

the



Record

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

August 13, 1974
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NATIONAL INSTITUTES OF HEALTH

Unsafety of Components Used in Manufacture Of Plastics Discussed

Scientists recently discovered that vinyl chloride — a gas from which polyvinyl chloride is made — is a highly toxic substance which can cause a fatal form of liver cancer among people who work with that chemical.

This was one of the subjects under discussion at a recent conference entitled *The Public Health Implications of Components of Plastics Manufacture*.

NIEHS Sponsors

The meeting, sponsored by the National Institute of Environmental Health Sciences, was held at the end of July in Pinehurst, N.C. It was attended by scientists from the Government, industry, and the academic field.

During the conference seminars, participants also talked about how to determine what research on unsafe compounds is required in order to head off environmental health problems before they occur.

The processes and components involved in manufacture and fabrication were considered, including the general aspects in polymer synthesis, the processing of plastics, and the additives in plastics, fibers and fabrics.

The remaining sessions of the conference dealt with the epidemiology and toxicology of vinyl chloride and polymeric materials, and the toxicological and environmental aspects of polymeric materials.

Dr. Richard Monson, Harvard School of Public Health, reported on his work on mortality among vinyl chloride workers. Dr. Thomas Mason, National Cancer Institute,

(See *PLASTICS*, Page 7)

Seminar on the Prevention Of Mongolism Held Here

A science writers' seminar on the prevention of mongolism—Down's Syndrome—was held at NIH, last Friday, Aug. 9, the day the *Record* went to press.

A further story on the research discussed by medical professors who attended the meeting will be published in the Aug. 27 issue.



During a recent press conference at Baylor College of Medicine in Houston, Dr. Robert L. Ringler (at podium), Acting Director, National Heart and Lung Institute, announces an NHLI award to Baylor for establishing at that college a National Research and Demonstration Center for studies on heart and blood vessel diseases. Attending the conference were: Dr. Robert Levy, NHLI; Dr. Theodore Cooper, HEW Deputy Assistant Secretary for Health, and Dr. Michael E. DeBakey and Dr. Antonio Gotto of Baylor. Dr. DeBakey, who is president of the college and chairman of its department of surgery, is principal investigator for the Baylor center.

Stone Attends Meeting In Tokyo; Visits Dacca

Dr. Robert S. Stone, NIH Director, will be returning from a trip to the Far East tomorrow (Aug. 14).

Dr. Stone served as a delegate to the Joint Committee of the U.S.-Japan Cooperative Medical Science Program in Tokyo, Aug. 8 and 9.

For the past several days, following the Tokyo meeting, he has been visiting the Cholera Research Laboratory and the International Center for Medical Research in Dacca, Bangladesh.

NIH administers the CRL through an agreement with the Agency for International Development.

The ICMR, funded by the National Institute of Allergy and Infectious Diseases, is operated by Johns Hopkins University.

Dr. Whedon Heads Trustees Post

Dr. G. Donald Whedon, Director of the National Institute of Arthritis, Metabolism, and Digestive Diseases, has been elected Chairman of the University of Rochester Trustees Council for the year 1974-75.

Biohazards Committee To Update Registry Of Biological Agents

Because of the number of non-natural hybrid viruses being formed and used in research, the work of the NIH Biohazards Committee takes on increased importance.

Soon, all laboratory chiefs responsible for biomedical research will be requested to review and update the registry of biological agents in use.

A questionnaire for collection of the data will be distributed by each B/I/D committee representative.

Formed in November 1972, the Biohazards Committee provides technical advice to service organizations; informs scientific directors and staff on biohazard control at NIH; establishes, reviews, and updates the registry of biological materials with particular attention to evaluating new materials and identifying areas where new biological hazards may exist, and sets policies for hazard risks.

It serves in an advisory capacity to the Deputy Director for Science and is headed by Dr. Robert G.

(See *BIOHAZARDS*, Page 6)

Dr. Lamont-Havers Is Appointed NIH Deputy Director

Dr. Ronald W. Lamont-Havers has been named Deputy Director of NIH replacing Dr. John F. Sherman. He has been acting in that capacity since May 20.

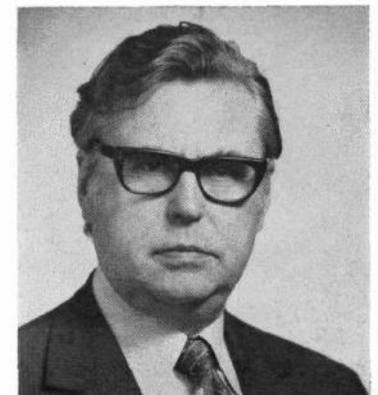
Dr. Lamont-Havers will aid NIH Director Dr. Robert S. Stone in directing NIH activities.

As Deputy Director his responsibilities will range from overseeing the conduct of biomedical research in Bethesda and field installations to administering national grant programs for biomedical research, research training, and for the improvement of research facilities.

He will also coordinate the development of medical manpower resources and the classification and dissemination of biomedical information.

In 1972 Dr. Lamont-Havers was selected as deputy director of the National Institute of Arthritis, Metabolism, and Digestive Diseases after serving as NIH Associate Director for Extramural Research and Training for 4 years.

He joined NIH in 1964 as the



Dr. Lamont-Havers is the author of numerous papers on arthritis which have appeared in professional journals and textbooks.

associate director for Extramural Programs, NIAMD, directing the Institute's grant-in-aid, training, and fellowship programs.

(See *DR. LAMONT-HAVERS*, Page 6)

the NIH Record

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Mary F. Thompson Dies; Was Secretary at NHLI

Mary F. (Bunnie) Thompson died Aug. 2 in her Bethesda home after a long illness.

Mrs. Thompson served in the Federal Government over 29 years, 16 of which were at NIH. Initially, she joined the National Cancer Institute in 1957, resigning in 1971.

The following year she returned to NIH as a secretary to Dr. Rudolph E. Jackson, program coordinator of HEW's National Sickle Cell Disease Program and chief of the National Heart and Lung Institute's Sickle Cell Disease Branch.

