

the



Record

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

September 29, 1970
Vol. XXII, No. 20

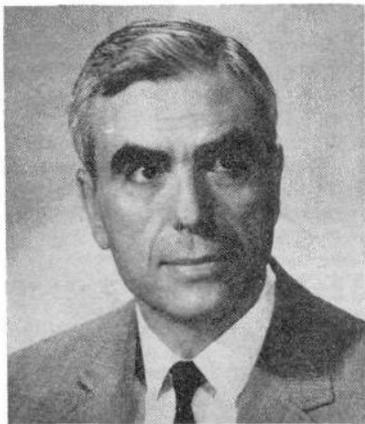
NATIONAL INSTITUTES OF HEALTH

Dr. Ernest Cotlove Dies; Devoted Clinician Headed Model Automated Lab

Dr. Ernest Cotlove, acting chief of the Clinical Pathology Department, CC, died on Sept. 13.

He is survived by his wife, Elaine W. Cotlove, M.D., of the home address, 10310 Drumm Ave., Kensington, and by two children: a son, David, 20, who is a student at Haverford College, and a daughter, Candace, 18, a student at Sarah Lawrence College.

Numerous tributes to Dr. Cotlove, both from his colleagues at



Dr. Cotlove's belief in the power of logic and his preoccupation with perfection live on in those he trained.

NIH and elsewhere in the scientific community and from community leaders in Montgomery County, were reaching the *Record* at the time of this printing. A selection of these tributes will appear in the next issue of the *Record*.

Two characteristics that struck those who knew Ernest Cotlove were his brilliance and gentleness. Many were surprised after his death to learn that he had been a gifted amateur pianist.

But devotion to patients was his life's work—he often reminded his wife that he had been "imprinted" as a clinician. He meant that beyond the machines with which he was concerned, beyond the reams of paper, were live patients who were his primary concern, and error could not be tolerated.

He would plot on charts the
(See DR COTLOVE, Page 11)

NCI Study on Method of Transferring Cancer Immunity Wins Research Award

A new way to transfer cancer immunity from one animal to another was recently reported by scientists of the National Cancer Institute, who indicated that the method might lead to a means of bolstering cancer patients' defense mechanisms against their disease.

In a study that won an award for research excellence from the Student American Medical Association, Drs. Kenneth P. Ramming and Yosef H. Pilch demonstrated that non-immune rodent spleen cells incubated with RNA from animals immunized against tumors were able to produce immunity in a significant percentage of previously non-immune animals that received injections of these cells.

RNA, ribonucleic acid, is one of the key chemicals that direct the life processes of all cells.

Drs. Ramming and Pilch also demonstrated that the transfer of tumor immunity mediated by RNA, which is believed to be chemically similar in all animal cells, would take place between different animal species.

This is significant because any future application of this or similar forms of therapy in human cancer would require large amounts of RNA, necessitating the use of animal RNA donors, Dr. Ramming said.

In the study, spleen cells from non-immune C3H strain mice were incubated in flasks with RNA extracted from spleens and lymph nodes of Hartley strain guinea pigs immunized to a mouse fibrosarcoma or cancer of connective tissue.

After incubation, the spleen cells were injected into other C3H mice, the majority of which were then protected from the growth of tumors from injected fibrosarcoma

Dedication to Career Cited

"Dr. Ernest Cotlove was outstanding in a career of dedicated scientific and medical service," according to Dr. Robert Q. Marston, Director of NIH.

"He will long be remembered with admiration and gratitude for his devotion to duty and his contributions to laboratory medicine. Many patients are, or will be, fortunate that he lived."

cells.

Tumors appeared in only 41 percent of the mice previously inoculated with immune spleen cells, but in 75 to 85 percent of untreated mice that received injections of tumor cells.

Many of the tumors which did appear in the treated mice appeared later and were smaller than in the untreated mice.

RNA from guinea pigs immunized with normal mouse tissues was ineffective and, therefore, it was concluded that tumor specific immunity had been transferred.

To demonstrate that the tumor
(Continued on Page 9)

'What Is a Smile Worth' Ask Keymen as 6-Week CFC Gets Under Way

"What Is a Smile Worth?"

Federal employees will have an opportunity to place monetary value on a priceless object as the Combined Federal Campaign gets under way.

The HEW goal for the 6-week drive which began Sept. 16 and ends Oct. 28 is \$8,403,207. The NIH share is \$221,378.

Dr. Carl G. Baker, Director of the National Cancer Institute, is chairman. He will be assisted by vice chairman, Dr. Arnold W. Pratt, Director of the Division of Computer Research and Technology.

The theme of this year's campaign is "What Is a Smile Worth?" This question is answered every year through contributions from all Federal agencies in the National Capital area.

Early contributors to the campaign will be eligible for cash prizes which have been donated by the NIH Recreation & Welfare Association.

A drawing for these prizes will be held Oct. 8, at noon in the lobby of Bldg. 31.

Keymen may be contacted for further information.
(See CFC, Page 4)

Delegates to U.S.-Japan Medical Science Meeting Adopt 5-Year Report

Adoption of the first 5-year report of the United States-Japan Cooperative Medical Science Committee was recently announced in a joint communique from Tokyo.

The report will be printed for distribution early next year.

The Committee held its sixth annual meeting at the Ministry of Foreign Affairs in Tokyo Sept. 3 and 4.

Dr. Robert Q. Marston, NIH Director, participated as a member of the eight-man U.S. delegation.

Attending from the National Institute of Allergy and Infectious Diseases were: Dr. Dorland J. Davis, NIAID Director; Dr. Howard A. Minners, chief, Geographic Medicine Branch; Dr. Earl S. Beck, head, U.S.-Japan Program of GMB, and George Yee, program officer assigned to the tuberculosis and leprosy panels, also in GMB.

The Japanese Minister of Health and Welfare, the U.S. Ambassador to Japan, and the chairmen of the U.S. and Japanese delegations spoke at the opening session.

This was followed by reports from six scientific panels relating health problems of the people of Asia: cholera, leprosy, malnutrition, parasitic diseases, tuberculosis, and viral diseases (particularly rabies and hemorrhagic fevers).

After expressing satisfaction with research results presented, the
(See DELEGATES, Page 4)

4 NIH Scientists to Appear On WTTG-TV's 'Panorama'

Four NIH scientists will appear on WTTG-TV's award-winning program, *Panorama*, in October.

Scheduled for 12:30 p.m. are: Dr. James F. Kavanagh, NICHD, Oct. 1; Dr. Peter L. Frommer, NHLI, Oct. 6; Dr. Alfred S. Ketcham, NCI, Oct. 8, and Dr. Laurence H. Miller, NIAMD, Oct. 13.

The appearances are coordinated by the Features Branch, ODI, and NIH Information Offices.

the NIH Record

Published biweekly at Bethesda, Md., by the Publications and Reports Branch, Office of Information, for the information of employees of the National Institutes of Health, Department of Health, Education, and Welfare, and circulated by request to interested writers and to investigators in the field of biomedical and related research. The content is reprintable without permission. Pictures are available on request.

The NIH Record reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policies of the paper and the Department of Health, Education, and Welfare.

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Krin Larson, NIAID Information Office, discusses the Institute's programs with Dr. Koyo Okabe, Kurume University School of Medicine, Japan. Dr. Okabe was one of many participants in the Second International Congress of Parasitology, held early this month in Washington, D.C., who visited the NIAID exhibit. In addition to describing the mission of NIAID, the exhibit provided samples of materials available to the general public.

NIH Orchestra to Begin 12th Season on Oct. 19

The NIH orchestra will begin its 12th season Monday, Oct. 19, at 8 p.m. in the Jack Masur Auditorium, Clinical Center.

All employees and members of their families are welcome to join the orchestra, which is sponsored by the NIH Recreation & Welfare Association.

As in the past, Mark Ellsworth will be the conductor.

Please bring current R&W membership card to the initial rehearsal and a music stand to each rehearsal.

The orchestra holds no auditions

NIH Television, Radio Program Schedule

Television

NIH REPORTS

WRC, Channel 4
1 a.m. Wednesday

September 30

Dr. James M. Stengel, chief, National Blood Resource Program, NHLI
Subject: National Blood Resource Program (Part 2) (R)

October 7

Part 3 of the above program (R)

Radio

DISCUSSION: NIH

WGMS, AM-570—FM Stereo
103.5—Friday, about 9:15 p.m.

October 2

Louise C. Anderson, chief, Nursing Department, CC
Subject: The Nurse in Research (R)

Interview takes place during the program, The Music Room.

October 9

Dr. James E. Hamner III, chief, Oncology Section, NIDR
Subject: Pre-malignant and Malignant Oral Lesions

Interview takes place during intermission of the Library of Congress concerts.

This is the first in a new series of radio interviews with outstanding NIH professionals broadcast for the third consecutive year.

but experience in playing classical music is desirable.

For further information, contact Dr. John B. Wolff, manager, Ext. 67070.

Pat Morse to Continue His Activities—Only More So—Upon Retirement Oct. 2

When George P. (Pat) Morse retires as chief of the NIH Protection and Safety Management Branch on Oct. 2 he will continue his favorite tension-relaxing sport—basketball.

He plays the game daily after work on his private court with a team made up of his five sons.

This is frequently alternated with an invigorating game of tennis (usually with Mrs. Morse) also on a court in his backyard.

