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NATIONAL INSTITUTES OF HEALTH
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Heartbeat Slowed By Paired Stimuli, NHI Study Shows

National Heart Institute scientists report that paired electrical stimuli, delivered in rapid succession to the heart via an external pacemaker, slows heart rate while greatly increasing the vigor of its contraction.

After a heartbeat, the heart's specialized conduction system regains its capacity to transmit electrical impulses more quickly than heart muscle fibers regain the capacity to respond to them.

Timing Described

If an electrical impulse is delivered immediately after the conduction system has recovered, but before the muscle fibers have recovered, no contraction occurs and the recovery period of the muscle fibers is prolonged.

Thus, heartbeat can be effectively slowed by delivering pairs of closely spaced electrical stimuli, the first to produce heart-muscle contraction, the second to extend

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Patient Uses Ingenious Device As Means of Communication

Col. Mathias J. Schon Jr. demonstrates the "Speakeasy," a communication device developed by his friends at Fort Lee, Va. He controls the pointer on clock-like face (left) by light touch of left hand on electric control board on bed. He has just exchanged quips with the ward's head nurse, Mary D. Thompson.—Photo by Lee Bragg.

By Frank Smith

The inventiveness of a soldier's friends has virtually restored to him the gift of communication. And it looks as though their invention may soon be shared by other patients at the Clinical Center.

Muscular atrophy made Col. Mathias J. Schon Jr. incapable of almost all muscle usage throughout his body, taking from him even the strength to speak. His ability to converse was limited to a short turn of the head for "no," a slight nod for "yes," and a smile.

Then, about 15 of his friends at Fort Lee, Va., came up with an innovation. The idea was initiated by Col. Lewis M. Flint, and others contributed.

Friends Build Device

They envisioned a large clock-like board, with letters, words and numbers on its face, and with a single "clock" hand to serve as a pointer. The pointer was to be remotely controlled by an easy tap of the finger.

W. J. Glass, another friend, incorporated the plans in construction of a device, using plywood, wiring, paint and controls. And it worked!

When Col. Schon was admitted to the Clinical Center not long ago, the nurses were "interested, amazed and thoroughly pleased with the Colonel's 'Speakeasy,' as he has dubbed it," says Mrs. Mary

(See DEVICE, Page 6)

Robert S. Gordon Appointed NIAMD Clinical Director

Dr. Robert S. Gordon Jr. has been named Clinical Director of the National Institute of Arthritis and Metabolic Diseases. He succeeds the late Dr. Joseph J. Bunim who held the position from 1952 until his death last July.

Dr. Gordon

Dr. Gordon comes to his new position from the National Heart Institute, with which he had been associated since 1951, most recently as a senior investigator in the Laboratory of Metabolism.

As Clinical Director of NIAMD he will direct clinical and related laboratory research in the study of the various forms of arthritis, of diabetes, cystic fibrosis, and other metabolic disorders, and of endocrinology, hematology and diseases of the digestive system.

Prior to joining NIH as an assistant surgeon in 1951, Dr. Gordon served his internship and residency at the Presbyterian Hospital, New

(Continued on Page 3)

Betting Behavior of Individuals Reveals Wishful Thinking Influences Decisions

By Karen Levin

Which rules, the heart or the head, when one is faced with a big decision? Wishful thinking almost always outweighs reason, according to Dr. Francis W. Irwin, Professor of Psychology, University of Pennsylvania, whose research is supported by the National Institute of Mental Health.

Subjects Draw Cards

Dr. Irwin and a group of his graduate students tackled this question through a study of betting behavior in card games. He described his findings from work done by him or his students at a seminar in the Clinical Center, sponsored recently by NIMH's Laboratory of Psychology.

In one series of tests, college students were shown packs of cards, some of which were marked with X's. The subjects always were told what the odds were for drawing the X cards. Then they were asked to bet as each card was dealt, face down, on the chances that the card was marked.

The students received money for each X card drawn. Even though the subjects knew how many X cards were in the pack, they still defied reason and bet too frequently that they held the money-paying cards. The greater the reward, the more powerfully wishful thinking affected their behavior, Dr. Irwin's latest study shows.

Some Use Logic

A few individuals with a shrewd insight into mathematical probabilities successfully restrained their wishful thinking and bet with pure logic. But with most people, their

(See BEHAVIOR, Page 6)

Viruses of Lab Rodents To Be Symposium Topic

The National Cancer Institute, in cooperation with the Communicable Disease Center at Atlanta, Ga., will sponsor a symposium on "Viruses of Laboratory Rodents" on January 25 and 26 in Atlanta.

The symposium will be followed by a training course, through February 5, on the "Serology of Indigenous Murine Virus." Course participation will be by invitation since enrollment is limited. Training course participants should be experienced in serological techniques and have a basic understanding of virology.

Further information concerning the symposium and training course may be obtained from Dr. Robert Holdenried, National Cancer Institute, NIH, Bethesda, Md. 20014 or by calling 49-66086.

the NIH Record

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

NEWS from PERSONNEL

INJURIES AT WORK

All Civil Service personnel are reminded of their entitlement and obligation to seek immediate medical attention from the Employee Health Service when they are injured at work or contract a work-connected illness.

Under the Federal Employees Compensation Act the Government is responsible for all medical care needed for job-related injuries or illness, as well as for rehabilitation service and compensation in the event of disability or death. To obtain these benefits, however, the employee must:

- Report the injury immediately to his supervisor.
- Obtain first aid from one of the Employee Health Units (Clinical Center, Bldg. 10; North Health Unit, Bldg. 31; or Westwood Bldg. Health Unit).
- If further medical treatment is needed, obtain an order from the Employee Health Unit for treatment by an authorized physician or hospital.
- Make a written report of the injury or illness on a form furnished by the Health Unit, and give it to his supervisor within 24 hours.

Supervisors also have certain responsibilities for assisting the employee and making certain reports. The total requirements and detailed procedures are in Guide 8, Chapter IV of the Personnel Guides for Supervisors. The assistance of the I/D Personnel Officer should be solicited in any case in which questions or problems arise.

CIVIL SERVICE STATUS

"Civil service status" is a term used to denote that a person has met the requirements for membership in the competitive civil service.

Conditions for Acquiring Status. The individual must meet all 3 of the following: 1) Pass a civil service examination, 2) Be appointed from a register of eligibles, 3) Serve a satisfactory probationary or trial period.

Exceptions can be made only: By statute, By executive order, In certain cases by Civil Service Commission action. Such cases must be documented for Congress in CSC annual report.

Benefits of Civil Service Status. The individual: 1) Can be promoted, transferred, assigned to a different job, or reappointed—without again meeting open competition with others, but must have qualifications for new job; 2) Has certain safeguards against removal, and 3) In a reduction-in-force action, status person can't be separated so long as there are nonstatus persons whose work can be performed by the status person.

