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Art Lectures Span Time and Space

Works of art from widely separated points in time (centuries before Christ and our own half century) and space (the Tassili Plateau and midtown Manhattan) were the subjects of lectures given at the University in recent weeks. They were part of a continuing series planned by Professor Walther F. Goebel.

On January 27, Guest Investigator Caleb E. Finch recounted with words and slides a journey he and his wife, June, made last summer to the Tassili Plateau in the central Sahara. This is the site of an extraordinary group of rock frescoes, some possibly dating back to 5,000 B.C. The existence of these paintings had been rumored for many years, but they did not gain world-wide attention until 1956 when a French expedition penetrated parts of the region never before visited by Europeans and spent many months making copies. Today, though their exact dating remains controversial, the paintings are considered of major anthropological significance as a cultural repository of one or possibly several Negroid peoples who lived in the area

at a time preceding the first Egyptian dynasties. The paintings are in various shades of black, white, red, and ochre. The pigments probably were made from local minerals and other natural dye materials. They have been well preserved by the arid climate of a land now inhabited only by Berber-speaking Tuareg herdsmen. Some of the paintings show giraffes, elephants, hippopotamuses, and even great herds of cattle, suggesting that the central Sahara was once a fertile region.

Dr. Finch's interest stems back to an anthropology course during his undergraduate days at Yale. After receiving his Ph.D. degree from Rockefeller University last June, he and his wife flew to Algiers. Two more days of air travel, including stops at remote oases along the 1,200-mile route to southeastern Algeria brought them to Djanet, a garden spot with thousands of palm trees and the only water for many miles. There the young adventurers hired two Tuareg guides and climbed to the top of the 5,000-foot-high Tassili Plateau. For five days, they roamed on foot from site to site, photographing the varied frescoes — the earliest examples of Negro art yet discovered. Anyone hearing Dr. Finch could sense he is planning a return trip.

* * *

"Abstract Art: The Rockefeller University Collection" was the topic of a program on February 9 featuring Miss Sylvia Milgram, Lecturer and Educational Coordinator at the Museum of Modern Art, and Miss Dorothy Miller, former Curator of Museum Collections, who were both introduced by Mrs. Seitz. Miss Miller and Mr. Alfred Barr, former Director of Collections at the Museum, were the consultants responsible for bringing together the works of art in Abby Aldrich Rockefeller Hall.

A majority of the paintings there derive from the abstract expressionist period of the 1950s, which Miss Milgram discussed, using color slides. She also reviewed the work of Alexander Calder, whose mobile, "Three Black Moons," hangs in the Abby lounge. The evening was climaxed by a tour of the collection.

A Question of Safety

A decade after the introduction of birth control pills, Dr. Roy Hertz of the Population Council still feels that many important safety questions remain unanswered. The scientist, whose area of research is the human reproductive system and those cancers that affect it, explained his concern in testimony January 15 to the Monopoly Subcommittee of the U.S. Senate's Select Committee on Small Business.

About 8.5 million American women reportedly are taking the oral contraceptives, which contain synthetic forms of the female hormones estrogen and progesterone. Government reports, though admitting an element of risk, have called the pills safe for contraceptive use. Specialists differ widely in their assessment of the gravity of the risk.

Dr. Hertz points out that cancers have developed in five species of animals treated with hormones essentially the same as or comparable with those used in the pills. For this reason, Dr. Hertz expresses concern that "our observations to date regarding the potential effects on women of prolonged hormone treatment are insufficient."

Alumnus Wins Award

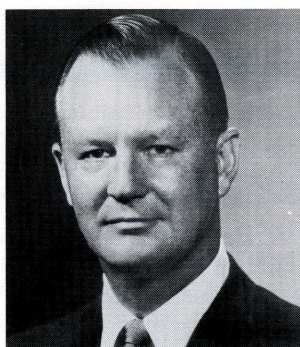
A 31-year-old graduate of Rockefeller University is the first winner of the Gustav Stern Award in Virology. Dr. David Baltimore, who received his Ph.D. in 1964 and is now Associate Professor of Microbiology at the Massachusetts Institute of Technology, won the recognition for research on polio and mingo viruses. He demonstrated for the first time the mechanism by which viruses of this type manufacture RNA and proteins, and the enzymes involved in this process. The award, which includes a \$1,000 prize and an inscribed scroll, was presented February 2 at a banquet held in connection with the seventh Gustav Stern Symposium on Perspectives in Virology. The annual award was established in memory of the late Gustav Stern, an industrialist and philanthropist who sponsored the annual symposia to further the exchange of ideas in the field of virus research.