The question is whether Pat Morse, father of seven, will have time to relax with all the plans he has made for his so-called "retirement."

He is planning to revamp his home from which he will practice law on a limited basis, mostly writing wills and planning estates.

To Serve as Consultant

He will devote his major efforts as a consultant in protection and safety to institutions, especially hospitals and universities.

Mr. Morse has been asked to return to the American University in Beirut, Lebanon, to implement a study he made 2 years ago. He also recently conducted a study on protection at Catholic University.

As chairman of the National Hospital Protection Committee, he served as moderator at the 16th annual seminar of the American Society for Industrial Security in Boston in mid-September.

Recently he was appointed regional vice president of the International Association for Hospital Security.

Prior to coming to NIH, Mr. Morse was chief of the Personnel Security Division, HEW, and Director of Security for PHS. He also held a number of security posts with the C.I.A. and the Civil Service Commission.

Pat Morse's military service during World War II included several challenging assignments. He was an aide to Gen. William Donovan, Director of OSS; executive officer on the staff of the late Robert Jack-

(See MR. MORSE, Page 10)



Mr. Morse, author of numerous articles on protection and safety, will lecture next semester at G.W.U.

Hoarseness Bothering You? Cold Got Your Gills Green? So Volunteer for Cold Study

"I am at this moment deaf in the ears, hoarse in the throat, red in the nose, green in the gills, damp in the eyes, twitchy in the joints, and fractious in temper from a most intolerant and oppressive cold."

If you are suffering from a cold as Charles Dickens was when he so aptly described his symptoms, you are urged to remember that NIAID's Laboratory of Infectious Diseases needs a continuing supply of volunteers for its "common cold" study.

Employees with colds are requested to contribute samplings of nasal secretions plus two blood samples. Participants receive \$2 for each blood sample.

Please call Mrs. Sara Kelly or Harvey James, Ext. 65811, for appointments. It is best to do so within the first 3 days of infection.

If possible employees are urged to schedule appointments in the morning to give researchers ample time for processing.

Japanese Gov't Agency To Select Investigators For Awards in Research

The Science and Technology Agency of the Government of Japan has made available its annual Research Awards for Foreign Specialists.

These awards enable one scientist from each of six countries to work in a Japanese government laboratory for about 7 months, studying research in the fields of natural and applied science and technology.

The countries are Australia, France, Germany, The Netherlands, the United Kingdom, and the United States.

The awards include a living expense allowance of \$2,100 and round trip air tickets, and are limited to scientists presently employed by a government laboratory or agency.

Applications should be in by end of November 1970. Awards will be announced about March 31, 1971.

For further information, contact the International Fellowship Section, Fogarty International Center, NIH, or call Ext. 66111 or 66112.

'New Approaches to Old Problems' Goal, Says Dr. Wong, NEI Clinical Director

Helping change the direction of ophthalmology is a major goal of the National Eye Institute's clinical research program, according to its new, young director, Dr. Vernon G. Wong. Dr. Wong's appointment as NEI Clinical Director was announced last week.

"Further progress in combatting visual disorders will be made only with the aid of the sciences outside the traditional limits of ophthalmology," Dr. Wong stated in an interview.

He cited his own research using immunosuppressive and antimetabolite drugs in successfully treating serious inflammations of the eye—including corneal graft rejection—which were unresponsive to conventional therapy.

Dr. Wong introduced the use of these agents to ophthalmology, learning about their use and action through collaboration with cancer researchers here and elsewhere.

"New approaches to old problems could be called the basic philosophy which will shape the clinical program of our Institute," Dr. Wong said.

"In building our staff, we will be looking for investigators who are not afraid to be innovative and imaginative, who are able to apply knowledge expertly from such fields as immunology, virology, biochemistry, and genetics to the solution of visual system problems."

Program Flexible

Because the NEI clinical program will depend in great part upon the capabilities and interests of the investigators who join it, Dr. Wong would not speculate upon what specific problems will be studied over the next few years.

At present, studies of cataracts of unusual etiology, conjunctival and corneal diseases, diagnosis and treatment of uveitis, electrophysiologic studies of retinal disease, and investigations of glaucoma and vascular retinopathies constitute the Institute's clinical program.

Registration Deadlines For Election Announced

The last days for registration to vote in the Nov. 3 general elections are: Oct. 5 in Maryland and Oct. 3 in Virginia.

To qualify for Maryland elections, a registrant must be an American citizen, and by Nov. 3 be a state resident for one year and a county resident for 6 months.

Virginia requirements are the same except that a voter must have resided in his county and municipality for 6 months and his election precinct for 30 days.

For further information the county registrar or board of elections may be contacted.

There are no elections this year in the District of Columbia.



Dr. Wong will continue his current investigations in addition to coordinating NEI clinical research.

According to Dr. Wong, these studies will be continued as long as productive, with modifications, additions, and discontinuances as the program develops.

He views his new position as one of coordinator of clinical research and supervisor of high quality standards of patient care.

"My job is not to tell our people what to do or how to do it. This would only stifle the freedom which is the basis of research progress."

Dr. Wong will also continue his current research in uveitis and conjunctival and corneal diseases.

Born in Hong Kong, Dr. Wong became a U.S. citizen in 1947. He graduated from Pennsylvania State University and earned his M.D. from Jefferson Medical College in 1958.

Dr. Wong has been with NEI's Ophthalmology Branch since 1962 when it was part of what is now the National Institute of Neurological Diseases and Stroke.

Beginning as a Clinical Associate, he advanced to the position of associate ophthalmologist and senior investigator by 1967.

In addition to his work with immunosuppressive drugs, Dr. Wong also helped develop, in collaboration with NIAMD scientists, a simple method for diagnosing the inherited metabolic disorder cystinosis by assaying biopsies of conjunctiva, eliminating the need for the more difficult and time-consuming methods previously used.

Dr. Wong received Jefferson Medical College's Albert Strickler Memorial Prize for his essay "Chemotherapy of Acute Leukemia" and is a charter member of Jefferson's Association for Research.

20th Exhibit, Symposium On Research Equipment Opens Here on Oct. 5

The Symposium on Recent Developments in Research Methods and Instrumentation will open next Monday, Oct. 5, at 2 p.m. in the Jack Masur Auditorium, Clinical Center, with a discussion of Large Scale Screening of Biological Fluids.

The 5-day scientific meeting is being held in conjunction with the 20th Annual Research Equipment Exhibit where 71 manufacturers will display the newest equipment developed for medical research.

Both the symposium and exhibit are being sponsored this year by NIH, the National Bureau of Standards, and the local chapters of seven scientific societies.

These are: the American Association of Clinical Chemists, American Chemical Society, American Institute of Biological Sciences, American Society for Microbiology, Instrument Society of America, Society for Applied Spectroscopy, and Society for Experimental Biology and Medicine.

Symposium sessions will be held at NIH on Oct. 5, 6, and 7 at 2 and 8 p.m., and on Oct. 8 at 2, 5, and 8 p.m.

Standardization for Meaningful Clinical Chemical Analysis will be the topic of a final session at NBS in Gaithersburg on Oct. 9 at 9 a.m. A panel and round table discussion follows at 1 p.m.

The exhibit, again housed in Bldg. 22 at NIH, will be open from 10 a.m. to 5 p.m. Oct. 5-8.

Complementing the exhibit, eight special instrumentation sessions will be held daily in Bldg. 1, Wilson Hall, at 10:30 a.m. and 1 p.m.

A special shuttle service will transport visitors between the Ex-

Flu Outbreak Is Unlikely; Vaccine Recommended Only for Chronically Ill

Because a recent PHS report indicates that major outbreaks of influenza "seem relatively unlikely this coming season," the Employee Health Service will not offer the influenza vaccine to all NIH employees.

Concurring with the recommendations of the PHS Advisory Committee on Immunization Practices, the EHS advises vaccination, and will offer the vaccine, for persons of all ages who have certain chronic debilitating conditions.

Conditions Listed

The conditions for which the vaccine is recommended, presented in the *Morbidity and Mortality Weekly Report* of Aug. 22, include:

1) Congenital and rheumatic heart disease; 2) cardiovascular disorders; 3) chronic bronchopulmonary diseases, or 4) diabetes melitus and other chronic metabolic disorders.

The primary series consists of 2 doses administered subcutaneously, preferably 6 to 8 weeks apart.

Persons who had one or more doses of the vaccine containing Hong Kong strain antigen in the 1968-69 seasons require only a single subcutaneous booster dose of bivalent vaccine. All others should receive a primary series.

Vaccination should be scheduled for completion by mid-November.

Employees who qualify may receive the vaccine between 1 and 4 p.m. in any of the EHS units.

Exhibit Hall (Bldg. 22), Bldgs. 10, 36, and 37 and Parking Lot 31H.

Light lunch facilities will be provided outside the Exhibit Building between 11 a.m. and 2 p.m. daily.



James B. Davis, OAS Director, admires the original collage—which blends lab glassware, electronic components, and manufacturers' trademarks with the HEW seal—presented to him by representatives of the scientific instrument industry. Vee Grace McCutcheon was commissioned to create a composition recognizing Mr. Davis' contribution to the interchange of ideas between the scientific community and manufacturers. For 18 years he directed the NIH research equipment exhibit. Since 1969 Donald R. Watson, chief, Supply Management Branch, has been in charge of the annual event.