SERVICE OPPORTUNITIES

The Personnel Management Branch has received a registry of community volunteer service opportunities which shows various agencies and groups in need of volunteers for their service programs. Programs involving work with children, the elderly, and hospital patients are included.

Compiled by the Health and Welfare Council of the National Capital Area, the registry presents avenues for interested personnel to participate actively in the health, welfare, and recreational activities within the District and nearby counties of Maryland and Virginia.

The registry is available in Bldg. 1, Rm. 31, for anyone who wishes to refer to it.

In recent years, grants and awards have accounted for more than 75 percent of the total NIH appropriation.

Big game bow-huntsmen pose with the big buck brought down recently by George Thomas of the Division of Research Services. Sitting, left to right: Mr. Thomas, Walter Franz of Langley Park, Md.; Joe Frazier and Charles Lohr of NIAMD. Standing: Harold Tipton of DRS. The color slide from which this black-and-white print was made was photographed by Jim Sullivan of DRS, one of the hunting party.

Employees Asked to Use P. O. for Holiday Mail

To avoid interference with delivery and dispatch of official mail by NIH mail rooms, all NIH employees have been requested, in a memorandum from D. R. Cushing, Chief of the Office Services Branch, OD, to mail greeting cards, packages and other personal mail through regular Post Office facilities during the holiday season.

The memorandum also requests that NIH employees have personal mail addressed to their homes rather than to NIH.

Mr. Cushing notes that it is the policy of NIH to cooperate with the Post Office Department in withholding from the mails from December 1 to 26 all bulk mailings of pamphlets, books, forms and other printed matter and supplies which add to the burden imposed upon the Department's facilities during the holiday season.

NIH 'Robin Hoods' Shoot Buck Near Sugar Loaf With Bow and Arrow

Each year, during the fall hunting season, a group of NIH huntsmen goes on deer-stalking expeditions in the upper reaches of Montgomery County—armed only with bows and arrows. The bow season this year is Sept. 15 to Dec. 24.

On a recent Saturday (Nov. 14) they were in luck. Hunting near Sugar Loaf Mountain in the vicinity of Dickerson, Md., one of their number—George Thomas of DRS—shot a 230-lb., 6-pt.-antlered buck, the largest killed this year in Montgomery County up to that time.

The 30-inch, steel-tipped arrow pierced the buck's heart and lungs, killing him almost instantly.

The bows used are equipped with sights and require a pull of 53 lbs. for full extension.

Mr. Thomas shot his deer from a distance of about 40 yards.

NIGMS Career Awardee Wins Research Honor

Dr. Margaret R. Murray, a National Institute of General Medical Sciences Career Awardee, was the recipient recently of the National Multiple Sclerosis Society's Scientific Award for "outstanding achievements" in the field of multiple sclerosis research.

Dr. Murray, Professor of Anatomy at Columbia University College of Physicians and Surgeons, has received Career Award support from NIGMS since July 1962. The society's highest scientific honor was presented at its ninth National Chapter Conference held recently in New York.

The award cited Dr. Murray for her pioneering work in developing advanced techniques now widely used in laboratory studies of central nervous system tissue. She received a specially mounted medallion and $1,000.

Dr. Murray received her Ph.D. degree in Zoology at the University of Chicago in 1926. She has been at Columbia University since 1929 and during this time has developed and directed the Laboratory for Cell Physiology, an outstanding center for training and research in tissue culture techniques.

Clinical Diagnosis of TB Discussed by Dr. Katz At NIAID Grand Rounds

Speaking on the "Pathogenesis of Tuberculosis" at a recent NIAID Grand Rounds, Dr. Sol Katz warned clinicians that tuberculosis, which is similar in its clinical manifestations to many other diseases, should not be "overlooked" in differential diagnosis.

Dr. Katz

Dr. Katz, Chief of Medical Service at Mount Alto Veterans Administration Hospital and Associate Professor of Medicine at Georgetown University School of Medicine, emphasized that the three phases of tuberculosis — primary complex, hematogenous, and chronic pulmonary—are not necessarily a continuous process.

The course may be interrupted or arrested at any stage, he said, resulting in calcified, encapsulated, and even ossified lesions which may cause no further trouble.

On the other hand, he noted that lesions resulting from primary complex tuberculosis, whether or not they have progressed to cavitation in the lung, may spread by means of contiguity and continue in the system for many years.

Lesions May 'Seed' Organs

Later, "when the setting is right" they may be responsible for "seeding" various organs via the blood stream, he said, thus triggering development of organ tuberculosis and/or eventually leading to chronic pulmonary tuberculosis via the endogenous reinfection of the apices of the lung. In this way the tubercle bacilli may be said to travel full-circle through the body.

During the stage of hematogenous dissemination there may be no clear clinical or roentgenological evidence of the disease, he pointed out, though it is approximately 80 percent demonstrable via the use of bone marrow or liver biopsy.

Dr. Katz also discussed the tuberculin skin test as a diagnostic tool and the ease and effectiveness of modern chemoprophylactic treatment for high-risk tuberculin-positive groups, such as very young children, medical students, and nurses.

Dean Named to Council

Dr. Roger O. Egeberg, Dean of the School of Medicine of the University of Southern California, Los Angeles, has been appointed to the National Advisory Cancer Council for a 4-year term ending September 30, 1968.

Dr. Nirenberg Receives Harrison Howe Award

Dr. Marshall W. Nirenberg, Head of the Section on Biochemical Genetics of the National Heart Institute, received the Harrison Howe Award from the Rochester section of the American Chemical Society at a dinner meeting at the University of Rochester Faculty Club November 9.

Later that evening Dr. Nirenberg delivered a lecture in the university auditorium. His subject was "On the Reading of the Genetic Code."

The following morning Dr. Nirenberg met in an informal seminar with members of the faculty and graduate students in the Department of Biochemistry of the School of Medicine and Dentistry.

For his work in describing the arrangement of chemicals in the cell nucleus which carry the hereditary message from one generation to the next, Dr. Nirenberg was honored by the National Academy of Sciences with its 1962 award for distinguished research in molecular biology.