Dr. Jackson said Mrs. Thompson was "devoted and loyal" and

Barbara Iba Named to EEO Post

Barbara Y. Iba has been appointed EEO coordinator for the National Institute of Dental Research.

Mrs. Iba, who joined the Institute in 1964, has held positions as staff nurse and field investigator for NIDR's Human Genetics Branch.

"played an important role in the initial development of the . . . program."

Mrs. Thompson is survived by her husband, George, of the home, 5917 Rolston Road, and two daughters, Debra Britt of Bethesda and Jacalyn Gruesser of San Francisco.



Dr. Stephen Potkay, chief of the NIH Animal Center in Poolesville, Md., was recently awarded the PHS Commendation Medal "in recognition of his outstanding leadership in improving employee-management relations, upgrading the quality of service to NIH investigators and (making) contributions to the research canine breeding program." Since he joined DRS in 1963, Dr. Potkay's interests have included primate conditioning, experimental surgery, and carnivore production.

Revised Rodent Catalog From DRS Is Available

A *Catalog of NIH Rodents* which describes and indexes the characteristics of the strains and stocks maintained in the Laboratory Animal Genetics Center of DRS is now available.

The Veterinary Resources Branch of the Division of Research Services maintains nearly 130 different strains and stocks of common and exotic species of rodents and rabbits in this Center.

The animals are used for NIH intramural research and as breeding nuclei for establishing new colonies for extramural use since many of the animals are unique.

Some endangered stocks have been added to the collection for future biomedical research.

Catalog Described

Descriptions in the catalog include the age and frequency of appearance of spontaneous tumors, growth of transplantable tumor lines, resistance and susceptibility to infectious agents, behavioral characteristics, blood pressure levels, biochemical and physiological characteristics, and unique anatomical features.

Dr. Carl T. Hansen, a geneticist in the Small Animal Section of the Veterinary Resources Branch, refers to this collection as a "living library" of animal models.

Copies of the catalog have been sent to investigators using NIH rodents and rabbits for research. Additional copies are available from the Small Animal Section, Bldg. 14A, Room 102.

Students May Register For Fall 'After-Hours' College-Level Courses

The Federal After-Hours Education Program is again offering more than 60 college-level courses this fall to civilian, military personnel, and the general public in 31 Federal buildings in downtown D.C.

Through the College of General Studies, George Washington University, students may enroll in undergraduate and graduate courses leading to the associate in arts, bachelor of science, and master of science degrees, or they may take self-improvement courses, enrolling as non-degree students.

Registration for the fall long semester and the first short session will be held in Conference Rooms A, B, and D—just off the lobby—Department of Commerce Building, 14th Street and Constitution Avenue, N.W., from 10 a.m. to 3 p.m. on Tuesday, Aug. 20, and Wednesday, Aug. 21.

Fall semester classes begin Sept. 3 and continue through Dec. 13.

Tuition is \$67 per semester hour, and all courses are 3 semester hours.

Registration for the fall second short session will be Oct. 16, 10 a.m. to 3 p.m., in the lobby, 706-20th Street, N.W.

For further information, contact Robert W. Stewart, Jr., G.W.U., at 676-7018 or 7028.

Dan Bailey Is Joining Pearl S. Buck Foundation

Dan Bailey, who has been serving as special assistant for Interagency Liaison in NCI's Cancer Control Program, has been named Executive Director of the Pearl S. Buck Foundation.

Mr. Bailey will assume his new post in Philadelphia on Aug. 19.

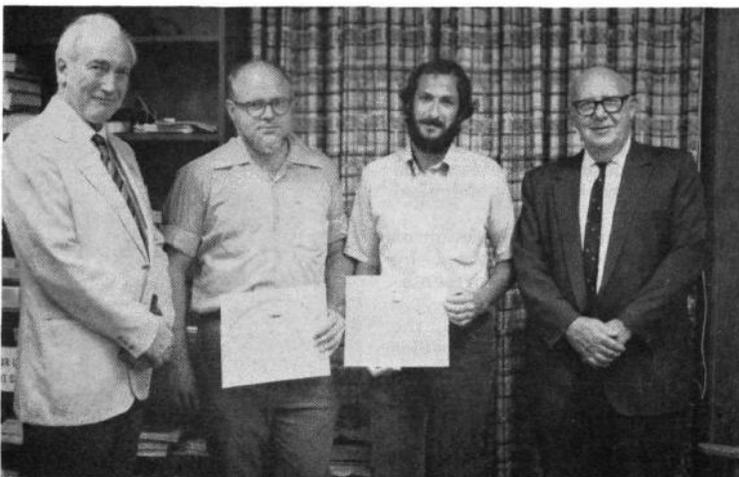
He returned to NIH after a 6-year absence during which he was a consultant in Washington and Atlanta, Ga.

Previously, Mr. Bailey had been program analyst in the Office of the Surgeon General, PHS; assistant director, National Library of Medicine, and information officer of the former Division of General Medical Sciences.

Award-Winning Biomedical Photos Shown in CC Lobby

An exhibit of award-winning biomedical photographs is now on display in the CC lobby. It will be there through Aug. 19.

The collection is sponsored by the Chesapeake chapter of the International Bio-Medical Photographic Association. Several photos by Gary E. Sterner, National Eye Institute, are included in the exhibit.



Drs. Allen W. Cheever and Stephen M. Feinstone, NIAID, receive PHS commendations and citations for research, and congratulations from Dr. Dorland Davis (l), NIAID Director, and Dr. John R. Seal (r), NIAID scientific director. Dr. Cheever (left center) was honored for his quantitative—and now classic—studies on schistosomiasis in Brazil and Egypt. Dr. Feinstone, using immune electronmicroscopy, was the first to detect the virus causing infectious hepatitis. He was cited for his perception in detecting the tiny particles in specimens from patients with hepatitis A.

Pilot Plant Is Source for Tissue Culture or Bacteria



The pilot plant at the National Institute of Arthritis, Metabolism, and Digestive Diseases is the source for a continuing supply of bacteria, bacteriophages, viruses, and enzymes that is prepared in large quantities for NIH researchers.

