

BIOCHEMISTRY

Ethyl fights methyl

As every toper knows, drinking wood or methyl alcohol can cause blindness, brain damage and death. Researchers at the University of Chicago have found that substantial doses of ethyl alcohol, the kind present in beverages, can prevent the effects of wood alcohol.

Formaldehyde, and perhaps other oxidation products of wood alcohol, damages the optic nerve by destroying the neural ganglion cell of the retina of the eye. Formaldehyde also attacks the neurochemicals called catecholamines. These amines include transmitters in the sympathetic nervous system as well as dopamine, lack of which in one brain area produces the tremors of Parkinson's disease. These tremors are a symptom of wood alcohol poisoning.

When both methyl and ethyl alcohol are present in the body, Dr. Albert M. Potts reports, body oxidative enzymes selectively act on the ethyl alcohol. Thus the methyl alcohol is not oxidized. If ethyl alcohol levels in the body can be kept high for 24 hours, he says, the wood alcohol will be excreted without tissue damage.

HEALTH INSURANCE

Advice from abroad

After seven months in the United States as a visiting professor, a British physician believes that "some form of national health insurance" must be introduced here to avoid a "complete breakdown of health services.

"American medicine is more advanced technologically but there is little doubt that it is possible for doctors to practice better medicine in Britain," Dr. W. W. Holland, St. Thomas's Hospital Medical School, London, says.

In Britain, where there is a national health scheme of long standing, the number of general practitioners is increasing; the trend in the United States, on the contrary, is toward specialization. The result, says Dr. Holland, is that poor people "wait in dirty, ill-lit corridors" of big county hospitals for attention and because of the time required to see a doctor often fail to seek treatment until a disease is in an advanced stage. "Parallels may be found in developing countries or in the treatment of the poor in London teaching hospitals before 1914," he writes in the July 25 LANCET.

AIR POLLUTION

Cost in human disease

A 50 percent reduction in air pollution levels in major urban areas would produce, in terms of decreased illness and death, an annual saving of \$2,080 million, according to an estimate in the Aug. 21 SCIENCE.

This estimate is the result of an ambitious study in which Dr. Lester B. Lave and Eugene P. Seskin of Carnegie-Mellon University examined hundreds of medical studies of the relation of air pollution to disease.

There is a "quantitative association between air pollution and both morbidity and mortality" in bronchitis, pneumonia and lung cancer, Dr. Lave and Seskin find. They estimate that 25 percent of these diseases could be avoided by halving air pollution. Because there is a "good deal of evidence connecting all mortality from

cancer with air pollution" the researchers estimated that 15 percent of the cost of nonrespiratory-tract cancer might be saved. Evidence associating cardiovascular disorders with air pollution is "only suggestive" and a 10 percent saving is assumed.

The costs of these illnesses are calculated on the basis of the direct costs of medical care and the indirect costs of earnings lost because of illness and premature death.

FACILITIES

From sword to plowshare

The Departments of Defense and of Health, Education and Welfare reportedly are completing plans to convert the super-secret Ft. Detrick, Md., facility into a civil laboratory—possibly for critical medical and environmental research (SN: 1/17, p. 62). DOD and HEW spokesmen will say only that the transfer is under intensive study. Ft. Detrick has been a major center for research in chemical and biological warfare.

The transfer probably will not be accomplished before late this year. Meanwhile, not knowing its future is having a demoralizing effect on personnel as "rumors and misinformation fly freely," a spokesman there discloses. Many have left or retired, including Dr. Riley D. Housewright, the scientific director. His former assistant, Dr. Harold Glassman, is now acting director.

SURGERY

Restricting transfusions

Blood transfusion is not a necessary accompaniment to blood vessel surgery, Dr. C. Wilton Simmons and colleagues of the Texas Heart Institute, Houston, report in the Aug. 10 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Operating on 20 Jehovah's Witnesses (who refuse transfusion because of their religious beliefs), the Texas surgeons say they were able to reduce blood loss to a minimum by rapid and meticulous clamping of all cut blood vessels and to replace blood loss with a solution of salt, carbohydrate, potassium and calcium, keeping circulation stable both during and after the operation.

"Blood transfusion involves the risk of hepatitis and is used cautiously in this hospital," the surgeon says.

VITAMINS

Fighting resistant rickets

Successful treatment of a 44-year-old housewife confined to a wheelchair by rickets not controlled by vitamin D administration is reported by biochemist Hector F. DeLuca of the University of Wisconsin.

Dr. DeLuca isolated a metabolite of the vitamin that is thought to be the form in which it acts in the body. This is 25-hydroxycholecalciferol. At the University of Oklahoma Medical Center, Dr. J. Rodman Seely gave the patient 25-HCC over a 10-month period. The patient is able to walk and bone fractures have healed.

"Large amounts may be necessary to overcome a hereditary defect in the body's transport system for vitamin D and its active form, or in the body's metabolism of this vitamin," Dr. DeLuca says.