

the NIH Record

U. S. DEPARTMENT OF
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NATIONAL INSTITUTES OF HEALTH

Antibiotics May Increase Adverse Side Reactions To Some Cancer Drugs

Antibiotics, sometimes given to cancer patients to reduce adverse reactions to cancer drug treatment, may in some cases increase the toxic effects, National Cancer Institute scientists announced yesterday (April 14).

Earlier experiments have shown that germfree animals tolerate larger doses of cancer drugs than conventional animals. As a result, antibiotics are sometimes administered to cancer patients to simulate a germfree state and allow administration of larger doses of cancer drugs necessary to treat the disease effectively.

In a report to the 53rd annual meeting of the Federation of American Societies for Experimental Biology in Atlantic City, Drs. Howard W. Bruckner and David P. Rall described experiments in which the antibiotic, neomycin sulfate, increased the toxicity of at least one cancer drug in normal mice.

Twenty-eight of 31 mice receiving neomycin plus the cancer drug, methotrexate, died. Only 12 of 31 that received methotrexate alone,

(See *CANCER DRUGS*, Page 8)

Dr. Glen Kohls, NIAID, Receives DHEW Medal

Dr. Glen M. Kohls of the National Institute of Allergy and Infectious Diseases, Rocky Mountain Laboratory, was recently awarded the DHEW Meritorious Service Medal in recognition of his exceptional achievements in the field of entomology. Dr. Kohls is with the Medical Entomology and Acarology Section.

He is known for his work on ticks—their taxonomy, biology, and relationship to diseases of man—especially Q fever. Through his research, Dr. Kohls has expanded the nucleus of a tick collection, started by the late Dr. R. A. Cooley, into one of the largest and most valuable reference collections in the world.

A USPHS Commissioned Corps Officer, Dr. Kohls has been at the Rocky Mountain Laboratory for

(See *DR. KOHLS*, Page 8)

DHEW Secretary Robert Finch Honors 7 NIH Scientists at Awards Ceremony



Dr. Anfinsen



Dr. Bryan



Dr. Kotin



Dr. Parkman



Dr. Law



Dr. Meyer



Dr. Seegmiller

Seven NIH scientists were cited at the DHEW Annual Honors Awards ceremony last Friday (April 11) in the Departmental auditorium.

DHEW Secy. Robert H. Finch presented the Distinguished Service Award to four civil service employees from NIH—Drs. Christian B. Anfinsen, William R. Bryan, Paul Kotin, and Paul D. Parkman—and Distinguished Service Medals to three NIH Commissioned Officers—Drs. Lloyd W. Law, Harry M. Meyer, Jr., and J. Edwin Seegmiller.

Dr. Anfinsen, chief of the Laboratory of Chemical Biology, National Institute of Arthritis and Metabolic Diseases, was cited for his "distinguished contributions on protein biosynthesis, representing the first systematic approach for cracking the code through which protein chains coil themselves to enable their specialized structures to function."

Pioneers Virus Research

Dr. Bryan, scientific coordinator in Viral Oncology, National Cancer Institute, was recognized for "distinguished service for his pioneering and continuing contributions to our knowledge of viral causation of cancer and his leadership in international efforts aimed at prevention of cancer."

Dr. Kotin, who is Director of the National Institute of Environmental Health Sciences, was honored for "outstanding and creative leadership in planning, establishing,

and directing the fundamental research and training programs of the NIEHS."

Dr. Parkman, head of the section on General Virology in the Laboratory of Viral Immunology, Division of Biologics Standards, was cited "for developing the first effective experimental German measles vaccine and for developing a technique for the rapid, accu-

(See *AWARDS*, Page 8)

History of Med. Soc. Holds A Special Meeting Tonight

A special meeting of the Washington Society for the History of Medicine will be held this evening (Tuesday) at 8 p.m. in the Billings Auditorium, National Library of Medicine. An election of officers for 1969-70 will take place during the open meeting.

Dr. W. Proctor Harvey, professor of Medicine, Georgetown University Medical School, will speak on "Methods of Teaching Medicine in 1969 with Particular Reference to Cardiology."

Dr. Harvey is president of the American Heart Association.

NHI Study May Explain Varying Drug Responses; Paper Given at FASEB

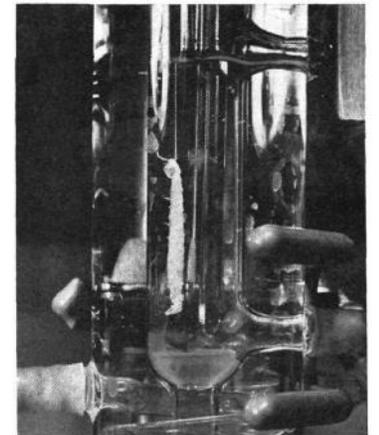
Findings that help explain why a drug may produce a profound response in one animal species but in another species produce little or no response—or an altogether different kind of response—were reported yesterday by scientists of the National Heart Institute.

The findings also provide further insights into the drug responses of old versus young members of the same species.

These variations were reported to the 53rd annual meeting of the Federation of American Societies for Experimental Biology in Atlantic City.

This evidence was gained from comparative studies of beta receptor activity in isolated aortic strips by Drs. Jerome H. Fleisch and Harriet M. Maling of the NHI Laboratory of Chemical Pharmacology, and by Dr. Bernard B. Brodie, who heads the laboratory.

