

NIH



record

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

March 16, 1959, Vol. XI, No. 6

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

NEW STUDY GROUPS, COMMITTEE FORMED

Four new study sections were recently established in DRG to review the increasing number of applications for grants and fellowships.

A new Toxicology Study Section has been created to review public health problems arising from the wide use of chemical agents as pesticides and food additives. Francis P. McGrath has been appointed Executive Secretary.

The former Metabolism and Nutrition Study Section has been reorganized into two groups: Metabolism, with Dr. J. Palmer Saunders as Executive Secretary; and Nutrition, headed by Dr. Elsa O. Keiles. Dr. Saunders' section will be concerned with biochemical studies of disease in general, and especially with metabolic studies in arthritis, diabetes, and mental health. Dr. Keiles' group will review applications for laboratory and clinical studies of nutrition in health and disease.

The Biochemistry Study Section has been divided into a study section still to be known as Biochemistry, and a new Physiological Chemistry Study Section. The Biochemistry Study Section, headed by Dr. Helen L. Jeffrey, will review projects concerned with organic chemistry reactions in living cells and cell systems. The Physiological Chemistry Study Section, under Dr. C. Donald Larsen, will be concerned with clinical biochemistry, especially relating to life processes in normal and diseased tissue.

Also created in February is the Experimental Embryology and Development Training Committee, under DGMS. Chairman of the group is Dr. Louis Hellman, State University of New York College of Medicine.

THREE NIH EXHIBITS IN HEW HEALTH FAIR

Three exhibits from NIH will be on display in the DHEW Auditorium, 4th St. and Independence Ave., S.W., during the Department's Health Fair, today through March 26, sponsored in connection with the Federal Service Health Campaign.

NCI's display, "Cancer--Where We Stand Today," illustrates the magnitude of the cancer problem, and shows research approaches to cancer as well as various forms of treatment now in use.

The NHI exhibit, a cooperative project with the American Heart Association, was shown last year at the Brussels World Congress of Cardiologists, and at other exhibitions.

The DGMS display pictures the organization, activities, and areas of research of the Center for Aging Research.

ROBIN BUILDING READY FOR OCCUPANTS SOON

Personnel and offices now located in the Colemont, Perpetual, and Progress Buildings will begin moving this month into the new Robin Building, 7981 Eastern Ave., Silver Spring.

Also moving to the new building are some sections from Bethesda.

The four-story Robin Building, on which construction began last summer, will provide NIH with more than 250 additional offices.

In addition to more than 71,000 square feet of floor space, the Robin Building will contain three conference rooms, an auxiliary health unit from Employee Health Service, a snackbar, and vending machines.

Shuttle service has been established to provide service between the new building and NIH each half-hour of the workday.

SOVIET EXCHANGE SCIENTISTS TOUR HERE



Recent Russian visitors to NIH, members of an endocrinology exchange mission, meet for a press conference in the Clinical Center. From left, Dr. Robert W. Bates, NIAMD, host to the team; Natalie Grant, State Department interpreter; Prof. Nicolai A. Yudaev, Academy of Medical Sciences, Moscow; Dr. Vasily G. Baranov, Pavlov Institute of Physiology, Leningrad, and Dr. Eugenia A. Kolli, All-Union Institute of Experimental Endocrinology, Moscow.

Biochemists Study Schizophrenia

No. 224 in a Series

The cause, or causes, of schizophrenia, one of the most serious and most prevalent of the mental disorders, has yet to be determined. Etiological theories, ranging from changes in blood composition, through body-fermented poisons, to pathological brain lesions, have been suggested, accepted, or discarded over the years since Hippocrates.

Recent controlled studies, however, have failed to disclose any pathological brain lesions characteristic of the disease. But the 19th century concept of "blood ferments," though superseded by precise data concerning enzymes and metabolism, may lead today's biochemists to the heart of the problem.

Under the direction of Dr. Seymour Kety, the Laboratory of Clinical Science, NIMH, has been examining the biochemical factors of schizophrenia as part of a broad study of the disease. The condition presents a multiplicity of symptoms, and long periods in an institution often add chronic infections and dietary deficiencies. Therefore, the staff is giving careful attention to scientific design and to the sources of error common to biological studies of this disease.

A primary step in the Laboratory's investigation of these sources of error was the selection of a group of schizophrenics and a corresponding group of normal individuals to use as controls. Within the same environment in the Clinical Center, each group is given identical diets and metabolic tests.