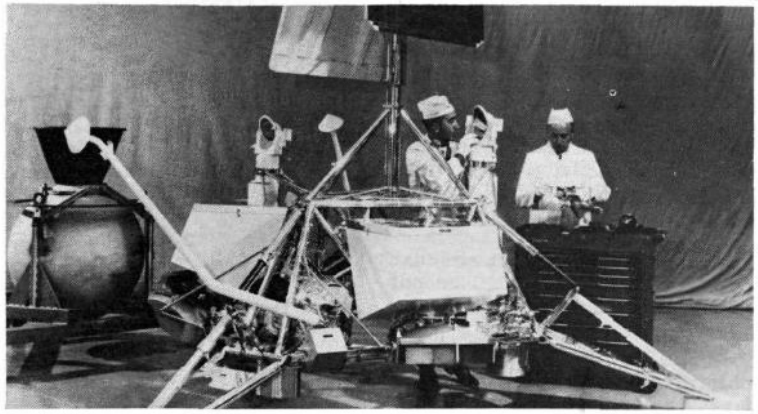
Other Awards Received

In 1963 he received the Paul Lewis Award in Enzyme Chemistry from the A.C.S., and in 1964 he won the Modern Medicine Award.

A 1948 graduate of the University of Florida, Dr. Nirenberg received his master's degree there in 1952 and his doctorate from the University of Michigan in 1957. Since that time, he has been associated with the National Institutes of Health.

The Harrison Howe Award was established in 1945 as a memorial to Harrison E. Howe, a charter member of the Rochester section of A.C.S. and former editor of Industrial and Engineering Chemistry. Among previous recipients are Nobel Prize winners Linus Pauling, Glenn T. Seaborg, and Carl and Gerty Cori.

'Flyable' Mass Spectrometer Is Planned For Use in Analysis of Moon's Surface



Engineers at Hughes Aircraft assemble one of the NASA Surveyor spacecraft that will investigate the moon's surface prior to any attempt at manned landings. The spacecraft shown will carry three TV cameras. Other models will carry a variety of robot equipment. One device being developed is a mass spectrometer which could relay information to earth valuable in preparing for safe astronaut landings.—Photo by NASA.

Design of a "flyable" mass spectrometer, small enough to be rocketed to the moon yet capable of analyzing samples of the moon's surface, is the problem facing Dr. Leonard F. Herzog II, a former National Heart Institute grantee.

Dr. Herzog, President of Nuclide Corporation, State College, Pa., recently was awarded a $96,429 contract by the National Aeronautics and Space Administration to begin design of such an instrument. Nuclide designs and manufactures mass spectroscopes and other equipment for a broad range of scientific and industrial uses.

Device to Obtain Data

The miniaturized device, Dr. Herzog said, is intended to obtain valuable data for NASA's Surveyor Program, a series of unmanned moon shots to be launched prior to the astronaut-manned Apollo landings scheduled for the late 1960s.

A mass spectroscope, Dr. Herzog explained, can break down any substance—solid, liquid, or gas—into elemental matter at the atomic level. By measuring the "masses" of the constituent atoms the instrument reveals what molecules, elements, and isotopes are present, and in addition, can determine in what quantities they exist relative to each other.

When NASA Surveyor space vehicles land on the moon they will contain a selection of scientific instruments and equipment. The mass spectrometer is being investigated, Dr. Herzog said, as one of the components intended to identify and analyze rocks, minerals, and dust.

Chemical analysis of the moon's surface by mass spectrometer, Dr. Herzog pointed out, is one more highly important step in the search to learn more about the moon.

Objectives Described

A successfully operating robot mass spectrometer landed in advance of astronaut landings, he said, could make major contributions to knowledge in these two general areas:

- To "pure" science which seeks answers to such dramatic questions as the origin and evolution of the solar system.
- To gain information that would help insure safety for the astronauts.

When manned landings are routine, he said, portable mass spectrometers operated by astronaut-scientists could help determine how well the "moon stuff" can be used to support a self-sufficient moon station. Alternatively, some of this data might be gained from samples brought back to earth—but a broad exploration program seems to require that analyses be done on the moon.

Dr. Gordon Appointed NIAMD Clinical Director

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York City. He received his M.D. (magna cum laude) from Harvard Medical School in 1949.

Dr. Gordon is known for his research on the physiologic role of free fatty acids in blood. His studies showed that free fatty acids are the forms in which fat is mobilized from adipose tissue.

Subsequently he developed a diagnostic test using radioactive polyvinylpyrrolidone which has made possible the widespread recognition of diseases in which there is a loss of protein in the digestive system.

Dr. Gordon recently completed a very productive 3-year assignment in Dacca, East Pakistan, as Scientific Director and Chief of Clinical Research at the Pakistan-SEATO Cholera Research Laboratory.

An international research group there, headed by Dr. Gordon, demonstrated the effectiveness of a coordinated research effort, utilizing clinical, metabolic, and bacteriologic techniques, on one of the last major epidemic diseases afflicting mankind.

The new NIAMD Clinical Director is a member of Phi Beta Kappa, Alpha Omega Alpha, the American Society for Clinical Investigation, and the American Physiological Society.

A native of New York City, Dr. Gordon also received his A.B. from Harvard College. He served in the U. S. Army from 1943-44.

Investigations Link Muscle Activity to Intracellular Calcium Regulating Device

National Institute of Arthritis and Metabolic Diseases scientists have provided evidence of an intracellular calcium-regulating mechanism that controls muscular contraction and relaxation.

The physiological activity of muscle has been found to be related to the time course of intracellular calcium ion activity. Contraction can be triggered by local application of calcium ions, while relaxation is coordinated with action of a calcium "sink," an intracellular mechanism that reduces the amount of calcium available to the contractile elements.

In 1947, previous investigators observed that muscle fibers contracted in response to intracellular injections of calcium ions. This pointed to calcium as the physiological activator and suggested that an increase in intracellular calcium ion activity might be near the end of a series of activating steps that begins with membrane depolarization.

If this were so, the relaxation mechanism might be expected to involve a process for inactivating calcium. This hypothesis led to the present study.

Research Described

Evidence for a calcium "sink" was sought by seeing how heavily a frog muscle fiber deprived of its surrounding membrane could be loaded with calcium and still relax. A minute piece of fiber (60x75 microns) was loaded with a series of calcium-containing droplets having volumes nearly equal to that of the preparation.

When the drops were transferred to the preparation there was vigorous contraction followed by relaxation, even after the number of added calcium ions exceeded the number of molecules of contractile protein. This can be explained easily by intervention of a "sink" that inactivates the added calcium.

An attempt was then made to relate the physiological properties of living muscle fibers to the rate constant for calcium interaction with the "sink." This was done by measuring the amount of calcium required to elicit a barely detectable contraction of a single sarcomere (a minute fiber segment) when the time for delivering calcium was varied.

When the delivery time was less than about ten milliseconds, the amount required for such a response was practically constant. For longer delivery times, more calcium was required for contraction, with the excess probably being inactivated by the "sink."

Hypothesis Supported

Of this model the half-time for calcium inactivation proved to be about 25 milliseconds, which agrees with the half-time for tension decay in a twitch of the same intact, electrically activated muscle fiber, thus supporting the original hypothesis that relaxation is due to removal of calcium from the contractile elements.

