

## BACTERIOLOGY

# Food Poisoning Studied

➤ THOSE PESKY GERMS that cause the distress of food poisoning are hard to track down because they change into forms that can no longer be recognized in scientific tests.

This is why carriers of such germs often cannot be spotted with any certainty, Dr. Hiroshi Nikaido of Harvard Medical School, Boston, told a meeting in New York sponsored by the New York Academy of Sciences.

Dr. Nikaido reported five different mutant strains of *Salmonella typhimurium*, the intestinal, or enteric, bacterium most frequently isolated in the United States from persons with food poisoning.

Some disagreement was noted at the conference in reports of the endotoxin molecule structure. Endotoxin is a complex substance with fat or fat-like sugar and protein components. Injected into animals it causes fever, tissue destruction and, in large doses, death.

Dr. S. E. Mergenhagen and his collaborators at the National Institutes of Health, Bethesda, Md., and Columbia University reported that the molecule is located in the outer layer of the bacterial cells they studied.

Dr. M. Ikawa of the University of New Hampshire, Durham, told the conference that the outer or protein part of the endotoxin molecule was not essential for the toxic effect on a mouse tumor he had studied. When he split off the protein "overcoat," the remaining liposaccharide, or fat-like sugar, was just as active as the original endotoxin.

## MEDICINE

# Treat Delirium Tremens

➤ ALCOHOLICS who have delirium tremens should be hospitalized even though their attacks last a shorter time than the usual critical three-day period.

This is the opinion of Dr. Benjamin J. Cutshall, who reported a study of 205 cases, including 21 women, in Los Angeles, Calif., in the Quarterly Journal of Studies on Alcohol, 26:423, 1965.

All these patients are seriously ill, and need careful treatment. They are dehydrated and need fluid replacement. Glucose should be given while the person is unable to eat. Magnesium and potassium, as well as the other electrolytes, must be replaced by injection and by mouth as soon as possible.

Sedation should be handled carefully, and the personal interest of the patient's doctor is an important factor in successful treatment. Strong-arm methods and overuse of medication can result in a high death rate.

Delirium tremens, complete with terrifying hallucinations, was perhaps a feature of Bacchanalian frenzies 2,500 years ago, Dr. Cutshall said, but it is still vaguely understood and inadequately treated.

To be in delirium tremens, an alcoholic

Dr. L. Cheodid and his co-workers at the Pasteur Institute, Paris, have used a radioactive tracer, and have found that the liver removed endotoxin from the blood.

Drs. W. E. Farrar Jr. and L. M. Corwin of the Walter Reed Army Institute of Research, Washington, D.C. have found that the liver performs a significant function in taking the poison out of endotoxin that gains entry into mammals.

The Walter Reed group reported that guinea pigs with livers severely damaged by carbon tetrachloride (a substance found dangerous for drycleaning) were about 200 times more susceptible to the poisonous effect of endotoxin than normal guinea pigs.

A better understanding of how some intestinal bacteria can cause diseases and better ways to prevent and control such diseases is expected to result from the conference, attended by scientists from various parts of the world. The title of the meeting was Conference on Molecular Biology of Gram-Negative Bacterial Lipopolysaccharides. Gram-negative refers to a staining method applied to bacteria that are decolorized by Gram's solution.

Enteric fever is an old name for typhoid fever, but intestinal bacteria also can sneak into the blood stream where they are carried to other organs and settle down, multiply and cause serious ailments. Such ailments include those of the urinary tract, of the abdominal cavity, when peritonitis occurs, as well as meningitis and diseases of the lungs, bones and heart valves.

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must suffer from these four definite signs: hallucinations or mental confusion; excess movement of muscles, or hyperkinesia; wakefulness and tremor. All these signs will develop after prolonged and excessive drinking. The type of alcoholic beverage is not important.

In the Los Angeles study, 38% of the women and only 22% of the men had a course of D.T.'s longer than three days. This could imply that women alcoholics consume larger amounts or remain on a "bout" for longer periods than men.

"This is not unlikely," Dr. Cutshall said, "as it is usual for the woman alcoholic to have either a husband or a lover who keeps her supplied with alcohol, whereas the alcoholic man generally has to stop drinking when his resources are depleted."

Dr. Cutshall said the longest a woman experienced delirium tremens, however, was five days, in contrast to nine days for a man. This suggests that women may have the greater recovery capacity.

Thirteen of these patients died, with pneumonia as well as liver disease and its complications being the most common cause of death.

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