunters it is now considered one of the world's rare birds.

A great hunter, the golden eagle feeds mainly on animals which it kills with its powerful talons: rabbits, marmots, woodchucks and ground squirrels.

The golden eagle was once the symbol of the power of Rome, and its image was placed on the staffs carried in front of every Roman legion. The Romans called it *Aquila*, the generic name it bears today.

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CHEMISTRY

Benzene Synthesized By California Chemist

► A CHEMICAL SUBSTANCE believed impossible to create—a not-quite identical twin of nature's commonest organic building block, benzene—has been synthesized.

The "Dewar benzene" was synthesized by Prof. Eugene van Tamelen of Stanford University, Stanford, Calif., and his associate Dr. Socrates Pappas of Brandeis University, Waltham, Mass. Hundreds of thousands of new materials can be created by substituting Dewar benzene for ordinary benzene in numerous compounds.

The new molecule has a slightly different "ring" structure which endows it with different properties. It contains higher energy, is less stable and hence combines more easily with other molecules. This means that known benzene compounds formed with it—medicine, plastics, perhaps even foodstuffs—would also be different.

How, for instance, would an aspirin tablet with a Dewar benzene ring perform? Faster? More powerfully? Or would it change from a headache remedy into a tranquilizer?

What would the new molecule do to the action of penicillin? Of anticancer drugs? Or of cancer itself?

Such tantalizing speculations will have to await other investigations, said Prof. van Tamelen. His own plans call for learning more about the molecule itself, and how it reacts chemically.

Both kinds of benzene are composed of equal amounts of carbon and hydrogen (C_6H_6). Called "isomers" because they differ only in structure, both are six-sided molecules.

Because of a different arrangement of electron bonds between the 12 atoms of carbon and hydrogen, the benzene molecule is flat while the Dewar benzene molecule is folded across the middle.

The two researchers published a report of their work in the *Journal of the American Chemical Society*, Oct. 20, 1963.

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IN SCIENCE

PSYCHOLOGY

Girls Outnumber Boys In Suicide Attempts

► GIRLS OUTNUMBERED boys two to one in a tabulation of suicide attempts by children.

Ages of 22 children entering Winnipeg Children's Hospital in Winnipeg, Canada, after attempting to kill themselves ranged from eight to 15, with the majority in early adolescence.

One boy was found in a school locker after remaining there 36 hours. Another, rescued as he tried to jump from a roof, said he heard a voice telling him to kill himself.

Two boys tried hanging, another tied a scarf around his neck until he was blue. A girl, who never had driven before, got into a car and tried suicide by driving it aimlessly.

Twelve girls and two boys took overdoses of barbiturates, aspirin or tranquilizers. The least serious attempts were superficial cuts with knives or scissors.

Only four of the homes in which these children lived appeared to be reasonably stable, and some families were extremely disrupted, the report said.

Previous attempts at suicide had been made by four of the children, but no medical care had been given them until they tried a second time.

No suicide attempt by a child should be ignored even if it seems minor, the investigators pointed out.

Drs. Robert H. Lawler and Wladyslaw Nakielny, with Nancy A. Wright, psychologist, all from the hospital's psychiatry department, reported the findings in the *Canadian Medical Association Journal*, 89:751, 1963.

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GENERAL SCIENCE

Day Named Maryland's Top Young Scientist

► DR. THOMAS BRANNOCK DAY, associate professor of physics at the University of Maryland has been named by the Maryland Academy of Sciences as the state's "Outstanding Young Scientist of 1963."

Dr. Day, 31, cited for his "brilliant research in high energy physics and his significant contributions to the theory of elementary particles," received an engraved plaque bearing the citation and a \$500 cash award.

The Outstanding Young Scientist Award was established by the Maryland Academy of Sciences in 1959 to help stimulate the interest of young people in science and to recognize their efforts.

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CE FIELDS

MEDICINE

Vaccinations Assured For the Unprotected

➤ MANY PARENTS no longer have an excuse for depriving their children of polio, diphtheria, tetanus or whooping cough vaccinations.

Grants totaling \$3.4 million have been issued to 18 states and seven city-county health departments to assist in community immunization campaigns.

The goal of the Vaccination Assistance Act of 1962 is the immunization of the entire population, with special emphasis on the 14 million children under five years of age in the United States who are not fully protected against these four diseases.

SCIENCE SERVICE learned that the method of giving the vaccinations is optional. Community health departments have a choice of giving the four-in-one shots, but the usual method is to give three-in-one shots including all except polio. Either Salk or Sabin types of polio vaccination may be given separately.

One reason there are so many unvaccinated persons is that large numbers of children are not under the regular care of a physician or public health clinic, Public Health officials point out. Also there is a great deal of moving about among American families.

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GENETICS

Spinal Defects Repeated In Families, Study Shows

➤ A MOTHER who has borne a child with a severe spinal or brain defect could have only one chance in 30 of having another.

She may have several normal children before another deformed child appears, a New York State Department of Health scientist told SCIENCE SERVICE. But her chances of having another deformed child are greater because she has had one, he believes.