The sympathetic nervous system regulates heart and blood vessel performance through the acti-



Relaxation of a contracted aortic strip reduces tension on the connected string. The decrease in tension is recorded as a descending curve on a polygraph—indicating presence of beta adrenergic receptor sites.

vation of two types of sympathetic (adrenergic) receptors.

Stimulation of *alpha* receptors causes blood-vessel constriction; stimulation of *beta* receptors causes blood-vessel dilation and increased

(See *DRUG RESPONSES*, Page 8)

the NIH Record

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May Seminar Will Stress College Campus Changes

A Science and Public Policy Seminar will be held in the latter part of May at Belmont, the Smithsonian's Conference Center near Elkridge, Md.

The conference, which starts Sunday afternoon (May 25) and terminates Wednesday afternoon (May 28) is for members of the NIH extramural professional staff.

Views Exchanged

Participants exchange views with discussion leaders. These have included spokesmen from the Office of Science and Technology, Bureau of the Budget, Congress, and universities and medical schools.

The forthcoming seminar will stress the changes occurring in today's society with emphasis on what is happening on college and university campuses.

What significance these changes have in regard to the relationship of NIH with grantee institutions will be fully explored.

The Committee on Staff Training-Extramural Programs, sponsor of the seminar, selects the participants who are nominated by I/D and Bureau Directors.

Choriocarcinoma Studies Discussed by CC Nurses At Second Conference

Findings of an NIH clinical research team studying choriocarcinoma in male patients were discussed recently at the second Clinical Nursing Conference of the year in the Clinical Center.

Choriocarcinoma is a highly malignant and invasive tumor of the genital region that spreads relatively early in the course of the disease.

Nurses from the Cancer Nursing Service were joined in the conference by Dr. Griff T. Ross, assistant chief of the Endocrinology



Speakers at the recent Nursing Clinical Conference were (l to r): Mildred Claassen, Elizabeth Hayes and Alice Parson, clinical nurses, and Dr. Griff T. Ross, NCI.

Branch, National Cancer Institute. He reviewed current research on male choriocarcinoma.

Mildred Claassen, clinical nurse, discussed importance of a patient's case history. This knowledge assists the nurse in providing understanding when attending the patient's physical needs and gives her a better grasp of the individual's behavior in the hospital environment.

Less Than One Percent

Testicular tumors comprise less than one percent of all malignant tumors, Alice Parson, clinical nurse, pointed out. She said those tumors which react to radioactive treatment have the best outlook. The prognosis remains good even if the tumor has started to spread.

Elizabeth Hayes, clinical nurse, said nursing care during the period of intensive diagnosis includes explaining to the patient why certain tests are needed, frequent surveillance of external puncture sites for bleeding, alertness to the possibility of internal bleeding, and checking the patient's vital signs often.

Miss Hayes also said that nurses engaged in cancer chemotherapy research must provide skillful and intensive patient care and be constantly alert for drug-produced side effects.

She pointed out the importance of a favorable emotional climate for the patient during treatment as a determinant of whether the patient will continue follow-up treatment after discharge.

NIH Television, Radio Program Schedule

Television

NIH REPORTS

WRC, Channel 4
Sundays—3:55 p.m.

April 20 and 27

Dr. Alfred M. Sadler, Jr.
and Blair L. Sadler, NIH
Subject: Medical and Legal
Aspects of Organ Transplants

Radio

DISCUSSION: NIH

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

April 18

Dr. Herbert Swerdlow,
chief, Dental Services
Branch, NIDR
Subject: Dental Services in
NIDR Research

April 25

Dr. Harold Baer,
chief, Section on Allergic
Products, DBS
Subject: Studies on Poison
Ivy Sensitization

Both interviews take place during intermission, Library of Congress Chamber Music Series.

Secretaries Invited to Meeting

All secretaries are invited to attend the next meeting of the Capital Chapter of the National Secretaries Association on April 29.

The meeting will be at 7:45 p.m. in the Perpetual Building and Loan Association, Wisconsin and Montgomery Avenues in Bethesda.

For further information call Mrs. Judy Jamieson, telephone 530-4882.

'Operation Cleanup' 1969 Successfully Completed, 2,773 Items Collected

According to Donald R. Watson, chief, Supply Management Branch, NIH's "Operation Cleanup" 1969 has been successfully completed.

Scientific, laboratory, and office equipment—2,773 items—valued at \$535,925, was collected during the campaign.

Items Transferred

The surplus items were transferred to the Property Utilization Warehouse for reissue to NIH and other Government agencies.

"Walk-thru" teams made up of I/D and SMB representatives canvassed buildings occupied by NIH employees and identified surplus items.



Surplus scientific, laboratory, and office equipment in SMB's warehouse is surveyed by William Morse, chief, Property Management Section (l), Lucy E. Barnes, head, Property Utilization Unit, and Donald R. Watson.

Dr. Gordon Seger Ends 29-Year PHS Career, Retires From NIGMS

Dr. Gordon H. Seger, associate director of the National Institute of General Medical Sciences since its organization in 1962, retired recently, culminating a 29-year career in the Public Health Service.

The last 23 years of Dr. Seger's Government service were with NIH.

Northern Michigan University in 1964 awarded Dr. Seger its Distinguished Alumni Award for "significant professional achievement, outstanding citizenship, and unselfish support of worthy endeavors."

In his post at NIGMS, he played a major role in the Institute's development. His responsibilities included liaison with the Nation's scientific community and with numerous advisory groups.