Other groups had found an elevation of ceruloplasmin levels in the blood of schizophrenics. Dr. Roger K. McDonald, in the Laboratory's Section on Medicine, has shown this condition to be due to a reduced ascorbic acid level of dietary origin.

Irrelevant variables were also involved in the reported inability of schizophrenics to convert tryptophan, an amino acid, to serotonin in normal amounts. Carefully controlled studies carried out by Dr. Irwin J. Kopin on the metabolism of ingested large doses of tryptophan have shown no reduction in that pathway in the patients, as compared with normal controls.

High levels of circulating adrenochrome have been reported to be

a cause of the disease. Dr. Stephen Szara, of the NIMH Clinical Neuropharmacology Research Center, and Dr. Julius Axelrod developed a technique for measuring this substance in body fluids, and have shown that there is no significant quantity in either normal or schizophrenic blood.

Other tests, carried out by Drs. Elwood LaBrosse and Jay D. Mann, have produced results contrary to those reported by other laboratories. Using chromatographic techniques, the NIMH group has found no differences between the excretion patterns of aromatic amino acid metabolites in the normal and schizophrenic patients, except for four compounds which they showed to result from ingested coffee.

These Laboratory studies, in addition to clarifying certain questions about the disease and contributing to basic knowledge of amine and amino acid metabolism, have served to emphasize the importance of maintaining careful dietary controls during biochemical studies. Current research in the Laboratory continues to probe these and other areas of possible relevance to this most important of the mental disorders.

Some of the Laboratory's studies are providing basic information about the chemistry of the body. One theory now under test concerns the metabolism of the hormone epinephrine, which plays an important part in nervous system function and the body's responses to stress. Little was known about this process until three years ago, when a group of doctors in Utah isolated 3-methoxy-4-hydroxy-mandelic acid from normal urine. Then Dr. Axelrod, in the NIMH Laboratory, mentally tracing the way in which this compound might be formed from epinephrine, supposed the existence of another compound, which he called 3-methoxy-epinephrine, and demonstrated that it did, indeed, exist. Continuing with the isolation of these metabolites, he then demonstrated that the principal metabolic pathway of epinephrine involved catechol-O-methyl transferase as the inactivating enzyme, rather than monoamine oxidase, as previously believed. Dr. LaBrosse and others in

(See Schizophrenia, page 4)

Publication Preview

The following manuscripts were received by the SRB Editorial Section between November 18 and December 2.

DBS

Baron, S.; Barnett, E. V.; Burch, B. L.; Lynch, J. M.; and Ehrmantraut, W. R. Rapid immunization with poliomyelitis vaccine.

Scheno, R. C. Rouleaux: A blood bank problem. Schmidt, P. J., and Steinfeld, J. L. The use of standard mechanical equipment in the processing of frozen red cells for clinical transfusion.

CC

Hilbish, T. F., and Schulz, E. Radiological manifestations of trophoblastic tumors.

NCI

Benoiton, L.; Birnbaum, S. M.; Winitz, M.; and Greenstein, J. P. The enzymic resolution of β -methylaspartic acid with acylase II.

Benoiton, L.; Winitz, M.; Colman, R. F.; Birnbaum, S. M.; and Greenstein, J. P. Studies on diastereoisomeric α -amino acids and corresponding α -hydroxy acids. X. The preparation of β -hydroxy- β -methylaspartic acid.

Dalmat, H. T., and Stanton, M. F. A comparative study of the Shope fibroma in rabbits in relation to transmissibility by mosquitoes.

de del Campo, M. S. B. Nuclear artifacts present in vaginal and cervical smears.

Grinspoon, L., and Dunn, J. E. A study of the frequency of achlorhydria among Japanese in Los Angeles.

Kaiser, R. F., and Hilberg, A. W. Changing goals in cytology research.

Love, R. Cytopathology of virus-infected tumor cells.

Morris, H. P.; Wagner, B. P.; and Lipner, H. J. Influence of thyrotropin on the growth of transplantable thyroid gland tumors of mice.

Mulay, A. S., and O'Gara, R. W. Incidence of liver tumors in male and female rats fed carcinogenic azo dyes.

Rabotti, G. Ploidy of primary and metastatic human tumors.

Rabson, A. S., and Legallais, F. Y. Cytopathogenic effect produced by polyoma virus in cultures of milk-adapted murine lymphoma cells (strain P388 D).