New Trustees

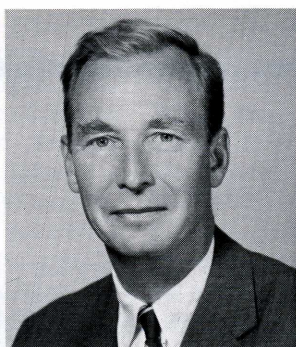
The University's Board of Trustees has three new members. They are C. W. Cook, Chairman and Chief Executive Officer of General Foods Corporation, Christian A. Herter, Jr., Special Assistant for Environmental Affairs to U.S. Secretary of State William Rogers, and Walter N. Rothschild, Jr., former President of Abraham & Straus and the new Chairman of the New York Urban Coalition.

Mr. Cook, who was elected Chairman of General Foods in 1966, has been Chief Executive since 1965 and a director since 1960. The Company's headquarters are in White Plains. A graduate of the University of Texas, Mr. Cook joined General Foods in 1942 as Chief Engineer. After holding a succession of manufacturing and production posts in the Maxwell House Division, he transferred to the marketing area of the business. He was

Continued overleaf



C. W. COOK



CHRISTIAN A. HERTER, JR.



WALTER N. ROTHSCHILD, JR.

named Division General Manager and a vice president of General Foods in 1955. Seven years later, he was elected President.

Mr. Cook was chosen by President Nixon to chair a panel on food processing and manufacturing at the White House Conference on Food, Nutrition and Health held last December. He is a member of Governor Rockefeller's Steering Committee on Social Problems in New York State, a director of Whirlpool Corporation and the Chase Manhattan Bank, and a co-chairman and trustee of the National Industrial Conference Board.

In addition to being a special assistant to Secretary Rogers, Mr. Herter also is Director of the new Office of Environmental Affairs in the Bureau of International Scientific and Technological Affairs. His father, who died in 1966, had served as U. S. Secretary of State, a member of the House of Representatives, and Governor of Massachusetts. The new trustee's great-uncle, Christian A. Herter, was a physician and a member of the original Board of Scientific Directors of

The Rockefeller Institute for Medical Research.

Mr. Herter is a lawyer with a wide background in business and government. He was an administrative assistant to the U.S. Vice President in 1953-54 and a member of the policy planning staff of the U. S. Department of State in 1954. In 1957, he was elected to the Governor's Council of Massachusetts. From 1961 to 1969 Mr. Herter was with the Socony Mobil Oil Company, first as General Manager of Government Relations and then as Corporate Vice President for Public Affairs. Mr. Herter holds B.S. and LL.B. degrees from Harvard University.

Mr. Rothschild will take over on March 1 the unsalaried post of chairman of the Urban Coalition, a non-profit organization that is seeking solutions to the problems of poverty and urban decay. He stepped down in January as head of Abraham & Straus, New York's third largest retail chain. In announcing last September his plans to resign the position he had held since 1963, the 49-year-old executive said "the problems of poverty, of urban renewal and of education are engrossing and demanding, and it has become more and more difficult to pursue what amounts to two careers." Mr. Rothschild was graduated from Harvard in 1942. He began his career in retailing at Bloomingdale's. In 1950, he joined the firm which his great-grandfather, Abraham Abraham, had helped to found.

Mr. Rothschild is chairman of the Citizens Committee to Keep New York City Clean and of the Downtown Brooklyn Development Committee. He is also a director of the New York City Public Development Corporation, a group formed to foster industrial development in the city, and a member of the Second Regional Planning Committee, and the Steering Committee of Coalition JOBS.