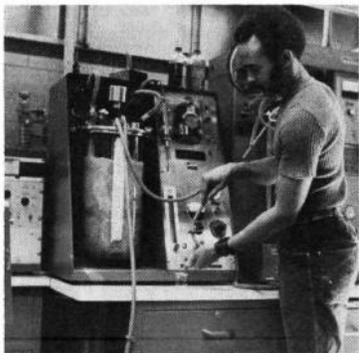
The plant is particularly valuable to scientists who require large amounts of material to isolate small amounts of biologically interesting compounds.

This source material—of human, animal, or plant origin—can be in the form of tissue culture or bacteria. The desired material could be an enzyme, drug, vitamin, nucleic acid, virus, or protein.

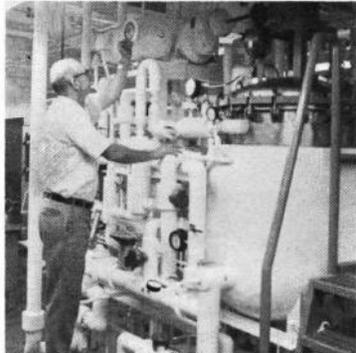
When a scientist schedules a run, he specifies the growth conditions according to the parameters developed in his own laboratory.

The pilot plant, operated by David Rogerson with the aid of Douglas Johnson, Clark Collins, and Jim Oden, is part of the Laboratory of Nutrition and Endocrinology headed by Dr. Herbert A. Sober.

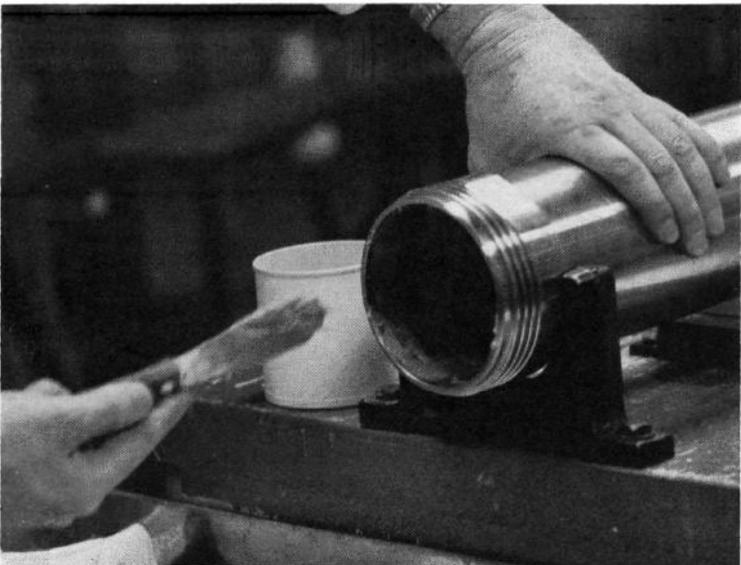
The equipment in the plant is scrubbed manually by Douglas Johnson and sterilized by steam to prevent contamination of the organism to be processed. A small sample is tested for purity and then a sufficient quantity (usually 10 liters) is inoculated into a 300-liter or 1000-liter fermenter.



To monitor the progress of organism growth, Clark Collins draws a sample periodically and tests it for light density.



The growth rate is then adjusted by David Rogerson through controls on the fermenter to meet the specifications for the procedure.



When the desired growth level is reached, the organisms are moved from fermenters into continuous centrifuges from which they are harvested. The material might be prepared in the form of a solid bacterial paste that is scraped from centrifuge bowls or in a liquid that is drawn from a tap.

Three-Year, \$6 Million Collaborative Program Launched by NHLI

A 3-year, \$6 million collaborative program involving nine institutions has been launched by the Division of Lung Diseases, National Heart and Lung Institute.

The program will test the therapeutic efficacy of an external device—the extracorporeal membrane oxygenator—that provides oxygen to the blood in patients with acute respiratory failure.

An estimated 150,000 adult patients a year suffer from respiratory failure. Nearly 40 percent of them die, whereas many might be saved if provided with short-term respiratory assistance.

In animal trials, the ECMO systems have provided long-term (1-2 weeks) support to the lung without serious blood damage—because circulating blood and external oxygen are separated by a thin membrane.

More recently, clinical experience has shown that these membrane oxygenators can be used successfully to provide partial respiratory support for patients with acute respiratory failure.

Patients' Therapy Described

The principal premise is that if assistance for the body can be provided with extracorporeal oxygenation during a period of respiratory crisis, the lung may recover and auxiliary oxygen support can then be removed.

The collaborative program will compare patients treated by conventional lung-ventilating modes of therapy with those treated by a combination of the conventional and ECMO therapies.

The practice of by-passing the lungs by diverting part or all of the blood and oxygenating it outside the body became widely known during the 1950s, thus making possible dramatic advances in the field of open heart surgery.

With bubble and disc oxygenators now used throughout the world, extracorporeal circulation and oxygenation of the blood stream is routinely possible during heart operations.

But if oxygenation exceeds about 6 hours, there is damage to the blood, largely by the bubbles and other direct blood-to-gas exchanges.

The development of membrane oxygenators that work without bubbles or other direct blood-gas contacts makes it practical to route part of the patient's blood through a small disposable bedside oxygenator and sustain life for several days, instead of hours.

In the 4 to 5 years that they have been used clinically, mem-

(See \$6 MILLION PROGRAM, Page 7)

Self-Instruction Series By NMAC Wins Awards

Introduction to Congenital Heart Disease, a five-part audiovisual series for self-instruction, recently received the American Academy of Family Physicians' "Award for Best Scientific Exhibit" at the annual A.M.A. convention.

This is the second award for the series. In October 1973, the American Academy of Pediatrics presented a gold certificate for the presentation, citing its originality and outstanding teaching value.

The units—designed for second- and third-year medical students, nursing students, and physician associates—were developed by NLM's National Medical Audiovisual Center in cooperation with the Medical College of Georgia.