Dr. Seger's assistance to the Institute's training committees in preparing in-depth reports on the status of research in their particular fields resulted in important contributions to the scientific literature.

The reports were started under his guidance several years ago as informal, "inhouse" documents to help keep the Institute abreast of areas of ferment in the basic biomedical sciences.

Discerning a greater value in the reports, Dr. Seger subsequently set

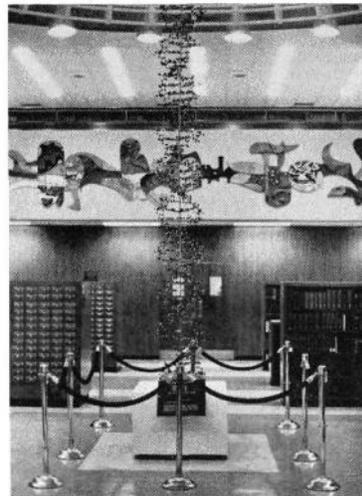


Dr. Seger was commended by the Advisory Council of NIGMS for his part in their "joint venture to advance the scientific programs of the Institute."

up procedures for distributing them as a continuing series to hundreds of interested research scientists, administrators, and educators throughout the country.

The Institute's Council paused during its March review of grant applications and program reports to pay tribute to Dr. Seger. By way of resolution, the Council expressed "great pleasure and honor" for its association with Dr. Seger.

NLM Exhibit on 'Genetic Code and How It Works' Open Through June 27



This double stranded helix DNA model was made in Cambridge, England, especially for the National Library of Medicine. The idealized piece of DNA leads to formation of messenger RNA and the specific amino acid sequence in a protein.



Discussing the Nobel Gold Medal Award and Certificate on display in the NLM exhibit on the genetic code are (l to r): Prof. Sune Bergstrom, of the Karolinska Institute and Medical School, Stockholm, and chairman of the Nobel Committee for Medicine; Nobel Laureate Dr. Marshall Nirenberg, National Heart Institute, and Dr. Robert Q. Marston, Director of NIH.

Donald C. Parks, BEMT, Speaks On Education Aid at Seminar

Donald C. Parks, Bureau of Health Professions Education and Manpower Training, recently spoke on "Financial Assistance for Education," at the Prince George's General Hospital Careers Seminar.

Mr. Parks is executive officer, Division of Health Manpower Educational Services, BEMT.

High school principals and vocational counselors attended the seminar, which was one of the events held to observe the 25th anniversary of the hospital.

Dr. Seger began his career with PHS in 1940 as a health education specialist with the States Relations Division, Washington, D.C.

Previously he had been health education director for the public schools in Flint, Mich., and executive secretary there for the Genesee County Tuberculosis Association.

Initiates Merit System

In 1941 he became chief of State Personnel Administration for the Bureau of State Services, a post in which he initiated the development of personnel merit systems for both state and local health departments.

Dr. Seger joined NIH in 1946 as project review officer for the Division of Research Grants. From 1951 to 1955, he was executive officer for the National Cancer Institute, and from 1955 to 1961 he headed the Extramural Programs Branch for the then National Institute of Neurological Diseases and Blindness.

In 1961, Dr. Seger was chief of the Special Programs Review

NINDS Booklet Reports '68 Research Progress In Neurological Disorders

Findings on a broad spectrum of neurological disorders are summarized in a new publication, *NINDS Research Profiles, 1968*, produced by the National Institute of Neurological Diseases and Stroke.

Based on the annual report of research programs and progress prepared for Congress, the publication highlights recent advances in the neurological and sensory fields.

The pamphlet reflects the increased emphasis placed on elucidating the neurological complications which can occur during the perinatal period.

Reflects Emphasis

It also reports continued research emphasis on the neurological disorders of vision, hearing, speech, and language; the neurological diseases including multiple sclerosis, muscular dystrophy, epilepsy, cerebral palsy, and parkinsonism, and neurological damage resulting from head injuries.

This pamphlet, the most recent in the Institute's Research Profile series, is available free of cost from the NINDS Information Office.

Branch, DRG, and the following year joined NIGMS.

Dr. Seger received his B.S. degree from Northern Michigan College in 1934, his M.S. (1938) and Ph.D. (1946) degrees from the University of Michigan.

During World War II he served 3 years with the U.S. Navy.

AWARDS

(Continued from Page 1)

rate diagnosis of German measles and measurement of rubella immunity."

Dr. Law, head of the Carcinogenesis Section, Laboratory of Biology, NCI, received the medal "for his original research in experimental leukemia and for significant contributions in the chemotherapy of leukemia, virus oncogenicity, and cancer induction and immune mechanisms with emphasis on the role of the thymus."

Dr. Meyer, who is chief of the Laboratory of Viral Immunology, DBS, was honored "for demonstrating the efficacy and safety of an experimental attenuated rubella virus vaccine as well as a technique for diagnosing German measles and for measuring rubella immunity."

Dr. Seegmiller, chief of NIAMD's Section on Human Biochemical Genetics, was recognized for his "outstanding contributions to the understanding of purine metabolism, gout, Lesch-Nyhan disease, and other related hereditary metabolic disorders."

Annual Savings Bond Drive To Begin at NIH April 28

Proof that Spring has arrived at NIH: the foliage is turning green and the annual Savings Bond Drive is scheduled to begin April 28.

Chairman for this year's campaign is Dr. Dorland J. Davis, Director of the NIAID.