These studies provide the first actual evidence that a calcium "sink" operates in living muscle and support the general thesis that physiological activity of muscle is controlled by the time course of intracellular calcium ion activity.

A report of this work by Drs. R. J. Podolsky and L. L. Costantin of NIAMD's Laboratory of Physical Biology appeared in the Proceedings of the Federation of American Societies for Experimental Biology.

Dr. Terry Announces Council Appointments

Two appointments to the National Advisory Arthritis and Metabolic Diseases Council were announced recently by Dr. Luther L. Terry, PHS Surgeon General.

Named to 4-year terms (ending September 30, 1968) were Dr. Alexander B. Gutman, Director of the Department of Medicine at Mount Sinai Hospital, N.Y., and Professor of Medicine at Columbia University's College of Physicians and Surgeons; and Dr. Katharine McBride, President of Bryn Mawr College, Bryn Mawr, Pa.

Dr. May Reappointed to WHO Advisory Panel

Dr. Everette L. May, Chief of the Section on Medicinal Chemistry of the Laboratory of Chemistry, National Institute of Arthritis and Metabolic Diseases, has been reappointed to the World Health Organization's Expert Advisory Panel on Addiction-Producing Drugs.

Dr. May

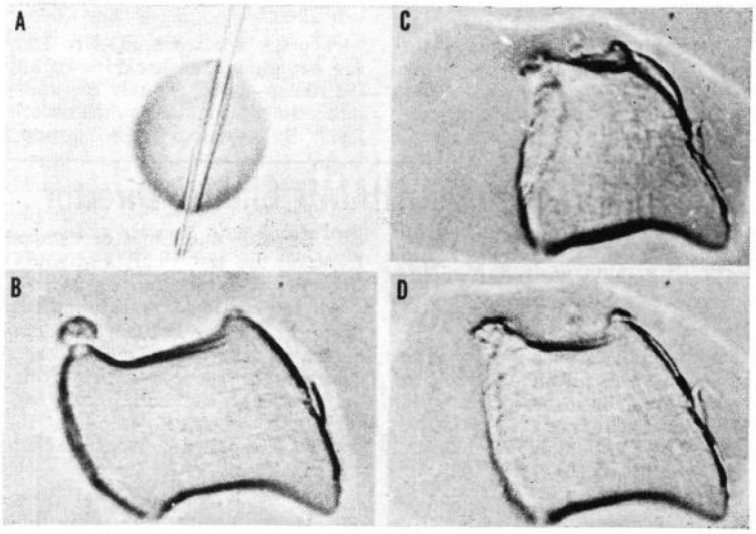
The honorary appointment was made by Dr. M. G. Candau, Director-General of WHO.

During his second five-year term, Dr. May will continue to inform the organization of important developments in this field.

Dr. May is widely known for his part in developing phenazocine, an analgesic more powerful than morphine but less addictive.

A frequent contributor to scientific meetings, Dr. May was honored recently with an invitation to speak at the International Symposium on Pain, sponsored by the Ford Foundation, at the Henry Ford Hospital in Detroit. Dr. May delivered a paper entitled "The Chemistry of Morphine-Like Analgesic Drugs."

During the latter part of November, he also spoke on the "Benzomorphan Analgesics" before the Cincinnati Section of the American Chemical Society and addressed the University of Cincinnati College of Medicine on the "Chemopharmacologic Approach to the Problem of Drug Addiction."



This series of micrographs, enlarged 320 times, shows the method for studying calcium "sink" in muscle fiber segment. First a droplet containing calcium (A) is applied to a fiber segment (in mineral oil) from which the surface membrane has been removed. The number of calcium ions in the droplet exceeds the number of contractile molecules in the fiber segment (B). The contractile mechanism is activated by the calcium (C) and then it relaxes (D). Relaxation reflects calcium inactivation by the internal membrane system of the muscle.

NIGMS Awards Grant To Stanford Univ. for Study of Anesthetics

A broad study of the pharmacology of anesthetics and related drugs, utilizing newly developed analytic methods and seeking measurements far more precise than heretofore obtainable, will be carried out at the Stanford University School of Medicine, Palo Alto, Calif., under a Public Health Service grant.

Dr. John P. Bunker, Professor of Anesthesia, and co-investigator Dr. J. Weldon Bellville, Associate Professor of Anesthesia, will coordinate the activities of a team of senior scientists.

The grant of $191,505 for the first year's research activities of a proposed 7-year program will be administered by the National Institute of General Medical Sciences.

Current Need Noted

Commenting on the objectives of his project, Dr. Bunker noted the current need for extensive and detailed knowledge of the pharmacology of anesthetics and the clinical problems they present so that physicians can cope with undesirable side effects, many of which are poorly understood at present.

This line of investigation has become increasingly important to the field of postsurgical medical care, he believes, as advancements in clinical applications are made and as surgical techniques become more complex.

The scientists will emphasize the quantitative aspects of research reflecting the need for more precise measurements of drug effects and the availability of a rapidly developing technology for such studies.

Studies Listed

The studies will include dose-effect relationships, evaluation of secondary or side effects, toxicological effects, drug interactions, and the uptake and distribution of drugs.

Special attention also will be given to the design of experiments to provide information on the site and mode of drug action. In exploring problems of experimental design and particularly those relating to theoretical analysis of drug interaction, the research team will be working with the division of biostatistics.

Wilson Stone Appointed

Dr. Wilson S. Stone, Professor of Zoology, University of Texas, Austin, has been appointed to the National Advisory Research Resources Committee of the Division of Research Facilities and Resources for a 4-year term ending September 30, 1968.

HEARTBEAT

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the refractory period of the heart muscle fibers.

In the currently reported study, the researchers investigated the effects of sustained, paired electrical stimuli from an external pacemaker on heart rate and contractility in dogs and also in four patients undergoing open-heart surgery.

In the animal studies, the external pacemaker readily took over from the heart's own pacemaker, and reduced heart rate from an average of 152 to 109 beats per minute.

Even when the heart was paced at an extremely brisk rate (180-290 beats per minute) by single impulses from another external pacer, the paired stimuli could capture control of heartbeat, slowing heart rate by an average of 72 beats per minute.

Paired stimuli also readily suppressed tachycardia resulting from toxic doses of ouabain (a digitalis glycoside). Similar slowing of heart rate was achieved in the four patients; and, in one patient with atrial fibrillation, heart rate became regular during paired stimulation.