NMAC Creates Other Sets

Working with medical educators and national professional organizations, NMAC created several other self-instructional packages primarily for medical students.

These sets generally include study guides and slide-tape presentations. Some also contain motion picture clips, mannequins, and optical materials for review.

Topics include the femoral triangle, glaucoma, ophthalmoscopy, neurovascular examination, perinatal circulation, mammography, mammography techniques, and breast diseases.

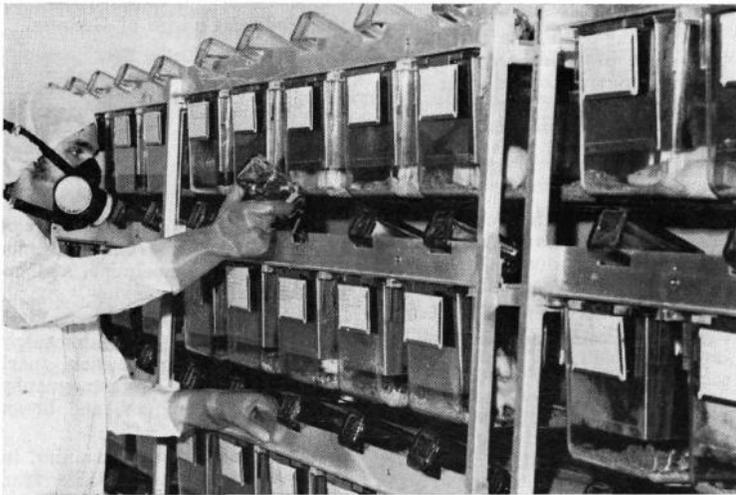
Information about the units, including prices, is available from the National Audiovisual Center, Government Services Administration, Attn: Sales Branch, Washington, D.C. 20409.



Dr. Karl Beyer, visiting professor of pharmacology, Hershey Medical Center, Pennsylvania State U., has joined the Fogarty Scholars-in-Residence Program. Through November, he and Mrs. Beyer will live in Stone House. From 1966 until his retirement last year, Dr. Beyer was senior vice president for research, Merck Sharp and Dohme Research Laboratories. His research interests include renal and clinical pharmacology, pharmacodynamics and toxicology.

building a new resource for the National Cancer Program

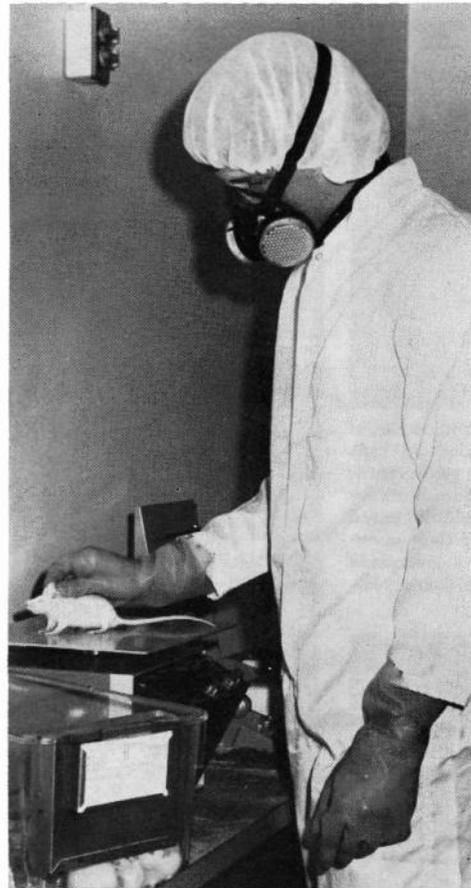
NCI's Bioassay Program is trying to identify and evaluate cancer-causing chemical and physical agents in the environment to which humans may be exposed. The Frederick Center is screening selected chemicals in studies conducted over the lifetime of rats and mice. A complete study of one chemical takes a minimum of 3 years from planning to analysis, and may cost \$75,000 or more. An important aspect of this effort is the improvement of large-scale chemical screening methods.



The FCRC facility which houses this program has been especially designed to prevent the introduction and spread of disease in the animal colony. There are 28 animal rooms—each of which receives a complete change of air every 4 minutes, and temperature and humidity are automatically regulated to maintain an optimum environment.



To assure that laboratory workers will not be exposed to potentially hazardous agents, the most advanced safety equipment and procedures are employed. While he combines animal feed with a test chemical, the technician is protected from aerosols by a positive air pressure system, which forces a continuous flow of clean air through his plastic hood. During actual operation, the stainless steel feed blender is completely enclosed in a protective hood.



A specially designed scale connected to a teletype machine automatically records the weight of mice that are used in large-scale testing of selected environmental chemicals to determine if they cause cancer.

Since June 1972 the animal farm has established 25 colonies including mice, rats, guinea pigs, and rabbits. During 1973, 253,000 laboratory animals were produced to supply healthy specimens of known genetic background to the Frederick Center as well as other NCI operations.



F 344 rats, one of over 20 strains, are raised at the animal farm in a carefully controlled environment free of contamination.

As the Frederick Center enters its second year, Litton Bionetics has been awarded an award-fee contract for the operation of the facility from June 26, 1974, to June 21, 1975, under the direction of the Center's Division of Cancer Cause and Prevention.

During its first 2 years of operation, FCRC has had the following objectives:

- 1) To produce biological sources such as viruses, cell lines, and compounds used in diagnosis, prognosis, and laboratory animal research.
- 2) To conduct applied research in environmental research.
- 3) To maintain an advanced facility where experienced and specialized equipment and personnel are quickly mobilized to support visiting scientists from throughout the world.

The Center is playing an important role in the Federal Government's all-out offensive against cancer, initiated in 1971 under the National Cancer Act.

The Act authorizes the National Cancer Institute to plan, develop an expanded, intensive research effort, coordinating its programs with those of other Federal, State, and private institutions.

From the initial nucleus of 20 people in July 1972, the staff has grown to almost 100.