Public Image of Bacteria Improves With Issuance Of New NIAID Booklet

The National Institute of Allergy and Infectious Diseases is attempting to improve the "public image" of bacteria.

A new 20-page booklet, called *Bacteria: The Littlest Cells*, describes the nature of bacterial structure and growth, and the function of bacteria in the ecological system.

Suggesting that these microbes have suffered from poor public relations in past years, the NIAID publication touches on the beneficial aspects of bacteria in fermentation, decomposition, and in the nitrogen cycle.

The primary emphasis, however, is on the relation of bacteria to disease, the development of measures to prevent microbial infection, progress made in diagnosing bacterial infections, and the use of antibiotics in conquering many of the illnesses which bacteria cause.

The booklet was the result of numerous requests received by the Institute for information concerning bacterial disease.

In an effort to dispel many of the misconceptions about bacteria's role in causing disease—and to clarify the distinction between bacteria and viruses—a companion booklet on viral infections will appear sometime in early October.

Single copies of *Bacteria: The Littlest Cells* may be obtained from the NIAID Information Office.

CFC

(Continued from Page 1)

These donations assist the orphaned, the aged, and the sick in addition to aiding constructive youth activities and disaster victims.

"The CFC offers NIH employees the opportunity to expand their daily commitment of improving the Nation's health to a broader, more inclusive pledge to the full scope of social service," Dr. Baker stated.

These services include member organizations of the United Givers Fund, National Health Agencies, and the International Service Agencies.

HEW Secretary Elliot L. Richardson addressed campaign workers at a kick-off rally in the Department auditorium last week. He encouraged HEW employees to set the pace for other Federal agencies in attaining a 100 percent goal.

Over 600 NIH keymen are currently contacting employees for contributions which may be made in a lump sum, by payroll deductions, or by a combination of both methods.

Donations may be designated for a particular agency at the contributor's request.

Individual Institute/Division quotas will be announced in the next issue of *The NIH Record*.

'Special Status' Is Achieved By 7 Blood Bank Donors

The Clinical Center Blood Bank reports that 448 units of blood were received from NIH donors in August, and CC patients received 2,212 units of blood.

Seven donors achieved a special status.

Austin B. Foster, OD, and Arnold Sperling, CC, reached the 2-gallon mark.

New Gallon Donor Club members are: Richard L. Sherbert, NICHD; Robert L. Weber, Sr., DRG; George L. Payne, OD; Edward C. Schlein, ODA, and Dr. Stanley Barban, NIAID.

More donors are needed. Call the Blood Bank, Ext. 64508, to make an appointment.

NHLI Enumerates Major Goals for Its New Framingham Heart Disease Survey

A new study, the Framingham Cardiovascular Disease Survey, which began in June, will observe acute heart attacks, strokes, and other manifestations of cardiovascular disease occurring among Framingham, Mass., inhabitants between last June 15 and July 1, 1971.

This research is under the aegis of the National Heart and Lung Institute.

The previous study, the Framingham Heart Disease Epidemiology Study, which has been conducted for more than 20 years, recently curtailed its activities.

The new survey is directed by Dr. Manning Feinleib, chief, Field Epidemiology Research Section, NHLI.

The study plan was developed by the NHLI Clinical Application Program with the help of the Middlesex

West Medical Society and other physicians in the town of Framingham.

The major goals of the present study are:

- To verify the data collected since 1948 by the Framingham Heart Study on the frequency of heart disease and of factors increasing the individual's risk of developing coronary heart disease and related cardiovascular disorders.

- To document events surrounding the acute episode in order to identify, 1) signs and symptoms that might give advance warning of an impending heart attack or stroke; 2) trigger factors that convert a frequently insidious blood-vessel disease into a life-threatening illness, and 3) factors operating very early in the acute episode that may profoundly affect its outcome.

- To determine why some patients delay in seeking medical assistance despite serious symptoms. Physicians practicing in Framingham and surrounding communities have been asked to participate in this important study.

Data Kept Confidential

Data from physicians and hospitals collected during the survey will be kept confidential except as part of the statistical summaries of the study findings.

Patients with their physician's recommendation will subsequently be invited to undergo at no expense a standardized cardiovascular examination.

Each patient, members of his family, or relatives and close friends will be interviewed in an attempt to reconstruct the events preceding and surrounding the acute attack.

This information may help to identify signs and symptoms indicative of impending heart attacks or strokes that might enable the physician to take steps to abort the episode.

DELEGATES

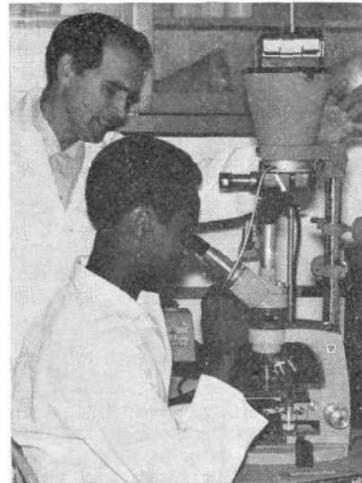
(Continued from Page 1)

delegates considered future priorities.

At next year's meeting—to be held July 29 and 30, 1971 in this country—a report will be presented on the feasibility of a program of cooperative research on environmental health problems.

It was also decided that two of the six panels would be reviewed annually. Parasitic diseases and leprosy were selected for next year's review.

Oregon Primate Research Center Helps Talented Teenagers to Study Biosciences During Summer



Dr. Dale Hoskins, of the Oregon Primate Research Center's Department of Biochemistry, shows student Samuel Irving the technique for focusing an intricate microscope.

Twelve high school students have completed a summer of work and study at the Oregon Primate Research Center in Beaverton.

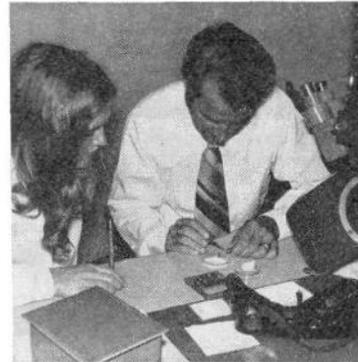
It is one of seven centers supported by the Division of Research Resources, BEMT.

The students—seniors or June graduates of Portland high schools—had "working scholarships" in the biomedical sciences.

The participants were paid through a Scholarship Program supported by organizations and businesses in the Portland area.

They assisted scientists in several aspects of center research: population control, dietary factors in heart attacks and stroke, organ transplants and tissue rejection, muscular dystrophy, immunology, and cancer.

They also participated in a series of bioscience seminars, and toured medical facilities in the area.



Nancy Trachsel, summer student, intently observes Dr. Wolf Fahrenbach prepare a specimen for an electron microscope at the center.



Dr. Rose Mary Bocok tells "scholar" Elizabeth Snook how the test tube holder is used.

At the end of the program, the students wrote papers on their projects and received diplomas.

The Scholarship Program resulted from interviews with high school science teachers to determine what the Center could provide for young people interested in science.

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

Special 20th Anniversary Feature

Significant Achievements Of Institute Scientists, Grantees Highlighted

During the past 20 years, a number of significant accomplishments have been reported in the diverse areas of NIAMD responsibility.

Institute scientists in Bethesda and grant-supported investigators have, for example:

- Pioneered studies leading to Nobel-prize-winning feats in cracking the genetic code, the mechanism by which hereditary information is stored and passed on from generation to generation.
- Introduced into clinical practice the first effective anti-rheumatic synthetic corticosteroid drug, prednisone.
- Synthesized in the laboratory such important hormones as insulin, ACTH, and, more recently, thyrotropin releasing hormone, which helps regulate the pituitary.
- Conducted research basic to identification of the Australia antigen, the virus believed to cause infectious hepatitis, and developed new methods for detecting its presence in blood.

(See *ACHIEVEMENTS*, Page 8)

Fermentation Lab Plays Key Role in Research By Growing Bacteria

NIAMD's "fermentation lab" is now well into its 12th year of raising microorganisms (such as bacteria, molds, and yeasts) for use by NIH research laboratories and local universities.

Large scale production of such organisms is needed to supply research workers with raw materials for isolation of special intra- or extra-cellular substances under investigation such as enzymes, nucleic acids or as-yet unknown factors which appear to play important roles in life processes.

Organized in 1957

The former chief of the NIAMD's Laboratory of Nutrition and Endocrinology, Dr. John C. Keresztesy, organized this project in 1957, and batch number one soon emerged from the first of the three big fermenting tanks in the basement of Bldg. 3.

In February 1959 the first official numbered batch was run. Bacteria batch number 1320 arrived in August 1970, according to David L.

(See *FERMENTATION*, Page 8)

2 Decades See Growth From Small Labs To Center for Diverse Basic Research

This fall marks the 20th Anniversary of the National Institute of Arthritis and Metabolic Diseases. Two decades of growth have seen NIAMD develop into a center for new knowledge of many basic research areas and for disease-oriented studies.

The Institute was authorized by the 81st Congress through Public Law 692, enacted in August 1950. In November of that year, NIAMD acquired the laboratories of the Experimental Biology and Medicine Institute (EBMI), which had been created from several "general" Divisions of NIH.

Through these laboratories, NIAMD can trace its origins back some 80 years. Its tradition of nutrition research, for example, stems from the classic work on pellagra culminating in its recognition as a vitamin deficiency disease.

