

the



# Record

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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NATIONAL INSTITUTES OF HEALTH

## Dr. Whitehair Will Head Primate Center Program



Currently a member of the PHS Commissioned Corps, Dr. Whitehair is secretary-treasurer of the American Board of Veterinary Public Health.

Dr. Leo A. Whitehair has been appointed director of the Primate Research Centers Program, Division of Research Resources. He succeeds Dr. William J. Goodwin, who retired June 1.

The NIH Primate Research Centers Program, initiated in 1960, includes seven centers in the U.S. and the Caribbean Primate Center in Puerto Rico.

Now the largest nonhuman primate research network in the world, the program's main mission is the establishment of primate animal models in which diseases can be duplicated and studied, causes and effects documented, and effective means of prevention and treatment developed.

### Education Noted

Dr. Whitehair earned his D.V.M. at Kansas State University and his Ph.D. in food science at the University of Wisconsin.

In 1954 he entered the U.S. Air Force as a task engineer, conducting studies on stress and nutritional deprivation.

From 1962 to 1967 he was a project officer, U.S. Atomic Energy Commission, for studies of application of ionizing radiation to agricultural and animal production. He received the USAF Commendation

(See DR. WHITEHAIR, Page 6)

## CC Scientists Win Prize For Study of Drugs' Effects on Lab Tests

Dr. Donald S. Young, chief of the CC Clinical Pathology Department's clinical chemistry service, Lucy Pestaner, computer specialist in that department, and Dr. Richard Friedman of the University of Wisconsin are co-recipients of the 1974-75 Gerard B. Lambert Award.

### Improve Patient Care

Their project is one of 10 selected from 2500 considered for their innovative and imaginative approaches to improve patient care or reduce costs.

The researchers tracked down and computer-filed over 17,000 reported drug-lab test interactions because their experience had shown that results of clinical laboratory tests performed on patients receiving medication may be altered by the effects of drugs.

### System Aids Physician

They developed a computer-file system which helps physicians determine what test will least likely produce erroneous results for a patient receiving a particular drug.

(See PRIZE WINNERS, Page 8)

## Scientists May Have Found Elusive 'Stem Cell'; NCI Research Explained at Meeting in San Diego

Researchers at the National Cancer Institute, believe that they may have found the elusive "stem cell," from which all blood cells develop. For more than 100 years, scientists have tried to isolate this precursor cell.

The NCI research was reported by Dr. Ronald D. Barr at the 66th annual meeting of the American Association for Cancer Research held recently in San Diego.

### Lengthy Process Explained

Dr. Barr, Division of Cancer Treatment, explained that a lengthy process of separating the white blood cells taken from normal human donors into different types and subtypes enabled the scientists to isolate a fraction that differentiated into all other forms when later cultured.

Preceding isolation of the stem cell fraction, the white blood cells were separated into their different component types by sedimentation procedures that layered cells by their differing densities and sizes.

Since the resulting separation was still incomplete, the fractions

were then subjected to other techniques that divided the cells on the basis of their immunological properties.

Several different samples of leucocytes were obtained, only one of which was capable of differentiation.

When placed in tissue culture the reproducing stem cells multiplied into maturing red and white blood cells and blood platelets.

Drs. Jacqueline Whang-Peng and Seymour M. Perry were Dr. Barr's associates in the NCI investigation.

NCI scientists who also spoke at the meeting included Drs. Ralph E. Johnson and Susan M. Sieber.

Dr. Johnson, chief of NCI's Radiation Oncology Branch, said that treatment with total body irradiation has doubled the average survival time for cancer patients with

(See NCI RESEARCH, Page 4)

## Economists Compare Trends in Health Costs In U.S., Other Countries

The current status and future implications of Health Costs and Expenditures in North American and European countries were discussed at a recent international conference at NIH, sponsored by the Fogarty International Center.

Dr. Teh-wei Hu, visiting research professor at the Center, served as program coordinator for the conference held June 2-4.

During the 3-day meeting, in which about 120 persons participated, a number of well-known health economists and experts presented papers on trends in their countries. They evaluated health costs in the United States, Canada, the United Kingdom, France, Sweden, Belgium, Denmark, the Netherlands, West Germany, and Romania.

Health costs and expenditures in the United States have increased about 5 to 8 percent of our Gross National Product as compared to 3.5 to 6 percent of the GNP in the early 1960s.

Two major factors influencing these increases are changes in the nature of health services, such as their range, intensity, and sophistication.

(See COST TRENDS, Page 4)



Paul Mack of the Mack Printing Company presents a copy of the second edition of "Effects of Drugs on Clinical Laboratory Tests" to Dr. Young and Mrs. Pestaner. As a special issue of the "Journal of the American Association of Clinical Chemists," the first edition of 20,000 copies sold out. The enlarged second edition, describing 17,500 effects of drugs on laboratory tests, will be sent free to all journal subscribers or may be purchased for \$10. This is the first issue of a scientific journal produced entirely from computer tapes.



# the NIH Record

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## Applications Due July 14 From Employees Eligible For Project Stride

July 14 is the deadline for employees who want to submit applications for Project Stride, a career development program which combines on-the-job training in positions as technicians or paraprofessionals at NIH with full-time study at American University.

A meeting will be held for applicants on Friday, June 27, from 11 a.m. to noon in Bldg. 1, Wilson Hall.

Some 30 Stride trainees in 10 institutes are needed in administrative, life and physical sciences, and computer science areas.

An announcement listing positions will soon be distributed to all employees. Also, the positions will be included in the NIH Merit Promotion Plan Vacancy Listing.

To enter the program employees must be: full-time career conditional, in a nonprofessional job (one grade promotions), and working in a permanent full-time position at NIH for the 12 months prior to July 14.

Also, employee must be in grade GS-7 or below, or grades WG-8, WS-6, WI-12, or below, and have a high school diploma or GED certification and less than a bachelors' degree.

The application—Standard Form 171, Personal Qualifications Statement—should be sent to the Career Development Branch, DPM, Bldg. 31, Room B2-C39. Separate copies of the application are required for each occupational area.

For further information, a fact sheet is available from the Career Development Branch, or employees may call Ext. 66211.