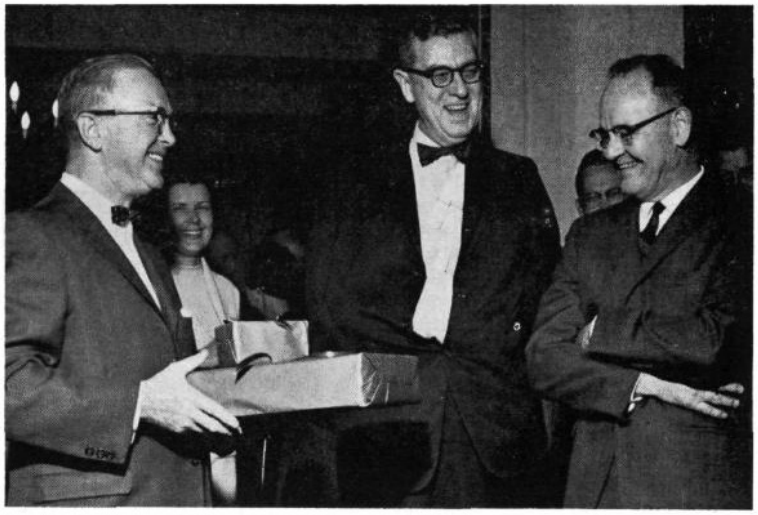
Contractile Force Increases

The slowing of heart rate during paired stimulation was always accompanied by a substantial increase in the vigor of heart-muscle contraction, which persisted as long as paired stimulation was continued. In the animal studies, ventricular contractile force was nearly tripled by paired stimuli delivered at the pace previously set by the heart's own pacemaker. In one patient, the slowed heart rate was accompanied by a 100 percent increase in ventricular contractile force.

Although increased ventricular filling was probably a contributing factor, the increased vigor of ventricular contraction stems for the most part from a fundamental increase in heart-muscle contractility. The mechanism underlying this increase is not yet clear.

The scientists conclude that paired stimulation, though not without hazard, may be clinically useful in the treatment of patients with arrhythmias and various other forms of heart disease and possibly in the post-operative care of patients undergoing heart operations.

These findings were reported in the American Journal of Cardiology by Drs. Nina S. Braunwald, William A. Gay Jr. and Andrew G. Morrow of the Surgery Branch, and Dr. Eugene Braunwald, of the Cardiology Branch. Their findings confirm and extend the original observations of Lopez and co-workers and the more recent work of Chardack and associates.



Dr. Charles V. Kidd, formerly Associate Director for International Activities and Chief of the Office of International Research at NIH (right), enjoys a laugh with Dr. James A. Shannon, NIH Director (center), and Robert H. Grant, Assistant Chief of OIR, as he receives a desk pen set and paperweight globe at farewell reception in his honor.—Photo by Sam Silverman.

Study Shows Safer Adenovirus Vaccine Possible

Developments which indicate a possible way to produce potentially safer and effective adenovirus vaccines have been reported by scientists of the National Institute of Allergy and Infectious Diseases.

A vaccine consisting of purified sub-units of the protein coat of the virus would offer two advantages.

First, it would be possible to eliminate infectious virus, the adenovirus itself, or extraneous agents that could be present in tissue cultures used to prepare the vaccine.

Because of the suggestion that some viruses play a role in the causation of animal tumors, there is a continuing reappraisal of the use of live viruses in vaccines in order to exclude any risks of this sort, however remote.

Second, such vaccines could possibly be subject to chemical assay to be correlated with potency tests.

Variation in antigenic potency of different lots of vaccine has been one of the reasons why present inactivated vaccines of whole adenovirus fail to provide consistent protection.

It has been possible to separate noninfectious soluble antigens, that is, structural sub-units of the virus particle present in infectious tissue culture suspensions.

Trial Vaccines Prepared

Using this procedure, Dr. Julius A. Kasal, Margaret Huber, Dr. Frank Loda, Dr. Peter A. Banks, and Dr. Vernon Knight, of the Laboratory of Clinical Investigations, prepared experimental vaccines to determine whether two of the soluble antigens of adenovirus type 1 could stimulate neutralizing antibody.

Injected into volunteers, these vaccines stimulated the production of antibody capable of neutralizing infectious virus *in vitro*. Moreover, the volunteers were found to be substantially immune to challenge with infectious adenovirus.

The report appeared in the October issue of Proceedings of the Society for Experimental Biology and Medicine.

Dr. Martin M. Cummings, Director of the National Library of Medicine, displays the newly acquired portraits of two of his predecessors, Dr. Frank B. Rogers (foreground) and Dr. Joseph H. McNinch. The portraits will hang in the Library's Main Reading Room. —Photo by Robert Cohen.

Dr. Kidd Named Executive Sec't Of the FCST

The Office of Science and Technology has announced the appointment of Dr. Charles V. Kidd, formerly Associate Director for International Activities and Chief of the Office of International Research at NIH, as Executive Secretary of the Federal Council for Science and Technology.

The Federal Council, a body of senior policy officials from eight Federal departments and agencies, serves with the Office of Science and Technology to assist the President in developing Government-wide plans and policies relating to scientific research and development.

Dr. Kidd's association with NIH began in 1949. Since then he has held a number of key positions in the Office of the Director, NIH. Prior to his last posts here, he served as Associate Director for Training and Associate Director for Institutional Relations.

Before joining NIH, Dr. Kidd served with the President's Council of Economic Advisors as a staff economist.

Formerly With WHO

Long interested in international biomedical research activities, Dr. Kidd was detailed to the World Health Organization in Geneva, Switzerland, in 1958 and 1959 to develop an expanded research program at the international level.

He also has served as a consultant to the Ford Foundation on science development in Latin America, and to other foundations and universities.

In 1954 Dr. Kidd was the recipient of a Rockefeller Public Service Award for a year's study and travel in this country and Europe to review the effect of Government research funds on universities.

Dr. Kidd has written numerous articles and papers relating to national science policy and Government-university relationships. He also authored the volume, American Universities and Federal Research, published by Harvard University Press in 1959.

He received his A.B. and M.A. from Princeton University in 1935 and 1937, respectively, and his Ph.D. in 1957 from Harvard University.

'Birth of a Nation' Next in Silent Classics Series

"The Birth of a Nation," the famous early movie epic produced in 1915 by D. W. Griffith, will be featured in December by the NIH Recreation and Welfare Association in its series of silent film classics.

The full-length film will be shown on Saturday and Sunday, December 5 and 6, at 8 p.m. in the Clinical Center auditorium.

Admission is free. All NIH employees and guests are invited to attend.

BEHAVIOR

(Continued from Page 1)

desires overcame their reason time after time—regardless of education, I.Q., or sex.

Cultural background doesn't affect this phenomenon, either. In one of his earlier studies, Dr. Irwin compared the betting behavior in the X-card tests, of middle class children with those from culturally deprived homes. The results were identical. Both were equally swayed by wishful thinking.

Dr. Irwn conjectured that this bias may affect men in all walks of life, including scientists. He said, "We have not studied scientists as such. But we have looked at adults who were faced with deciding which of two hypotheses was true. We know that they more readily accepted the hypothesis they wanted to be true on less evidence than they did the hypothesis they didn't like."