This work was done by Dr. Joseph Goldberger (assigned to this problem by the PHS in 1914) and his student, Dr. W. H. Sebrell, who later served as EBMI Director, as the first Director of NIAMD, and, subsequently, as NIH Director.

The first operating funds of NIAMD in fiscal year 1951 amounted to about \$2.4 million. With the growth of Institute programs, recent yearly budgets have totaled about \$140 million for research at Bethesda, extramural grant-supported investigations and contract work, and fellowship and training support.

Over the years, NIAMD, originally created for the study of arthritic disorders and diverse diseases of metabolism, has expanded its programs in specific areas as, for example, in the development of more efficient and less expensive artificial kidneys.

The Institute's sphere encom-



Dr. G. Donald Whedon has been NIAMD Director since Nov. 23, 1962.

passes a great number and diversity of illnesses. Arthritis itself comprises a group of disorders characterized by inflammation and functional impairment of the joints.

The so-called metabolic diseases, characterized by a specific disorder in body chemistry, constitute a huge variety of illnesses, ranging from diabetes, which affects about 5 million Americans, to comparatively rare conditions such as maple syrup urine disease.

Disease Categories Noted

Diseases of the digestive system, such as peptic ulcer and ulcerative colitis; liver diseases; disorders of blood, bone, and kidneys; urology; orthopedic surgery; skin diseases, such as psoriasis; endocrine disorders, and nutrition are other major areas of Institute responsibility.

With its evolution from laboratories noted for their pioneering work in experimental medicine and biology, NIAMD has also become a center for new knowledge in fundamental sciences such as genetics, biochemistry, enzymology, molecular biology, histology, pathology, pharmacology, and toxicology.

Physicians, biochemists, mathematicians, microbiologists, geneticists, pharmacologists, and supporting services work together here and in distant epidemiological and field studies.

Through its largest effort, the extramural grants program, the NIAMD supports more than 2,000 research and training projects in non-Federal institutions in every region of the Nation.

Thus, the Institute's interests are broad and its influence great on the Nation's health efforts.

Encouraging Progress Marks Fifth Year Of Institute's Artificial Kidney Program

Steady and encouraging progress highlights the fifth anniversary of the Institute's Artificial Kidney Program.

The goal to develop simpler, more effective and less costly mechanical kidneys has already been partially achieved and new and exciting approaches are being developed.

The artificial kidney, a greatly simplified version of the human kidney, performs the same functions of purifying the blood and regulating the body's chemistry through dialysis.

In this process, the patient's blood is circulated through a porous membrane immersed in a washing solution where waste products are filtered out, and returned to the bloodstream via a tube inserted in a blood vessel.

Although dialysis was first employed in animals in 1913, it was the advent of cellophane 30 years later that made patient treatment with the artificial kidney feasible.

The porous cellophane acts as a semi-permeable membrane to rid the body of toxic waste products.

The success 10 years ago of Institute-supported scientists at the University of Washington, Seattle, in developing permanently implanted plastic tubes (cannulas) in

an artery and vein, began a new era in hemodialysis. Patients could now be repeatedly connected to the artificial kidney.

Previously, connecting tubes had

(See *KIDNEY*, Page 8)

NIH
record

FEDERAL SECURITY AGENCY
Vol. II, No. 15 - 28 August 1950
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

CONGRESS ADDS TWO INSTITUTES TO NIH

**NCI REPRESENTED
AT PARIS CONGRESS**

**NIH WELCOMES
NEW LIBRARIAN**

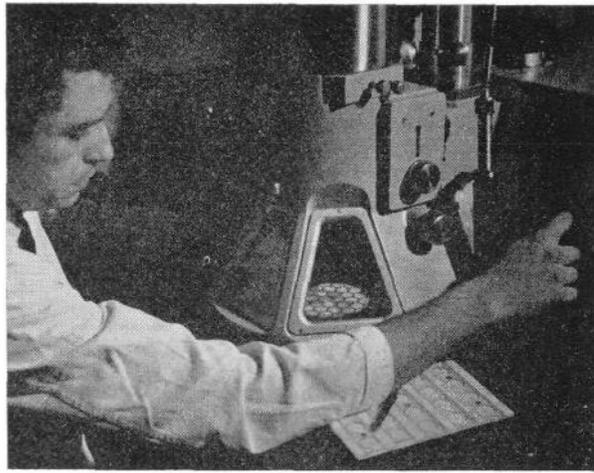
NIARMD AND NINDB

A National Institute on Arthritis
Rheumatism, and Metabolic Diseases

The NIH Record reports the authorization of "NIARMD," the National Institute of Arthritis, Rheumatism, and Metabolic Diseases. Shortly thereafter, "Rheumatism" was deleted from the Institute's name.



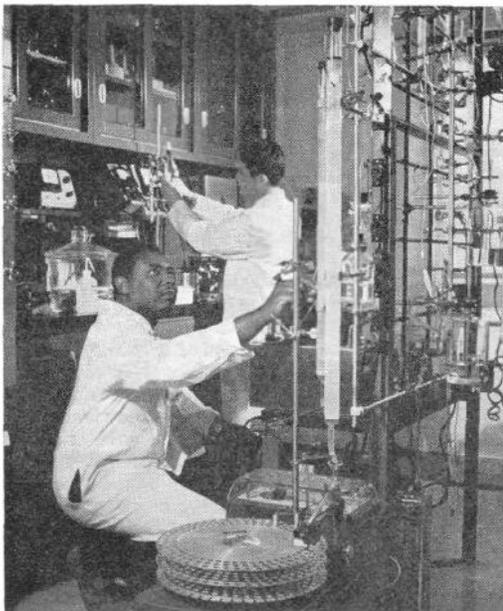
Young investigators learn to evaluate test patterns from the more experienced.



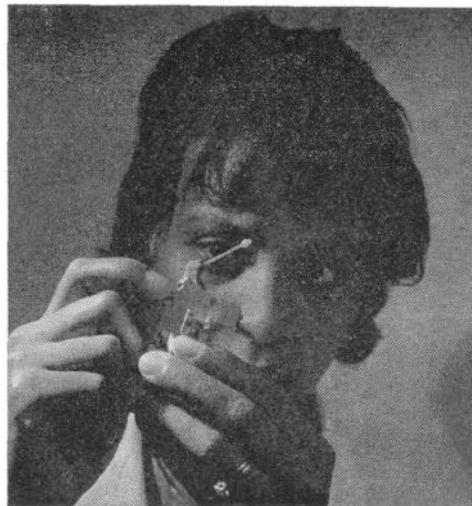
Membrane proteins involved in cell's interaction with its biochemical environment are purified and characterized by several methods, including electron microscopy.



Through the World Health Organization, scientist from Bombay observes computer simulation of biological processes.



Column for chromatography is set up on framework adaptable to various experiments. Proteins of possible importance in arthritis are separated as they flow down the column at different rates.



X-rays will probe the molecular structure of crystal being positioned here.



While standard artificial kidneys save lives, new ones are on the way through NIAMD research.

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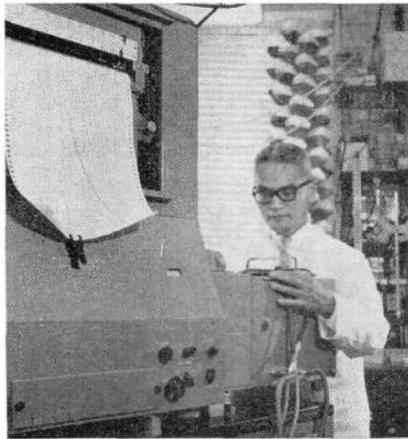
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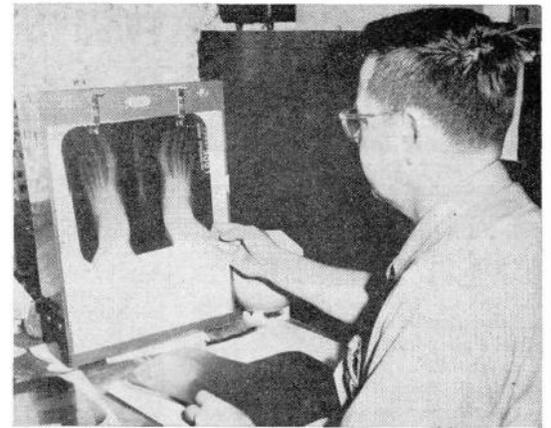
For the past 20 years, in
laboratories and clinics, and
from the rice paddies of the
deserts of Arizona, the National
and Metabolic Diseases has
better health. No one who
pishments during this rela
decades can doubt that rhe
fibrosis, diabetes, and other
Institute's purview will ex
history, some perhaps even

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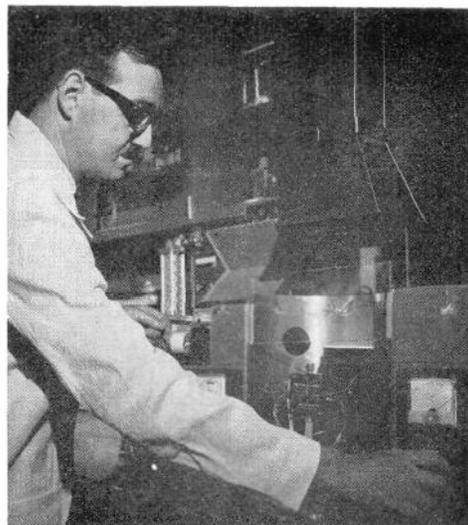
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Scientist charts hydrostatic pressures important in study of blood hemoglobin malformations of sickle-cell anemia.



