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THE ROCKEFELLER UNIVERSITY
news and notes

THE JOURNAL
OF
EXPERIMENTAL MEDICINE

EDITED BY
SIMON FLEXNER, M.D.
PEYTON ROUS, M.D. HERBERT S. GASSER, M.D.

VOLUME 79, No. 2, 1944

AVERY, OSWALD T., MACLEOD, COLIN M., and McCARTY, MACLYN. Studies on the chemical nature of the substance inducing transformation of pneumococcal types. Induction of transformation by a desoxyribonucleic acid fraction isolated from *Pneumococcus* Type III. Plate 1..... 137

**35th Anniversary
of Landmark Paper**

The February 1, 1944, issue of *The Journal of Experimental Medicine* carried a report by three members from the Hospital of The Rockefeller Institute which began:

“Biologists have long attempted by chemical means to induce in higher organisms predictable and specific changes which thereafter could be transmitted in series as hereditary characters. Among microorganisms the most striking example of inheritable and specific alterations in cell structure and function that can be experimentally induced and are reproducible under well defined and adequately controlled conditions is the transformation of specific types of *Pneumococcus*.”

The authors of the report, titled “Studies on the Chemical Nature of the Substance Inducing Transformation of the Pneumococcal Types,” were Oswald T. Avery, Colin M. MacLeod, and Maclyn McCarty. Contained within the measured language of their observations were the seeds of a scientific revolution. They were announcing, in essence, that genes were made of DNA.

In celebration of the 35th anniversary of the publication of the paper, *The Journal of Experimental Medicine* has

reproduced the article in its February 19, 1979, issue with an introduction by President Lederberg. In discussing its significance, he states: “the revolutionary contribution of Avery, MacLeod, and McCarty was the refocusing on DNA by a generation of chemical biology. Certainly that was its precise impact on the initiation of my own scientific career.”

Professor McCarty, the junior and surviving author of the paper, was honored on February 2 at a special research colloquium on DNA.

Photographs from the University’s Archives of Doctors Avery, MacLeod, and McCarty taken at the time of their collaboration and a reprint of their paper are on exhibit in the Library.

HONORS & AWARDS

Professor **Abraham Pais**, Theoretical Physics, received the 11th annual J. Robert Oppenheimer Memorial Prize, awarded by the University of Miami’s Center for Theoretical Studies, in Coral Gables, Florida, on January 17. The prize, which includes a gold medal and \$1,000 award, is presented for outstanding contributions to the theoretical natural sciences and to the philosophy of science. Nobel laureate physicist P. A. M. Dirac made the presentation.

Subway Plans Modified

After many months of controversy between the Metropolitan Transit Authority and the residents and institutions of this area, particularly the tenants of the University’s Faculty House, the completion of the tunnel for the Queens-Manhattan subway extension will soon begin; but under conditions less onerous for the neighborhood than anticipated. (See *news and notes*, February 1978.)

According to Thomas P. McGinnity, director of physical facilities, some of the worst features of the original plan have been modified or eliminated. The proposed five-story truck hoist adjacent to Faculty House will not be constructed. The ventilation shaft will be drilled, but the debris will be removed at existing removal sites on the east and west ends of the tunnel.

In contrast to methods used on the sections of the tunnel already completed, the section to be dug between Lexington Avenue on the west and the FDR Drive on the east will be done by a tunnel boring machine. This method, which has been used in other cities but not before for any major project in New York, will greatly reduce the amount of blasting necessary. In addition, the original work schedule of 62 to 74 months has been reduced to a period not to exceed 43 months.

These modifications are the result of a year of negotiations during which contractors’ bids and proposals were reviewed, following the approval of the project by the various federal, state, and city agencies concerned.

“Since the project was bound to go through,” states Mr. McGinnity, who was actively involved in all phases of the discussions, “we’re glad that at least it will be a shorter and less messy business than it could have been. The negotiations have also greatly improved the rapport between the neighborhood groups and the MTA. Both sides have promised continuing cooperation to keep the wheels rolling smoothly to get the job done.”

IN PRINT

In an article in the December 22 issue of *Science* titled "Implications of RNA-RNA Splicing in Evolution of Eukaryotic Cells," Professor **James E. Darnell, Jr.**, Molecular Cell Biology, summarizes results of recent research that may have "profound implications in the study of both evolutionary and regulatory biology."

