



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

April 21, 1958, Vol. X, No. 8

PUBLIC HEALTH SERVICE NATIONAL INSTITUTES OF HEALTH

## DEPARTMENTAL AWARDS GO TO 4 NIH EMPLOYEES, 2 GROUPS



Dr. Bernard B. Brodie

### Drs. Kety, Brodie Cited For Distinguished Work

The Department's highest honor award, the Distinguished Service Award, was presented to Dr. Seymour S. Kety, NIMH, and Dr. Bernard B. Brodie, NHI, by DHEW Secretary Marion B. Folsom at a ceremony in the Departmental Auditorium April 18.

Also honored were Robert E. Learnmouth and Robert J. Koegel, NCI, who received Superior Service Awards; and the Medical Arts and Media Preparation Sections, DRS, which received unit citations.

Dr. Kety, Chief of the Laboratory of Clinical Science, NIMH, was honored for his outstanding contributions to internal medicine, including the advancement of an entire field of clinical knowledge of circulation.

Dr. Brodie, Chief of the Laboratory of Chemical Pharmacology, NHI, was cited for his leadership and original contributions in chemical pharmacology, which have led to the development of numerous therapeutic agents.

A Superior Service Award was presented to Mr. Learnmouth for his administrative skill as Executive Officer, NCI, and for contributions to financial management systems at NIH. Mr. Koegel, chemist in the NCI Laboratory of Biochemistry, was recognized for the invention of new analytical instruments.

Sixteen members of the Medical Arts Section, DRS, were honored for superior production of medical illustrations and the development of new techniques in visual aids; and nine employees in the Media Preparation Section, DRS, were cited for outstanding performance in meeting greatly increased needs for complex biological media.



Dr. Seymour S. Kety

### NIMH To Co-Sponsor Mental Health Week

The National Association for Mental Health and the NIMH will co-sponsor "National Mental Health Week" April 27-May 3 to stimulate citizen activity for the mentally ill.

The theme of this tenth annual observance is "With Your Help the Mentally Ill Can Come Back." It was chosen to stress the need for rehabilitation of the ex-mental patient. Educational materials have been prepared and distributed by NIMH, and fund raising will be directed by the National Association for Mental Health.

The Advertising Council is co-operating by designating top TV programs to carry mental health messages.

### TV Lecture Scheduled

Drs. Joseph J. Bunim and Kurt Bloch, NIAMD, have been invited to appear on a closed circuit telecast at the 39th Annual Session of the American College of Physicians in

(See Lecture, Page 3)

### NIH TO SEND EXHIBITS TO GENEVA CONFERENCE

Two NIH exhibits will be displayed at the 2d International Conference on Peaceful Uses of Atomic Energy, to be held in Geneva, Switzerland, September 1-13.

An exhibit entitled "The Metabolic Pathway of Carbon-14 Labeled Chemical Carcinogens" is being entered by Drs. Harold P. Morris, John H. Weisburger, Elizabeth K. Weisburger, and Helen M. Dyer, of the NCI Laboratory of Biochemistry.

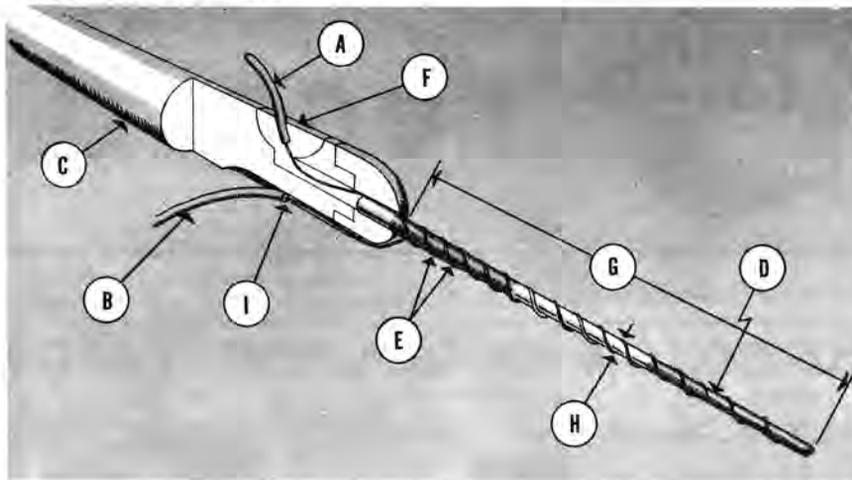
The exhibit will demonstrate major accomplishments made during the last decade in tracing the pathway taken by radioactive and stable isotopic molecules of a chemical carcinogen through the body.