## Safety Tips for NIH



### NIH EMERGENCY TELEPHONE NUMBERS

Fire & First Aid Rescue.....	62222
Employee Health Service.....	64411
Cardiac Arrest.....	62200
Pathogenic Agent Spill.....	66034
Radiation Incident.....	65774
Other Emergencies	
Building 10.....	62471
Other.....	65685

### PG Free Clinic Needs Personnel

Doctors, nurses, and lab technicians are needed to work Tuesday or Friday evenings in Prince George's Free Clinic near southeast Washington. Services of this 4-year old organization will be curtailed if professionals are not found.

Located in Seat Pleasant, the clinic serves young adults 12 to 25 years of age who have concerns about birth control, venereal disease, pregnancy, and minor medical problems. No fees are charged.

For more information or to volunteer, call the clinic coordinator at 336-1219, Monday through Friday afternoon, before July 1.

## Use Heavy Locks, and Chains To Deter Bicycle Thieves

Pleasant summer weather encourages many employees to ride bicycles to work. Unfortunately, the more bicycles parked on the reservation, the greater the chance of thefts.

Lightweight chains or cables, often used to secure bicycles, are easily cut by bicycle thieves. For greater security, heavy, case-hardened 6-foot chains have been installed on the bicycle racks conveniently located throughout the reservation.

### Directions Given

Simple directions for effective use of these chains have been posted on the racks.

A cheap lock is a weak link in the security chain, according to Arthur G. McKay, Protection and Parking Branch, DAS, who suggests locks similar to the Quality American series 200, available below retail cost at R&W stores.

## NHLI Minority Research Symposium Helps Explain Expanding Opportunities



Dr. George I. Lythcott, a member of the NHLI Advisory Council, addressed the Institute's Minority Research Symposium in Atlantic City.

The Minority Research Symposium presented by the NHLI Executive Staff at the Federation of American Societies for Experimental Biology meetings in Atlantic City was so successful that the National Heart and Lung Institute has received invitations to make similar presentations to minority institutions, such as Winston-Salem University and the Macy Foundation Summer Institute.

### Presents Program

To offer increased opportunity for minorities to learn about and participate in its research and training programs, the Institute developed and presented a program to nearly 100 persons during the FASEB meetings.

Spokesmen answered questions concerning the research grant review process, how scientists—particularly minority scientists—get research and training support, and what criteria are used to select members for study sections as well as the NHLI advisory and review committees.

### Employees! Volunteer to Tutor Students Who Will Work Here

NIH employees are asked to volunteer as tutors in special subjects for high school and college students who will be working here during the summer.

Tutors are required for the following subjects: algebra, geometry, trigonometry, calculus, foreign languages, organic and inorganic chemistry, and physics.

### Spend Time Tutoring

They will be requested to spend 1 to 3 hours a week for 6 to 10 weeks. Tutoring will take place at NIH; the time and place will be arranged between the student and the tutor.

For further information call Milt Tipperman, Training and Education Branch, DPM, Ext. 62146.

## Research Grants Index Published for FY 1974

The 14th annual *Research Grants Index*, DHEW Publication No. (NIH) 75-200, is now available. The index contains scientific data on more than 20,000 PHS grants and contracts active during the fiscal year 1974.

The index is published in two volumes. The first contains about 7,900 subject headings, under which are listed the identification numbers and titles of projects.

### Investigators Named

Volume II contains three parts: project identification data, including the names of investigators, grantee addresses, and project titles; similar information on research contracts, and an alphabetical list of grantee investigators.

Single copies of the index may be obtained from the Research Documentation Section, Statistics and Analysis Branch, DRG, Westwood Bldg., Room 3A03, or by calling Ext. 67543.

## Parking Changes to Result From Building Construction

Construction of Bldg. 12-B, to house expanded DCRT facilities, will begin on June 30.

This work will permanently affect some spaces in parking lots 13-B and 13-C.

Traffic to the Bldg. 13 east service court will be disrupted from the east entrance; however, access from the west entrance will be maintained.

Ample parking is available in nearby areas, such as parking lot 17 and the multi-level garage, MLP-6.

## Kidney Dialysis Patients' Requests for Diet Guide Create a 'Best Seller'

A new booklet, *Diet Guide for Patients on Chronic Dialysis*, published by the Artificial Kidney-Chronic Uremia Program, National Institute of Arthritis, Metabolic, and Digestive Diseases, would qualify as a best seller—except that it's free.

To meet a nationwide need, the Artificial Kidney Program prepared and published the attractive, comprehensive guide which contains so-called exchange lists and advises patients and their families on preparing food and choosing menus, whether for box lunches, picnics, or restaurant dining.

### Diet Prescribed

About 18,000 Americans with irreversible kidney failure are being maintained by chronic dialysis—artificial kidney treatments given 3 times weekly.

Successful dialysis must be accompanied by a specific diet prescribed for each patient. This diet is limited in protein and restricts intake of sodium, potassium, phosphate, and fluids.

Previously, the various dialysis centers throughout the Nation have issued their own dietary guides, usually written and mimeographed by a center dietitian.

The new booklet was written in nontechnical language by Walretta O. Jones, a dietitian in the renal unit of the Veterans Administration Hospital, New York City. The Medical Arts and Photography Branch, DRS, provided illustrations and an attractive book design.

First distributed to dialysis dietitians during the annual meeting of the American Society for Artificial Internal Organs in Washington, D.C. this past April, the booklet received an immediate, enthusiastic response.

Thousands of requests have resulted in plans for a second edition.

The guide is available from the Office of Scientific Communications, NIAMDD, Bldg. 31, Rm. 9A-04, Bethesda, Md. 20014.

## Dr. Haggerty Describes Ideal FIC Scholar, NIH'ers Say Description Fits Him to a T



Gifts from co-workers and colleagues were given to both Dr. Haggerty and Mrs. Welfare at their joint retirement party. Dr. Eugene L. Walter, Jr. (l), acting chief, Scholars and Fellowships Branch, and Mrs. Welfare present just the thing for Dr. Haggerty's hobbies. Mrs. Welfare received a set of luggage.

By Tony Anastasi

Perhaps Dr. James F. Haggerty doesn't realize it, but he fits his own definition of what the ideal Fogarty Scholar should be.

Dr. Haggerty retired on May 30 as chief of the Fogarty International Center's Scholars and Fellowships Program Branch, after 30 years of combined Federal and military service.

