

MEDICINE

Artificial Kidney Used

► THE ARTIFICIAL kidney can save minds as well as lives. It can do this when the mind has been deranged by a poison, thiocyanate.

This new role for the artificial kidney was discovered by Capt. Lamont E. Danzig, Army medical officer at Brooke Army Medical Center, Fort Sam Houston, Tex., and Dr. Alan J. Kringel of the Veterans Administration Hospital, Palo Alto, Calif. They report it in the *Journal of the American Medical Association* (June 18).

The discovery was made in the case of a 57-year-old woman, wife of an Army sergeant. She had been getting potassium thiocyanate to reduce her high blood pressure, which it did. Both potassium and sodium thiocyanate have been used to reduce blood pressure for almost half a century, although these chemicals must be used very carefully to avoid mental derangement and even fatal poisoning.

About six weeks after starting this treatment, the Army sergeant's wife began behaving oddly and neglecting her personal appearance. She wrote confused and illegible letters to her husband.

She was taken to the hospital where she became assaultive, wanted to kill herself and had delusions of persecution. Her mental state was so bad she had to be put in a locked ward of the neuropsychiatric department. She continued to remain in this state for a week.

Then she was treated with the artificial kidney for six hours. About 22 hours later, she began to improve noticeably. She was so much better and her appearance had changed so within 36 hours that the doctor caring for her had trouble recognizing her. At the end of a month, she had completely recovered and was discharged from the hospital.

The artificial kidney removed the thiocyanate from her body fast and in large amounts. Her own kidneys had not been able to do this. The doctors think the artificial kidney may have saved the patient's life, as well as restoring her sanity.

When an artificial kidney is used, the patient's blood runs through membranes of cellophane or similar dialyzing material and back into the patient's body. The thiocyanate molecules, and other poisonous ones in other cases, are small enough to pass through the small pores of the artificial kidney membranes. They are thus removed from the blood.

In the case of the Army sergeant's wife, the artificial kidney reduced the thiocyanate in the blood serum from a level of 24.8 mg per 100 cc to 1.5 mg per 100 cc.

In further studies, the doctors found that the artificial kidney is 73.6 times more efficient in removing thiocyanate than normal kidneys. They suggest using it in future cases of thiocyanate poisoning.

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coli, a common organism found in human intestines. Using known figures of volume, weight and protein percentages, the scientists computed the total number of protein molecules in the organism to be 1,070,000.

"This is, of course, not to be regarded as a precise figure," Dr. Bath said. "It is simply an indication of order of magnitude."

The time between generations of bacteria is about 25 minutes, the U.C.L.A. scientists pointed out. If it is assumed that the bacterium manufactures its individual protein molecules at a uniform rate, this would amount to 21,400 molecules per minute.

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NEUROLOGY

Drugs Affect Artists

► THE OLD idea that drugs can inspire artists to better creative work gets some confirmation from studies reported at the American Neurological Association meeting in Chicago.

The studies also confirm another idea long held by scientists. This is that nothing much comes of the inspiration because the drugs stop initiative so that the artists fail to get started working on the new ideas.

The studies were made by giving four painters of national prominence two drugs, mescaline and LSD. Mescaline is extracted from the Mexican plant better known as peyote. It induces an intoxication with delusions of color and music. LSD, short for lysergic acid diethylamide, is a chemical that produces hallucinations and delusions in healthy persons like those in mental sickness.

Under the influence of these drugs, the painters reported seeing wonderful pictures in their minds. But only one of them took to painting "with great fervor." The others did not want to paint. They were content just to enjoy the visions they saw.

When finally induced to paint, their greater freedom of expression of form and

color led to work that their peers judged better than work they had produced before taking the drugs.

Writers apparently are not affected in the same way by the drugs. One, a playwright, was tested. He also had his senses heightened by LSD but when he tried to write, he did not come up to his usual level of literary creativeness.

The scientists reporting these studies were Drs. Louis Berlin, Thomas Guthrie, Arthur Weider and Harold G. Wolff of New York.

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MICROBIOLOGY

Million Molecules in Single Bacterium

► HOW MANY molecules in a single bacterium? Something like 1,000,000, with the tiny organism capable of manufacturing them at the rate of 21,000 per minute.

These computations were made by the late Dr. O. L. Sponsler and Dr. Jean Bath of the University of California at Los Angeles.

The bacterium studied was the *Escherichia*