It will show how the use of radioactive and stable isotopes makes it possible to visibly trace the carcinogen through the body of the rat and guinea pig. The rate and place of elimination, the metabolites that are produced, and their method of identification and distribution will also be illustrated.

(See Conference, Page 4)

# Microelectrodes Aid Research

No. 204 in a Series



Components of the axon microelectrode are (A) current wire, (B) voltage wire, (C) plastic handle, (D) quartz rod, 70 cm. in diameter, and (E) pure silver wire, 20 microns in diameter. The current wire is joined to heavier wire at F. The quartz rod (shading indicates insulated areas) is 6 cm. in length (G). Its maximum outer diameter (H) is 130 microns. The voltage wire joins heavier wire at I.

Highly skilled instrument makers at NIH are fabricating electrodes with an infinite number of possible uses. Their potential in neurosurgery along is virtually unexplored.

The nervous system is like a telephone switchboard in that it can both give and receive messages. If a section of living tissue is connected to a medium of electrical conductivity such as the electrode, it can be stimulated to action, and the electrical impulses occurring within can be tapped. Electrical equipment attached to the electrode records any activity within the tissue.

Microelectrodes are electrodes reduced to the size of a human hair. The Instrument Section, LAB-DRS, has made many types of microelectrodes. One, the axon microelectrode, is a solid quartz rod wrapped with insulated wires of pure silver and held firmly in plexiglass. Two wires are used: one to measure the voltage and the other to apply the current. A feed-back amplifier connected between the wires applies the necessary current to keep constant the potential measured by the voltage wire. A corrosion-resistant plastic, Tygon, is the insulating material.

The Instrument Section spent three months in developing the technique for construction of the axon microelectrode. The original work was done by James J. Gilliam, Kenneth T. Bolen, and Harry J. Knight, under the direction of John M. DeBroske, Fabrication Chief.

Glass-blowing techniques had to be perfected to produce quartz as thin as ordinary newsprint. First, Gilliam stretched a quartz fiber to a length of several feet, then from the center of the filament cut a rod 6 centimeters in length and 70 microns in diameter. Seventy microns is about 1/400 inch.

A miniature brass lathe was devised with which to wind spirals of the silver wire onto the rod by turning a specially calibrated screw. The wire, so delicate that a whisper would cause it to snap, was threaded through tiny, fork-like notches and weighted by beeswax to keep it from blowing into space.

The final and most difficult step in this painstaking process was to apply layers of thinned plastic over the wired rod, omitting deposits at intervals where conductivity was desired. The coatings, three in all, are no thicker than five microns.

During the initial stages of this delicate work, the instrument maker peered through a jeweler's loupe. He performed the final work under a microscope.

There's nothing halfway about an electrode. Either it works or it doesn't.

The Instrument Section handles numerous requests for unusual types of electrodes. In keeping with its reputation for precision, the Section is preparing a how-to-do-it manual on techniques and materials used in constructing electrodes for neurological work.

## Publication Preview

The following manuscripts were received by the SRB Editorial Section between February 11 and February 27.

DBS

Halperin, M. Extension of the Mann-Whitney test to samples censored at the same fixed point.  
Kilham, L. Virus transformation and cancer.

NCI

Armitage, P. The comparison of survival curves.  
Armitage, P., and Schneiderman, M. A. Statistical problems in a mass screening program.  
Endicott, K. M. Chemotherapy of tumor viruses.  
Shimkin, M. B. Oncology in the Soviet Union.  
Van Scott, E. J. Response of hair roots to chemical and physical influence.

NHI

Bronk, J. R., and Kielley, W. W. Evidence for the point of action of 2,4-dinitrophenol on ATPase, ATP-P<sup>32</sup> exchange, ATP-ADP<sup>32</sup> exchange and phosphorylation.

Chen, P. S., Jr. Evidence for conversion of progesterone-4-C<sup>14</sup> to radioactive  $\Delta^4$ -pregnene-6 $\beta$ , 17 $\alpha$ , 21 triol-3, 20 dione by perfused calf adrenals.

Fales, H. M., and Wildman, W. C. Interconversions of amaryllidaceae alkaloids by sodium and amyl alcohol.