Eukaryotic cells are cells with a true nucleus, characteristic of forms higher than bacteria, which are called prokaryotes. It has been assumed by many biologists that eukaryotes evolved from prokaryotes. Messenger RNA is the information carrier that "reads" and transmits the messages of the cell's DNA, the genetic material, to RNA that in turn guides the protein synthesis that determines life processes. According to Dr. Darnell, "evidence has been accumulating that messenger RNA information in eukaryotic cells is substantially different and more biochemically complex than in bacteria." His article describes the differences that have been discovered and explains why, as a result of these findings, prokaryotic to eukaryotic cell evolution now appears unlikely. If this sequential evolution did not occur "then it seems not only possible but logical that the basic rules for genome organization might also differ between present-day prokaryotes and eukaryotes." (The genome is the complete set of hereditary factors in the cell's chromosomes.)

These findings may have an important bearing on research activities. As the author puts it, "If the molecular basis of eukaryotic gene regulation is to be explained in relation to developmental biology or cancer biology or endocrinology or many other topics, it is at least possible that we cannot rely on bacterial models but must again solve the molecular control mechanisms of eukaryotic genes."

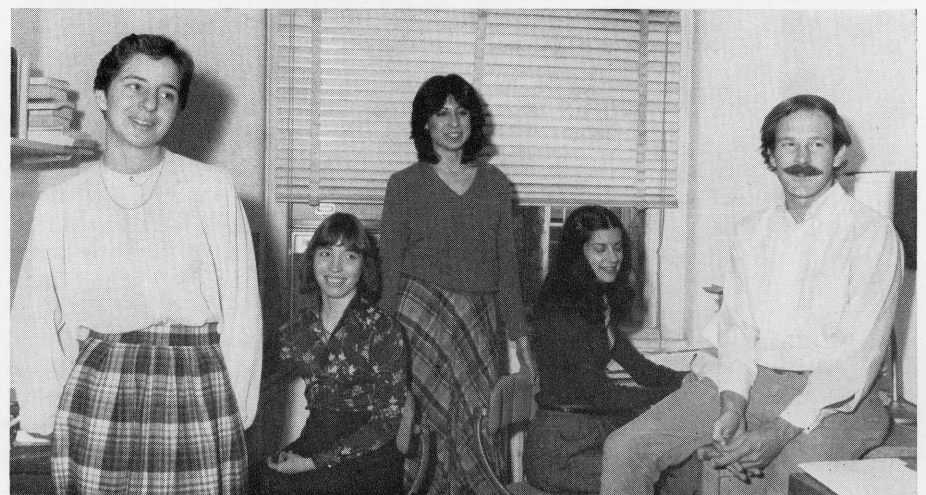
Adjunct Associate Professor **Roger S. Payne** has been studying whale communication for over a decade. In the January issue of *National Geographic*, in an article entitled "Humpbacks: Their Mysterious Songs," he reports on an "astonishing" fact that "sets these whales apart from all other animals. Humpback whales are constantly changing their songs, 'composing' as they go along, incorporating new elements into old songs. We are aware of no other animal besides man in which this strange and complicated behavior occurs, and we have no idea of the reason behind it."

Studies of many recordings have revealed that the songs of two successive years will differ significantly, but what Dr. Payne finds equally "intriguing" is that the whales do not forget the previous year's song, which they sing at the start of the following season. "Only as the season progressed did the changes gradually take place."

These and other aspects of whale communication behavior suggest to Dr. Payne "an impressive mental ability."

Journals Office copyeditors. Top photograph: left to right, seated, Karen Paxton and Craig Percy; standing, Mark Briskin and Mark Branca. Center photograph: Joseph Fortner, Janet Witter, and Gregory Collins. Bottom photograph: Lori Raymon, Martha Kellar, Jayne Kornblum, Judith Hoffmann, and Timothy Webster.

On page 3, top photograph: Journals Office managerial team. Seated, Vera Smith and Margaret Broadbent; standing, Raymond Fastiggi and Denise Furey. (Not shown, Eileen Luciano.) Bottom photographs: Order Service. Left, Elsie Conklin. Right, Elizabeth Kellerhals, Harold Mattsson, and Joyce Buffa.



Reorganization

With Paul R. Penndorf moving to his new post as director of safety and code compliance, the Buildings and Grounds staff has been reorganized into a four-unit structure under the direction of Thomas P. McGinnity, director of physical facilities, reporting to Vice President David J. Lyons.

Superintendent Albert W. Schall continues in charge of renovations and construction, including the services of the cabinet and paint shops; Guenther Ebert is supervisor of the mechanical and electrical maintenance shop; Chief Engineer James Mortko is in charge of the boiler plant and of all heating, ventilating, and air conditioning systems. Supervisor Ronald Sauer has responsibility for custodial services, the grounds, and the security force.