One of the pioneers of the FIC, Dr. Haggerty set up the Scholars Program when the Center was established in 1968. Before his retirement party, he was considering just what the ideal scholar should be.

### Sounds Like Himself

"He should be bright, personable, young at heart, contribute something of significance, and he should be in a field where his expertise should touch on many at NIH and have substantial impact," he said.

According to those close to him, Dr. Haggerty himself personified the ideal scholar.

"He was a gentleman, a fine administrator, a dedicated worker, and a supervisor who was genuinely interested in the human elements concerning his employees," a close co-worker said.

"If you worked for him, you were not just another social security number. He was interested in your own personal problems as well as your on-the-job performance," the co-worker further added.

Reflecting on his long service, Dr. Haggerty said, "Coming to work each day should be a pleasant experience for the employee.

"The difficulty in retiring is that I will not only be breaking away from friends, but I will also miss the intellectual and social stimulation of my colleagues within the

Scholars Program," he said.

Before establishing the Scholars Program in 1968, Dr. Haggerty had served as chief of the Research Grants Review Branch in DRG since 1964.

He had joined NIH in 1960 as chief of the Research Grants Branch, National Cancer Institute. Earlier he was a biochemist with the Atomic Energy Commission.

Dr. Haggerty attended Tufts College, the University of Michigan, and Georgetown University where he was awarded his M.S. and Ph.D. degrees in biochemistry.

His main research interests and publications have centered on water soluble vitamins, amino acid degradation, radiobiology and cancer. He was responsible for the administration of the cancer program at AEC when he worked there.

Official retirement will not mean the end of his working days for Dr. Haggerty. He plans to serve as a consultant and also to devote time to furniture making and his chief hobby, building model railroad trains.

### Training Classes on Leave

The NIH Adult Education classes for this session will end June 26 so that students may have a week's vacation.

The next session will start July 7.

For further information, call Louise Goubeau, Ext. 62146.

## Five NIH Publications Place 1st, 2nd, 3rd In STC's Contest

The recently issued *Research Advances 1975*—which placed first in the Technical Reports Category—was one of five NIH publications that received awards from the Society for Technical Communications on June 4 at the National Press Club.

Harold F. Osborne, director of the Division of Scientific Reports, Office of Communications, OD, edited *Research Advances 1975*, and Charles Gailis, Division of Research Services' Medical Arts and Photography Branch, designed the report.

Also, during the awards ceremony, it was announced that the *Radiation Safety Guide*, which had received a first place award in the local STC contest last year, won an Award of Merit in the STC international competition held last month in Anaheim, Calif.

This guide—prepared by the Radiation Safety Staff, then part of the Clinical Center's Nuclear Medicine Department—was edited by Judson Hardy and designed by Mr. Gailis.

In the Brochures Category, two NIH publications tied for second place with a brochure from the U.S. Soil Conservation Service, and two NIH brochures tied for third place.

### Other Winners Named

The second place winners were: *Breast Self Examination*, by Pauline Wall, National Cancer Institute, designed by Betty Hebb, MAPB, and *Menopause: The Experts Speak*, written by Kathy Kowalczyk, National Institute of Child Health and Human Development, designed by Ms. Hebb.

The third place winners were: *Allergy Series*, written by Krin Kolsky, edited by Margaret McElwain, National Institute of Allergy and Infectious Diseases, designed by Ms. Hebb, and *Progress Against Cancer* (site pamphlet series) by J. Paul Van Nevel and Ms. Wall, NCI, designed by Mr. Gailis.

### Ellaree Welfare, FIC, Retires; With Federal Gov't 30 Years

Ellaree Welfare, who has been with the Federal Government for 30 years—the last 12 years with NIH—has retired. For the past 4 years she has served as secretary to Dr. James F. Haggerty.

Mrs. Welfare, an avid participant in several sports—especially golf—plans to continue with those hobbies, to do volunteer work, and to travel.

Every tooth in a man's head is more valuable than a diamond.—*Miguel de Cervantes*

## NIH Visiting Scientists Program Participants

5/27—Dr. Gottfried N. Noll, Germany, Laboratory of Vision Research. Sponsor: Dr. S. Yoshikami, NEI, Bg. 6, Rm. 229.

6/1—Dr. Marina S. Marini, Italy, Laboratory of Cell Biology. Sponsor: Dr. J. F. Mushinski, NCI, Bg. 8, Rm. 202.

6/1 — Dr. Shigeto Abe, Japan, Laboratory of Developmental Biology and Anomalies. Sponsor: Dr. George Martin, NIDR, Bg. 30, Rm. 416.

6/1—Dr. Mami Shinohara, Japan, Laboratory of Cerebral Metabolism. Sponsor: Dr. Louis Sokoloff, NIMH, Bg. 36, Rm. 1A27.

## NCI RESEARCH

(Continued from Page 1)

chronic lymphocytic leukemia.

"This is the first time remissions have been achieved of sufficient degree to alter the natural history of the diseases in a significant number of patients," Dr. Johnson stated.

In the 10-year NCI study, one-third (16) of a group of 48 patients who received total body irradiation for untreated, progressive CLL experienced a complete disappearance of all clinical symptoms of the disease.

The median survival time (the time at which half of the patients remained alive) for the 48 patients was 57 months from the time of first treatment. Two patients were alive and free of disease after 10 years.

Another group of 18 patients with progressive CLL was treated with local irradiation and anticancer drugs. The median survival time for patients in this group was 27 months.

### Dr. Johnson Explains Study

Chronic lymphocytic leukemia is diagnosed in about 5,500 persons a year in the U.S. Previous studies reporting treatment of the disease by various methods have indicated that only partial and temporary remission of the disease could be obtained, Dr. Johnson said.

As in the earlier studies, the disease status was not improved in patients receiving local irradiation and chemotherapy in the NCI study. However, patients who did not show a complete response to total body irradiation also had no improvement in other disease parameters.

"Only in patients with a complete remission has a change in disease status been observed," the NCI scientist said.

These patients had improved immune responses, including recovery of normal immunoglobulin levels and resistance to infectious complications. They were able to return to work and resume other normal activities.

The total body irradiation therapy involved dosages of either five rads per day five times a week or ten rads per day three times a week. A rad is a standard unit measuring radiation dosage.

Half of the 48 patients received a total of 200-400 rads during the study; the other half received 100-200 rads.