Sarnoff, L. C.; Sussman, K. E.; and Sarnoff, S. J. The problem of reproducibility in blood flow bioassay techniques for vasoactive substances: Studies with human urine.

Sarnoff, S. J.; Case, R. B.; and Macruz, R. The effect of human urine and nitroglycerin on coronary resistance and myocardial oxygen consumption in the isolated supported heart preparation.

Sarnoff, S. J.; Sussman, K. E.; Pierce, J. V.; and Sarnoff, L. C. Comparison of vasodilator activity in the urine of normal individuals and patients with orthostatic hypotension.

Steinberg, D.; Vaughan, M.; Anfinson, C. B.; Gorry, J. D.; and Logan, J. The preparation of tritiated proteins by the Wilzbach method and a simple method for liquid scintillation counting of radioactive proteins.

Stephenson, J. L. Theory of measurement of blood flow by dye dilution technique.

NIAID

Cook, M. K. Antagonism of the toxoplasmicidal activity of pyrimethamine in tissue culture.

Garin, J. P., and Eyles, D. E. Le traitement de la toxoplasmose experimentale de la souris par la spiramycine.

Paterson, P. Y. Tolerance to the paralytogenic activity of nervous tissue.

Rosen, L. Observations on the epidemiology of dengue in Panama.

NIAMD

Bartlett, R. G., Jr.; Brubach, H. F.; Trimble, R. C.; and Specht, H. Relation of increased airway resistance to breathing work and breath velocity and acceleration patterns with maximum and near maximum breathing effort.

Briggs, G. M. Good animal health important for good human health.

Edelhoc, H. The denaturation of pepsin. III. The effects of various protein denaturants on the kinetics of pepsin inactivation.

Ginsburg, V.; Weissbach, A.; and Maxwell, E. S. Formation of glucuronic acid from uridine-diphosphate glucuronic acid.

Greenblatt, C. L., and Schiff, J. A. The occurrence of a pheophytin-like pigment during dark adaptation of *Euglena gracilis* var. *bacillaris*.

Itano, H. A., and Robinson, E. Electrophoretic separation of intermediate compounds in two reactions of ferrihemoglobin.

Itano, H. A., and Singer, S. J. On the dissociation and recombination of human adult hemoglobins, A, S, and C.

Weissbach, A., and Hurwitz, J. The formation of 2-keto, 3-deoxy heptonic acid in extracts of *E. coli* B. I. Isolation and characterization.

#### NIDR

Burstone, M. S. Histochemical demonstration of acid phosphatases using naphthal AS-phosphates.

McClure, F. J., and Zipkin, I. Physiological effects of fluoride as related to water fluoridation.

Paulton, D. R., and Pruzansky, S. Report of a case with supernumerary teeth and treatment involving extraction of three upper incisors.

Zipkin, I.; McClure, F. J.; Leone, N. C.; and Lee, W. A. Deposition of fluoride in human skeletal tissues as related to fluoride in drinking water.

#### NIMH

Freygang, W. H., and Sokoloff, L. Quantitative measurements of regional circulation in the central nervous system by the use of radioactive inert gas.

Gladwin, T. Canoe travel in the Truk area: Technology and its psychological correlates.

Goodrich, D. W. Toward a model for psychotherapy research.

Goodrich, D. W. The choice of situation for observational studies of children.

Hollister, W. G. A mental health program for Puerto Rico. Part I. The current status of mental health programs in the Continental United States.

Kety, S. S. The cerebral circulation.

Kohn, M. L. Social class and parental values.

Kornetsky, C. Effects of meprobamate, phenobarbital, and dextro-amphetamine on reaction time and learning in man.

McDonald, R. K. Ceruloplasmin and schizophrenia.

Newman, R. G.; Faegre, C.; and Glaser, F. The assessment of progress in the treatment of learning disturbances of hyperaggressive children within a school setting.

Pearlin, L. I. Social and personal stress and escape television viewing.

Raush, H. L. On the locus of behavior-observations in multiple settings within residential treatment.

Wikler, A. Methodology of research in psychological pharmacodynamics.

#### NINDB

Albers, R. W., and Salvador, R. A. Succinic semialdehyde oxidation by a soluble dehydrogenase from brain.

Brady, R. O., and Koval, G. J. The enzymatic synthesis of sphingosine.

