

MEDICINE

Study of Anesthetics Key To Mystery of Life and Death

Knowledge of What Happens To Cells of Body When Acted on By Ether or Chloroform Will Give New Light

THE MYSTERY of life and death may some day be solved by studies of the effect on body cells of the anesthetics now used to bring oblivion during surgical operations, it appears from the presidential address of Prof. William de B. MacNider, of the University of North Carolina, at the Congress of Anesthetists.

Scientists will come closer to understanding this fundamental problem when they learn more about how ether and chloroform and similar substances affect each kind of cell in the body, Prof. MacNider pointed out.

"We possess in the general anesthetics substances which, by their use and through an understanding of what they do and how they do it, come nearer than any other substances to an answer to the question, what constitutes life and what is the basis for a normal type of death dependent upon functional depression with or without structural changes," Prof. MacNider declared.

In order to pierce the mystery sur-

rounding life and death, scientists need to discover first what happens chemically to the body cells when the patient is anesthetized, and then what happens chemically in reverse direction when the anesthetic wears off and the patient regains consciousness. Prof. MacNider described the anesthetic state as a period of depression in which the body cells in large measure are induced to suspend function.

Discoveries which may lead to a new conception of how the tissues of the body recover from injury and how as a result of that recovery they acquire resistance to further injury by the same or similar substances were reported by Prof. MacNider.

Prof. MacNider called attention to two earlier conceptions of how the body tissues recover from disease. One of these was formulated by the great Russian scientist, Metchnikov, who found that the action of certain wandering cells called endothelial leucocytes provided the body with a means of defense against invading cells like bacteria

and also enabled the body to develop resistance to subsequent attacks from these cells. The second theory was a chemical one, formulated by the German bacteriologist, Paul Ehrlich, who found that tissues which were the seat of a disease process produced special chemical antibodies which neutralized or bound the poisons and in that way terminated certain diseases and imparted resistance to further attacks.

How Injuries Are Repaired

The part played by the fixed tissue cells of the body, such as are found in the skin, the eyes, the liver or the kidneys, in inducing resistance to disease has been investigated by Prof. MacNider. He found that in case of slight injury these cells repair themselves by formation of a normal type of cell having normal function but no resistance to the same kind of injury. But if the original injury is severe, in a certain number of instances the repair process results in formation of an abnormal type of cells, which may or may not have normal functional value. Such cells, however, are not only highly resistant to the chemical substance which caused the injury but to a variety of other chemical poisons.

Study of the role of the fixed tissue cells in giving the body resistance to injury by invading forces is just beginning, Prof. MacNider said. His investigations were made on the liver and kidneys. Their results and implications add further to the knowledge of how the body protects itself against injurious substances.

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GEOGRAPHY

"Heroes of the Arctic" Thrilling Drama of North

IF American audiences have a chance to see the motion picture record of the Cheliuskin expedition, that thrilling episode in the conquest of the Soviet Arctic, they will witness a drama in which the plot was ordered by nature and circumstance, the actors are real history-makers, fighting for their lives and Soviet civilization, and cameramen had no opportunity for retakes.

At the American premiere of "Heroes of the Arctic" held at the Embassy of the Union of Soviet Socialist Republics, scientists and newspapermen had the privilege of seeing one of the most striking records of exploration ever placed on the screen. (Turn to Page 269)



SOLITUDE ISLAND

The true meaning of desolation was learned by these Soviet explorers at the roof of the world.