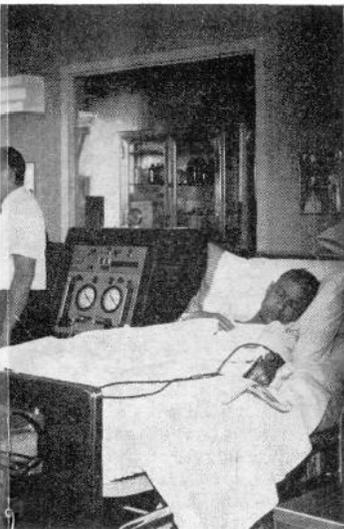
Clinical researcher studies X-rays for signs of bone deformity in arthritis.



Saliva abnormalities that may hold clues to cystic fibrosis are measured with atomic absorption spectrophotometer.



NIAMD-sponsored studies in the Philippines, where rice is a staple, and among growing infants in India, focus primarily on malnutrition disorders.

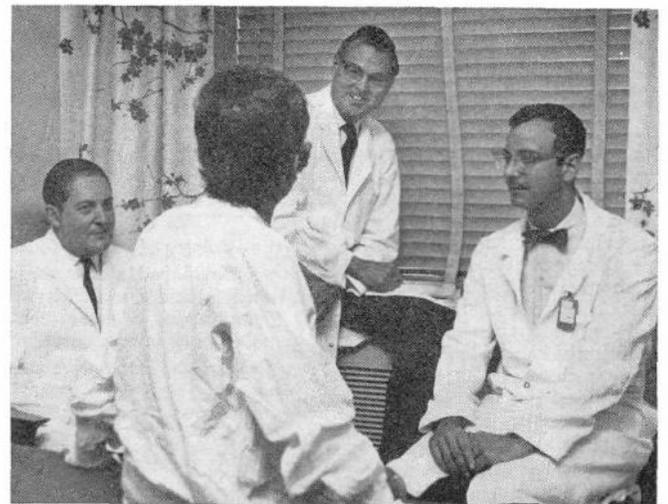


ives, simpler, less expensive models
and development.

more than one hundred
l in field studies ranging
e Philippines to the arid
onal Institute of Arthritis
advanced man's search for
has measured the accom-
tively brief period of 2
umatoid arthritis, cystic
major diseases within the
eventually be relegated to
n our own time.



Records are checked on surgical specimens in a pathology lab.



NIAMD physicians consult with patient during clinical rounds.

New Equipment Expands Unusual Research Role Of Metabolic Chamber

The Institute's Metabolic Chamber, long used in the study of obesity, energy expenditure, gaseous exchange, and other metabolic functions, has been given a new role.

Institute scientists are now employing the Chamber's facilities to study cystic fibrosis (CF), an inherited, grave metabolic disorder of children, and disorders such as Raynaud's phenomenon.

In the CF study, sweat samples obtained from subjects through temperature control in the Chamber may shed light on the basic metabolic disorder of exocrine secretion in the disease.

Salt Loss Dangerous

Due to this defect, patients are unable to conserve salt and the very young, especially in the summer, are in danger of developing acute dehydration.

Another experiment utilizing the Metabolic Chamber's temperature control facilities involved Raynaud's phenomenon, a circulatory disorder in which cold temperatures cause abnormal blood circulation, color changes and numbness in the fingers.

Results of the studies showed that intra-arterial injections of reserpine, a drug often used to control hypertension, brought relief to certain patients.

These experiments are made possible through the new equipment recently installed in the Chamber's outside laboratory.

An automated and highly sensitive metabolic weighing balance, for example, enables scientists to follow weight loss of sweating patients with a speed and precision not possible before.

ACHIEVEMENTS

(Continued from Page 5)

- Induced ovulation, and subsequent fertility, in previously sterile women by treating them with human gonadotropic hormones.
- Devised new diagnostic tests for cystic fibrosis, and identified a genetic cell marker in both the affected and carrier states.
- Pioneered in studies employing amniocentesis for the intra-uterine diagnosis of inborn errors of metabolism.
- Developed a pain-killing drug, phenazocine, effective as morphine but relatively non-addictive.
- Demonstrated the effectiveness of allopurinol in disrupting the production of uric acid in gouty individuals, which has made gout one of the most controllable of the arthritic disorders.
- Helped perfect kidney transplantation as a life-saving measure and performed more than half of the world's liver transplants to date.
- Implicated viruses, and/or a disorder of the immune system, in

Pima Indian Research Program Providing New Clues on Diabetes, Other Diseases

An Arizona Indian tribe whose ancestors eaked a living out of the desert long before the time of Christ is providing Institute investigators with clues to the causes of diabetes.

For the past few years the Pima Indians, living on the Gila River Reservation 30 miles south of Phoenix, have been the central figures in a growing research program because they have the highest prevalence of diabetes ever reported in a given population group.

The diabetes study is the offshoot of one of the largest population surveys of rheumatoid arthritis ever attempted in the U.S. It was conducted among two diametrically dissimilar Indian tribes.

The purpose of the survey was to determine what role, if any, climate and heredity play in rheumatoid arthritis.

Hopefully, some answers would be uncovered by comparing the prevalence of rheumatoid arthritis among the Blackfeet Indians, living in the cold, mountainous terrain of Montana, and among the Pimas, who live in a hot, dry climate.

Final tabulations, showing rheumatoid arthritis to be more common in the Pimas than in the Blackfeet, were surprising because it had long been thought that arthritic disorders were more severe in cold, damp climates.

Routine blood testing also revealed that the prevalence of diabetes among the Pimas is 15 times that of the rate of the U.S. population as a whole.

The investigators felt that determining why this population group has such a high frequency might help pin down the factor causing the disease. In February 1965 an NIAMD field unit was organized to make more sophisticated studies.

The unit was headquartered in Phoenix, with a special clinical facility set up on the Pima Reservation at Sacaton.

Other results have also revealed a prevalence of gall bladder disease six times higher than that found in a similar study of Caucasians in Framingham, Mass.

Clinical studies on these and other disorders are being extended into a new NIAMD 25-bed Clinical Research Unit which will occupy a complete floor of the soon-to-be opened Phoenix Indian Health Service Medical Center.

the etiology of rheumatoid arthritis.

- Developed a new generation of artificial kidneys which offer specific advantages over conventional models now in use.
- Isolated the active principle of vitamin D and demonstrated its ability to control vitamin D-resistant rickets.
- Discovered a new thyroid hormone, thyrocalcitonin, which acts to lower blood levels of calcium, and elucidated its mode of action.



To test hypothesis that child-bearing is associated with an increased risk of diabetes, NIAMD made a study of Pima women. No evidence was found of any relation between increasing parity and the age-specific prevalence of diabetes.

KIDNEY

(Continued from Page 5)

to be inserted surgically for hookup to the artificial kidney each time dialysis was to be undertaken, thus limiting the number of times this treatment could be used.

The promise of this life-saving treatment encouraged Congress to appropriate funds in 1965 to NIAMD for a centrally-directed program to develop better hardware and to solve problems of chronic, fatal, uremia resulting from irreversible kidney failure.

In the fall of that year, the Institute launched a new contract program, appointing a panel of outside consultants.

Kidney Research Advancing

Since then, there have been many significant research accomplishments. The same Seattle team which originated the cannulas developed a more compact, efficient, artificial kidney with the potential of lowering treatment costs and introduced new methods for multiple re-use of dialyzers.

More recently, a team of Dow Chemical Company scientists working under NIAMD contract support developed a new "capillary" artificial kidney, a unique, compact cylinder, the size of a quart milk bottle.

Another recent innovation was a disposable, presterilized dialyzer, called the "envelope kidney," which greatly simplifies home use of artificial kidneys—the primary economically feasible method of repeated dialysis treatments.

Developments such as these have greatly increased medicine's ability to cope with kidney failure problems.

Institute Support Spurs Major Advance Toward Eventual HGH Synthesis

Many children afflicted with pituitary dwarfism can look forward to a more normal life because of the activities of the National Pituitary Agency.

Created by NIAMD in 1963, the agency was founded to help children with hypopituitary dwarfism grow to a near normal height and to assist researchers in problems of growth through experimentation with human growth hormone (HGH).

The agency operates under an NIAMD contract awarded to the University of Maryland School of Medicine.

Human growth hormone is secreted by the pituitary gland which produces a number of vital hormones. Insufficient secretion of HGH results in hypopituitary dwarfism.

In 1956, HGH taken from human pituitary glands was found to stimulate growth in hypopituitary dwarfism.

Modern medicine was, for the first time, able to offer hope to an estimated 5,000-10,000 American children dwarfed as a result of pituitary growth hormone deficiency.

The big problem facing fundamental and clinical research is the scarcity of the hormone. At present the only HGH source is the pituitary gland of deceased persons.

Animal Extract Not Active in Man

Extracts of growth hormone from animal pituitary glands are not active in man. Research has shown that one human pituitary gland provides only enough hormone for about 5 day's treatment of a hypopituitary child.

Laboratory and clinical studies seek to determine HGH's metabolic effects and mechanism of action. Emphasis is on analysis of the detailed molecular structure of HGH in order to synthesize it.