Frost, L. L.; Baldwin, M.; and Wood, C. D. Investigation of the primate amygdala: Movements of the face and jaws. III. After discharge and the anterior commissure.

Wanko, T., and Gavin, M. A. The fine structure of the lens epithelium. An electron microscopic study.

### NIH RECORD

Published by  
Scientific Reports Branch  
Division of Research Services  
National Institutes of Health  
Room 212, Building 8  
Bethesda 14, Maryland  
OLiver 6-4000 Ext. 2125

## SCIENCE STUDENTS HIRED FOR SUMMER JOBS AT NIH

Employment programs for students interested in scientific research careers will be sponsored by NIH again this summer.

Science students may obtain summer employment by (1) appointment under Schedule A of the Civil Service regulations, (2) competitive appointment from a Civil Service Register as a student trainee, or (3) participate in the Commissioned Officer Student Training and Extern Program (COSTEP).

Under Civil Service Schedule A, applicants with at least a year of college are selected on the basis of their scientific education in categories where there are vacancies.

The Student Trainee Program requires a written examination and is open to college students or those who have been accepted for college enrollment.

Additional information concerning the above programs will appear in subsequent issues.

Students seeking summer jobs in clerical or other nonscientific fields are selected from a register of eligibles after passing the required examination.

### LECTURE Contd.

Atlantic City. The telecast, a part of the Clinic on Newer Developments in Rheumatic Diseases, will be broadcast at 9 a.m. on April 29.

Dr. Bunim, Clinical Director and Chief of the Arthritis and Rheumatism Branch, NIAMD, will discuss basic procedures and principles of serological tests currently used to diagnose rheumatoid arthritis. He will be assisted by Dr. Bloch.

### Stanley Brooks Dies

Stanley Truman Brooks, biologist in DRG, died April 2 of cancer. He knew since last August that he had inoperable cancer of the lung and brain. Before being hospitalized in the CC, he compiled a report for DRG on the analysis and interpretation of research results of grantees.

Mr. Brooks, renowned for his studies on the role of tobacco tar as a possible cause of human lung cancer, was associated with PHS, the Military Government of Germany, the Commerce Department, the Carnegie Institution, and the American Tobacco Company.

## NEWS BRIEFS

Dr. Arnold B. Kurlander, Assistant to the Surgeon General, PHS, has been named to the new post of Assistant Surgeon General for Operations. He will perform special assignments and assist the Surgeon General in coordinating PHS programs.

\* \* \* \* \*

The nutritional status of Alaskan Eskimos is being studied for the first time by a team of specialists working with the Arctic Health Research Center, PHS, in Alaska. Dr. Edward M. Scott, NIAMD, and Carl L. White, NIDR, are members of the survey team, which is under the supervision of the Government's Interdepartmental Committee on Nutrition for National Defense.

\* \* \* \* \*

The February Guard of the Month, Pvt. Samuel Page, was chosen for his alertness and dependability in handling unexpected situations. His integrity, attention to duty, and general performance were outstanding.

\* \* \* \* \*

Albert F. Siepert, NIH Executive Officer, served as chairman of a panel on science and public administration at the recent national conference of the American Society for Public Administration in New York.

### NIH SHORT OF QUOTA IN JOINT FUND DRIVE

At the end of the second week of the Federal Service fund-raising campaign, only 11.5 percent of NIH employees had contributed to the Federal Service Health Campaign and 11.2 percent to the Federal Service Joint Crusade. The NIH goal in the six-week campaign is 100 percent participation.

### Mr. McCandless Resigns

G. Byron McCandless, NIDR Information Officer, resigned recently to re-enter private industry. Mr. McCandless, a veteran in the public relations field, had been at NIH since 1956.

Nearly every branch of biological science, as well as journalism, history, and the arts were encompassed in Mr. Brooks' career.

Mr. Brooks is survived by his wife, Dr. Betty Watt Brooks; a son and two daughters.

## LABORATORY HAZARDS WORKSHOP HELD HERE

Fifty safety engineers from research agencies in the Eastern U. S. attended a one-day workshop at NIH recently to exchange ideas on the identification and prevention of accident hazards in the laboratory. The annual workshop was sponsored by the Laboratory Committee of the National Safety Council Chemical Section.

After a welcome from Dr. J. R. Heller, NCI Director, the group participated in a panel discussion, moderated by Dr. Donald B. Tower, Chairman of the NIH Safety Committee. Topics discussed included radiation safety, infection hazards, ventilation, and chemical safety and disposal.