Some programs under development at the Center are:

- Studies of the role of hormones and other factors which may play in human cancer.
- Development of a new culture screening method for identifying the cancer-causing potential of various substances. This method could make the testing of chemicals more rapid and efficient.
- Large-scale production of viruses that cause cancer for use by scientists in the United States and abroad conducting research relating to cancer cause and prevention.

Because of its facilities, FCRC offers a high quality environment for scientific research in various disciplines to cancer prevention.

Cancer Res third year, then awarded to continue facility from 25, 1975, under the National Commission of Cancer Research. Years of opened three ob-

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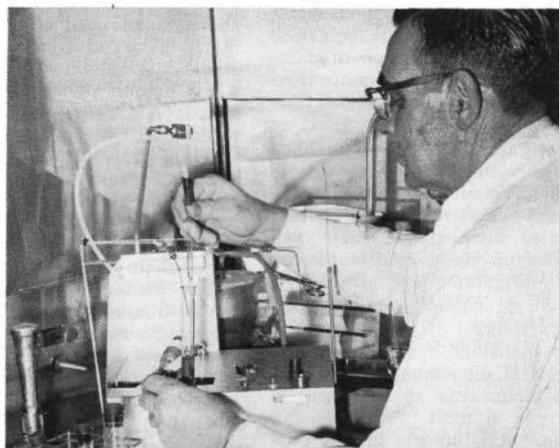
Virus particles are so small that tremendous quantities are required for studies on the potential relationship of viruses and cancer. The Center's virus production laboratory will soon have a weekly output of 250 liters of concentrated viruses for research at its facility and for shipment to NCI programs elsewhere.



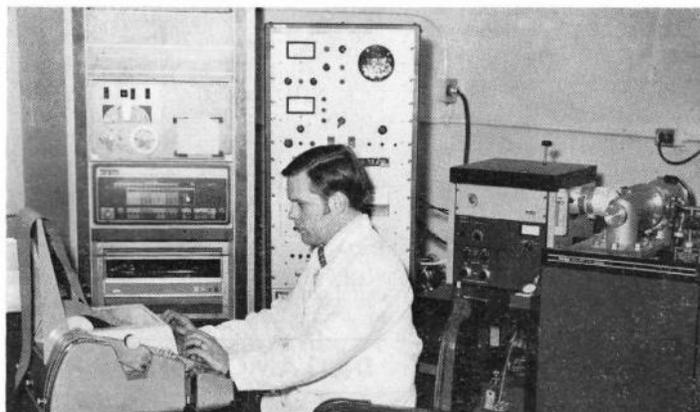
Cells containing virus particles are immersed in a nutrient solution and sealed in bottles. These bottles are then laid on roller racks designed to keep them rotating so the cultured cells can grow evenly over the inside surface of the glass, forming a coat. After several weeks of continuous growth and multiplication, the virus-laden cells are harvested.



The harvested material is then concentrated approximately 1000-fold by centrifugation. One of the ultracentrifuges used in this process rotates to 35,000 rpm, achieving a gravitational force of over 90,000 g. Centrifugation separates cellular material, nutrients, and virus particles into distinct bands based on differences in weight and density. The final virus product contains nearly one billion particles per milliliter.



A technician is working with a special apparatus which provides an oxygen-free atmosphere for the manipulation of anaerobic bacteria. These bacteria are being studied for their ability to produce cancerous substances or precursors when altered by physiological factors such as nutrients, acidity, and temperature.



A gas-liquid mass spectrophotometer, connected through a computer terminal to the NIH data bank, is one of many sophisticated instruments used to analyze cancer-causing substances. These substances are used in animal screening tests as well as in biochemical and immunological studies of the cancer process.



The Frederick Cancer Research Center

NIHRAC Participates in Field Day; Tests Equipment During Simulated Emergency

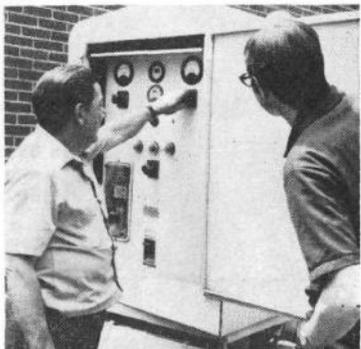
The world's largest test of a non-commercial emergency communications network took place at the end of June by licensed radio amateurs—"hams"—of the United States and Canada.

Operating under simulated emergency conditions, the amateur clubs were required to use non-commercial power, such as wind, solar, water, battery, or generator, to provide their energy.

The NIH Radio Amateur Club (K3YGG) participated in this year's Field Day Test of Emer-



As though the main antenna on Bldg. 10 had been blown down, a portable antenna was used during the test. Larry Martin, DCRT, attaches the final guy wire.



John T. Scafone, PEB electrician, throws the switch on the generator used to power NIHRAC's radio equipment as Mr. Martin watches.



Leonard Aberbach, club president and DRS biomedical instrumentation specialist, uses Morse code to contact one of the 2,000 participants.

gency Powered Amateur Radio Stations using a generator operated by the Plant Engineering Branch, OES.

During the test, NIHRAC contacted more than 35 other clubs in 12 states, British Columbia, and the West Indies.

Under Federal Communications Commission regulations, the club kept careful logs of each station that they exchanged messages with and their "call" letters.

Testing all of their message-sending equipment, NIHRAC used Morse code (CW) teleggraphy, single side band and FM radio telephony, and a radio teleprinter to make their contacts.

In the latter test, the club successfully contacted the amateur club operating the Maryland Civil Defense and Emergency Planning Agency's station. This was done to determine if the PEB generator was accurately producing the required 60-cycle power.

Nine NIHRAC members volunteered their own time to participate in the Saturday Field Day exercises.

Operating out of the "shack"—the NIH Emergency Operations Control Center located in Bldg. 10, Room B2N104 — the members searched various frequencies to make contact with as many other clubs as possible.

Employees interested in NIHRAC, sponsored by the NIH Office of Emergency Preparedness, may call Leonard Aberbach, Ext. 64131, or Dr. William Hook, Ext. 66693.

DR. LAMONT-HAVERS

(Continued from Page 1)

Dr. Lamont-Havers was National Medical Director of the Arthritis and Rheumatism Foundation (later renamed the Arthritis Foundation) during 1958-64.