The differing dosages had no apparent effect on remission rates or survival times. The total dosages are only one-tenth of radiation dosages conventionally used in therapy of other forms of cancer, Dr. Johnson noted.

Dr. Sieber, NCI Division of Cancer Treatment, discussed the "un-

## Kathleen Summa Retires; Ends 20 Years in Gov't



Mrs. Summa, who has been president of Noah's Ark Animal Society, Inc. for 12 years, plans to continue her work with the pet shelter after her retirement from NIGMS.

Kathleen Summa, secretary to Dr. Robert W. Weiger, program coordinator, Pharmacology-Toxicology Program, NIGMS, is retiring after 20 years of Government service.

She began her Federal career with the Internal Revenue Service in St. Paul, Minn., came to Washington to work in the Office of the Secretary of War, and later worked for the U.S. Senate Investigating Committee under Harry S. Truman. She also worked for a private sugar refiner for a time.

In 1963 Mrs. Summa came to NIH as a secretary in the Division of Biological Standards, Office of the Director, and transferred to NIGMS shortly thereafter.

questionably useful" role of anticancer drugs in treating cancer and noncancerous diseases.

However, she cautioned that some patients treated successfully with certain anticancer drugs may have an increased risk of developing a second cancer.

### Therapy Described

In reviewing the scientific literature, Dr. Sieber found two forms of cancer and their respective drug therapies to be associated with a higher than normal incidence of acute myelogenous leukemia—Hodgkin's disease and multiple myeloma.

Hodgkin's disease is treated with vincristine, nitrogen mustard, chlorambucil, or with combination chemotherapy plus irradiation. Multiple myeloma is treated with Melphalan—L-PAM.

Seventeen of the 23 second cancers that occurred in Hodgkin's disease patients who had received drug therapy were acute leukemia, while 32 of the 33 second cancers in multiple myeloma patients who had received L-PAM were acute

## NEI Council Reports Status of Research

A report by an advisory council to the National Eye Institute—the first detailed, comprehensive analysis of public and private support of vision research in the United States—is expected to focus attention on the most crucial problems and promising opportunities for vision scientists.

The Vision Research Program Planning Committee of the National Advisory Eye Council prepared the report for NEI. The Committee, advised by 25 consultants from major fields of vision research, was chaired by Dr. Bradley R. Straatsma, director of the Jules Stein Institute of the UCLA School of Medicine.

The two-volume report, *Vision Research Program Planning*, evaluates NEI's five major research programs and identifies research needs and opportunities in retinal and choroidal diseases, corneal diseases, cataract, glaucoma, and sensory and motor disorders of vision.

Volume I includes background information on research program planning, a summary of support for vision research in the U.S., and a discussion of the current status of each NEI research program, as well as the committee's recommendations and a list of participants in the planning effort.

Volume II contains detailed statistics and descriptive analyses of support of vision research by NEI and others.

The volumes may be obtained from the Office of Scientific Reports, NEI, Bldg. 31, Room 6A-27, NIH, Bethesda, Md. 20014.

leukemia.

Laboratory studies of mice exposed to high doses of anticancer drugs indicate that many of these agents are carcinogenic.

Procarbazine, one of the four drugs in the combination for Hodgkin's disease, has been found to be a very potent cancer-causing chemical. It can induce many different types of tumors in mice, rats, and even monkeys.

Just because a drug causes cancer in a laboratory animal does not necessarily mean that it can also cause leukemia in cancer patients, Dr. Sieber emphasized.

### Treatment Outweighs Risk

She added that even before treatment, cancer patients may already be at a greater risk of developing a second cancer than is the population at large. In addition, acute leukemia may be part of the natural history of myeloma or Hodgkin's disease—a possibility that is only now becoming evident because of the increases in patient survival due to improved treatments.

Without chemotherapy many of

## Dr. Hartwell Retires But Continues Writing, Anticancer Drug Work

Dr. Jonathan L. Hartwell, who joined the National Cancer Institute 37 years ago, recently retired as head of the Natural Products Section of the Institute's Drug Development Branch.

However, he continues going to his office in the Blair Building to complete work on some publications.

He has also been planning a symposium—which started yesterday, June 16, and continues today—on anticancer drugs obtained from plants.

Dr. Hartwell, an organic chemist, is also a naturalist with an interest in folk medicine.

After learning that the Penobscot Indians of Maine had long



Dr. Hartwell has written three important reference texts and established two scientific journals.

applied extracts of the mayapple to cancerous growths, he isolated and purified three anticancer agents from the root of this American herb.

In the post that he held at the time of his retirement, Dr. Hartwell supervised a program in which botanists searched as far as Kenya and Tanzania for plants that might contain anticancer agents.

Natural products obtained from some of these plants have been used in research conducted on ani-

(Continued on Page 5)

these cancer patients would have died of their disease, therefore, the benefit of treatment greatly outweighs the risk of a second cancer, Dr. Sieber said.

However, when such a risk accompanies treatment for a condition that is not a threat to life, then the problem of whether or not to treat becomes more complex.

Physicians administering drugs that kill cells must weigh their potential benefits against the possible hazards, she stated.

Dr. Richard H. Adamson, acting chief of NCI's Laboratory of Chemical Pharmacology, was associated with Dr. Sieber in this research.



The third memorandum of understanding between American and Soviet rheumatologists was signed recently by Dr. R. W. Lamont-Havers, Acting NIH Director, and Prof. V. A. Nassonova, Director of the Institute of Rheumatism in Moscow, to continue the exchange of scientific data and personnel. The fourth major collaboration in health sciences between the US and USSR, the study of arthritic diseases follows earlier agreements on vascular diseases, cancer, and environmental health. Other representatives included (l to r): Drs. Wil-

liam Batchelor and Alfred Steinberg, NIAMDD; Drs. A. I. Speransky and M. M. Ivanova, USSR; Dr. John Baum, University of Rochester, and Dr. V. Stepanov, Medical Counselor, USSR Embassy. Professor Nassonova (c) addressed an NIA-MDD-sponsored symposium on rheumatic diseases held May 19-20. The Soviet scientists also visited the Clinical Center accompanied by Dr. Steinberg and translator Nataly Martin (r).

**DR. HARTWELL RETIRES: CONTINUES WRITING**

(Continued from Page 4)

imals and are now being evaluated in cancer patients.