Participants also visited the NIH chemical disposal and incinerator areas and toured the CC.

## 8th Equipment Exhibit To Be Held Here Soon

Plans are going forward for the annual Instrument Symposium and Research Equipment Exhibit, a four-day event that begins Monday, May 12. Instrumentation sessions demonstrating new equipment will be held daily.

This is the eighth year that NIH has been host to national manufacturers exhibiting the latest developments in medical research equipment. The instrument symposium will be held concurrently with the exhibit, as in the past three years.

More than 100 manufacturers will display equipment valued at more than \$700,000.

Cosponsors of the event are the Washington sections of six scientific societies; American Chemical Society, Instrument Society of America, Society for American Bacteriologists, American Association of Clinical Chemists, Society for Experimental Biology and Medicine, and Professional Group on Medical Electronics of the Institute of Radio Engineers.

## Commissioned Officers To Hold Dance April 26

The PHS Commissioned Officers Association will hold its spring dance, the April Shower, on Saturday, April 26, in Wilson Hall. Dick Stratton and his orchestra will provide music from 10 p.m. to 1 a.m.

## NIH Spotlight



Ernestine L. Taylor

"I like to see different people and study various types of faces; that's the best part of my job," says Ernestine L. Taylor, whose smile may be familiar to you.

Ernestine is a cashier in the CC cafeteria. She observes your daily diet -- even if you don't!

At the last stop in line, Ernestine is sometimes the recipient of complaints about the menu or price changes. She recalls that once she was the target of a roll thrown by a disgruntled customer after bread prices went up. But most customers, she says, mention the price changes jokingly -- in the manner of the one who always tells her the higher prices are to pay for her new car.

"People are generally very pleasant," Ernestine declares; "I have received more flowers than rolls."

Although she faces a steady flow of traffic throughout the day, Ernestine remains cheerful. "My main problem is keeping the line moving rapidly," she says. "This is often difficult when women wait until the last moment to dig out their money, or men become too engrossed in their conversations to move on."

Ernestine came to NIH five years ago as a kitchen helper. Three years ago she was selected to begin training as a cashier. After working with another cashier for several weekends, she was ready to brave the daily lunch rush alone. She has passed the NIH examination for cashiers and is now one of the cafeteria's four full-time change-givers.

Most of Ernestine's 7 a.m.-to-3:30-p.m. day at NIH is spent doling out change. When not behind the register, she assists the dietitians in setting up the menu board or decorating the cafeteria.

## ELECTRICITY IN MEDICINE TO BE DISCUSSED APRIL 30

A session on "Electricity in Medicine" will be presented next week as part of a meeting of the American Institute of Electrical Engineers. Interested NIH personnel are invited to attend the session, to be held at 9 a.m. on Wednesday, April 30, at the Sheraton-Park Hotel, Washington, D. C.

Papers to be presented include "Advances in Cineradiography" by Donald Sekira, Westinghouse Electric Corporation; "Dual Scanner for Detection of Brain Tumors" by G. I. Johnston, Laboratory Aids Branch, DRS; "Telemetering of Physiological Data" by Capt. N. L. Barr, Navy Department; and "A Brief History of Point Polarized Electrode Systems" by Dr. Irvin Levin, Walter Reed Army Medical Center.

For additional information, contact G. C. Riggle, Instrument Section, DRS, who is program chairman of the session.

## CONFERENCE Contd.

An exhibit illustrating how congenital heart anomalies are diagnosed with radioactive gas will be submitted by Drs. Andrew G. Morrow and Richard J. Sanders, NHI Surgery Branch.

The path of this radioactive gas will be shown as it enters the left side of both the normal and the abnormal heart, and then proceeds through the arteries, and as it circulates through the tissues, enters the veins, and returns to the right side of the heart.

If there is a hole in one of the partitions in the heart permitting blood from the left side to enter the right side, then the concentration of radioactive gas in the right side of the heart will immediately increase. This instant increase in radioactivity in venous blood samples indicates the defect in the heart.

The central theme of the 70 U. S. exhibits will be a progress report on U. S. scientific and technological progress in peaceful uses of atomic energy.

The Medical Arts Section, DRS, is providing advice and ideas for the exhibits, which will be constructed by the Tague Company, New York City.

The one weekend out of three that she is off duty, Ernestine and her husband like to go fishing, weather permitting.