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**NOBEL PRIZE WINNERS**—*The three French scientists who received the Nobel Prize in Physiology or Medicine, pictured in their laboratory at the Pasteur Institute in Paris, are from left to right: Dr. Jacques Monod, Dr. Andre Lwoff and Dr. Francois Jacob.*

## GENERAL SCIENCE

## Nobel Prize Awarded

Three French scientists are sharing the Nobel Prize in Physiology or Medicine for their work on the genetic control of enzyme and virus synthesis—By Faye Marley

► **THREE FRENCH SCIENTISTS** at the Pasteur Institute in Paris will share the \$56,400 1965 Nobel Prize in Physiology or Medicine. They are Profs. Andre Lwoff, his former student, Francois Jacob, and Jacques Monod.

The three scientists were given the award for their work on the genetic control of enzyme and virus synthesis.

The discoveries of the three scientists have been the basis of much of the recent rapid development in what is called molecular biology, the study of why all cells contain the directions governing all cell life.

Dr. Lwoff, the founder of this internationally famous group at the Pasteur Institute, has worked in a wide variety of fields. He has made important contributions on the nutritional requirements of microorganisms. One of these led to the discovery of vitamins.

He also made many discoveries about the nature of temperate viruses, which become incorporated into the bacterial chromosome and remain there only to reappear generations later in response to an external stimulus.

This work was followed up by Dr. Lwoff's student, Dr. Jacob, in a series of brilliant discoveries on the nature of this type of virus and bacterial genetics in general. Dr. Jacob and Dr. Monod also have made a number of contributions in the field of gene regulation.

In their study of the intestinal bacteria, they have investigated how genes are turned on and off, a key problem in how cells develop into different forms.

Their discoveries and other recent work in the molecular biology of bacteria and bacterial viruses have led to an understanding of some basic cell biology. This understanding is slowly beginning to bear fruit in application to animal organisms. It is influencing the work of scientists concerned with human and animal viruses and the basic cell biology of all higher organisms.

The three men were chosen by Teachers College, a panel of highly qualified scientists at the Caroline Institute in Stockholm, from among 85 candidates.

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## MEDICINE

### Human Leukemia May Also Be Virus Caused

► **SCIENTISTS** may soon prove that viruses, which cause leukemia in animals, also cause human leukemia.

There is no reason "man should be an exception to all the other animals" in which leukemia is virus-caused, Dr. Albert J. Dalton of the National Cancer Institute, Bethesda, Md., told **SCIENCE SERVICE**. He said, however, that no specific virus affecting humans had been found.

Dr. Arnold Graffi, director of the Institute for Experimental Research at the German Academy of Science, East Berlin, reported that, working with only one type of virus, he produced several forms of leukemia in mice. Included were the lymphatic, or lymph form; the myeloid, or bone marrow, form; and others. His findings bring into question the belief, held by many scientists, that the various forms of leukemia are each caused by a different virus.

The electron microscope shows virus particles in solid tumors that appear identical to those found in mouse leukemia and in some human leukemias.

Dr. Dalton reported that he used the Moloney virus, named after Dr. John B. Moloney of the Laboratory of Viral Oncology, in which Dr. Dalton also works, to produce solid tumors. Dr. Moloney will introduce his fellow scientist and tell something of the background of their work.

The Moloney virus used in the NCI experiments is an RNA, or ribonucleic acid virus, but it is not the first RNA virus to cause solid tumors. Influenza RNA virus has been shown to be a cancer-causing agent, and mammary tumor has been caused by an RNA virus in animals.

Both Dr. Dalton and Dr. Graffi are among the scientists who presented 38 different reports at the conference on murine (mouse) leukemia, sponsored jointly by the Albert Einstein Medical Center in Philadelphia and the National Cancer Institute.

Much of the work reported at the conference is supported by the NCI's virus-leukemia program for which Congress appropriated a total of \$25 million for the 1965 and 1966 fiscal years. Also supporting the meeting is the Leukemia Society, Inc., the American Cancer Society and the Damon Runyan Memorial Fund for Cancer Research.

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## BIOTECHNOLOGY

### Whole Blood Separated Into Major Fractions

► **BLOOD CELL SEPARATORS** permit, for the first time, the collection of a high quantity of certain white blood cells from a single donor.

The most advanced model can accept blood continuously from a donor, whirl it in a centrifuge to separate the three major components, plasma, red blood cells and white blood cells, and return unneeded plasma and red blood cells to the donor. The spinning bowl of the centrifuge separates the blood components on the basis of their differing densities.

One simple version of the machine can remove glycerol, which is needed for successful freezing of blood but which cannot be transfused.

Three models of the machine, developed jointly by the National Cancer Institute and International Business Machines Corporation, were demonstrated in Bethesda, Md., at a Symposium on Recent Developments in Research Methods and Instrumentation sponsored by the National Institutes of Health.

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