When he came to NCI in 1938, Dr. Hartwell began an extensive review of scientific literature on compounds that had been tested for their ability to cause cancer in animals or in man, compiling data which was published in 1947 in a book entitled *Survey of Compounds Which Have Been Tested for Carcinogenic Activity*.

Later, two supplements to this landmark reference were published, and the NCI Division of Cancer Cause and Prevention continues to update this publication.

In the late 1940s he moved to the Laboratory of Chemical Pharmacology, part of NCI's Drug Research and Development Program, and in 1954 he was named to the new NCI Cancer Chemotherapy National Service Center.

As one of the Center's four assistant chiefs, in charge of research communications, Dr. Hartwell helped in the intensified search for effective anticancer drugs.

He and his staff summarized scientific articles on compounds able to destroy cancer cells. These were reported in bimonthly issues of *Chemotherapy Abstracts*.

In addition, Dr. Hartwell started the journal, *Cancer Chemotherapy Reports*, to enable NCI to communicate new research findings to other scientists.

Dr. Hartwell received his Ph.D. degree in organic chemistry from Harvard University.

His numerous scientific articles include a series of reviews on plants used against cancer for the journal *Lloydia*.

Dr. and Mrs. Hartwell's retirement plans include a trip to Greece this autumn.

**Dr. Lepovetsky Is NCI Chief of Training Grants**

Dr. Barney C. Lepovetsky has been appointed chief of the Training Grants Branch, Division of Cancer Research Resources and



Since coming to NIH in 1964 as a Grants Associate, Dr. Lepovetsky has held positions in NIDR and NCI.

Centers, National Cancer Institute. The Training Grants Branch administers ongoing fellowship and training programs, identifies manpower shortage areas in cancer research, and encourages applications for individual and institutional cancer research fellowships as well as research career development awards.

Dr. Lepovetsky joined NIH in 1964 as a Grants Associate. From 1965 to 1974 he held positions in the National Institute of Dental Research including health scientist administrator, grants officer, and chief of the Office of Collaborative Research.

He joined NCI in 1974 as executive secretary of the Cancer Control Grant Review Committee.

Dr. Lepovetsky received his Ph.D. in 1954 from Ohio State University and the J.D. degree in 1963 from Ohio Northern University, where

**3 Medical School Profs. Appointed to NINCDS Nat'l Advisory Council**

Three scientists in diverse research fields have been appointed to the National Advisory Neurological and Communicative Disorders and Stroke Council for 4-year terms.

They are: Dr. Mary A. B. Brazier, an electrophysiologist; Dr. Calvin L. Calhoun, a professor of anatomical sciences, and Dr. George A. Sisson, an otolaryngologist.

Dr. Brazier is professor of anatomy and physiology at the University of California School of Medicine in Los Angeles. She received her graduate degrees from the University of London and has an NIH Health Career Research Award.

Dr. Brazier is editor-in-chief of the *Journal of Electroencephalography and Clinical Neurophysiology*.

Dr. Calhoun is professor and chairman, department of anatomical sciences, and professor of neurology, Meharry Medical College.

His special research interests include electron microscopy of experimental cerebral infarctions. From 1965 to 1966, Dr. Calhoun was an NINCDS research fellow.

Dr. Sisson is professor and chairman, department of otolaryngology and maxillofacial surgery at Northwestern University Medical School.

He is a Diplomate of the American Board of Otolaryngology and a member of the editorial board of the *Archives of Otolaryngology*. From 1962 to 1966, he served as a member of the NINCDS Communicative Disorders Research Training Committee.

he received the Law Day award for the highest scholastic standing in the graduating class and was a faculty member from 1955 to 1964.

He is licensed to practice law in Ohio and has been admitted to practice before the Supreme Court of the United States.



Because of the low number of cells in the brain and other parts of its nervous system, the sea slug is important for studies on the biology of the nervous system. The Kewalo Marine Laboratory of the University of Hawaii cultivated the slug on the left demonstrating how much larger the animal may be grown in the lab. The other, a field animal, is average size. Both belong to the same species "Aplysia juliana." This mariculture work is funded by DRR.

**COST TRENDS**

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tication, and the rise in labor costs.

In health care in each country, hospitals have the largest share of costs and expenditures.

Many health economists believe that the free market mechanism for containing health costs and expenditures in these countries is losing ground. They suggest that the government might play a more active role.

**Demand Increases**

To meet the greater demand for health care, some governments are using the co-payment mechanism or rationing by waiting time for health services.

Regarding the supply side, other governments have been controlling the increase of hospital beds and physicians, reducing costs of reimbursement to physicians, regionalizing health care services, and fixing budgets for hospitals.

**Cooperation Asked**

However, none of these efforts to control costs has been totally effective, and it was suggested that a more effective solution might be to ask the medical community to cooperate more actively in the management of health services.

**Talented Rick Carow Tapes Music, Book for Children**



Rick Carow was a popular visitor when he entertained the children at the NIH Day Care Center one recent afternoon.

Jon F. "Rick" Carow, a supervisory grants technical assistant in the NHLI Division of Extramural Affairs, is also an accomplished performer on piano, organ, clarinet, saxophone, drums, and guitar, who has recorded and performed in the D.C. area for 17 years.

Rick recently arranged and produced the music for a tape cassette version of the children's book, *The Mind Is a Funny Thing*, published

**Seattle Surgery Team Uses Hypothermia While Correcting Infants' Heart Defects**

Open heart surgery can be performed on infants as young as 3 months old through the use of hypothermia—a state of low body temperature—and a technique which temporarily stops the heart.

Dr. David H. Dillard, professor of surgery at the University of Washington, heads a team that has performed open heart surgery using surface-induced deep hypothermia since 1965.

Dr. Dillard's research is supported by a grant from the National Heart and Lung Institute.

Hypothermia, induced by placing the child in a cooling tank, decreases the metabolism rate and the need for oxygen permitting stoppage of the heart.

**Patients Are Tiny**

The technique is used for infants too young or delicate to tolerate a heart-lung machine. The patients have ranged from 3 to 22 months in age and have weighed between 2.9 and 10 kilograms.

The patient is anesthetized with ether, then placed on a plastic sheet and lowered into a cooling tank to float on ice water. Monitors are attached for electrocardiogram readings.

As the body temperature drops, bags of crushed ice are packed

around the baby to lower the temperature still further.