IN PRINT

Major developments in American medicine during the past decade are reviewed in an article by **Dr. Paul F. Cranefield** appearing in *The New York Times Encyclopedic Almanac 1970*. Under the title "Advancing Medicine," Dr. Cranefield describes American medicine as entering the 1970s "embroiled in controversy and facing a series of complex and challenging problems." Referring to federal funds for research, he writes: "Seeking new knowledge is actually the least costly of the nation's health programs, and we must hope that small increases in the delivery of medical care today are not paid for at the cost of advances that might yield incalculable benefit to future generations."

"Learning in the Autonomic Nervous System" is the title of an article by **Dr. Leo V. DiCara** in the January issue of *Scientific American*. Dr. DiCara describes recent experiments at Rockefeller University and other institutions on visceral responses — of glands, of cardiac muscle and of the smooth muscle of the alimentary canal and blood vessels — and the autonomic nervous system, which controls them. Contrary to long-standing assumptions, the article states, the experiments indicate that "supposed involuntary responses can be genuinely learned." These findings, Dr. DiCara writes, "should lead to better understanding of the cause and cure of psychosomatic disorders and of the mechanisms whereby the body maintains homeostasis, or a stable internal environment." (See col. 3, page 3.)

Demons, Dreamers, and Madmen is the title of a book by **Dr. Harry G. Frankfurt**, published recently by Bobbs-Merrill. The 193-page book is subtitled "The Defense of Reason in Descartes' *Meditations*." Dr. Frankfurt explains that it deals with those parts of the French philosopher's *Meditations* "I believe are indispensable to understanding" his attempt to provide a justification of reason. In the last chapter, the author offers an hypothesis concerning the relation between the theory of knowledge inherent in the *Meditations* and the controversy over the significance of scientific truth that developed in the seventeenth century between Galileo and the Catholic Church.

Peyton Rous 1879-1970

Dr. Peyton Rous, associated with the University for over 60 years, died February 16. He was 90. The Nobel Prize in Medicine was presented to him in 1966 "for his discovery of tumor-inducing viruses." Dr. Rous joined the staff of The Rockefeller Institute in 1909. He became Member Emeritus in 1945 but was active up to a few weeks before his death. On campus he is remembered most warmly for a love of life that delighted "in the beauty of plants, the behavior of animals, the artifacts of man, and the exquisite usage of the written word."

Report Reflects Decade of Change

The 1968-69 Annual Report, published this month, closes out a year — and a decade — of great changes at Rockefeller University, including a steady growth in numbers of students and faculty and a broadening of educational and research interests to include physics, mathematics, psychology, the behavioral sciences, and philosophy. In June 1969, the report notes, degrees were conferred on 27 students, the largest group in the eleven convocations since 1959. All told, 151 doctorates have been conferred in that span, and the student body increased from ten in 1955 to 136 in 1969.

In his introductory message, President Seitz acknowledges that figures on expansion and growth may “stir a serious question. . . . Is the nature and spirit of Rockefeller University to be radically transformed?” In reply, he states: “I can only reiterate my view that all the changes of the past year and those planned for the new decade are part of an evolutionary process.”

As for numbers, Dr. Seitz observes, “despite the rise in students and faculty, we are a long way from an explosion. . . . We have yet to lose our sense of community nor is it intended that we do so.” And, he adds, “no change is conceived that would unbalance the delicate mechanism designed to help each student accomplish” the transformation from a graduate student into a scholar and investigator.

Commenting on the role of science in times of stress and doubt, Dr. Seitz states that “as individuals and in groups, we are and must be looking for opportunities to bring whatever competence and knowledge we possess to bear on the resolution of conflicts between human betterment and technological developments.”

The report contains a major section on research and a bibliography of faculty and student publications. The research section differs from those in previous reports in that it presents highlights of the significant work reported by the heads of the University laboratories.

The financial section of the report shows total receipts, excluding grant support, of \$11,022,130 for the period July 1, 1968 to June 30, 1969. Related budget expenditures were \$11,760,469, “resulting in an excess of expenditures over receipts of \$738,339.” Support from grants involved net receipts of \$5,459,762 compared to \$5,404,536 in fiscal 1967-68.

The financial section concludes: “As the year ended it became clear that, like academic institutions everywhere, Rockefeller University faced economic problems requiring a reappraisal of many operations. The challenge was to find solutions that would maintain the high standards of research and education to which this University has always been dedicated.”

