

## MEDICINE

# Name Nobel Winners

Research on two essential life substances, deoxyribonucleic acid and ribonucleic acid, brought two American biochemists the 1959 Nobel Prize in Medicine.

A SNEAK preview of the current work being done by Nobel Prizewinner Dr. Arthur Kornberg was presented to scientists at the National Institutes of Health, Bethesda, Md.

Currently, he is working on the biosynthesis of DNA, deoxyribonucleic acid, an essential component of living cells. Dr. Kornberg, now chief of the biochemistry department at Stanford University, Palo Alto, Calif., has successfully isolated the enzyme that, coupled with a primer and what he termed "building blocks of the body," can produce DNA in the test tube.

The material that Dr. Kornberg produced in the test tube is apparently identical with the DNA of animals, bacteria, plants, and viruses. The DNA is a complicated molecule that is believed to act as the "code" or pattern in determining genetic characteristics.

Dr. Kornberg, 41, shares the Nobel Prize in Medicine and a cash award of \$42,606 with Spanish-born Dr. Severo Ochoa, 54, chairman of the biochemistry department of New York University College of Medicine in New York.

The award was presented for their joint work in discovering the mechanisms in the biological synthesis of DNA and RNA and thus in contributing to our understanding of the life process. They successfully synthesized nucleic acid. This acid is found

in the cells of all animals, plants and bacteria. The discovery involves the materials that are believed to determine the nature of offspring in these forms of life.

Dr. Ochoa has worked in the field of enzymes. He has studied the reactions between inorganic and high energy phosphate, leading to the discovery of the enzymatic synthesis of RNA, ribonucleic acid.

RNA is the energy-packed cell machinery that manufactures protein. RNA is also found in the genes of cells in another form, DNA, and holds the secret of heredity.

Such molecules that have been produced in the laboratory appear to be identical to nature's. They behave alike in many ways but it is still not certain whether these molecules are exactly as nature makes them.

The enzyme and chemical studies of the two biochemists have made it possible to use the test-tube compounds for synthesizing compounds which appear to be identical to natural DNA and RNA. Apparently the enzyme acts on the molecules that are needed as forerunners or precursors to the very large double-coil molecules of nucleic acid. The smaller molecules, in effect, are strung together like beads to form the larger one.

This research may contribute to cancer research. Most scientists are agreed that abnormal growth and reproduction char-

acterize this disease. Drs. Kornberg and Ochoa have contributed greatly to solving the problems of cellular reproduction and the manufacture of protein.

In announcing the recipients of the prize, the Swedish Royal Caroline Institute of Medicine and Physiology pointed out it was honoring "two of the best biochemists of the present time in their most active age."

Science News Letter, October 24, 1959



**PRIZE WINNERS** — Dr. Arthur Kornberg (above) is shown in his laboratory at Stanford University holding a model of the DNA structure which was developed through his work in conjunction with Dr. Severo Ochoa. Dr. Ochoa (left) is shown in his laboratory at the New York University-Bellevue Medical Center.



## ROENTGENOLOGY

## X-Ray Recording Device Gives Fast TV Picture

GERMAN researchers have adapted the principle of tape-recorded television to X-ray picturetaking.

Using a device developed by researchers of German Philips Company, Hamburg, Germany, doctors can obtain a fast X-ray picture on a TV screen without waiting for film to be developed.

The recording device consists of a drum about a foot in diameter and an inch thick. This drum spins 3,000 times a minute under a recording head which, with electrical impulses, records the X-ray picture on the drum's magnetic surface.

After the X-ray is made, the picture can be "played back" through a TV picture tube for as long as needed.

Science News Letter, October 24, 1959