Recently, identification of the chemical structure of this vital hormone was made by a University of California grantee who has received pituitary glands and hormones from the agency. His finding marks a major advance toward eventual HGH synthesis.

FERMENTATION

(Continued from Page 5)

Rogerson, a chemist who heads the Large Scale Unit of the Section of Vitamin Metabolism, and records and files the statistics.

Many different strains and mutants of non-pathogenic bacteria have proliferated under a variety of conditions in the original 100-gallon fermenter, a similar one added in 1962, and a 300-gallon fermenter added in 1968.

Dr. Douglass Appointed DRG Associate Director

Dr. Carl D. Douglass has assumed the position of associate director for Statistics, Analysis, and Research Evaluation in the Division of Research Grants.

Dr. Douglass, formerly associate director, Division of Research Resources, BEMT, will administer DRG's statistical programs.

He will also collaborate with PHS bureaus in developing programs that will provide integrated, Service-wide grant and award statistics.

Dr. Douglass received his B.S. degree from Hendrix College, Conway, Ark., and his M.S. and Ph.D. degrees in chemistry from the University of Oklahoma.

From 1951 to 1952, Dr. Douglass was a Fellow at the Oak Ridge Institute for Nuclear Studies.

He then joined the Department of Biochemistry, University of Arkansas.

Dr. Douglass entered Government service in 1959 as chief, Nutrition Research Branch, Food and Drug Administration.

In 1961, he came to NIH as nutrition program officer, NIAMD.

Dr. Douglass joined the National Library of Medicine in 1964 as chief of its Research and Training Division and later as chief, Facilities and Resources Division.



Dr. Douglass is a Fellow of the American Institute of Chemistry.

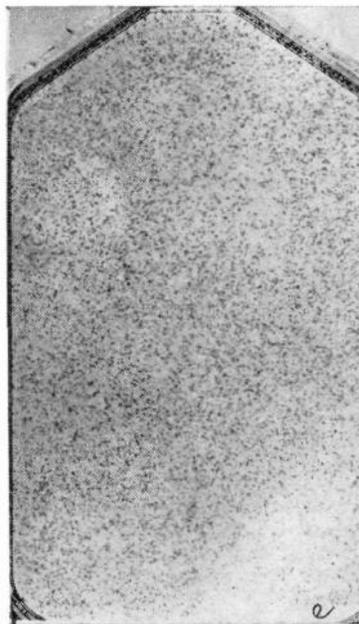
NLM Contracts Agency To Prepare Bibliography

The National Library of Medicine has signed a contract with Paul de Haen, Inc., to prepare a *Bibliography on Drug Interaction*.

The bibliography, composed of excerpts from papers published from Jan. 1, 1967 to Dec. 31, 1970, will include both animal and human studies.

It will also have a listing of citations of *in vitro* studies, editorials, review articles, and other papers pertinent to the subject.

NCI IMMUNITY STUDY WINS RESEARCH AWARD



In the cytolitic plaque-forming assay which the investigators devised to test for immunity, tumor cells are grown in a layer of culture medium on the bottom of a tissue culture flask (1). When immune spleen cells are added, a clear tumor cell-free zone, or "plaque" forms (r) indicating an immune reaction wherever the spleen cells react with and kill the tumor cells.

(Continued from Page 1)

Inhibition was due to the transfer of tumor specific immunity, the scientists used a cytolitic plaque-forming assay they adapted to test for immunity.

In the test, tumor cells are grown in a culture medium as a layer covering the bottom of a tissue culture flask; when immune spleen cells are added, a clear tumor cell-free zone or "plaque" forms wherever they react with and kill the tumor cells.

Reaction Specific

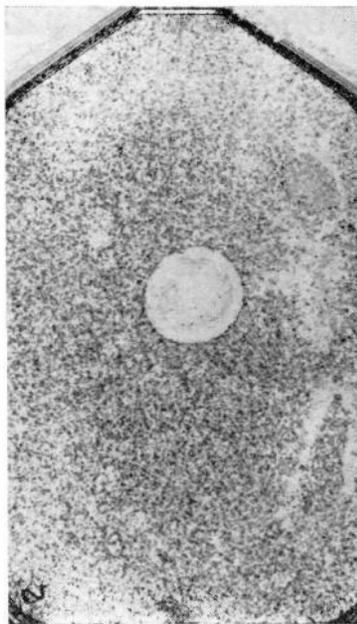
When the scientists added spleen cells incubated with immune RNA to the cultured tumor cells, plaques were formed. But, when RNA from animals not immunized to the tumor was used, no plaques were formed.

This indicated that the reaction was specific for tumor-immune RNA, not merely for RNA from another species of animal.

The investigators also cultivated spleen cells with RNA from guinea pigs immunized against another cancer of connective tissue (liposarcoma). When they added these cells to the assay, no significant immune reaction resulted.

This indicated that the immunity was directed toward the specific antigens (foreign substances which elicit immune responses) of the particular tumor used for immunization, not toward all cancer cells of connective tissue.

In further tests they were able to show that when the immune RNA was treated with RNAase, an enzyme which destroys RNA, this inactivated immune RNA did



not transfer immunity.

But, when the immune RNA was treated with enzymes which destroy DNA or protein, the RNA preparations were not inactivated. This proved that the activity of these preparations was in fact due to RNA rather than DNA or protein.

Also, spleen cells incubated with extracts rich in solubilized tumor specific transplantation antigens (the antigens that distinguished the fibrosarcoma from other tissues) produced no plaques, or indication of immunity when tested with the assay.

This, according to the scientists, indicates that the immunity was transferred to the mice by the immune RNA and not by contaminating tumor antigens that might have been present in the RNA preparations.

The mechanism by which immune-RNA mediates the transfer of immunity is as yet unknown. Attempts are being made to isolate an RNA-tumor antigen complex from the immune RNA preparations, the scientists said.

May Behave as Super-Antigen

They indicated that such an RNA-antigen complex might behave as a "super-antigen," a type of antigenic material with greatly increased activity.

The findings were presented at a recent meeting of the American Medical Association in Chicago.

Dr. Pilch is a senior investigator in NCI's Surgery Branch. Dr. Ramming is now a resident in general surgery at Duke University Medical Center.

Latest Participants in NIH Visiting Scientists Program Listed Here

9/1—Dr. Angelo Nicolin, Italy, Cancer Chemotherapy National Service Center. Sponsor: Dr. Abraham Goldin, NCI, Bldg. 37, Rm. 5E26.

9/2—Dr. Shoshana Levy, Israel, Laboratory of Nutrition and Endocrinology. Sponsor: Dr. Herbert A. Sober, NIAMD, Bldg. 3, Rm. B107.

9/8—Dr. Bernard Bandler, U.S.A., Division of Manpower Training Programs. NIMH, Barlow Bldg., Rm. 11A01.

9/8—Dr. Kuo-ping Huang, Taiwan, Laboratory of Biochemistry and Metabolism. Sponsor: Dr. Enrico Cabib, NIAMD, Bldg. 10, Rm. 9N11.

9/9—Dr. Jose A. Bermudez, Mexico, Reproduction Research Branch. Sponsor: Dr. Mortimer B. Lipsett, NICHD, Bldg. 10, Rm. 12N204.

9/9—Dr. Gaetano Salvatore, Italy, Clinical Endocrinology Branch. Sponsor: Dr. Jacob Robbins, NIAMD, Bldg. 10, Rm. 8N315.

9/11—Dr. Tomaoki Nagamachi, Japan, Laboratory of Chemistry. Sponsor: Dr. Bernhard Witkop, NIAMD, Bldg. 4, Rm. 330.

9/14—Dr. Chandan Prasad, India, Laboratory of Molecular Biology. Sponsor: Dr. Ernst Freese, NINDS, Bldg. 36, Rm. 3D02.

9/14—Dr. Teresa Sawicka, Poland, Section on Biochemistry. Sponsor: Dr. Victor Ginsburg, NIAMD, Bldg. 4, Rm. 327.

9/15—Dr. Eylard V. Van Hall, The Netherlands, Reproduction Research Branch. Sponsor: Dr. Griff T. Ross, NICHD, Bldg. 10, Rm. 10B09.

9/15—Dr. Leon C. Smith, U.S.A., Center for Studies of Child and Family Mental Health. Sponsor: Dr. Edwin J. Nichols, NIMH, Westwood Towers, Rm. 312.

'Big Brother' Volunteers Needed in Mont. County

The Montgomery County Big Brothers Council urgently need volunteers to expand its service to thousands of boys in the county without fathers.

Often a boy's lack of companionship with a responsible male adult can cause serious problems—he may perform poorly in school, experience difficulty with the law, or lack faith in people and the world he knows.

Big Brothers attempt to offer these boys, between age 8 and 17, opportunity for development through friendship on a one-boy, one-man basis. The time required is a few hours a week.

Professional social workers make and supervise the matches.

For further information, call 483-3536.

Research Activities, Progress in Organ Transplantation Told in DRR Pamphlet

For centuries men have dreamed of replacing diseased organs with new healthy ones. Today that dream is closer to reality, largely due to the studies conducted in 30 of the 80 general clinical research centers supported by the Division of Research Resources, BEMT.

Research Advances in Human Transplantation, a 24-page booklet published by the DRR, explains the progress in organ transplantation, and emphasizes the role of the general clinical research centers.