An eminent rheumatologist, he received his higher education in Canada earning his undergraduate degree from the University of British Columbia in 1942, and his medical degree from the University of Toronto in 1946.

Upon graduation, Dr. Lamont-Havers held medical positions with the Vancouver General Hospital, University of British Columbia, and Queen Mary's Hospital in Montreal.

Later, he took special training in rheumatology as a fellow of the Columbia University's College of Physicians and Surgeons.

Dr. Lamont-Havers also received a diploma in internal medicine from McGill University in 1953.



DON'T LET YOUR BIKE be the next to go. Last year, 15-20 percent of the bikes on the campus were stolen—thefts are continuing at about the same rate this year. Lightweight chains or cables used to secure bicycles are easily cut by thieves. To help combat this, NIH has installed heavy, case hardened, 6-foot chains on bicycle racks with one end attached to the rack. Thread the chain's free end through both wheels, loop the end around the frame, and close the loop with your own padlock. Arthur McKay, Protection and Parking Branch, OAS, said, "Don't let an inferior lock be the weak link in the security chain. Quality American series 200 locks can be purchased at a savings in the R&W store."

BIOHAZARDS

(Continued from Page 1)

Martin, National Institute of Arthritis, Metabolism, and Digestive Diseases.

Two key subcommittees on classification of agents and on information and education are particularly active.

Investigators who may have problems with hybrid virus agents or who anticipate biohazard problems are encouraged to contact committee members in their own Institutes or the committee chairman for assistance and advice.

The Environmental Services Branch, Division of Research Services—responsible for surveillance of the NIH environment, for control of biohazards at NIH and, in the larger context, for assessing environmental impacts on the surrounding community—is vitally involved in the entire safety effort.

If investigators' questions relate to measures of control, to monitoring, or to other services supplied by ESB, it is suggested they call Ext. 66034.

Dr. Martin, commenting on the committee's work, stressed that its activity is not a policing action, but rather an effort to coordinate and consolidate information about biohazards and to make more effective solutions to problems as they arise in this fast-moving field.

Other members include John R. Leach and Vinson R. Oviatt, DRS, and Drs. W. Emmett Barkley, NCI; Clarence J. Gibbs, NINDS; Edward A. Graykowski, NIDR; Douglas Lorenz, BB; John M. Lynch, CC; John Moore, NIEHS; Elizabeth F. Neufeld, NIAMDD; Paul J. O'Brien, NEI; Alan Peterkofsky, NHLI; Wallace P. Rowe, NIAID; Carl R. Merrill, NIMH, and Corwin D. Strong, CC.

NIAMDD Receives AMA Award For Exhibit on 'Cystic Fibrosis'

The National Institute of Arthritis, Metabolism, and Digestive Diseases received a Certificate of Merit awarded by the American Medical Association for the Institute's exhibit on "Cystic Fibrosis" at the AMA's recent annual convention in Chicago.

Given the top scientific award in the "Diseases of the Chest" category, the NIAMDD exhibit was based on research by Dr. Paul A. Di Sant-Agnese, chief, Pediatric Metabolism Branch.

The 20-foot exhibit, which presented diagnostic criteria and suggested treatment, was created by Irving Shapiro, Office of Scientific and Technical Reports, NIAMDD, and Walter Ashe, Medical Arts and Photography Branch, DRS.



Keith Collett has been appointed Clinical Center personnel officer. During his 13 years at NIH, Mr. Collett has held positions as CC administrative officer of the day, NIH Library administrative officer, and DRS personnel management specialist. He has been on the CC personnel staff since 1971.



Yvonne Dubose, Division of Research Services, recently received the 1974 Durbin Award for outstanding efficiency and interest in laboratory animal science. Dr. Joseph J. Knapka, a nutritionist and her supervisor, admires the certificate which, with a cash award, is presented annually to an outstanding laboratory technician by the National Capitol Area Branch of the American Association for Laboratory Animal Science.

\$6 MILLION PROGRAM

(Continued from Page 3)

brane oxygenators have been used in the treatment of about 120 patients worldwide, some of them for as long as 12 days.

This advance represents a quantum leap in respiratory related clinical fields where even a few days reprieve may mean not only survival but recovery to a full life for many patients in acute respiratory failure.

Membrane oxygenators vary widely in form and size, but are generally smaller than the antecedent surgical "heart-lung" machines.

Some of the most successful membrane oxygenators, such as the one developed by Dr. Theodor Kolobow of NHLI, are literally pint-sized plastic containers.

Some 'Disposable'

Unlike the large disc and bubble oxygenators, which can be reused indefinitely, the delicate, gas-permeable plastic films, through which the blood is gently oxygenated in most membrane systems, cannot be used more than once; which makes membrane oxygenators "disposable."

Authorities generally agree that the principle of the membrane oxygenator—specifically its complete exclusion of damaging blood-gas exchange—holds the greatest promise for long-term support for respiratory gas exchange in patients.

For additional information, contact the NHLI Public Inquiries and Reports Branch, Bldg. 31, Room 5A21, NIH, Bethesda, Md. 20014, or call (301) 496-4236.

Computer Builds 3-D Molecule Models; Offers Convenient Permanent Record

By Dorothy Mastin

Summer Information Aide

A 3-dimensional computer system may soon replace the physical models now used to examine molecular structures.

Investigators at the Division of Computer Research and Technology have designed a computerized graphics system that manipulates the spatial positions of the atoms in a molecule.

The technique, developed by Richard J. Feldmann and Charles R. T. Bacon, DCRT, and Dr. Jack S. Cohen, who is now with NICHD, exhibits the molecule's structure on a "display"—the computer's TV screen. To view a continuous 3-D picture, a stereo box is placed over this display, and the user looks through polarizing glasses.

Useful Tool

The computer builds a model of the molecule from the data fed into it, and the program allows the user to zero in on the specific area he wants to study.

By manipulating the 3-dimensional model, he can observe the rotation of the molecule around a specific bond, measure distances and angles between bonds, or learn more about the atom-to-atom relationships.