Associate Superintendent Kenneth C. Schmitt is coordinating plant management office procedures, with the additional responsibilities of the telephone system and parking facilities; he is, in addition, the University's locksmith.

Secretary Erika Mueller remains as the first line of communication on extension 1515.



Blue Pencils and Green Thumbs

Five scholarly journals are published each month under the University's imprint. Their production, distribution, and financial management is the responsibility of The Rockefeller University Press, directed by William A. Bayless, and specifically of the Press's Journals Office and Order Services.

From her river-view office on the second floor of the Nurses' Residence, Margaret Broadbent, Journals manager, heads a staff of copyeditors whose job is to oversee the production of the journals from the time the manuscripts are received from the scientific editors until they appear in print. An author, in the heat of creativity, may be forgiven for writing (as one did), "This extended comment is intended to illicit an extended response." But woe betide the copyeditor from whom this does not elicit a response with the proverbial "blue pencil."

"A good copyeditor," says Miss Broadbent, "is one of a unique breed, who derives special satisfaction from turning a batch of heterogeneous typescripts and illustrations into an orderly journal whose format provides a certain uniformity. A good copyeditor is detail oriented; organized, knowing how to keep manuscripts, galleys, and page proofs marching to the printing press; disciplined in checking; and diplomatic in dealing with authors and editors."

The care extended to text is also given to illustrations. According to Miss Broadbent, she is often asked about the special "Rockefeller process," particularly in regard to the reproduction of electron micrographs. "The 'magic formula'," she asserts, is "simply the intense vigilance of editors, authors, and printers to match the original figures."

A veteran of 39 years with the University, Miss Broadbent came up through the ranks, from secretary (a

"medieval clerkship" in those pre-computer days) to subscription chief to copyeditor to manager in 1963. Among other affiliations, she is a member of the Council of Biology Editors, serving on the committee for the publication of its style manual and was chairman of CBE in 1975-76. She contributes to journals in her own field, most recently with an article, "Productivity in Copy Editing," for the January 1979 issue of *Scholarly Publishing*.

Most of the Journals Office copyeditors come fresh from college: Miss Broadbent likes to get them before they have to "unlearn" other editing styles. An exception was Judith Hoffmann, who was a crossword puzzle editor before joining Journals, a field to which she has returned after almost six years with the University. She had most recently edited the *Biophysical Journal*, with the assistance of Martha Kellar, and as a special assignment, *news and notes*, now edited by Gregory Collins.

Working on *The Journal of Clinical Investigation* are Mark Briskin, Mark Branca, Karen Paxton, and Craig Percy; on *The Journal of Experimental Medicine*, Lori Raymon and Jayne Kornblum; on *The Journal of Cell Biology*, Janet Witter, Gregory Collins, and Joseph Fortner; and on *The Journal of General Physiology*, Timothy Webster.

Raymond Fastiggi, assistant to the manager, presently helps in training new editors and, with a recent master's degree in accounting, is of invaluable help with finances. Secretary Vera Smith, with Journals since 1962, is, in Miss Broadbent's words, "the glue that holds our office together." With secretaries Eileen Luciano and Denise Furey, she oversees a mountain of mail, logging-in of manuscripts, and checking of bills and receipts, among the countless needs generated by a large office.

Two floors above, Harold Mattsson and his team in Order Service—Joyce Buffa, Elsie Conklin, who has been with the University since 1943, and Elizabeth Kellerhals—fulfill 20,000 worldwide journal subscriptions, as well as orders for books published by the University.

The Press takes pride that the journals, without sacrificing quality, are self-supporting, their revenues covering all operating expenses, including an overhead contribution to the University. In Order Service, thanks to a balcony over the river and Harold Mattsson's green thumb, they even grow their own vegetables.

The Baltimore Connection

In a recent article in the *Baltimore Sun*, Dr. Thomas B. Turner, dean emeritus of The Johns Hopkins University School of Medicine, points out that nine Nobel laureates in medicine have been associated with Baltimore. Of those nine, no fewer than five have also been associated with Rockefeller.

Electrophysiologist Herbert S. Gasser, a 1915 Hopkins graduate and 1944 Nobel laureate, was director of the Rockefeller from 1935 to 1953. Another electrophysiologist and Hopkins alumnus, H. Keffer Hartline, has been at Rockefeller since 1953. His Nobel Prize for work on the optic nerve was awarded in 1967. Dr. Hartline was the first Detlev W. Bronk Professor from 1972 until he became emeritus in 1974.