PERSONAL MENTION

Bernard Mattimore, a fireman on the Power House crew for almost 43 years, retired February 1. He first reported for work July 6, 1927. Only Chief George Karda has been at the Power House longer. Mr. Mattimore plans to continue residing at his home in Bay-side, where he and his wife spend a great deal of time in their flower garden. He is looking forward to visiting his son, James, who teaches English in Philadelphia. And there should be many more hours to play grandfather. Mr. Mattimore's daughter, Mrs. Joan Fox, who lives in Flushing, has two children—a boy and a girl.

Born, December 12 at New York Hospital, to **Dr. Herbert L. Morton** and his

wife, Sally, their second child, Michelle Ada.

Born, December 29 at the Bronx Lebanon Hospital Center, to **Wilburt Carter**, Laboratory Assistant, and his wife, Monica, their second child, Lois Heidi.

Born, January 12 at New York Hospital, to **Dr. Shigeru Sassa** and his wife, Reiko, their second child, Osamu.

Born, January 16 at New York Hospital, to **Dr. James M. Manning** and his wife, Lois, their second child, Laura Jean.

Born, January 20 at New York Hospital, to **Dr. David Cooper** and his wife, Pearl, their first child, Audrey Anna.

Married, December 20, in the Cohn Library, Abby Aldrich Rockefeller Hall, **Dr. Ta-Feng Lin** to Chen Yeh Huang.

EXTRACURRICULAR

Graduate Fellow **Glenn L. Paulson** is temporary chairman of a steering committee to help make plans for the New York area in connection with a nationwide campus teach-in on environmental problems. He is also a member of the national Teach-In Committee, the policy-making body for the offices of Environmental Teach-In, Inc., Washington, D.C. The steering committee was formed January 31 following a meeting at Barnard College of 350 students and other participants preparing for the April 22 teach-in. Earlier, one of the principal speakers, University Professor **René J. Dubos**, had cautioned the audience that direct action programs on specific, limited issues would not keep the movement to protect the environment going unless they were backed up with a long-range philosophy.

“A Closer Look”

Dr. Neal Miller is one of six scientists whose photographs appear in the January issue of *Fortune* in connection with an article on the behavioral sciences titled “Science Takes a Closer Look at Man.” Author Lawrence Lessing describes the six scientists as “representative of the spread and variety of the growing endeavor to understand the complexities of individual and social behavior.” The article notes that Dr. Miller “recently extended operant conditioning to teaching rats to raise or lower their own heart rate, blood pressure, and other visceral or glandular functioning hitherto thought to be entirely beyond voluntary control.” (In operant conditioning, a reward is used to strengthen any one of a number of different responses that is selected for training.) Dr. Miller's work also was featured recently on “Research Project,” an NBC television series.

One Flight Up

The Registrar and two members of the President's Office have moved into new quarters on the third floor of Caspary Hall. The shift from the second floor to Room 3C, at the south end of Caspary, was made this month by Miss Marian E. Lucius, Registrar, and Mrs. Pamela P. Lee and Mrs. Jody T. Smith of the President's Office.

For his "dedication to the narcotics problem and work with methadone in addiction treatment," **Professor Vincent P. Dole** has received one of the ten Distinguished Achievement Awards for 1970 given by *Modern Medicine*, a national medical journal. The awards, announced in January, are presented annually to individuals who have made significant contributions to medical research, practice, or education. Dr. Dole, a senior physician at the University Hospital, and his wife, Dr. Marie E. Nyswander, a psychiatrist who had

worked with narcotics addicts for many years, began their methadone maintenance program five years ago, under a grant from New York City's Health Research Council. The program is based on the use of an addicting narcotic, methadone, as an agent against heroin. When given orally in carefully prescribed daily doses, methadone blocks the euphoria brought on by heroin and eliminates drug hunger without itself producing sedation, euphoria, or medical problems—even in patients who have taken it more than five years. There are eight methadone centers in New York with 2,000 former heroin addicts under treatment and 4,500 on waiting lists.