The molecular structures studied in biochemistry are of various sizes with some large molecules having as many as 5,000 atoms. The physical models now used require a long time to build and can easily deteriorate or break; in contrast, computer graphics assures a permanent record.

Film production is also possible with this system, according to Mr. Feldmann. A camera is placed in front of the screen and a rotating 3-D molecular structure is recorded.

"We have done 20 films so far," Mr. Feldmann said, "and we're now producing a 1½-minute clip



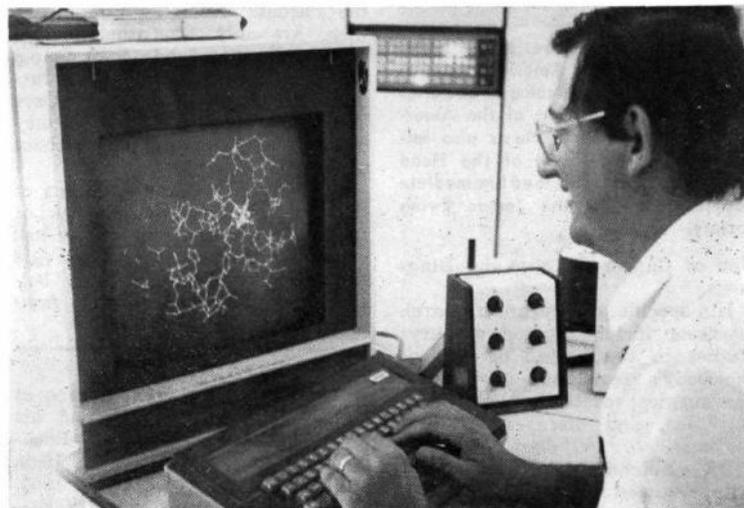
Donald B. Hare (r) has been awarded a PHS Commendation Medal and citation for organizing and operating the NIAID Histocompatibility Serum Bank, the principal world source of tissue matching reagents used in organ transplantation. Dr. Dorland Davis, NIAID Director, presented the awards to Mr. Hare at a ceremony held recently in the Institute conference room.

for television.

"Much of what we film is used for scientific meetings," he added.

The computerized system may also be used to produce a cheaper, more accessible method for viewing the 3-D structure of molecules. Graphics and text of the molecule are recorded onto pieces of microfiche—small 4 x 6 plastic cards containing 208 pages of computer copy. Each collection of microfiche contains an atlas of a molecular structure.

By using microfiche, an enlarging viewer, stereo box, and polarizing glasses, the scientist has access to a more convenient and cheaper system than printing or plotting.



Mr. Feldmann, a DCRT computer specialist, demonstrates how computers can be used to illustrate the structures of molecules. As the image rotates, the molecular representation is in 3-D.

PLASTICS

(Continued from Page 1)

summarized his findings on cancer mortality in counties with plastics and related industries.

Dr. Roy Albert, New York University Medical Center, told about his studies and the work of other NIEHS grantees on bis chloromethyl ether, a potent carcinogen.

Conference participants noted that in addition to new chemicals which may prove harmful, many chemicals and compounds which have been used for years have not been adequately tested and may be toxic.

In summarizing the conference, Dr. David P. Rall, NIEHS Director, said, "... Our discussions here have emphasized the fact that there are many elements in the general area of plastics and plastics manufacture which can pose serious problems for public health."

The conference proceedings will be published next May in the NIEHS journal, *ENVIRONMENTAL HEALTH PERSPECTIVES*.

NIH Visiting Scientists Program Participants

7/1—Dr. U. Krishna Bhat, India, Rocky Mountain Laboratory. Sponsor: Dr. Conrad Yunker, NIAID, Hamilton, Mont.

7/1—Dr. Ferdinando Dianzani, Italy, Laboratory of Viral Diseases. Sponsor: Dr. Samuel Baron, NIAID, Bg. 5, Rm. B1-29.

7/1—Dr. Hirokazu Inoue, Japan, Environmental Mutagenesis Branch. Sponsor: Dr. Frederick J. de Serres, NIEHS, Research Triangle Park, N.C.

7/1—Dr. Fan-Nan O. Lin, Taiwan, Environmental Biometry Branch. Sponsor: Dr. Joseph K. Haseman, NIEHS, Research Triangle Park, N.C.

7/1—Dr. Nava Paran, Israel, Laboratory of Viral Diseases. Sponsor: Dr. Carl Mattern, NIAID, Bg. 5, Rm. B1-35.

7/7—Dr. Leif N. Bertilsson, Sweden, Laboratory of Preclinical Pharmacology. Sponsor: Dr. Erminio Costa, NIMH, William A. White Bg., Rm. 100, St. Elizabeths Hospital.

Dr. Veech Sponsors

7/7—Dr. M. L. Lakshmanan, India, Section of Neurochemistry. Sponsor: Dr. R. L. Veech, NIMH, William A. White Bg., Rm. 334, St. Elizabeths Hospital.

7/7—Dr. Sewa Singh Legha, India, Cancer Therapy Evaluation Branch. Sponsor: Dr. Stephen K. Carter, NCI, Bg. 37, Rm. 6A17.

7/7—Dr. Apichati Pongpatirojana, Thailand, Surgical Neurology Branch. Sponsor: Dr. Giovanni Di Chiro, NINDS, Bg. 10, Rm. 2D17.

7/7—Dr. John L. Reid, United Kingdom, Laboratory of Clinical Science. Sponsor: Dr. Irwin J. Kopin, NIMH, Bg. 10, Rm. 2D46.

NHLI Establishes Nat'l Research, Demonstration Center in Seattle, Wash.

The National Heart and Lung Institute recently awarded more than \$500,000 for the establishment of a National Research and Demonstration Center at the King County Central Blood Bank, Seattle, Wash.

This establishes one of the NRDCs early in FY 1975 as specified under a provision of the National Heart, Blood Vessel, Lung, and Blood Act of 1972 (Public Law 92-423).

The King County Central Blood Bank program will be mainly concerned with improvement of procedures for the acquisition, processing, storage, distribution, and clinical use of blood and blood products.