Judgment May Improve

Dr. Irwin offered one ray of hope. One's judgment may improve with age. He found that college students were swayed a little less by wishful thinking than fifth and sixth graders. The youngsters sometimes bet that they held a desirable card fifty percent of the time, when the odds were ten to one against it.

But in general, Dr. Irwin believes that wishful thinking is a powerful and universal force in decision making, regardless of education and background. He warned that "One must guard against it at every level. The only way this irrational effect can be cut down is to resort to objective evidence whenever it is available—or, in short, stick to the facts."

Dr. Gordon H. Seger, Associate Director, NIGMS, presents a Superior Performance Award to Rita K. Warnock, Fellowships Assistant in the Research Fellowships Branch. Mrs. Warnock was cited for sustained superior performance in carrying out the daily activities of the Research Career Program, and for initiating and developing new methods to facilitate these activities.—Photo by Ed Hubbard.

New NIAMD Abstracts Journal to Aid Research Developments' Communication

The first issue of a journal designed to improve communication of research developments in the field of arthritis and rheumatic diseases has been inaugurated by the National Institute of Arthritis and Metabolic Diseases.

The new monthly publication, Arthritis and Rheumatic Diseases Abstracts, contains abstracts of current world literature on arthritis and rheumatic disease.

As the only central source of up-to-date information in this area of research, the journal will close an existing communication gap by providing, free to investigators, ready access to articles from over 4,000 biomedical journals published throughout the world.

Included in each issue of the journal will be over 250 abstracts dealing with varied clinical and fundamental aspects of these disorders, as well as with social and epidemiological factors. Complete subject and author indexes are also included in every issue and will be cumulated at the end of each year for easy reference.

Members Are Advisors

The abstracts, prepared under contract with Excerpta Medica Foundation, are classified according to a modification of the proposal of the Nomenclature and Classification Committee of the American Rheumatism Association. Eminent members of the association also serve as editors and advisors for the new publication.

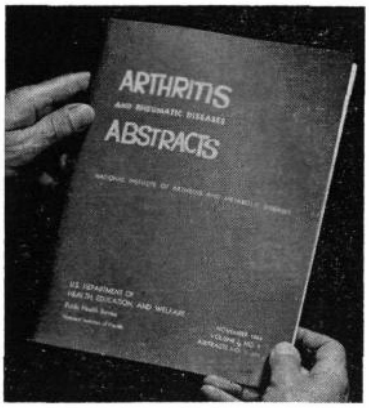
The first issue of the journal is dedicated to the memory of Dr. Joseph J. Bunim, late Clinical Director of the National Institute of Arthritis and Metabolic Diseases and a pioneer in arthritis and rheumatism research.

This specialized communication is one of four such information bulletins published by the National Institutes of Health. The others are Cancer Chemotherapy Abstracts and Carcinogenesis Abstracts (NCI), and Psychopharmacology Abstracts (NIMH).

Terry Appoints Three To Neurology Council

Surgeon General Luther L. Terry of the Public Health Service recently announced three appointments to the National Advisory Neurological Diseases Council.

Named to 4-year terms were Dr. John S. Meyer, Professor and Chairman, Department of Neurology, Wayne State University College of Medicine, Detroit; Dr. Francis A. Sooy, Professor and Chairman, Division of Otolaryngology, University of California Medical Center, San Francisco; and The Rev. Thomas J. Carroll, Executive Director, St. Paul's Rehabilitation Center for the Blind and the Catholic Guild for All the Blind, Boston.



This is the first issue of NIAMD's Abstracts Journal, showing the cover with title and volume and issue numbers.—Photo by Jerry Hecht.

DEVICE

(Continued from Page 1)

D. Thompson, head nurse on his ward.

"Reasonable ability to communicate non-verbally is expected of nurses of the NINDB medical neurology service due to the Institute's relatively high incidence of patients unable to talk. But this device takes all the strain out of it for us; and it is obviously a great blessing to the patient himself."

The face of the Speakeasy shows an outer circle of the alphabet and numbers one through 10 in black; an inner circle of key words and phrases in green; and a third innermost circle of words and phrases in red.

Pointer Indicates Words

The pointer begins by stopping at a black, red or green dot at the top of the outer circle to put the reader on the right track—and then leads him from letter to letter, spelling words, or from key word to key word.

The pointer moves and stops at the command of a light touch on a wooden control board by the patient's side. It can be made to go backwards as well as forward, like a toy electric train. In fact, the motor device within the Speakeasy was taken from such a train set.

"The device is also equipped to be operated by a head band, permitting the muscles of the brow to control the pointer," says Dr. W. King Engel, Col. Schon's attending physician. "The little effort required to operate the Speakeasy makes it feasible for many patients but especially so for those with muscular atrophy."

Dr. Engel added, "We want to begin exploring the possibility of having several duplicates of the Speakeasy made right here in our own shops for use by other patients."

The instrument is easily constructed, and in retrospect it even seems like an obvious idea; but the fact is that innumerable patients, until now, have had to remain mute because it didn't exist.

Pictures and wiring diagrams of the Speakeasy have been filed with the Veterans Administration and the Department of the Army, specifying that anyone anywhere may reproduce it or a similar instrument—with the singular provision that its reproduction may not be for profit.

Dr. Elizabeth G. Frame Named Assistant Chief Of NIGMS Branch

Dr. Frederick L. Stone, Director of the National Institute of General Medical Sciences, has announced the appointment of Dr. Elizabeth G. Frame as Assistant Chief of the Institute's Research Fellowships Branch.

Dr. Frame comes to NIGMS from the National Institute of Child Health and Human Development, where she has been Acting Director of the Developmental Pharmacology Program since 1963.

In her new position, Dr. Frame will work closely with Dr. Frederick P. Ferguson, Chief of the Research Fellowships Branch, in the development and administration of the branch and in policy formulation.

Dr. Frame's training has been in biochemistry and she has published extensively on protein metabolism and endocrinology.

Background Cited

Born in Nova Scotia, Dr. Frame received her B.A. and M.A. degrees from Dalhousie University, Canada. From 1930 until 1937 she was Instructor and then Assistant Professor in Zoology at Smith College, Northampton, Mass.

After receiving her Ph.D. from Yale University, Dr. Frame joined the staff of Johns Hopkins University School of Medicine as Instructor in the Department of Urology.

She was a Fellow at Boston City Hospital from 1944 to 1946 and Assistant Professor of Physiological Chemistry at the University of Minnesota until 1953.

Her association with NIH began in that year, when she became Head of the Biochemistry Service of the Clinical Center's Clinical Pathology Department. In 1959 and 1960 she was a biochemist at the Center for Aging Research and in 1960 accepted a position as program administrator in the Research Training Branch, Division of General Medical Sciences.