When the rectal temperature is down to 23°-21° C (about 73°-70° F), the patient is lifted from the tank and prepared for the first incision.

As the temperature drops to about 20°-17° C (68°-63° F), about 4 cc of Young's solution is injected into the aortic root, stopping the heartbeat.

The operation is then performed in a dry, quiet field. The operating time available under hypothermia is 60 minutes, although Dr. Dillard said that most operations are performed in less than 40 minutes.

After the operation, the infant is immersed in a warm water bath. A gentle massage restores the heartbeat. The chest incision remains open until the body temperature reaches 30° C (86° F) to allow the surgeons to control possible bleeding.

Infants spend 1 to 3 days in the intensive care unit following surgery. After about a day, they are able to take liquids normally.

Dr. Dillard says that patients generally have minimal complications and rarely experience bleeding. There has been no evidence, he says, of any neurological damage from the hypothermia procedure.

The hypothermia used at the University of Washington hospital is adapted from a method developed at the University of Sendai, Japan. Dr. Hitoshi Mohri, a pioneer in the development of the Japanese technique, was assisted in the modification by Dr. Dillard and others.

"A number of children who would have been lost because there was nothing that could be done," says Dr. Dillard, "can now be saved and, in effect, totally corrected during the first year of life with open heart surgery using hypothermia."

**DR. WHITEHAIR**

(Continued from Page 1)

Medal for Meritorious Service for this effort.

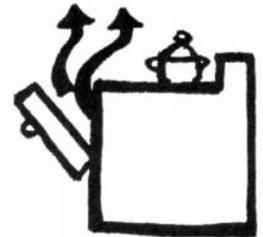
In addition, Dr. Whitehair was liaison officer to other Federal agencies. He was the AEC representative to the Primate Advisory Committee of the Animal Resources Branch, DRR, in 1963-64, and to the Nutrition Study Section, DRG, from 1962 until 1967 when he left the U.S. Air Force.

After completing the NIH Grants Associates Program in 1968, Dr. Whitehair became a health science administrator in the Animal Resources Branch, DRR, administer-



An infant undergoing open heart surgery using hypothermia is lowered into a cooling tank that is packed with bags of crushed ice. The technique is particularly helpful in operations to correct transposition of the great arteries, Tetralogy of Fallot, or ventricular septal defects.

**ENERGY TIPS**



How can the oven be used most efficiently?

- Don't use the oven or burners to heat the room. Stoves aren't efficient space heaters.

- Avoid pre-heating the oven for more than 10 minutes.

- Don't peek! Opening the oven door lowers the temperature 25°-50°.

- Make the most of oven heat. Plan all oven-cooked meals.

- Ceramic, glass, and stainless steel containers retain heat best. When using dishes made of these materials, the oven setting can be lowered 25°.

- To warm food, set the oven no higher than 140°-200°.

- Food and plates can be warmed in a turned-off oven after baking.

- A ceramic tile warmed in the oven while baking can be wrapped in a napkin to keep bread or rolls warm.

ing grants and contracts for laboratory animal model development and special colonies of research animals.

## Dr. B. Blood Fills Post In Primate Program

Dr. Benjamin D. Blood has been appointed to provide staff support for the Primate Steering Committee. The committee was established in 1974 by the Director of NIH to plan for consequences of severe restrictions and curtailment of importations of wild primates for use in human health research.

Dr. Blood will develop a program to assure adequate supplies of nonhuman primates for Government, academic, and industrial institutions in the United States.

Plans include domestic breeding



A staff member of PAHO for 15 years, Dr. Blood is best known for his work as founder and first director of the Pan American Zoonoses Center in Argentina, where the Government honored him with the Orden de Mayo al merito, in grade of knight commander.

as well as continued importations consistent with good conservation practices in both source and user nations.

Liaisons have been established with other Government agencies, WHO, and the Pan American Health Organization.

Dr. Blood, a veterinary epidemiologist, has been International Health Attache with the U.S. Diplomatic Mission to the U.N. Specialized Agencies, Geneva, Switzerland, since August 1969.

He has represented health interests of the U.S. to the International Union for Conservation of Nature and Natural Resources, the Committee on Animal Welfare of the Council of Europe, WHO, and other organizations.

Previously, Dr. Blood was associate director for International Organizations Affairs, OIH, HEW, and has served on the WHO Executive Board as well as on the governing bodies of PAHO.

For there was never yet philosopher

That could endure the toothache patiently. — William Shakespeare, *Much Ado About Nothing*, V.1,35

## Primate Steering Committee Formulates Means for Assuring Sufficient Supplies

Severe restriction of nonhuman primate exports by foreign countries has prompted the Department of Health, Education, and Welfare to take immediate action to assure that Government-supported biomedical researchers will have an adequate number of laboratory primates to continue their studies.

Nearly 80 percent of the primates imported annually to the U.S. come from India, Peru, and Colombia.

In July 1973, the Government of India announced that the number of rhesus (Old World) monkeys permitted to be exported annually would be reduced from 50,000 to 30,000—about half the anticipated supply needed for the U.S. India has also warned of further reductions in the future and is expected to reduce the quota to 20,000 annually in 1975-76.

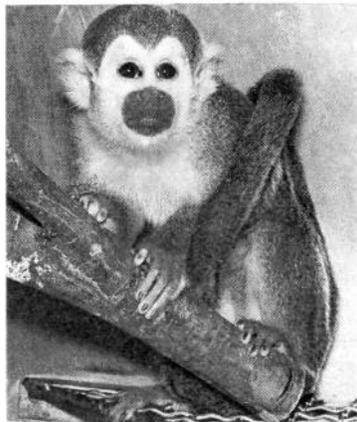
### Exports Cease

Peru ceased exporting New World primates in October 1973. Pending the initiation of a conservation program, Colombia recently stopped issuing primate export permits.

In 1974, as part of the NIH National Plan for Rhesus Monkeys, NIH instituted a domestic breeding program through its Animal Resources Program (DRR) and the Veterinary Resources Branch (DRS).

In October of that year, the DHEW Assistant Secretary for Health approved the formation of a department-wide Primate Steering Committee, with NIH serving as the lead agency in developing a unified plan to assure primates for biomedical research.