In the area of blood resources, the center will seek new knowledge through research, and through its training, education, and information programs will hasten the dissemination and widespread clinical application of pertinent results.

Cooperates Closely

It will also work in close cooperation with NHLI, which will coordinate center activities with other Institute programs toward achieving the goals of the National Heart, Blood Vessel, Lung, and Blood Program.

Research activities include:

- Preparation and characterization of blood clotting factors, particularly antihemophilic factor (AHF or factor VIII) and Christmas factor (factor IX) for the prevention or control of bleeding episodes in hemophiliacs.

Other Projects Outlined

- Preparation and evaluation of highly purified bovine factor VIII for potential use in hemophiliacs who, spontaneously or after repeated transfusion, have developed circulating antibodies against human factor VIII.

- Development of improved methods for the preservation of blood platelets and for detecting and coping with platelet antibodies that reduce the effectiveness of platelet transfusions in some patients.

Such transfusions counter the threat of hemorrhage in patients with platelet deficiencies resulting from certain forms of cancer or from radiation or chemotherapeutic agents used to treat the disease.

- And studies of white cell transfusions as a possible way to prevent potentially lethal infections, especially in patients with very low white-cell counts following organ transplantation or heroic therapeutic measures for certain types of cancer.

NINDS Branch Donates \$65 to Pre-School



Participating in the donation ceremony are (l to r) Dr. Joseph S. Drage, PRB chief; Bryan Boucher and Diane Hill, whose mothers both work in PRB; Mrs. Jones; Ms. Oliver, and Virginia Burke, NIH child care coordinator.

Dr. Ketcham Is Joining U. of Miami Med. School

Dr. Alfred S. Ketcham is joining the University of Miami School of Medicine on Sept. 1 as professor of surgery and chief of the division of oncology in the surgery department.

Presently, Dr. Ketcham is clinical director of the National Cancer Institute and chief of its Surgery Branch as well as associate director for clinical research in the Divi-



Dr. Ketcham is president of the board of governors of the American Federation of Clinical Oncologic Societies and first vice president of the American Radium Society. He is also immediate past president of the Head and Neck Surgeons and immediate past secretary of the James Ewing Society.

sion of Cancer Biology and Diagnosis.

His specific clinical and research interests include tumor surgery; studies in the spread of cancer; the body's resistance to tumors; the surgical control of glandular activities, and diseases affecting the nose.

Dr. Ketcham's extensive research, aimed primarily at developing new methods to destroy or control various malignancies, has produced more than 200 scientific publications of which he is author

One more child from a low income family will have a better chance of going to the Pre-School Developmental Program at NIH thanks to the NINDS Perinatal Research Branch's generosity.

The branch recently contributed \$65 to the Pre-School — the first contribution ever made to them by an NIH component.

Originally, PRB employees intended to send money left over from a branch picnic.

But Jean Oliver, a PRB speech pathologist and a longtime worker in EEO activities, spearheaded a drive to increase the donation. They aimed for \$50 and made \$65.

The tuition aid fund helps low income parents afford the \$36.25 per week necessary to maintain their child in the center, located in Bldg. 35.

Pre-School tuition is based on a "sliding scale." This means that parents with higher incomes may pay up to \$42.50 a week for their child. The \$6.25 difference then goes into the tuition aid fund.

According to Coralyn Jones, a biologist in the National Institute of Mental Health and chairman of the Parents' Advisory Committee, there are only two other income sources for the fund: (tax deductible) contributions collected during the once-a-year Child Care Week, and proceeds from lottery ticket sales which amount to about \$100 a month.

"Children are being kept out of the program because of lack of funds," Mrs. Jones said. "If we had enough money in the tuition aid fund, we could have a truly balanced group of children from families at all income levels."

or co-author.

He obtained his B.Sc. degree at Hobart College, in 1945 and his M.D. at the University of Rochester School of Medicine in 1949.

Before coming to NCI in 1957, he was, for 2 years, chief of surgery at the PHS Indian Hospital in Talihina, Okla.

Dr. R. Bates, Hormone Expert, Retires From NIAMDD, Here 21 Yrs.

After 21 years of Federal Service, all of them with the National Institute of Arthritis, Metabolism, and Digestive Diseases, Dr. Robert W. Bates is retiring—for the second time.

Dr. Bates retired last Dec. 31, but came back to NIAMDD as a consultant for 2 days a week. Now he is really retiring—he and his wife Mildred are leaving to make their home in Kino Springs, Ariz.

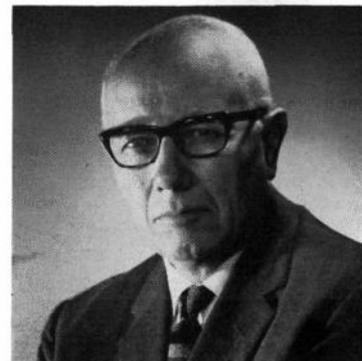
The research chemist—he is especially known for his work on the pituitary hormone, prolactin—came to NIAMDD in 1953, in the Laboratory of Nutrition and Clinical Endocrinology.

Dr. Bates was the Institute's hormone distribution officer. He distributed pituitary hormones for clinical and laboratory studies and supplied material for immunity testing of human hormones. The hormones and reagents are distributed without charge to qualified researchers in this country and abroad.

He was also contract officer for other programs supplying materials without charge to researchers and institutions. One contract funds the National Pituitary Agency which distributes human pituitary hormones.

Dr. Bates received his Ph.D. in physiological chemistry from the University of Chicago. Earlier, he had served as a chemistry and mineralogy instructor at Simpson College in Iowa, his native state, where he had received his undergraduate degree. Before coming to NIH, he was a chemist in private industry.

Five years ago, Dr. Bates received the Fred Conrad Koch Award from the Endocrine Society for his studies of the endocrine system, and particularly, of the anterior pituitary gland. That prize is the society's highest award.



Now, says Dr. Bates, he will have time for duplicate bridge, golf, and gardening. The Bates' new home will include a hot house for plants nourished only by water and sunlight.