'Science and Cancer,' by Dr. Michael B. Shimkin, Published by the PHS

The nature of cancer, its effect on man, and man's efforts to deal with it are examined from the viewpoint of biology and medicine in a book published recently by the Public Health Service.

"Science and Cancer," by Dr. Michael B. Shimkin, is addressed primarily to the informed reader outside the scientific community. It will be most useful to those who have had a high school course in biology, for it assumes a familiarity on the part of the reader with the life processes in which cancer seems to be thoroughly involved.

The author retired as an Associate Director of the National Cancer Institute in 1963 after 25 years as a research scientist and administrator. He is now engaged in cancer research and teaching at Fels Research Institute, Temple University School of Medicine, Philadelphia.

Purpose Is Twofold

Dr. Shimkin, a distinguished medical scientist and physician, expresses in his foreword a twofold purpose: to present the medical and biological aspects of cancer as a practical problem, and to describe some of the fronts on which scientists are engaged in the research attack upon cancer as an aberration of cellular growth.

Although the 137-page volume, sponsored by the National Cancer Institute, deals with the entire field of cancer research, it draws its focus mainly on the disease in man.

Its 20 chapters range over a wide field of subjects including diagnosis, treatment, environmental hazards, cells and organs, immune response, nutrition and cancer, anti-cancer drugs, and the reasonable expectation of ultimate victory over the disease.

Single copies of "Science and Cancer" (PHS Publication No. 1162) are available without charge from the Public Health Service, Washington, D. C. 20201. The book may be purchased in quantity from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402, at 60 cents per copy.

NIH Historian Moves Office To Room 105, Stone House

The Office of the NIH Historian, Dr. Wyndham D. Miles, is now located in Room 105, Building 16 (Stone House).

The Historian's office was formerly located in Room 207, Building 15-K (Wilson House). The telephone number remains unchanged—Ext. 63006.

First of PHS Dietitian Interns Enroll For 3 Weeks Clinical Center Training

The Clinical Center Nutrition Department felt the equivalent of a pat on the back when the PHS Staten Island Hospital recently asked for a helping hand in training new dietitian interns.

"The Staten Island Hospital is a real old-timer at providing the Commissioned Corps with well trained dietitians," says Edith A. Jones, Chief of the CC Nutrition Department. "We are naturally very happy to begin doing our part by giving its interns the benefit of three weeks' experience in cafeteria management and in evaluating dietetics in a research environment."

New dietetic interns on the job. Lois Richardson of San Diego, Calif., checks the menu while Patricia Giblin of Newark, N. J., applies the taste test to samples of foods before they go on sale in the CC cafeteria.—Photo by Sam Silverman.

The trainees are college graduates who must complete a full year's internship covering virtually every phase of dietetics in order to be certified by the American Dietetic Association. They will affiliate with the CC two at a time, a total of 12 per year.

The Clinical Center is included in their training program primarily because its cafeteria operates in competition as a public service—unlike the cafeteria at Staten Island Hospital.

The first two weeks here are taken up with learning how to give the optimum in food and service to cafeteria patrons while breaking even on costs.

Food Service Studied

The third week is devoted to providing food for research patients—as distinct from nutrition service on a purely therapeutic or general medical care basis.

Formerly the Nutrition Department was called upon to answer a constant string of requests for this kind of instruction, largely from hospital nutrition departments.

As a result the CC nutritionists established a program of week-long conferences in "metabolic food service," which they now conduct three times a year for some 30 dietitians.

"High quality and efficiency in food service are, as in any profession, the children of both academic and experiential education," Miss Jones says. "We'll do our best to give these new interns the full benefit of on-the-job training."

NIGMS Offers Film on New Computer System Developed for Hospitals

A 38-minute film showing the operation of a pilot version of a new computer-based system designed to simplify handling of communications and medical records in hospitals has been produced by the National Institute of General Medical Sciences.

Copies of the black and white, 16 mm. film are available on a loan basis from the Information Office, NIGMS, National Institutes of Health, Bethesda, Md. 20014.

Demonstrated at NIH

The film was processed from an edited videotape made during a demonstration at NIH of the experimental system being developed by Bolt Beranek and Newman Inc., and Massachusetts General Hospital. Work started on the system two years ago with contract support from NIGMS and the American Hospital Association.

Unique in many respects, the prototype system consists of a central time-shared digital computer in Cambridge connected through private telephone lines to a number of teletypes located on nursing stations and in the pharmacy at the hospital in Boston.

The system is presently designed to handle 60 teletype stations simultaneously within Massachusetts General Hospital. Since the capacity of the computer is greater than that required by this hospital, the system is potentially capable of providing similar service to a number of other hospitals in the area on a shared-time basis.

The system accepts messages from all stations, checking for discrepancies against previously "memorized" criteria. After checking, it stores the data in its memory as a permanent part of the patient's records, while automatically distributing the new information to authorized teletype stations.

By maintaining a comprehensive record of patient-care that is readily accessible in a variety of combinations, the system will be a useful resource in clinical research and in studies of patient-care procedures.

3 From NIH Participate In Virology Symposium

Three scientists from the National Institutes of Health were participants in a 3-day International Symposium on Applied Virology, scheduled to end today, at the newly opened Florida Atlantic University at Boca Raton.

Dr. Alexis Shelokov, Chief of the Laboratory of Virology and Rickettsiology of the Division of Biologics Standards, presented a paper on "Arthropod-borne Viruses: The Versatile Parasites."

"The Viral Zoonoses" was the title of a paper given by Dr. Francis R. Abinanti of the Extramural Programs Branch, National Institute of Allergy and Infectious Diseases.

Other Participants Noted

Dr. Karl Habel, Chief of the Laboratory of Biology of Viruses, NIAID, spoke on "The Implications of Recent Findings in Animal Tumor Viruses for the Possible Virus Etiology of Human Cancer."

The symposium was chaired by Dr. Edwin Lennette, Chief of the Viral and Rickettsial Disease Laboratories, California State Department of Public Health; and Dr. Murray Sanders, Chairman of the Department of Biological Sciences, Florida Atlantic University.

Dr. Kenneth R. Williams, President of the university, said he hoped this symposium on applied virology will be the first of an annual series of symposia to be held at the university.

The H. Trendley Dean Award, a bronze plaque honoring the first Director of the National Institute of Dental Research, won Honorable Mention in the National Sculpture Society's 31st annual exhibition held recently in New York City. The plaque, designed by Don Turano of Washington, D. C., on a commission from Dr. Frank McClure, Chief of the Laboratory of Biochemistry, NIDR, depicts man's attempt to conquer disease by portraying an eagle (health) attacking the serpent (disease) entwined around the tree of life. The award was first presented last March to Dr. Francis A. Arnold Jr., NIDR Director.