Peyton Rous, born in Baltimore and a 1905 Hopkins graduate, came to Rockefeller in 1909, made his now world-famous discovery of a chicken

cancer virus (Rous sarcoma) a year later, for which he was awarded a Nobel Prize *56 years later*—three years before his death in 1970 at the age of 90.

Rous had been a classmate at Hopkins of George H. Whipple, whose career was spent mostly at the University of Rochester as dean of the medical school. His Nobel Prize, in 1934, was for work on pernicious anemia. Whipple served as a member of the Rockefeller Board of Scientific Directors from 1936 to 1953.

The most recent Baltimore connection is 1978 Nobelist Daniel Nathans, head of the department of microbiology at the Hopkins, who was at Rockefeller from 1959 to 1962 in the laboratory of Professor (and Nobelist) Fritz Lipmann.

In 1975, the Nobel Prize was awarded to a 1964 Rockefeller alumnus, now at MIT, who has absolutely no connection with Johns Hopkins. As fate would have it, his name is David Baltimore.

China Report

The eagerness with which the People's Republic of China is working to revitalize its research programs and to participate in exchange programs with Western institutions has been reported from many sources within the scientific community.

Dr. Kwang-Poo Chang, an assistant professor in the parasitology laboratory of Professor William Trager, found this confirmed during his recent two-week visit to China as a member of a delegation from the American Society of Tropical Medicine and Hygiene.

Dr. Chang reports that in his conversations with members of research centers, in which major reorganizations are underway, there are strong indications that the Chinese are looking for opportunities for their scientists to work in American laboratories. Dr. Chang would be happy to speak with any colleagues here who would like further information.

APPOINTMENTS

Michael I. Posner, professor of psychology, University of Oregon, as a visiting professor in the experimental psychology laboratory of Professor George A. Miller, effective January 1.

C. Wayne Bardin, director, Center for Biomedical Research, Population Council, as adjunct professor, effective January 1.

Fund Honors Robbins

The New York Botanical Garden has established a research fund in honor of William J. Robbins, who died last October. Dr. Robbins was director of The New York Botanical Garden from 1937 to 1957 and was a Rockefeller trustee from 1956, becoming trustee emeritus in 1965. He maintained a laboratory at the University until shortly before his death. Those wishing to contribute to the fund may send donations to The W. J. Robbins Memorial Research Fund at The New York Botanical Garden, Bronx, New York 10458.

Standing Committee

The Standing Committee on University Affairs is now going into its seventh year. The committee's purpose is to serve as a forum and an advisory group to the board of trustees on matters not strictly scientific or financial that concern Rockefeller faculty and students. It has been involved in decisions on such areas as housing, food services, and communications generally.

The committee welcomes comments and advice. Current members are: Dean James G. Hirsch, Trustee Neva Kaiser, President Lederberg, Executive Vice President Rodney W. Nichols, Assistant Professor Mary R. Rifkin, Trustee Walter N. Rothschild, Jr., committee chairman, Biomedical Fellow Carol A. Rouzer, Professor Philip Siekevitz, Affiliate Gordon Silverman, and Graduate Fellow Michael A. Yamin.

BRIEFS

Professor **E. G. D. Cohen**, Theoretical Physics, will hold the post of Lorentz Professor at the University of Leiden, The Netherlands, for the period February through May. In June, Dr. Cohen will serve as Visiting Professor at the College de France, in Paris.

Professor **Joel E. Cohen**, Populations, spoke on Longitudinal Studies of Malaria for a symposium on Some Mathematical Questions in Biology at the 145th National Meeting of the American Association for the Advancement of Science, held January 3-8 in Houston, Texas.

Professor **René J. Dubos** and Trustee **Lewis Thomas** are members of the American Advisory Board of a new monthly publication, *GEO*.

SIMMS DIES

Henry S. Simms, a biochemist who was associated with The Rockefeller from 1920 to 1932, died on September 17, 1978, at the age of 82. Dr. Simms worked first in the laboratory of P. A. T. Levene, later moving to the animal and plant pathology laboratories in Princeton, New Jersey. He joined the faculty of Columbia University in 1933 where he remained until his retirement in 1974.

PEARSON DIES

Frances S. Pearson, 50, administrative secretary in the biochemistry laboratory of Professors Stanford Moore and William H. Stein, died on December 27, 1978. Mrs. Pearson had been with the University since 1967.

The Rockefeller University Children's School is now accepting applications from Rockefeller parents for September 1979, for children who will be between the ages of three years and six years three months by school opening. For further information, call Barbara Adams, school director, extension 1591, the sooner the better to assure a place.

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