



THE MONTH AT CALTECH

New Palomar Pictures

LIKE THE PICTURE on this month's cover of E&S, the pictures on this page have recently been released for the first time by the Mount Wilson and Palomar Observatories. They are included in the new catalogue of the Observatories, which lists all pictures available for public purchase at the Caltech Bookstore.

The picture at the top of this page, photographed in

red light by the 200-inch telescope at the Palomar Observatory, is officially known as Nebulosity in *Monoceros*. Obviously, though, it's going to be much better known as *Madonna and Child*.

The picture at the bottom of the page, which was also photographed in red light by the 200-inch, is of a nebula in Orion, aptly named the *Horsehead Nebula*.

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Oxypolygelatin

REPRESENTATIVES of various government and civilian research groups held a two-day conference at the Institute early this month with the Caltech chemists who developed Oxypolygelatin, an emergency substitute for blood plasma.

The closed conference concerned the clinical and chemical aspects of the material, which was developed under government sponsorship during World War II. It was the first such meeting since research on Oxypolygelatin was resumed after the outbreak of the Korean war.

Said Prof. Linus Pauling, a co-developer of OPG: "Significant progress was made at the meeting in formulating specifications for an ideal plasma extender. Results obtained so far . . . support the belief that OPG is an inexpensive and effective plasma that could be manufactured and stockpiled on large quantities."

NACA

SIX CALTECH representatives have been appointed to the technical subcommittees of the National Advisory Committee for Aeronautics for 1952. Dr. Clark B. Millikan, Director of the Cooperative Wind Tunnel and of the Daniel Guggenheim Aeronautical Laboratory, was reappointed to the Committee on Aerodynamics, and reappointed Chairman of the Subcommittee on Fluid Mechanics; Dr. Hans W. Liepmann, Professor of Aeronautics, reappointed to the Subcommittee on Fluid Mechanics; Richard B. Canright, Research Engineer at the Jet Propulsion Laboratory, reappointed to the Subcommittee on Rocket Engines; Dr. Ernest E. Sechler, Professor of Aeronautics, reappointed to the Subcommittee on Aircraft Structures; Dr. Frank E. Marble, Assistant Professor of Jet Propulsion and Mechanical Engineering, appointed to the Subcommittee on Combustion; and Dr. W. Duncan Rannie, Associate Professor of Mechanical Engineering, appointed to the Subcommittee on Compressors and Turbines.

Appointees serve in a personal and professional capacity without compensation. Recognized for their leadership in a special field, they include engineers from the aircraft industry and the airlines, scientists from universities, and experts from the civil and military agencies of the Government most concerned with aeronautics.

With the United States expanding its military aviation to levels never before reached except in the midst of a major war, and civil aviation continuing to grow, the 1952 appointments reflect the importance of the NACA's conducting an adequate program of aeronautical research. Selected because of their technical ability, experience, and recognized leadership in a special field of competence, the subcommittee members meet regularly to consider problems related to an assigned technological

area, to review research in progress both at NACA laboratories and in other organizations, to recommend research projects, and to assist in the coordination of research programs.

Scientific Advisors

DR. MILTON S. PLESSET, Professor of Applied Mechanics, and Dr. W. Duncan Rannie, Associate Professor of Mechanical Engineering, have been named by General Hoyt S. Vandenberg, U. S. Air Force Chief of Staff, to serve as members of his Scientific Advisory Board for a term expiring in June, 1952. Dr. Plesset is to be a member of the new Panel on Physical Sciences, and Dr. Rannie on the Panel of Fuels and Propulsion.

Dr. Theodore von Karman, former director of the Institute's Guggenheim Aeronautical Laboratory, is Chairman of the Scientific Advisory Board, which was set up in 1946 to assist the Air Force with problems in research and development.

Polio Grants

TWO GRANTS totaling \$26,920 were made to the Institute last month by the National Foundation for Infantile Paralysis.

Under a grant of \$16,920, Dr. Max Delbrück, Professor of Biology, will direct a study of the properties of bacterial viruses and how they grow. He will be assisted by Drs. J. J. Weigle, Renato Dulbecco and N. Visconti.

Drs. Linus Pauling and Robert B. Corey, Professors of Chemistry, received a \$10,000 grant for continuation of their attempts to obtain physical evidence of the structure of certain animal and plant viruses.

The "phage group" of Dr. Delbrück will conduct investigations on bacteriophage — viruses that attack bacteria — as simpler models to work with in an attempt to determine the properties and growth mechanisms of viruses. It is hoped that ultimately the knowledge gained may be applied to the polio virus.