Lyons Appointed

David J. Lyons, former Assistant Director of Finance at the University of Rochester, is Rockefeller University's first Director of Economic Planning. Lyons' appointment to the new position became effective February 1. His major responsibilities will be in the



Song of the Whale

Come April, Dr. Roger Payne and his wife, Katharine, will be off for Bermuda to add to their tape recordings of some of the most remarkable sounds in nature—the "songs" of humpback whales. Payne, who joined the University faculty in 1966 as an assistant professor of animal behavior, is one of a group of scientists who are not only interested in the nature and function of whale sounds but are also concerned with the survival of the world's largest mammals.

These scientists have found that the sounds of humpbacks are ordered into sequences that are repeated many times without a break, like bird songs. Even the shortest recorded solo by a humpback whale—about 7 minutes—is much longer than anything in the bird world. Some humpback sequences are almost 30 minutes long, vocal efforts worthy of creatures exceeding 50 feet in length.

The humpback whale has been called the best and noisiest vocalist in the world's oceans. Its repertoire includes high frequency wails, calf-like blats, sepulchral roars, and cavernous moos, as wildly beautiful as the deep waters through which they are transmitted. Some of the sounds travel over distances of tens, hundreds, and even thousands of miles.

To pick up the songs of humpbacks during their spring migration past Bermuda, the Paynes cruise over the whale "grounds" in a sail boat with a hydrophone in tow. This instrument converts sound energy in water to electrical energy. The signals are fed through an amplifier aboard the boat and recorded on magnetic tape. Later the whale sounds are analyzed to determine the frequencies of the various notes and phrases, their rhythm, and their loud-

ness. This is a job to which Katharine Payne brings a large supply of patience and a keen ear.

Analysis is aided by the use of instruments like the sound spectrograph, which makes a visual record of sounds fed into it. The Paynes have transposed some of this information into simpler charts—a sort of sheet music of whale songs—which reveal the highs, lows, and duration of successive phrases.

Evidence from various sources indicates that there is a sequence of sounds specific to the humpback species (*Megaptera novaeangliae*). But the renditions of the song by individual whales differ enough from each other to be recognizable. Preliminary evidence suggests that sometimes the whales sing at great depths within a stratum of water from which much of the sound energy cannot escape. Thus it is possible that, under favorable circumstances, whales throughout an ocean basin like the North Atlantic may be in "contact" with each other (as long as shoal water or continents do not intervene). The function of whale songs is not known, but, Dr. Payne notes, the lowest tones may serve as a signal upon which individuals can "home," in order to come together over varying distances.

Even as they pursue their research, the scientists are aware that their subjects are rapidly approaching extinction in an uneven contest with factory ships equipped with helicopters, radar, and harpoons with explosive heads. In the halcyon years of whaling celebrated by Herman Melville, all the whalers under sail killed an average of 37 leviathans in a three-year span. Today's catcher boats kill ten to twenty times as many in a single year. Dr. Payne observes that "the industry

areas of accounting, budgets, and long-range financial planning.

Lyons is a Certified Public Accountant with a broad background in applied mathematics and computer operations. He received his B.A. degree from the University of Chicago in 1957 and an M.B.A. degree from its Graduate School of Business in 1962. One of his mathematics teachers at Chicago was Dr. Morris Schreiber, who is now on The Rockefeller University faculty. Mr. Lyons was Administrative Assistant to the Comptroller of the University of Chicago when he resigned in 1967 to become Assistant Controller at Rochester and then Assistant Director of Finance with responsibility for systems and procedures, long-range financial projections, and special cost studies.

seems determined to destroy itself by wiping out the resource on which it depends. No unique substance is taken from whales that would justify the continued slaughter."

No wonder that Dr. Payne is actively involved in advancing a conservation program sponsored by the New York Zoological Society. The outlook is clouded, but, not so coincidentally perhaps, the same week in December that Dr. Payne played whale songs for an enthralled audience in Caspary Auditorium, the Caswell-Massey Co. Ltd. announced it was ceasing production of its "superb" Whale Oil Extract Soaps. The company proclaimed: "What we have now come up with is a surprising substance derived from a natural, vegetable source which chemically and physiologically duplicates our former whale oil extract and which we have named in honor of our friend, the whale, Vegesperm."