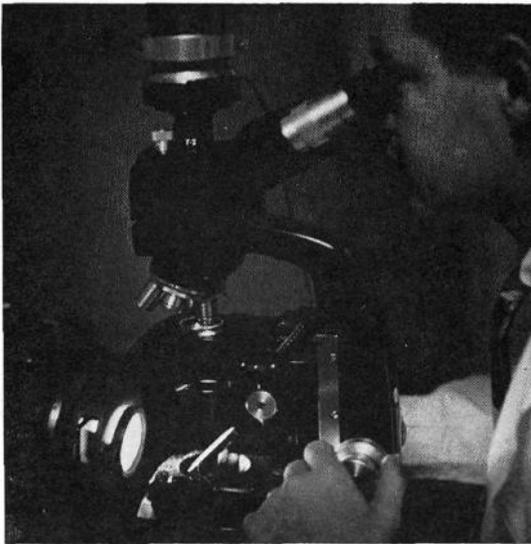
Currently only 40 percent of NIH'ers now buy bonds through the payroll savings plan.

the DIVISION of BIOLOGICS

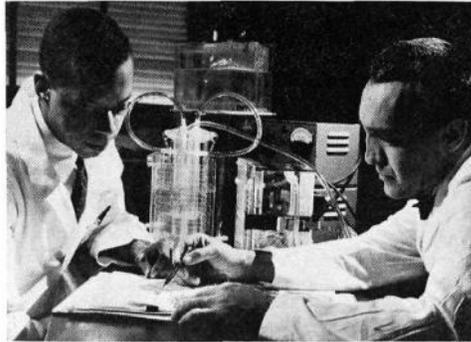
By Faye Peterson

Photos by Roy Perry

The ultimate aim of the DBS is to the improvement of biologics now ways of producing and testing these development of new immunizing agents that, so far, have baffled science.



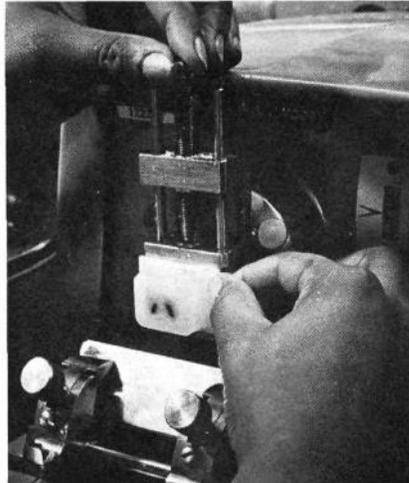
Fluorescent microscopy is valuable in detecting and identifying extraneous virus particles in cell cultures used in vaccine production.



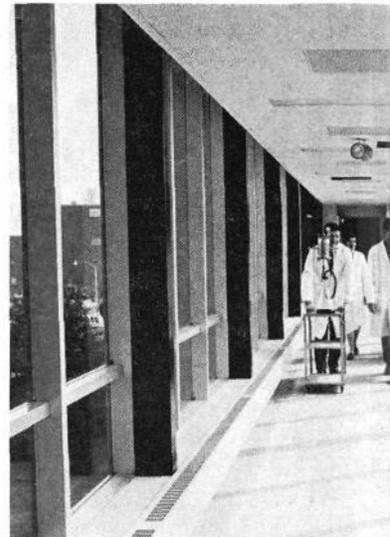
Physical standards for biological products are developed for uniform potency in commercial production. Electrophoretic fractionation identifies active components of some complex biologics.



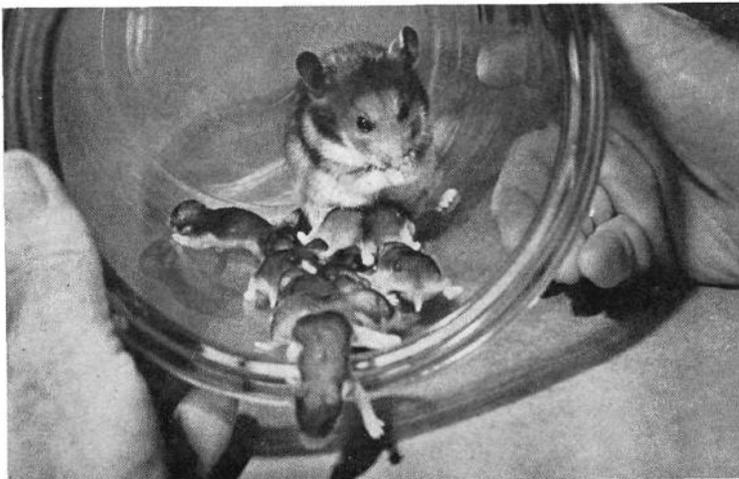
Intense research by DBS scientists strengthens control procedures for processing and storage of blood and its derivatives.



Histologic evaluation of tumor cells is one method used to detect oncogenic viruses.



A "freeway" connects the two DBS buildings housing more than 100 physicians, biochemists, immunologists, carries out biologics control.



The newborn hamster is preferred for testing potentially oncogenic viruses of animal origin. More than 40,000 hamsters are used annually in research.



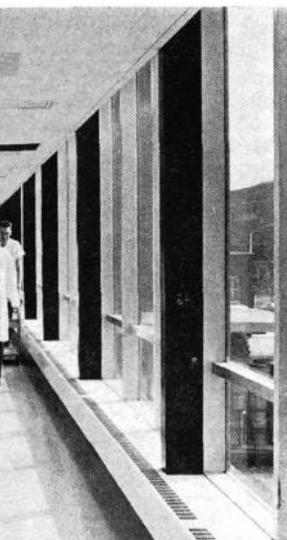
DBS Director Dr. Roderick Murray and staff meet to discuss and set standards for the production and control of biological products.

