

Sutherland's cyclic AMP work brings him 1971 Nobel Prize

Earl W. Sutherland Jr. of Vanderbilt University School of Medicine wasn't altogether surprised last week when he received news that he was this year's winner of the Nobel Prize for Physiology or Medicine. He and his colleagues had been aware for some time of the importance of his contributions to endocrinology. Fifteen years ago he isolated cyclic AMP (cyclic adenosine 3',5'-monophosphate) and proposed a scheme for how it controls the action of hormones. He spent the subsequent decade conducting what many of his colleagues called "brilliantly designed and carefully controlled experiments," to convince them that his scheme was essentially correct.

As a result, cyclic AMP is now known as the body's second messenger system (SN: 12/12/70, p. 450), a regulator of virtually all hormone activity. Hormones, produced in various glands and sent out to act on target tissues, act as intercellular communicators, delivering messages from one part of the body to another. From there cyclic AMP takes



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Sutherland: Found hormone regulator.

up the communications function, acting within cells to alter membrane permeability and influence enzyme activity.

The Nobel award in economics went last week to Simon Kuznets, the Harvard University professor emeritus who in the 1930's helped originate the concept of the gross national product, the measurement of the output of goods and services in a nation's economy. □

Cancer researchers finally get Ft. Detrick

The Government has finally decided what to do with Ft. Detrick, the Army's almost-idle biological warfare research center. President Nixon announced this week that the facility, which once employed nearly 2,000 persons, would be devoted to cancer research. Ft. Detrick has been left hanging since November 1969, when Mr. Nixon decided that the United States would discontinue research and production of offensive biological weapons. Since then, its staff has been reduced to about 580, with some 150 still engaged in defensive bacteriological research.

Mr. Nixon said that seven of Detrick's buildings, with laboratory space of more than 500,000 square feet and a value of more than \$70 million, would be made available for cancer research. "It is my hope that this specific conversion will help illustrate the general potential for using defense related facilities to meet pressing domestic challenges."

The National Cancer Institute, which is overseeing the conversion for the time being, has decided that the best way to utilize Ft. Detrick's facilities would be to arrange for a private contractor, not yet selected, to manage Detrick's cancer program. A private contractor, he noted, is usually in a better position to draw upon a wide range of public and

private assistance. The National Aeronautics and Space Administration, the National Science Foundation and the Atomic Energy Commission all use private contractors to manage various laboratories around the country.

During the next 12 months, an estimated \$6 million will be invested in cancer research at Detrick, with about 200 laboratory employees. When the facility reaches peak operation in two to five years, it will employ about 600 scientists and back-up workers, at a cost of about \$20 million a year. An NCI spokesman said that about 70 percent of the research at Detrick will focus on cancer viruses, with the remainder devoted to study of chemical causes and treatment of the disease.

Detrick would eventually become a focal point in the Administration's cancer-cure program, under Mr. Nixon's proposed Conquest of Cancer Agency. The Senate has approved a bill creating such an agency, which would supersede the National Cancer Institute and be, in effect, independent of the National Institutes of Health, but last week a House subcommittee voted down the measure, substituting for it the considerably different House bill (SN: 10/9/71, p. 243) and ensuring more legislative battle.

Mercury in human tissues shows 50-year decline

If the public is confused about mercury pollution, well they might be. It is a confusing subject, and the number of unknowns by far exceeds the number of knowns. In this regard, the mercury question is much like questions surrounding other environmental pollutants, for instance, lead. But with lead, there seems to be little doubt that its levels in the environment and in organisms are increasing. With mercury, the case may be the opposite.

In what appears to be a very well controlled study, pathologists at Saratoga General Hospital in Detroit have shown that mercury levels in human organs have undergone significant declines during this century. The probable reason: Coal burning in the earlier part of the century was a major source of mercury, and coal burning has declined greatly.

Jack Kevorkian, the pathologist who headed up the Saratoga study, reports that mercury levels in human lung tissues declined from 34.5 parts per million in the 1913-1919 period to about 5.5 in the current period. The downward trend throughout the intervening period was general except for some relatively minor rises at various times. This general trend also held for brain and kidney tissues.

The tissues were obtained from the pathology department of the University of Michigan. Along with the tissues came often detailed clinical histories which precluded the possibility of the mercury's coming from some source other than the environment, says Kevorkian. For instance, one sample came from a patient who had died of trichinosis; his medical records showed no treatment with any mercury-containing medications.

Kevorkian says the researchers also excluded the possibility of mercury contamination having occurred after death. "They were sometimes fixing tissue samples in mercury compounds in some of those [earlier] years," Kevorkian said. So the Detroit researchers made a point of doing mercury analyses of some early mercury-fixed samples. "They showed values thousands of times higher than the ones we got from our other samples," he said. Thus it was easy to be certain the mercury-fixed samples did not pass accidentally as ones prepared in other ways.

Two commercial laboratories in Detroit did the same tissue analyses as the Saratoga pathologists, as a check. The actual values turned up in these tests—which used different analytical methods—were often strikingly different from the Saratoga findings. But the