In commenting on the project, Dr. Delbrück explained that he and his fellow researchers plan a thorough study of the properties of viruses under varied laboratory controlled conditions.

Much of their work will be directed at tracing the source and extent of the substances of which the virus is composed. To accomplish this they plan to "tag" the virus or its host with radioactive isotopes. Part of their study will also be concerned with the mechanism of genetic recombination between several viruses infecting the same host bacterium, as well as the reactivity of viruses which have been damaged by exposure to ultraviolet light.

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Since 1947, March of Dimes funds have enabled Drs. Pauling and Corey to determine the basic structure of certain proteins. The present study is an extension of the previous work and will utilize data and techniques developed in the earlier research.

Using an X-ray diffraction technique, the scientists hope to find out the composition and structure of certain chemical molecules which are fundamental constituents of both plant and animal viruses. Their study, when completed, should go far toward a complete understanding of the molecular configuration of virus particles.

Although not working directly with polio virus, the scientists supported by the March of Dimes hope that their basic findings will make a significant contribution to an understanding of its structure and mode of action, and to its eventual conquest by the physicians and other scientists engaged in the fight against infantile paralysis.

Automotive Council Scholarship

A \$600 AUTOMOTIVE Transportation Scholarship has been established at the Institute for 1952 by the Automotive Council of Los Angeles, Inc.

The Council is an association of proprietary truck operators whose primary purpose is the furtherance of highway transportation. The new scholarship has been set up in recognition of the need for a sound engineering approach to highway and highway equipment problems. Funds for the scholarship are provided by proceeds from the annual Truck, Trailer and Equipment Show which is sponsored by the Automotive Council.

Caltech was the school selected to receive the award this year, and the \$600 scholarship—which is to go to an engineering student or students needing financial assistance, and interested in automotive transportation—has been given to Albert Snider '52.

"So far as is known, this is the first scholarship granted by any organization for this specific purpose, and it is the Automotive Council's hope its use will be productive of substantial benefits to highway transportation," said Ray. F. Labory, Caltech '31 and President of the Council.

The 1952 Truck, Trailer and Equipment Show is scheduled for the Pan Pacific Auditorium from June 12-15 this year. It is the Council's plan to continue its scholarship program with funds received from the show each year.

Honors for Pauling

DR. LINUS PAULING, Chairman of the Division of Chemistry and Chemical Engineering at the Institute, has been honored by two Brazilian educational institutions for his contributions to modern chemistry. The University of Recife School of Pharmacy has named its analytical

chemistry research center the Linus Pauling Study Center, and the Emil Fischer Study Center in Pernambuco has made Professor Pauling an honorary member.

The two centers are research organizations whose staffs include teaching personnel and research associates. They have honored Professor Pauling, specifically, for his "fundamental discoveries on the nature of chemical binding and the structure of crystals and molecules, discoveries in the field of protein chemistry and great contributions to the teaching of general chemistry."

Carnegie Appointment

DR. DAVID W. BISHOP, Visiting Professor of Biology at the Institute, has been appointed a Staff Member of the Carnegie Institution of Washington.

Dr. Bishop, a native of Philadelphia, received his undergraduate training at Swarthmore College and received his Ph.D. from the University of Pennsylvania in 1942. He has been at Caltech since last September, on leave from the University of Massachusetts for a year's study of sperm activity and metabolism with Dr. Albert Tyler, Caltech Professor of Embryology. His new appointment will take effect next October.

Safety Engineer

ROY I. WILSON, a safety specialist for 17 years, has been appointed Safety Engineer of the Institute, succeeding Stuart M. Seeley, who resigned to become a safety engineer at the North American Aviation Corporation.

Mr. Wilson recently returned to the United States from Tokyo, where he became Safety Director for the Army Engineers Corps in April, 1949. While abroad he helped the Occupation government set up safety standards for Japanese industry and spent six months as Safety Director at Eighth Army Headquarters in Korea.

A native of Asheville, North Carolina, Mr. Wilson attended Porter Military Academy, Charleston, South Carolina, and was graduated in 1932 from the New Mexico School of Mines.

After graduation, Mr. Wilson worked at Boulder Dam, then went to South America as a junior engineer with the Shell Oil Company. He became a safety engineer for Shell in 1934 and from 1935 to 1939 operated a safety engineering consulting firm in Honolulu for Hawaiian and Philippine plantation owners. He became Safety Director for Pacific Naval Air Base contractors in 1939.

During World War II, he was Chief Safety Engineer for the Navy at Pearl Harbor. Mr. Wilson also has been Safety Director of International Bechtel Construction Company in Arabia and of Morrison-Knudsen, which built Army housing in Guam and the Philippines. He is a member of the American Society of Safety Engineers.