LOGICS STANDARDS

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d Jerry Hecht

is to apply present knowledge
on the market, to find better
biologics, and to help in the
ts against infectious diseases



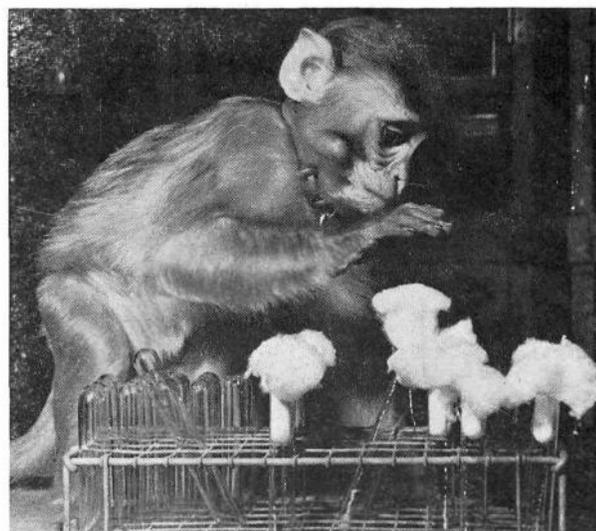
ings. The staff of 300, includ-
sts, virologists, biologists, and
rol research.



Active components of bacterial products, such as tetanus toxin, tuberculins, and cholera and pertussis antigens, are purified by passage through columns (chromatographic fractionation).



Fertile hens' eggs are used for propagating viruses, such as mumps and measles, in vaccine control testing.



About 2,000 monkeys are tested every year to demonstrate safety and potency of vaccines.



Incubation of virus-infected tissue cultures is an initial step in isolating mumps, rubella, and measles viruses for vaccine testing.



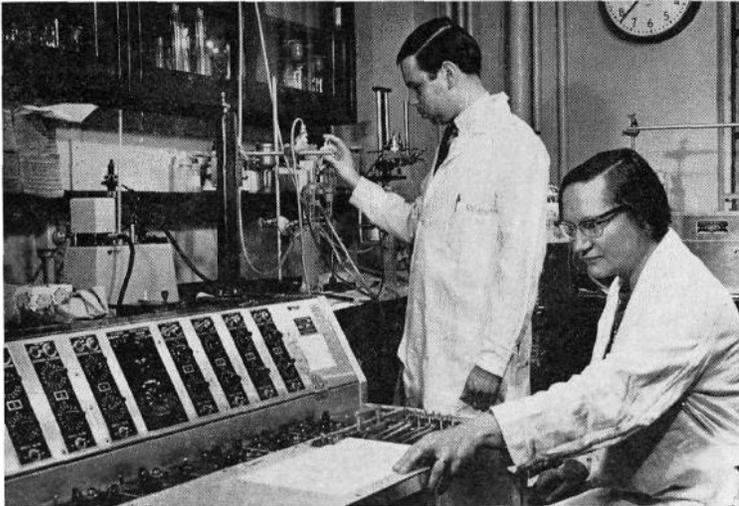
velop



Animals are important in control testing for safety, purity, and potency of biological products. Annually, about 8,600 guinea pigs are used in tests for vaccines, toxins, and toxoids.



Virus neutralization tests in cell cultures are used to determine potency of viral vaccines, such as influenza.



Dr. Jerome H. Fleisch adds a beta-stimulating drug to the nutrient fluid bathing an isolated aortic strip, while Dr. Harriet M. Maling observes a recording of the muscular strip's response to this drug.

DRUG RESPONSES

(Continued from Page 1)

rate and vigor of heart-muscle contractions.

In their studies of aortic beta receptor activity, the scientists tested the ability of two different beta-stimulating agents—*isoproterenol* (ISO) and *epinephrine* (EPI)—to relax previously contracted strips of aortas obtained from various laboratory animals.

These included thoracic and abdominal aortic strips from guinea pigs, cats and young and old rats and rabbits.

Both ISO and EPI relaxed thoracic aortic strips from young rats, young rabbits and guinea pigs, but failed to relax those from cats or

from old rats and old rabbits.

Furthermore, little or no relaxation was elicited by the beta-stimulating agents in abdominal aortic strips from any species tested.

Corollary experiments provided confirmatory evidence that relaxation was due to beta receptor stimulation rather than to some other effect of the test drugs.

The results of the NHI experiments indicate the occurrence of both species and age variation in aortic beta adrenergic receptor activity, and show that in those species possessing them, aortic beta receptor sites reside mainly in the thoracic portion of the aorta.

If applicable to humans, the discovery that aortic beta receptor activity disappears with age may also have great significance with respect to some heretofore inexplicable drug responses of aged patients.

NIH Physicians Head Health Law Workshops

NIH physicians headed a number of workshops at the recent annual convention of the Medical Committee for Human Rights.

These sessions, held at the Brookings Institution in Washington, D.C., stressed Federal health legislation. The physicians included Dr. Henry Metzger and Dr. Gil Omenn, National Institute of Arthritis and Metabolic Diseases, and Dr. Melvin Scheer, Division of Research Resources.