Committee members from NIH include: Dr. Joe Held (Chairman), DRS; Dr. Thomas G. Bowery, DRR,



Due to its small size and ease of maintenance, the squirrel monkey ranks second in importance as a major primate laboratory animal for biomedical research, especially in metabolism, atherosclerosis, gallstone, and cancer virus studies. The Animal Resources Program, DRR, has initiated a squirrel monkey domestic breeding program to augment the current NIH National Plan for Rhesus Monkeys.

and Kurt Habel, OD. Members from other agencies are: Dr. James King, Office of International Health; George Renaud, Health Services and Mental Health Administration; Dr. Johannes Stuart, Center for Disease Control, and Dr. James Vickers, FDA.

Their objectives are to:

- Develop a domestic breeding program to assure a supply of medically-important primates.

- Assist in the development of primatology programs, including breeding, in certain South American countries of origin including Brazil, Colombia, and Peru.

- Increase from 60 to 100 percent the NIH Primate Research Centers' capacity to breed major primate species required for their own research programs.

- Coordinate the use of primates for research in the U.S., including an allocation system if necessary.

The committee will be expanded to include other Federal agencies using significant numbers of primates.

### NAS Report Issued

The final report of a survey conducted by the Institute of Laboratory Animal Resources of the National Academy of Sciences, under contract from the Animal Resources Program of DRR, was issued recently.

The report, *Nonhuman Primates Usage and Availability for Biomedical Programs*, compiled under supervision of staff officer Dr. Nancy A. Muckenhirn, confirms the concern of many primatologists and biomedical scientists regarding the dwindling supply of laboratory primates and the problem of maintaining adequate stocks.

In summary, the report states, "Of the 82 species of primates imported into the U.S. over the past 3 years, 13 species comprise 96-98 percent of the total volume. The two most important species are the squirrel monkey and the rhesus macaque, which together account for roughly 62-65 percent of all imports."

The report shows that the total number of primates exported to the U.S. from all countries decreased by 32 percent from 1964 to 1973.

The Academy report recommends a national primate plan to:

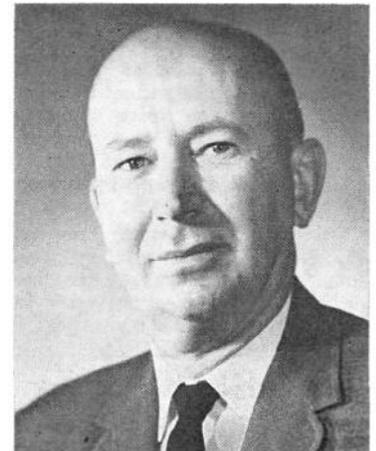
- Establish domestic breeding colonies of commonly used species.

- Improve trapping, holding, and shipping techniques and methods in countries of origin.

- Establish a system to facilitate multiple use of primates in research.

- Establish breeding colonies in

## Dr. Goodwin Retires; Expert on Primates



Dr. Goodwin has advised the various Institutes and Division of NIH, other Federal agencies, and university scientists on the use of primates in biomedical research.

Dr. William J. Goodwin, director of the Primate Research Centers Program, Division of Research Resources, has retired after 21 years of Government service.

Dr. Goodwin has been in charge of the administration of the seven NIH regional primate centers since 1967, and has acted as executive secretary of the Primate Research Centers Advisory Committee.

After serving in the U.S. Army Tank Corps in World War II and earning his Ph.D. in veterinary and medical entomology at Cornell University, he was an associate professor of medical entomology at Clemson University.

Dr. Goodwin entered the PHS Commissioned Corps in 1957, and was subsequently selected for special assignment by AID as a researcher in tropical diseases.

He was named U.S. Malaria Advisor to Libya and later to Haiti.

After joining NIH as a Grants Associate in 1963, Dr. Goodwin was appointed chief of the Environmental Health Sciences Research and Training Grants Branch, which later became the extramural program for the National Institute of Environmental Health Sciences.

Dr. Goodwin has published numerous papers on entomology, malaria eradication, and primatology.

Dr. Goodwin plans to move to Portland where he will be research coordinator for the Medical Research Foundation of Oregon.

the countries of foreign origin.

NAS also recommends that NIH guide the overall administration.

The 10 current NIH-supported rhesus monkey breeding contractors all report satisfactory progress. The Animal Resources Program, DRR, is now reviewing contract proposals for establishing a squirrel monkey breeding program for extramural use.

## PRIZE WINNERS

(Continued from Page 1)

It can also be used to check the probable validity of an abnormal test result.

The service provides potential cost-benefits to the patient by eliminating laboratory tests likely to be incorrect because of a drug effect and by reducing the cost of extra hospital days spent checking faulty or abnormal test results.

The Lambert Award Program was established in 1971 by Mrs. Lambert in memory of her late husband, a renowned innovator in government and industry.

## OMB Official Will Speak June 25 at NCI Forum

Science, Public Policy, and OMB Perspectives will be the topic of C. William Fischer, Deputy Associate Director for Human Resources, Office of Management and Budget, at NCI's Fourth Wednesday Forum at noon, June 25, in the Masur Auditorium.

The meeting is open to all NIH staff.

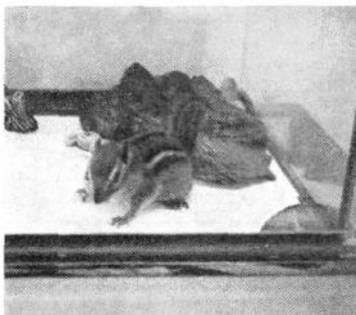
OMB, an agency within the Executive Office of the President, evaluates Federal programs' performance, serves to bring about more efficient and economical conduct of Government services, and assists the President in preparing the Federal budget.

### Budget, Programs Examined

OMB's Human Resources Division, headed by Mr. Fischer, examines budget requests, programs, operating methods, and legislative proposals of the Departments of HEW and Labor, as well as the food and nutrition programs of the Department of Agriculture.

