BIOLOGY

Clue to Living Cells

LARGE SYNTHETIC MOLECULES may give a clue to the structure and operation of living cells.

Synthetic molecules behave in a manner similar to important natural molecules, Prof. A. Katchalsky, vice president of the Israel Academy of Sciences and Humanities in Jerusalem, told SCIENCE SERVICE.

These large molecules, called macromolecules, are made up of smaller ones strung like beads on a string.

The development of synthetic macromolecules was a real industrial breakthrough and led to the manufacture of plastics, synthetic fibers and synthetic rubber.

However, Prof. Katchalsky, a physical chemist, said that cell structure, underlying that of all living beings, is also based on special macromolecules.

By studying the behavior of simple synthetic macromolecules, which dissolve in water and have electrical properties, scientists may learn more about the organization of living organisms and the properties of cells.

Prof. Katchalsky and his co-workers discovered that several of their synthetic macromolecules may contract or expand when reacting chemically.

This contracting ability of man-made materials illuminates the origin of movement in living beings, including contraction of muscles.

Prof. Katchalsky stressed that the synthetic macromolecules are only models from which to learn the fundamental principles governing the behavior of cells. The ultimate goal of his research is the study of natural macromolecules.

He said that the synthetic macromolecules may possibly help explain the action of certain defense mechanisms of the body.

The synthetic macromolecules might act in the body as a new type of drug, and might help fight some blood diseases since certain blood diseases are due to malfunction of natural macromolecules.

Prof. Katchalsky, an official guest at the Royal Society's Tercentenary Celebration in London, said that the Israel Academy of Sciences and Humanities is less than a year old and has been operating for only six months.

• Science News Letter, 78:87 August 6, 1960

BOTANY

Natural Antibiotic Controls Plant Fungus

A NATURAL ANTIBIOTIC in plants that helps protect the plants against fungus has been found by a team of scientists, Prof. Ralph L. Wain of the University of London said at the Royal Society's Tercentenary Celebration.

Prof. Wain said that he does not yet know exactly what this antibiotic substance is, but its composition is now being investigated.

He said that his team generally studies plant growth hormones. Some of these chemicals will kill plants when applied and these are used in weed control.

Dr. Margaret S. Smith, one of Prof. Wain's team, explained that they are studying systemic fungicides that will move through plants and prevent fungus from attacking the plant.

The team is also checking to determine if plants produce any substances that protect them from fungus attack. So far the scientists have discovered the one natural antibiotic that the plant uses as a defense against fungus. The antibiotic has not yet been named.

• Science News Letter, 78:87 August 6, 1960

BIOLOGY

Is Life on Earth Just Beginning?

"WHERE DID I COME FROM? How did life begin?"

These are questions asked both by children and scientists; but no answers yet have been found to satisfy either group.

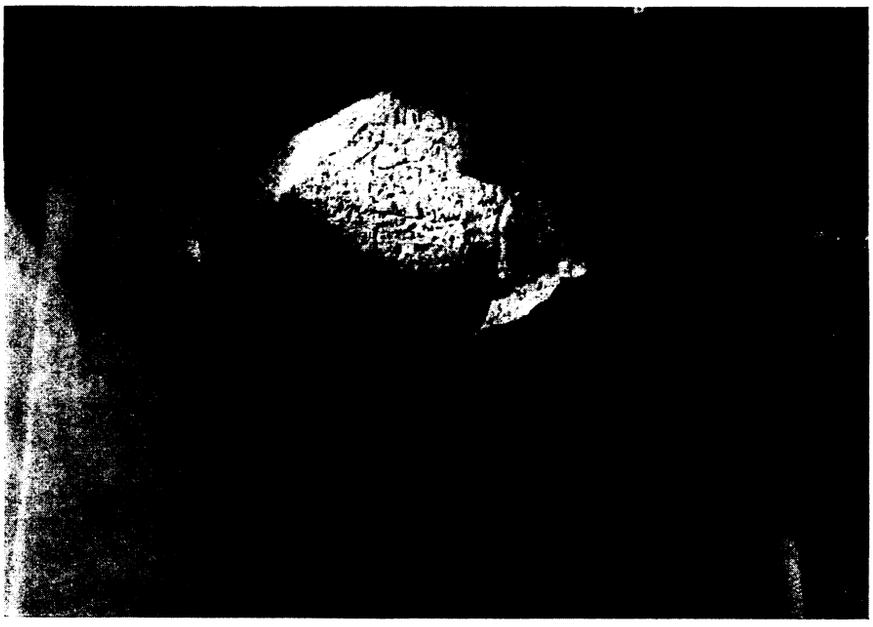
Research, controversy and theory on the subject are explored in Science, 132:200, 1960, by Dr. Sidney W. Fox of the chemistry department, Florida State University, Tallahassee. The range is from Darwin's theory of evolution to the current attempt to produce a living cell synthetically.

Adding to the confusion surrounding the search is the thought, suggested by the author, that even now life may be just beginning.

"Although we can with certainty say only that life arose at least once, there is increasing reason to believe that life can, or even must, arise in many places at many times."

Dr. Fox suggests the possibility that "we fail to recognize life beginning anew because it so resembles unevolved descendants of primitive forms already here."

• Science News Letter, 78:87 August 6, 1960



ANCIENT PELVIC BONE—This mastodon bone, which may be 30,000 years old, was discovered by Dr. Juan Armenta Camacho in the Valley of Puebla, southeast of Mexico City. It has carved upon its surface figures of horses, camels, mastodons and other animals—the earliest human drawings found in this hemisphere.

ANTHROPOLOGY

Mastodon Bone Drawings May Be 30,000 Years Old

A MASTODON PELVIC BONE with what look like drawings of now extinct animals scratched on its surface may push back man's known existence in the Americas to as much as 30,000 years ago.

The bone was found in the Valley of Puebla, southeast of Mexico City, by Dr. Juan Armenta Camacho, anthropologist at the University of Puebla, Mexico. From preliminary tests on the bone, Dr. Armenta believes it to be more than 30,000 years old.

Previously, the earliest well-established date for man in America was in the neighborhood of 10,000 years. Some finds have been made that were believed to be older but evidence has always been lacking that would pin down the date to the satisfaction of scientists.

Dr. Armenta has submitted several specimens from among his finds to Dr. James B. Griffin of the University of Michigan's Museum of Anthropology for dating with the radiocarbon method, but Dr. Griffin has not yet had time to make the tests.

Report of the ancient finds is contained in a Spanish-language Latin American magazine, Vision, July 29, 1960.

• Science News Letter, 78:87 August 6, 1960