Ralph Nader Speaks

The opening address, "Law and Medicine: Alliance for the Nation's Health," was given by Ralph Nader at the Smithsonian Institution's Museum of Natural History.

Dr. Joseph T. English, Director, Health Services and Mental Health Administration, was among the participants in a panel discussion that followed Mr. Nader's speech.

The convention proceedings were coordinated by Dr. John Graef, National Institute of Dental Research.



Eleanor R. Murphy, Charge Nurse of Massachusetts General Hospital's Respiratory Unit, looks on as a camera crew shoots the film "Threshold," sponsored by the National Institute of General Medical Sciences, which features modern anesthesiology involving research and patient care.

International Investigators Discuss Epilepsy, Medico-Legal Aspects of Head Injury

Scientists from many countries recently met in Washington, D. C., for the International Conference on The Late Effects of Head Injury.

The meeting, sponsored by the National Institute of Neurological Diseases and Stroke, was organized by the World Federation of Neurology and the World Federation of Neurosurgical Societies.

Among the problems discussed were the posttraumatic syndrome, posttraumatic epilepsy, rehabilitation, and medico-legal aspects of head injury.

Two Million Victims

Over two million Americans are victims of head injuries each year. Many of these injuries are from automobile accidents, sporting accidents, and gunshot wounds.

Injuries from these accidents are responsible for a tremendous loss of life, and may also result in varying degrees of disorganization within the central nervous system.

The discussion on the posttraumatic syndrome centered around the familiar symptoms of headaches, dizziness, irritability, poor concentration, and bad memory.

Investigators have now shown that this syndrome can be produced by neck trauma, such as whiplash injuries, without a blow to the head or loss of consciousness.

Speakers and delegates attempted to distinguish between the posttraumatic syndrome, neurotic reactions which may exaggerate symptoms, and malingering which is thought to occur in only a few cases.

Postmortem tests to determine neurological abnormalities and descriptions of brain pathology provided information on types of brain lesions and clinical symptoms which are produced by injury.

Although the exact relationship between trauma and posttraumatic epilepsy still remains obscure, it is recognized that the degree of brain destruction is the most important single factor.

Complications Develop

In addition, the longer the period of unconsciousness after injury, the more likely it is that such grave complications will develop.

However, other factors not yet understood may play as great a role in the production of epilepsy.

Anticonvulsants have not always proved effective in treating this type of epilepsy; nor has surgical removal of a focal scar been uniformly successful.

Fortunately, over half the cases cease spontaneously, or, with the aid of drugs and surgery, two-thirds of the cases may be free of seizures.

Longitudinal studies of combat and civilian injuries are now yielding data on the development of persistent epilepsy.

Dr. Howard A. Rusk, who is

with the Institute of Rehabilitation Medicine in New York, spoke on rehabilitation. He noted the gap existing between the scale of the problem and the available care and training facilities for those with brain injuries.

Difficulties in determining the prognosis of patients shortly after serious injury, as well as other factors, may delay rehabilitation. This delay has been found to lengthen the recovery period.

Rehabilitation centers here and abroad also have to decide other important factors in treating the seriously brain injured.

They must consider whether to concentrate on achieving some degree of improvement or independence in the seriously injured, or toward helping patients with milder injuries return to full-time work as soon as possible.

Information Essential

Conference delegates considered that further clinical information about the brain or spinal injury was essential for properly planned rehabilitation programs.

Legal experts from the U. S. and foreign countries stressed that the law regarding compensation will change with further medical advances.

Other medico-legal problems noted included difficulties in assessing disability shortly after head injury. Further discussion centered around the question of delaying or reinstating legal proceedings if and when later problems, such as epilepsy, developed.

Delegates expressed the hope that future compensation laws may eliminate the need for litigation.

A book, *The Late Effects of Head Injury*, edited by Drs. A. Earl Walker, William F. Caveness, and MacDonald Critchley, will be published in September by Charles C. Thomas, Springfield, Ill.

Five Achieve 'Special Status' In March at CC Blood Bank

The Clinical Center Blood Bank reports that 165 units of blood were received from NIH donors in March, and CC patients received 1,660 units of blood.

Five donors achieved a special status. Dr. Ralph D. Gunkel, NINDS, and Glenn R. Maynard, DRG, attained the 2-gallon mark.

Joining the Gallon Donor Club were: John N. Sheagren, NIAID; Dr. Eugene Streicher, NINDS, and Samuel T. Waters, NLM.



Dr. William A. Walter, Jr. has been appointed deputy associate director for Extramural Activities, National Cancer Institute. Dr. Walter, who was formerly chief of the Special Programs Branch, joined NCI in 1955.

Eunice Given Retires, CC Nurse Since '56 Had 33-Year Career

Eunice Given, clinical nurse for the past 13 years at the Clinical Center, retired recently after 23 years of Federal service and a 33-year nursing career.

Since joining the CC staff in 1956, Mrs. Given has been a member of two Heart Nursing Service



Eunice Given (right), a Clinical Center nurse for the past 13 years, receives a retirement token from Beatrice Marino, chief of CC Heart Nursing Service.

research teams.

Before coming to the CC, she spent 10 years as a nurse at the Veterans hospital in Richmond, Va., and 10 years in private practice.

About 30 of her friends and co-workers honored her at a retirement ceremony recently in the CC. As mementos of the occasion, she received a gold circle pin and a handbag.

Mrs. Given now plans to spend more time with her husband who also retired recently. She will devote additional attention to her hobbies—collecting antiques, figurines, and unusual cut glass vessels.