To date, 18 different tissues and organs have been transplanted in humans, each causing unique problems.

The most frequently transplanted organ is the kidney. More than 3,600 kidney transplants have been performed; it is a relatively simple operation.

In contrast to the simplicity of the kidney transplant is the liver transplant, a complex operation first performed in the early 1960's in the clinical research center at the University of Colorado.

Another transplant pioneered in a clinical research center is the thymus transplant. This gland, about the size of a silver dollar, is necessary for development of the body's immune systems, which help to ward off infection.

Danforth, Strauss Join NHLI Advisory Council

Dr. William H. Danforth and W. A. Strauss have been appointed to the National Advisory Heart and Lung Council, NHLI. Their terms of service will run from Oct. 1, 1970 through Sept. 30, 1974.

Dr. Danforth, vice chancellor for Medical Affairs, Washington University, has been on the faculty of that school since 1957.

Mr. Strauss is president and chairman of the Board of Northern Natural Gas Company, Omaha.



Members of the Central Sterile Supply Service, CC Pharmacy Department, recently received a \$3,200 Special Achievement Award for outstanding performance under adverse conditions. During renovation of their working stations, they maintained high quality production by being alert and overcoming environmental hazards. William H. Briner (r), PD acting chief, presented each with a citation and \$100 check. James L. Snowden (l), chief of CSS congratulated the group. Seven winners were not present.

FAES Seeks Members For Fall Expansion Drive

The Foundation for Advanced Education in the Sciences is presently conducting a membership campaign at NIH.

FAES serves NIH in an educational capacity. It conducts the Graduate Program on the reservation and the Predoctorate Johns Hopkins-FAES Cooperative Graduate Program in Biochemistry.

The Foundation also operates a bookstore and sponsors such services as the annual concert series and group health insurance programs for scientists unable to participate in the Federal programs.

New programs under consideration include advanced training for high school teachers, postgraduate education for practicing physicians, and a lecture bureau on scientific matters for the lay public.

The Foundation is seeking private financial support.

In addition, revised planning for the Foundation Center to be located adjacent to the NIH campus have been renewed under the direction of the Foundation's Executive Director.

Members may participate in the fall meetings and work in the Foundation's programs and committees. Membership privileges also include a 10 percent discount in the bookstore and priority in concert series tickets.

Basic membership fee is \$10; supporting membership is \$25 or more.

MR. MORSE

(Continued from Page 2)

son, Military Tribunal, and served at the Nuremberg trials of major Nazi war criminals.

He graduated from George Washington University Law School in 1951, and is a member of the Maryland bar; he was admitted to practice before the U.S. District Court for D.C. and the U.S. Circuit Court of Appeals.

During the 15 years he has been responsible for protection of the NIH facilities, he has initiated a number of innovations.

His greatest desire is to see the implementation of his "Concept for Total Protection." Articles by Mr. Morse on this concept will appear in forthcoming issues of *Hospital Economics* and *Industrial Security*.

He initiated the concept and advocated it at security and protection institutes and seminars. It integrates in a systems design all of the major functional elements for protection of people, property, and program based upon the needs of the particular organization.

At NIH the systems approach is already in its planning stage with a commitment to closed circuit television and remote monitoring of access to buildings.



Dr. J. Joseph Stevens, (l) assistant associate Regional Health Director, Region VIII, discusses the Division of Physician Manpower portable exhibit with Dr. Walter C. Bornemeier, AMA President, at the annual meeting of the Wyoming State Medical Society. The exhibit was lent to the Regional Office which is assuming greater responsibility in the implementation of BEMT programs.

DBS Develops Standards For Interstate Shipping Of Blood-Clotting Factor

The blood-clotting factor essential for the control of hemophilia is now commercially available through a simple technique that can be carried out in any blood bank or hospital with standard laboratory equipment.

The product, known as cryoprecipitated antihemophilic factor (human), was approved for commercial use early this month by Dr. Robert Q. Marston, NIH Director.

Federal standards ensuring safety, purity, and potency were established by the Division of Biologics Standards. The first license was issued to Stanford University Hospital Blood Bank, Palo Alto, Calif.

Developed in 1965

The cryoprecipitation technique of obtaining the antihemophilic factor (AHF) was developed in 1965 by Dr. Judith Pool of Stanford University Medical Center. Since that time, the technique has been used by blood banks and hospitals for AHF production within state lines.

The data accumulated served as the basis for development of Federal regulations by DBS for production of cryoprecipitated AHF, permitting its licensing for shipment in interstate commerce if the need arises.

Dr. Pool's research has been supported in part by the National Heart and Lung Institute.

Her technique involves separating the plasma from a single unit of whole blood by centrifugation within 4 hours after collection, freezing it within 2 hours after separation from the cells, then centrifuging the precipitate formed by the gradual thawing of the plasma.

The remaining plasma and red cells may be used separately or recombined for transfusion.

NLM Exhibit Chronicles Environmental Pollution

"The Darkening Day," a chronicle of the health aspects of environmental pollution, is the title of a new exhibit in the National Library of Medicine lobby.

Photographs illustrate air and water pollution by solid wastes and chemicals throughout the United States. They are bound together by the words of noted writers—from Hippocrates to the scientists of today—postulating the dangers of environmental pollution to health.

Illustrations Used

The exhibit also features volumes from the Library's historical collection which illustrate the concern of scientists and scholars over the centuries with the life-threatening effects of man's despoilation of his world.

A model of an automobile exhaust manifold reactor was especially made for the Library. This reactor was designed to meet more stringent gaseous exhaust emission standards recently proposed by the Federal Government.

A 3-minute, 8 mm film loop in a self-contained projector offers recent commentary on environmental pollution.

The exhibit, designed by Daniel Carangi, NLM Graphics Director, will be on display until Dec. 18. The Library is open to the public from 8:30 a.m. to 9 p.m., Monday through Friday, and 8:30 a.m. to 5 p.m., Saturday.



A garbage dump on San Francisco Bay—one of a series of photographs featured in the NLM exhibit depicting environmental pollution.

Updated Pamphlet Gives New L-DOPA Therapy

New information on L-DOPA therapy for Parkinson's disease, including effects and precautions, is available in a pamphlet, *Parkinson's Disease, Hope through Research*, issued by the National Institute of Neurological Diseases and Stroke.

The updated pamphlet may be obtained by postal card request from the NINDS Information Office, Bldg. 36, Rm. 4D04, Bethesda, Md. 20014.

DR. COTLOVE

(Continued from Page 1)

course in which a certain piece of research should go and also the "What if's?" the chances for things going wrong with machine or man and what should be done for guarding against them.

Dr. Cotlove was born in New York City in 1920. He went to City College of New York for his undergraduate work and pre-med training. This was against the advice of CCNY officials themselves, who warned prospective pre-meds that its graduates were rarely being accepted at that time by medical schools.

He made Phi Beta Kappa, graduated *magna cum laude*, and was promptly accepted by New York University College of Medicine. He graduated No. 1 in his class, and was president of Alpha Omega Alpha, an honor society.

Joins NHI in 1950

After his residency in New York City and a stint in the U.S. Army Medical Corps, he studied electrolyte metabolism at Harvard and then, in 1950, joined the National Heart Institute, where he became senior investigator in the Laboratory of Kidney and Electrolyte Metabolism.

His colleagues still remember his studies on the heterogeneity of inulin. He deduced that one could label inulin with ¹⁴C for the measurement of kidney function. Use of this material is still standard today.

Later, he was doing chloride determinations in rats, and through collaboration with Dr. Robert L. Bowman, produced an accurate chloride titrator that could do the determinations in seconds. Until then, physicians and technologists in hospitals had toiled over these. Today, almost every hospital, everywhere uses the Cotlove chloride titrator.

Serves Under Williams

This triumph probably shaped the rest of Dr. Cotlove's life. After refresher training, he became chief of the Clinical Chemistry Service under Dr. George Z. Williams, then chief of the Clinical Pathology Department.

This came at a time when a revolution in therapy demanded a matching revolution in diagnosis. Already, clinical laboratories were doubling their space and calling for more technologists. Paradoxically, clinicians began to get so many lab reports that it was oftentimes difficult to correlate them.

Dr. Williams and members of his team foresaw an automated, computerized laboratory. In the chemistry lab, for example, mixing of samples with reagents and the reading of them would all be done automatically, and in addition the computer would make corrections and calculations, store the information, and print it out in logical

Samplings of 'Caries-Inducing' Microbes Should Include Decayed, Healthy Spots

Surveys for prevalence of "caries-inducing" streptococci should include microbial samples from decayed spots as well as from other tooth surfaces.



Members re-elected the entire R&W board. L to R, seated: Donald F. Cyphers, NIAMD, treasurer; Joan Genau, NIDR, secretary, and Dr. John T. Kalberer, NCI, first vice-president. Standing: Benjamin Fulton, NICHD, president, and John Land, NLM, second vice-president.

format.

Dr. Williams' crisp authority was vital to the effort, and so was Dr. Cotlove's tirelessness.

In 1966 Dr. Cotlove became chief of the newly organized Research, Development and Laboratory Automation Section of the department.

With the assistance of Dr. Mervyn Stein and Dr. Clement McDonald and the cooperation of the service chiefs, Dr. George Brecher, Dr. Donald Young, Dr. Thomas Dutcher, and Dr. Harry Marsh, and a dedicated technical staff, the task was done.