Dr. Samuel Milham Jr. based his statement on two studies in New York State, one of 139 mothers with deformed children in three Albany maternity hospitals.

The second study, reported in *Nature*, 200:480, 1963, was of records from all over New York State, in which 112 families showed at least two "sibships," or brother and sister relatives, affected by spinal or brain defects.

The cases were all either spina bifida (open spine) or the more serious spinal-related brain deformity, anencephalus, in which the brain is exposed and death nearly always occurs. Most of these anencephalic babies are fortunately stillborn.

The New York State records showed that in 24 of the 112 "sibship" deformities, both babies were anencephalic. In 42 of

the families, both cases were spina bifida. In 46 "sibships" one had spina bifida, the other anencephalus.

What the second study showed, Dr. Milham said, was that a lapse could take place between the birth of deformed children.

"The cause, so far unknown, of these spinal and brain deformities, could be attributed to some disease in the mother that was temporary.

"If this is the cause and the disease is cured, the next consecutive baby could be perfectly normal." The cause could be genetic.

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PUBLIC HEALTH

New Institute to Study Childhood, Age Problems

➤ THE "BABY" INSTITUTE of the National Institutes of Health—that of Child Health and Human Development—will focus on research into prenatal and childhood diseases, on the one hand, and the problems of aging, on the other.

Starting with the attitudes and genetic resources of prospective parents, the fledgling institute will seek to follow human life from conception to death, Dr. Robert A. Aldrich, its director, told the American Public Health Association meeting in Kansas City, Mo.

The existing sections for research in aging and for research in child health have been transferred to the new institute, but this means "far more than a rearrangement of existing functions and units," the director pointed out.

He called the establishment of the new institute "an historic step" that could not have occurred much earlier.

Application of present-day detailed knowledge of molecular biology to human development could not be made until advances in biochemistry and genetics had been attained.

The growing number of older people and the dropping of the United States from sixth to 11th place in saving infant lives among the nations of the world, are immediate problems for the new institute.

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MICROBIOLOGY

Tiny Soil Fungus Breaks Up Chemical

➤ A SMALL FUNGUS in the soil is able to break up a chemical herbicide called simazine.

Scientists do not yet know just how the soil microorganism, *Aspergillus fumigatus*, deteriorates the chemical, Drs. Donald D. Kaufman, Philip C. Kearney and Thomas J. Sheets of the U.S. Agricultural Research Service, Beltsville, Md., reported.

The herbicide simazine (2-chloro-4, 6-bis (thyl-amino)-s-triazine) is used for selective weed control in agricultural crops.

This soil fungus degrades the herbicide by a mechanism unlike that observed in higher plants, the researchers said in *Science*, 142:405, 1963.

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PSYCHOLOGY

Ink Blot Test Shows How Disabled Can Adjust

➤ HALF THE BATTLE in treating a physically disabled patient is getting his cooperation. Physicians can now predict whether "psychological rehabilitation" will be necessary along with physical therapy by means of the Rorschach ink-blot test.

High scores in this test with shapeless forms on paper go along with a good adjustment rating, Dr. Tumkur Madhu of the Veterans Administration Hospital, Buffalo, N. Y., reported.

Previous studies have indicated that the adjustment of "visibly injured" patients, such as those with polio, could be predicted with the ink-blot test, but Dr. Madhu went one step farther and tested patients with such nonvisible disabilities as those with TB, rheumatic heart disease and epilepsy.

Dr. Madhu told the American Congress of Physical Medicine and Rehabilitation in Dallas, Texas, that he had compared responses of 50 patients with adjustment ratings by doctors and nurses to determine which patients would be uncooperative and need psychological help.

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RADIOLOGY

Children in Fallout Path Science Group Contends

➤ A GROUP of doctors and scientists insist that Utah and Nevada children were exposed to dangerous radioactive fallout from nuclear tests, despite counter-claims by the U.S. Atomic Energy Commission.

The group, called the St. Louis Committee for Nuclear Information (CNI), believes iodine-131 from Nevada nuclear testing may have delivered medically hazardous thyroid radiation to children in nearby areas. CNI contends also that AEC's fallout monitoring is inadequate.

CNI made the same claims last August before Congress' Joint Committee on Atomic Energy. Dr. Gordon M. Dunning, deputy director of AEC's operational safety division, challenged CNI's conclusions on several grounds.

One of his main points was that the evidence CNI used to back up its case is too variable.

"Such a serious disagreement should not be allowed to persist unresolved," CNI retorted in a letter to Dr. Dunning, "for it is clear that either you or we are dead wrong."

The letter was followed by a 22-page refutation of Dr. Dunning's remarks. It was drawn up by seven faculty members of Washington University in St. Louis and two researchers for the publication "Nuclear Information."

While CNI agreed that their estimates were subject to some variability, they said the variation might be in the direction of higher thyroid exposures as often as of lower exposures.

It also noted that the U.S. Public Health Service has announced it plans to make a "medical survey of the population exposed to fallout in the (Nevada test) region."

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