A trip to Florida during April is in her immediate plans.

Successful Transfusions Now Possible With Use Of Compatible Platelets

A means of providing compatible platelets for patients whose bodies reject transfusion of this life-saving blood fraction has been developed by scientists of the National Cancer Institute.

Drs. Frank C. Grumet, Ronald A. Yankee, and G. Nicholas Rogentine, Jr., reported on the technique to prevent hemorrhage at the 60th annual meeting of the American Association for Cancer Research held March 23-25 in San Francisco.

The scientists adapted histocompatibility tissue-typing methods used in kidney and heart transplants to platelet transfusions.

White blood cells from relatives of platelet-depleted patients were typed to determine their similarities to the patient's own cells.

Patients with aplastic anemia were used in the study. Platelet transfusions previously have been effective in stopping bleeding and elevating low platelet counts in patients with this disease.

Transfusions Lose Effect

However, patients receiving transfusions over long periods frequently obtain less and less benefit from each successive transfusion, and have a high risk of fatal intracranial or massive gastrointestinal hemorrhage.

After conventional transfusion therapy for 8 weeks, blood analyses of eight patients with aplastic anemia indicated few platelets remained when measured one hour or 20 hours after transfusion.

Platelet Count High

However, blood analyses indicated that the platelet count after transfusion from "matched" relatives—those with identical white blood cell types—showed approximate median recoveries of 90 percent at one hour and 50 percent at 20 hours.

As the difference in white cell type became greater, the posttransfusion platelet count dropped proportionately until it neared zero.

Dr. Grumet said this study indicates that with the transfusion of compatible platelets, these patients showed no signs of bleeding or transfusion reactions.

With two transfusions each week, the patients were able to leave the hospital and resume normal lives in contrast to ordinary confinement to hospital care for long periods of time with conventional transfusions.

With compatible platelet transfusions, he said, a greater margin of safety is achieved and transfusion costs are about one-fifth that required for conventional transfusion.

DCRT's Hybrid Computer Provides Tool For Solving Many Biomedical Problems

The Computer Systems Laboratory of the Division of Computer Research and Technology is attempting to acquaint the NIH scientific community with its hybrid computer.

The computer has been in operation for over a year, but many people are still unfamiliar with some of its aspects.

Although it is doing heavy duty for standard digital computation, its hybrid capabilities are not being used to greatest advantage.

Because the computer provides a powerful tool for solving biomedical problems involving the simulation of biological systems, collaborative projects are being encouraged within the limits of supporting resources.

Computers Communicate

The computer is housed in Room 11N111 of the Clinical Center. As its name implies, it consists of an analog and a digital computer coupled so the two operate as a unit.

The coupling or linkage device allows the computers to communicate with each other by translating the "language" of each machine to that of the other.

Digital computers are most proficient for storing and retrieving information, calculating distinct arithmetic quantities, and performing operations involving logic and decisions.

All of these functions are performed one after the other.

The analog computer can perform multiple operations simultaneously, and works best for such tasks as adding two or more time varying signals, multiplying variables by constants or variables by variables, and integrating time varying signals.

When using the hybrid, a problem can be divided and its parts assigned individually to the method best suited for solving them.

Because of the nature of the hybrid computer, problems which can

be solved by it fall into two categories.

One includes the entire analog-to-digital conversion operation, which prepares analog data for later digital analysis.

The other gets involved in the complex mathematical problems of simulating physiological systems and investigating them under various conditions.

In this second area, the analog computer is called upon to rapidly solve equations representing the system of interest, while the digital computer is used for its ability to logically determine the conditions for which the equations are being solved.

Inquiries about the hybrid computer can be made to the Hybrid Computer Group, Ext. 65641.

Drs. Kirklin and Corday Named to Heart Council

Dr. John W. Kirklin and Dr. Eliot Corday have been named to the National Advisory Heart Council, National Heart Institute. The appointments were announced by Dr. Robert Q. Marston, Director of NIH.

Dr. Kirklin, who is professor and chairman of the Department of Surgery, University of Alabama Medical Center, is a pioneer in open-heart surgery. He has developed a number of operations for congenital heart disease.

Dr. Corday, associate clinical professor of Medicine at the University of California at L.A., is particularly interested in drug therapy for cardiac arrhythmias. Currently, he is screening drugs for their antiarrhythmic properties.



Robert Romanoff, a DCRT computer programmer, uses the digital console typewriter to correct a hybrid problem as it runs. The digital console is at extreme left. Next to it is the analog tape drive. The third piece of equipment is the linkage device, and on its right is the analog computer.

NIH Scientists Examine Fetal Cells to Prove Metabolic Disorders

Confronted with biochemical evidence that her child was fated to become physically and mentally deformed because of a suspected hereditary disease, a young mother-to-be recently elected to have her pregnancy terminated therapeutically.

Another young mother-to-be, with similar proof, elected to carry her child to term and subsequently delivered an infant with chemical evidence of the rare disorder.

In both instances, the mothers were known carriers of the genetic trait for the Hurler or the Hunter syndromes, inherited metabolic disorders characterized by severe skeletal deformities, mental retardation, and early death.

Furthermore, both women had previously borne children affected with one of these disorders, thus the chances that additional offspring might be affected were increased.

Dr. Neufeld Heads Team

The prenatal diagnoses were provided by NIH scientists.