Is Model for Others

Not every aspect of the dream is a reality. But the automated laboratory system at the Clinical Center is the most advanced and comprehensive of any in the world. It is reliable in its continuous, routine service for patients. It is a model for other automated systems and scientists from every inhabited continent come to study it each year.

Dr. Cotlove became acting chief of the Department on the retirement of Dr. Williams last year.

Expressions of sympathy may be made in the form of contributions to the Cotlove Memorial Fund, Academic Clinical Laboratory Physicians and Scientists, c/o Dr. Rex B. Conn, 524 Dispensary Bldg., Johns Hopkins Hospital, Baltimore, Md. 21205.

Dr. Gordon K. Moe Will Serve On NHLI Nat'l Advisory Council

Dr. Gordon K. Moe, Director of Research of the Masonic Medical Research Laboratory, Utica, N.Y., has been appointed to serve on the National Advisory Heart and Lung Council, NHLI.

A recent study by scientists at the National Institute of Dental Research indicates that results could be underestimated if sampling is restricted.

Since 1960, when NIDR scientists discovered that certain strains of streptococci from human carious lesions can cause tooth decay in experimental animals, researchers have been trying to determine the exact role of these "cariogenic" streptococci.

To standardize survey methods, plaque samples are usually taken from one surface of a designated tooth, without regard to its condition (sound, carious, or restored).

In general, such surveys have shown some correlation between the prevalence of tooth decay and the levels of "cariogenic" streptococci recovered from the plaque samples, but the correlations usually have been lower than expected.

Comparisons Made

To ascertain whether sampling only one selected tooth surface could be influencing survey results, NIDR investigators compared plaque taken from carious lesions with plaque taken from an intact surface (mesial) of a maxillary first molar from the same children's mouths.

They found that the condition of the site markedly influenced the proportion of "decay-causing" streptococci in the plaque sample.

Caries inducing streptococci were recovered from all 26 lesions sampled. In 12 of the 26 decayed spots, the organisms made up more than 50 percent of the total streptococcal count.

By contrast, only six of the 26 samples from a sound surface on a first molar of the same children contained such organisms; and when the organisms were present on the healthy surface, the streptococcal counts were low.

Prevalence Underestimated

The investigators pointed out that the prevalence of "caries-inducing" streptococci may be grossly underestimated when sampling is restricted to selected tooth surfaces, particularly when the children being studied have considerable untreated decay.

Finding these streptococci in all the lesions sampled provides additional evidence that they may contribute to human tooth decay.

Drs. Norman W. Littleton and Samuel Kakehashi, NIDR, and Dr. Robert J. Fitzgerald, formerly with NIDR and now at the Veterans Administration Hospital in Miami, Fla., described their study in the *Archives of Oral Biology*.

NIMH Researchers Win Prize for Best Paper On Psychopharmacology

A National Institute of Mental Health research team, part of the Division of Clinical and Behavioral Research, was awarded a prize for the paper judged "best" by the American Psychological Association's Division of Psychopharmacology.

The \$1000 award was presented at the Association's 78th annual convention in Miami Beach early this month.

The team was composed of Dr. William E. Bunney, Jr., chief of the Section on Psychiatry in the Laboratory of Clinical Science of the Division, and his associates in the Section, Drs. H. Keith H. Brodie, Dennis L. Murphy, and Frederick K. Goodwin.

Their paper was entitled "Psychopharmacological Differentiation Between Two Subgroups of Depressed Patients."

The study upon which this paper is based carefully reviews the response of groups of depressed patients at the Clinical Center to lithium, L-DOPA, and tricyclic antidepressants.

Bipolar Patients Improve

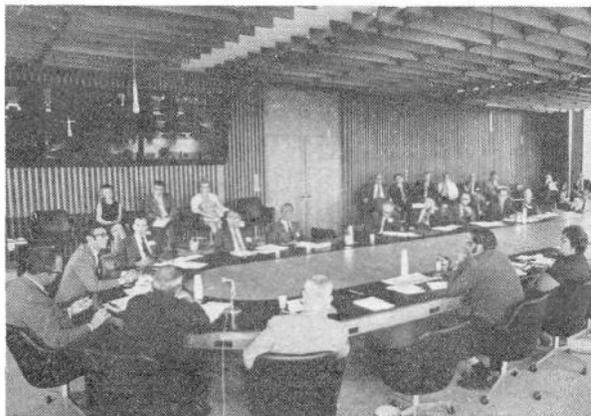
Bipolar patients (those who cycle between periods of mania and depression) showed consistent improvement under lithium treatment, while unipolar patients (depressed, but with no history of manic episodes) responded less uniformly.

Conversely, the majority of unipolar patients responded to tricyclics while few bipolar patients improved.

L-DOPA proved not to be an effective antidepressant, but pro-

College Group Committee Meets

With Grants Administrators Here



National officers and members of the external relations committee (l), business officers section, Association of American Medical Colleges, hold day-long discussions of common problems with grants administration staff of NIH. The meeting was co-chaired by Donald Spencer, assistant director (Grants and Contracts), ODA, and Thomas A. Fitzgerald, assistant controller, New York University School of Medicine. Dr. John F. Sherman, Deputy Director, NIH, (r) leads discussion at closing session, on Sept. 11 in Bldg. 31. Others taking part include (from left): Dr. Robert P. Akers, OD; Hugh E. Hilliard, Emory University School of Medicine; James Hickey and Mr. Spencer, ODA; Mr. Fitzgerald and Dr. Sherman. Dr. Ronald Lamont-Havers, Associate Director, NIH, opened the meeting.

Bellanti, Winick Honored for Pediatric Research

Dr. Joseph A. Bellanti, associate professor of Pediatrics and Microbiology, Georgetown University School of Medicine, and Dr. Myron Winick, associate professor of Pediatrics, Cornell University Medical Center, both grantees of the National Institute of Child Health and Human Development, have been named winners of the 1970 Amer-

ican Academy of Pediatrics' E. Meade Johnson Awards.

The awards, given for outstanding research, will be presented at the Academy's annual meeting next month in San Francisco. Each award consists of \$3,000, a scroll, and a certificate.

Dr. Bellanti and his co-workers identified and characterized the antiviral principle of respiratory secretions as a secretory IgA globulin.

They demonstrated that the presence of this globulin antibody correlates more effectively with resistance against infection than does circulating antibody.

As a result of these studies, inactivated vaccines such as measles have been shown to be less effective in stimulating local antibody than attenuated vaccines.

Dr. Winick's contribution is in the field of cellular growth, especially his documentation of the adverse effect of malnutrition on cellular growth of the human brain.

duced hypomanic episodes in bipolar and not in unipolar patients.

As Dr. Bunney points out, "This study not only adds to the evidence that unipolar depression and bipolar depression may be genetically distinct problems, but—when confirmed by other investigators—it may give us a better basis for evaluating the efficacy of antidepressant medications."

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Dr. Winick's contribution is in the field of cellular growth, especially his documentation of the adverse effect of malnutrition on cellular growth of the human brain.

Cell Growth Inhibited

Dr. Winick utilized data gathered from studies on rats which showed that caloric restrictions produced malnutrition which resulted in the inhibition of cellular division.

His studies indicated that in the human brain, cell division ceases at about 6 to 8 months of age. Dr. Winick's research on both deceased well nourished children and those who died of severe malnutrition, indicated that severe malnutrition retards cell division in human brains.

The biological evidence of the impact of malnutrition on the developing nervous system obtained by Dr. Winick and his associates is considered an outstanding achievement with great social implications.

Directors of 7 Trauma Centers to Participate In '70 Clinical Congress

Directors of seven trauma research units supported by the National Institute of General Medical Sciences will participate in the 1970 Clinical Congress to be held Oct. 12-16 in Chicago.

The Congress is sponsored annually by the American College of Surgeons.

The directors will take part in sessions dealing with various aspects of the physiologic response to injury.

Panel Topics Listed

These will include panel discussions on the total management of burn patients, engineering in surgery, respiratory monitoring, management of stress ulcer in traumatized patients, cardiovascular, visceral, endocrine, and metabolic responses to injury, and wound healing and infection.

Attending will be Drs. Jonathan E. Rhoads, University of Pennsylvania; John M. Kinney, Columbia Presbyterian Medical Center, New York, and G. Thomas Shires, University of Texas Southwestern Medical School, Dallas.

Also, Drs. William Altemeir, University of Cincinnati; Samuel R. Powers, Albany Medical Center, N.Y.; Richard H. Egdahl, Boston University Medical Center, and J. Englebert Dunphy, University of California Medical Center, San Francisco.

The Institute's trauma program attempts to reduce the enormous toll of death and disability from trauma—the medical term for physical injury.

Trauma is now the leading single cause of death among all persons aged one to 37 in the United States and the fourth ranking cause of death for all ages.



Dr. Jaroslav Nemeč (c), senior reference librarian, National Library of Medicine, receives the first Regents' Award for Scholarship or Technical Achievement. He was given a citation and cash award by Alfred Zipf (r), Chairman, NLM Board of Regents. Dr. Nemeč was cited for "broad and deep knowledge of the field of medicolegal relations, its history, and its international literature." Dr. Martin M. Cummings, NLM Director, attended the ceremony.