Neutralizing Antibodies Against SV 5, SV 20 Found in Human Sera

A Division of Biologics Standards study has found neutralizing antibodies against two simian viruses in the sera of persons from New Guinea and the United States, but the presence of these substances in man has not been associated with the use of vaccines, or with any definite clinical disease.

Although about 100 viruses of lower primate origin have been isolated and characterized, only a few of these have been studied to determine whether they also infect man.

In this study, the sera from 267 persons living in two markedly different geographic and ecologic settings (New Guinea and the United States) were examined for the presence of neutralizing antibodies against two representative primate viruses—monkey myxovirus SV5 and monkey adenovirus SV20.

Human Infection Possible

The results suggest the possibility that these viruses, or agents antigenically related to them, might infect man.

SV20 antibody was found in two-thirds or more of the New Guinea donors in all age groups; it was found in only one-fifth of the sera of U.S. donors above six years of age, and was absent in those six or younger. None of the New Guinea sera and eight percent of the U.S. sera possessed SV5 neutralizing antibody.

U.S. donors who did receive adenovirus vaccines prepared in monkey kidney cell cultures did not have detectable SV5 and SV20 antibodies, indicating that these antibodies are not associated with the use of these vaccines.

The fact that New Guinea donors had never received vaccine of any kind, nor had contact with any primate other than man, suggests that their antibodies against SV20 might have been stimulated by what may actually be a human infectious agent, which just happened to be isolated from lower primates first.

Clinical Manifestations Unknown

Nothing is known about the clinical manifestations of SV5 and SV20 infections in either monkey or man. The fact that SV20 antibody appears with great frequency in the blood of New Guinea natives and less commonly in the blood of United States residents, and the presence of SV5 antibody in the U.S. sera, may be indications that SV5 and SV20 are human pathogens.

A report of this study by C. G. Aulisio and Dr. J. A. Morris of the Division of Biologics Standards, and Mrs. D. C. Wong of the National Institute of Allergy and Infectious Diseases, appeared in the Proceedings of the Society of Experimental Biology and Medicine.

Following completion of the recent Combined Federal Campaign at NIH, Dr. Eugene A. Confrey, DRG Chief and Chairman of the NIH Campaign, and Dr. Joseph A. Gallagher of the Bureau of State Services who served as PHS Chairman, awarded certificates to the chairmen of eight NIH components for achieving 100 percent of quota. From left, seated: Dr. Gallagher; Genevieve L. Garner, OAM; Dr. Confrey, and Dr. Walter Newton, DRS. Standing: Daniel M. McMonagle, DRFR; Paul G. Waugaman, NICHD; Frank X. Byrnes, NIMH; Richard L. Seggel, OD-NIH; James W. Phillips, DRG; and Henry T. Cram, NIGMS.—Photo by Sam Silverman.

Ruth Overton Retires As NIH Library Aide; Serves Here 16 Years

Ruth Overton, a Library Assistant in the Library Branch, Division of Research Services, retired recently after 26 years of Government service. During the last 16 years she was on the staff of the Circulation Unit of the NIH Library.

Miss Overton began her Government service in the Administrative Services of the Works Progress Administration in 1936 and remained there until 1943.

Joins PHS in 1946

From 1944 until 1946 she was a civilian employee at Camp Pickett, Va. Her career with the Public Health Service began in 1946 in the Bureau of State Services. In 1948 she transferred to the NIH Library.

A native of Burkeville, Va., Miss Overton attended Randolph-Macon Woman's College in Lynchburg, and the Peabody College for Teachers and Vanderbilt University in Nashville, Tenn.

Miss Overton has returned to Burkeville, where her family has lived for many generations, and plans to resume her interest in music.

R&W Annual Meeting Set for December 16

The Recreation and Welfare Association of NIH announced that its annual meeting this year will be held Wednesday, December 16, at 12 noon in Wilson Hall.

All R&W members are urged to attend the meeting and to bring their 1964 membership cards.

Included among the business to be conducted at the meeting will be the presentation of a slate of officers for 1965. Nominations also will be accepted from the floor. The election will be conducted by mail ballot.

Door prizes will be awarded lucky ticket holders. In addition, the first 100 members to arrive will receive a special gift.

Dr. David Winter Wins Hans Berger Award

Dr. David L. Winter, until recently with the Electroencephalography Branch, NINDB, received the American Electroencephalographic Society's annual Hans Berger Award for outstanding neurophysiology research at the society's annual meeting, October 1-3, in Santa Fe, N. Mex.

In making the award, the society recognized Dr. Winter's studies employing microscopically tiny electrodes to measure electrical activity of single cells in the cat's gracile nucleus—a sensory area of the brain.

Dr. Winter is now associated with Walter Reed Army Medical Center.

Robert Wilson to Direct NLM Information Office

Dr. Martin M. Cummings, Director of the National Library of Medicine, recently announced the appointment of Robert M. Wilson to the newly established position of Public Information Officer for the Library.

In this capacity Mr. Wilson will be responsible for developing and carrying out a broad program of public and professional information aimed at delineating the Library's role in the advancement of knowledge in medicine, public health and related biological sciences.

Serves With NIAID

Mr. Wilson has been a member of the information staff of the National Institute of Allergy and Infectious Diseases since November 1962. Prior to that he served for more than three years in the Office of Research Information.

Before joining NIH, he served for six years in the Foreign Service of the U. S. Department of State, including assignments at the American Embassies in Korea and Mexico.

The National Library of Medicine, besides being the hub of the national network of biomedical libraries and information services, is the world's leading institution for the collection, organization, and dissemination of medical research information.

Dr. McPherson Wins ACP Research Award

Dr. Charles W. McPherson of the Division of Research Services was one of the recipients of the annual Animal Care Panel Research Award for the best paper published in the official ACP Journal in 1963.

The paper, entitled "The Effect of Orally Administered Sulfamerazine and Chlortetracycline on Chronic Respiratory Disease in Rats," was written by Dr. Robert T. Habermann, Fletcher P. Williams, Dr. Rex Every, and Dr. McPherson while all were members of the Comparative Pathology Section, DRS.

Each of the authors was given a certificate and an award of $75 at the 15th Annual Meeting of the ACP held recently in New York City.

Dr. McPherson is now Head of the Pathogen Free Animal Production Unit, DRS.

Currently, Dr. Habermann is a veterinary pathologist with the Division of Toxicological Evaluation, Food and Drug Administration, Washington, D.C.; Mr. Williams is proprietor of the Pied Piper Farms, Newark, Del.; and Dr. Every is in practice at the Baton Rouge Animal Hospital, Baton Rouge, La.