A team of investigators headed by Dr. Elizabeth F. Neufeld, National Institute of Arthritis and Metabolic Diseases, had determined by examining fetal cells obtained from the respective mother's amniotic fluid that both infants would be affected.

The cells incorporated radioactive sulfuric acid into mucopolysaccharides and responded to a specific staining technique in a manner characteristic of an affected child's cells.

The metabolism of mucopolysaccharides, substances belonging to the carbohydrate family, is deranged in both the Hurler and Hunter syndromes. The derangement leads to an accumulation of these chemicals in various parts of the body, resulting in the bizarre clinical manifestations.

One Affects Males Only

The two syndromes differ chiefly in that the Hunter syndrome affects only male offspring.

Studies of cultured fetal cells obtained from amniotic fluid have permitted the prenatal diagnosis of several hereditary disorders in recent years.

It is now clear that this type of approach is applicable to any inherited metabolic disease expressed in such cells for which a reliable assay can be developed.

Appropriate therapy could then be initiated for an affected fetus or, if no such therapy exists, the parents could be given the option of terminating pregnancy.

There is no effective treatment for the Hurler or the Hunter syn-

NIH Asked to Help Locate Wilbur J. Cohen's Notebook

Former DHEW Secretary Wilbur J. Cohen is missing a green three-ring binder labeled "Speeches and Articles—Wilbur J. Cohen, 1957."

The notebook contains irreplaceable personal papers. It has been requested that a thorough check be made of all NIH offices in an effort to locate these papers.

If found, please call Robert C. Coulter, DHEW, Code 13, Ext. 24094.

DR. KOHLS

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about 35 years.

He received his B.S. degree from Montana State University and an M.S. degree from the University of Minnesota. In 1967, he was awarded an honorary Sc.D. from Montana State University.



Dr. Kohls (r), who is renowned for his work on ticks, receives his award from Dr. John R. Seal, Director of Intramural Research, NIAID.

dromes.

Dr. Neufeld and her colleagues, Dr. J. C. Fratantoni, NIAMD; Dr. B. W. Uhlendorf, Division of Biologics Standards, and Dr. C. B. Jacobson of George Washington University, an NIH grantee, reported their study in the *New England Journal of Medicine*.



The first panel discussion on equal employment opportunities at NIH was held as part of a leadership training course for Division of Research Services supervisors. Another panel on employee-management relations was composed of DRS personnel (l to r): Sybe Pointer, Grounds Maintenance and Landscaping Section shop steward; R. R. Holliday, associate director for Engineering Resources; Charles Sandeen, personnel officer, and Herbert Keene, also shop steward for GM&L.

Proposed Rubella Vaccine Rules Bring Prevention Step Closer, Says Finch

In a move that brings us "one step closer to the prevention of a disease that has caused an untold number of tragic births," DHEW Secretary Robert H. Finch issued proposed regulations which establish standards for the production of a German measles (rubella) vaccine.

These regulations, prepared by the Division of Biologics Standards, were published April 3 in the *Federal Register*.

Technical, step-by-step production methods are outlined and standards of safety, purity, and potency are established for the vaccine.

Interested persons have 30 days to comment. After comments are considered, final regulations will be published in the *Federal Register*. Subsequently, a German measles vaccine that meets the standards can be licensed.

The regulations proposed apply

Caries Task Force Panel Appointed at NIDR

The appointment of a panel to guide the operations of the Dental Institute's Caries Task Force was announced by Dr. Seymour J. Kreshover, Director, NIDR.

The panel consists of Dr. Basil G. Bibby, Director, Eastman Dental Center, Rochester; Dr. George W. Burnett, professor of Microbiology, School of Dentistry, Medical College of Georgia; Dr. Charles J. Donnelly, chief, Dental Caries and Hard Tissues Program, NIDR Extramural Programs, and Dr. Robert J. Fitzgerald, Veterans Administration Hospital, Miami.

Also, Dr. John C. Greene, deputy director, Division of Dental Health, Bureau of Health Professions Edu-



Dr. Abraham Cantarow, Research Planning Officer of the National Cancer Institute, was elected president of the American Association for Cancer Research on March 24. His election took place in San Francisco at the society's 60th annual meeting.

to vaccines containing a live virus strain known as HPV-77, which is grown in either duck embryo or dog kidney cell culture systems.

Experimental vaccines produced in accordance with the standards have undergone extensive community testing in the United States and abroad.

cation and Manpower Training; Dr. Robert S. Harris, professor of Nutritional Biochemistry, Massachusetts Institute of Technology, and Dr. John W. Knutson, professor of Preventive Dentistry, School of Dentistry, University of California.

They will assist Dr. Henry W. Scherp, task force chairman, in developing research and programs to prevent decay.

CANCER DRUGS

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died. Neomycin alone was not toxic.

Two other drugs administered with neomycin—cyclophosphamide and 5-fluorouracil—were less toxic than when given without the antibiotic.

Another drug—6-Mercaptopurine—produced three different effects in three different trials.

The current concept behind antibiotic therapy is that the antibiotics destroy potentially harmful normal body bacteria before they can infect the body as a result of the lowered resistance produced by the cancer drugs.

The NCI investigators believe that normal flora influence the metabolism of cells treated by anticancer drugs. Killing this flora may make the cells more sensitive to cancer drugs thus producing the variance in side effects.

In light of their studies, the investigators recommend that, before clinical use, studies be undertaken to reevaluate various dosages of each antibiotic with each cancer drug.