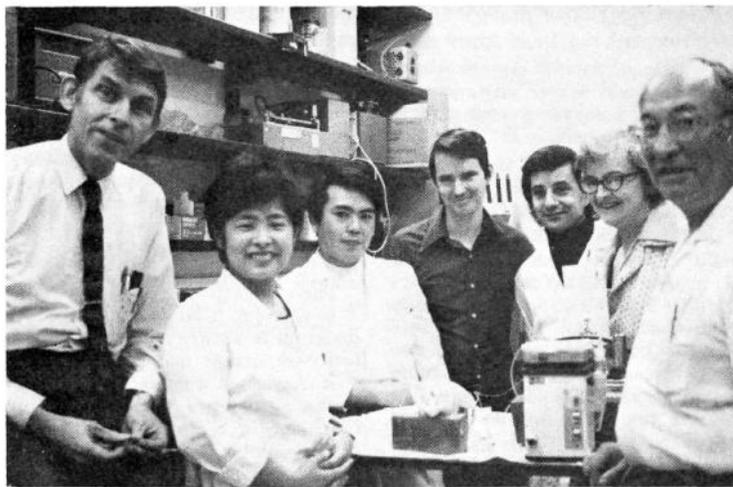
Mr. Fischer will answer questions from the audience after his presentation.

The Forum will not meet again until September. To suggest topics for fall meetings, call Frances Boak or Betty MacVicar, Office of Cancer Communications, Ext. 66641.



This chipmunk was found investigating the Westwood Bldg. conference rooms now being used by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. She was released in a nearby park.

## Rate of Glucose Use, Traced by Isotope, Helps Map Brain Structure, Functions



Current members of the research team gather around a white rat prepared for the brain mapping project. They include (l to r) Dr. Kennedy, visiting fellows Drs. Mami Shinohara and Osamu Sakurada, Drs. Sharp and Des Rosiers, Ms. Jehle, and Dr. Sokoloff.

What part of the brain becomes active when you hear a horn honk, see a fire, or go to sleep? A new method for seeing what part of the brain becomes involved in specific functions was reported in the March 7 issue of *Science* magazine in an article, Mapping of Functional Pathways by Autoradiographic Survey of Local Glucose Utilization.

Dr. Louis Sokoloff, chief of the Laboratory of Cerebral Metabolism, National Institute of Mental Health, directed the study.

The researchers developed a method to measure the rates of glucose consumption in different structural and functional units of the brain.

The rate of glucose consumption in the tissue is largely determined by the activity of the tissue. Thus the method can be used to indicate the functional activities in the various regions of the brain.

Previously, it was possible to measure the amount of glucose entering and returning from the brain as a whole but not where the energy was used in the brain to carry out specific functions.

The researchers studied various brain functions in rats and rhesus monkeys using deoxyglucose — a chemical compound with properties similar to glucose—and labeled it with a radioactive isotope (Carbon 14) which acted as a tracer or tag for plotting their map of brain functions.

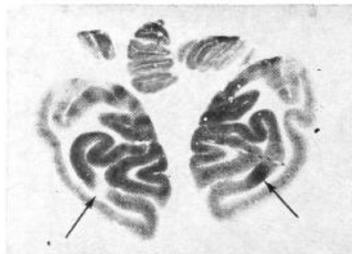
Glucose is in continuous supply in the blood and is drawn out by cells on demand as the blood circulates. Since <sup>14</sup>C deoxyglucose is taken up in brain cells at a rate related to that of glucose, it reflects glucose utilization.

In this study, glucose was quickly metabolized or "burnt up" for energy in the normal manner, but the injected isotope remained in concentrations that could be measured as an indicator of the amount of glucose used.

The deoxyglucose was injected intravenously into the animals and allowed to circulate for 45 minutes. Frozen sections of the animal's brain containing radioactive material were placed on photographic film.

The radioactive tracer produced an image showing which brain areas had required more glucose than others. The effect of sound, seizure states, and the visual system are among the functions studied thus far.

Dr. Clifford Patlak and Karen Pettigrew, Theoretical Statistics



Autoradiograph of brain tissue from a rhesus monkey blinded in one eye shows asymmetry of <sup>14</sup>C deoxyglucose metabolism in regions of the striate cortex corresponding to the "blind spot," which appears in serial section to extend approximately 3.4 mm from front to back.

and Mathematics Branch, NIMH, are assisting in the continuing study.

Collaborators from the Laboratory of Cerebral Metabolism included Dr. Michel H. Des Rosiers and Jane W. Jehle.

Dr. Frank Sharp, Laboratory of Neurophysiology, NIMH, also par-

## Arthritis Commission Hears Experts Talk On Current Research

The 18-member National Commission on Arthritis and Related Musculoskeletal Diseases held its second meeting at NIH on May 13 and 14.

The Commission, a component of the National Institute of Arthritis, Metabolism, and Digestive Diseases, was established to develop a long-range plan with specific recommendations for the use and organization of national resources to combat arthritis.

This plan is to be forwarded to Congress within 7 months of the Commission's April 17 meeting.

At the May meeting, the panel heard expert witnesses on screening and detection, rehabilitation, professional education, etiology and pathology of arthritis, and research.

Dr. Ephraim P. Engleman, UCSF, is chairman.

Eleven charter members—including six health professionals from outside of Government and four lay members—have been appointed to the Commission. Also, seven Government officials, including the NIH Director, are nonvoting members.

### Charter Members Listed

In addition to Dr. Engleman, the charter members are:

Verna Patton Anthrop, Sacaton, Ariz.; Dr. K. Frank Austen, Robert Breck Brigham Hospital, Boston, Mass.; Rosalind Russell Brison, Beverly Hills, Calif., and Dr. William F. Donaldson, University of Pittsburgh School of Medicine.

Also, Dr. William Robert Felts, G.W.U. School of Medicine; Dr. Vivian Floyd Lewis, Wilberforce, Ohio; Doris Melich, Salt Lake City, Utah, and Dr. Howard Freeman Polley, Mayo Medical School.

Also, Dr. Gordon C. Sharp, University of Missouri School of Medicine, and Marlin N. Shields, Latter Day Saints Hospital, Salt Lake City.

Dr. Charles Kennedy, professor of pediatrics, Georgetown University School of Medicine, aided the study as a guest worker at NIH. Dr. Martin Reivich, professor of neurology, University of Pennsylvania also collaborated.

"The new method is a useful, powerful tool," Dr. Kennedy noted, "for the study of brain pathways. It should be helpful in learning how the subdivisions of the brain act. With this tool we were able to locate, for example, the region of the brain which corresponds to the 'blind spot' of the eye.

"We now have the means to try and locate in the animal brain, for example, where drugs act or what centers 'turn on' for sleeping and for seeing, and which centers 'turn off' during the same activities."