Stewart, S. E.; Eddy, B. E.; and Stanton, M. F. Neoplasms in certain mammals by a tumor agent carried in tissue culture.

Sugimura, T.; Birnbaum, S. M.; Winitz, M.; and Greenstein, J. P. Quantitative nutritional studies with water-soluble, chemically defined diets. VII. Nitrogen balance in normal and tumor-bearing rats following forced-feeding.

Sugimura, T.; Birnbaum, S. M.; Winitz, M.; and Greenstein, J. P. Quantitative nutritional studies with water-soluble, chemically defined diets. VIII. The forced-feeding of diets each lacking in one essential amino acid.

Zervas, L.; Benoiton, L.; Weiss, E.; Winitz, M.; and Greenstein, J. P. Preparation and disulfide interchange reactions of unsymmetrical open-chain derivatives of cystine.

Zervas, L.; Otani, T. T.; Winitz, M.; and Greenstein, J. P. Studies on arginine peptides. II. Synthesis of L-arginyl-L-arginine and other N-terminal arginine dipeptides.

NHI

Hogben, C. A. M.; Tocco, D. J.; Brodie, B. B.; and Schanker, L. S. On the mechanism of intestinal absorption of drugs.

Hundley, J. M. What vital statistics tell about health.

Oates, J. A., and Zaltzman, P. Urinary tryptamine as an index of MAO inhibition.

NIAD

Beal, G. A.; Taylor, D. B.; McCullough, N. B.; Claffin, R. M.; and Hutchings, L. M. Experimental infection of swine with *Brucella melitensis* (Mediterranean type).

Eagle, H. Amino acid metabolism in mammalian cell cultures.

Eagle, H.; Oyama, V. I.; Piez, K. A.; and Fleischman, R. The biosynthesis of cyst(e)ine by mammalian cell cultures.

Hartley, J. W., and Rowe, W. P. "Unmasking" of mouse polyoma virus hemagglutinin by heat.

Huff, E. Chromatography of mixtures of lactaldehyde, acetol, and pyruvaldehyde on bisulfite ion exchange columns.

Potter, M., and Haas, V. H. Relationships between lymphocytic choriomeningitis virus, amethopterin and an amethopterin-resistant lymphocytic neoplasm in mice.

Rowe, W. P.; Hartley, J. W.; Estes, J. D.; and Huebner, R. J. Studies of mouse polyoma virus infection. I. Procedures for quantitation and detection of virus.

Young, M. D. Chemotherapeutic agents and malaria eradication.

NIAMD

Irreverre, F., and Terzian, L. A. Nitrogen partition in the excreta of three species of adult mosquitoes.

Schmid, R.; Brecher, G.; and Clemens, T. Familial hemolytic anemia with erythrocyte inclusion bodies and a defect in pigment metabolism.

Schmir, G. L.; Cohen, L. A.; and Witkop, B. The oxidative cleavage of tyrosyl-peptide bonds: I. Cleavage of dipeptides and some properties of the resulting spiradienone-lactones.

Shanes, A. M., and Bianchi, C. P. The distribution and kinetics of release of radiocalcium in tendon and skeletal muscle.

NIDR

Arnold, F. A., Jr. Fluorides in dentistry. Kreshover, S. J. Prenatal factors in oral pathologic conditions.

Stanley, H. R., Jr., and Swerdlow, H. Reaction of the human pulp to cavity preparation.

NIMH

Birren, J. E. Aging and psychological adjustment.

Botwinick, J.; Brinley, J. F.; and Robbin, J. S. Maintaining set in relation to motivation and age.

Brinley, J., and Botwinick, J. Preparation time and choice in relation to age differences in response speed.

Hewitt, R. T. Mental hospital followup services.

Wynne, R. D., and Kornetsky, C. The effects of chlorpromazine and secobarbital on the reaction times of chronic schizophrenics.

NINDB

Kaufman, H. E., and Caldwell, L. A. Pharmacological studies of pyrimethamine (Daraprim) in man.

Moore, J. W. Analog computer techniques in the control and measurement of nerve membrane responses.

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

NEWS BRIEFS

Former HEW Secretary Marion B. Folsom recently won the Stockberger Award of the Society for Personnel Administration. He was cited for his contribution to the advancement of public and private personnel administration.

* * * * *

A second series of competitive examinations for appointment in the PHS Commissioned Corps will be held throughout the nation May 12-15. Applications must be filed no later than March 27 with the Surgeon General, PHS, Washington 25, D. C.

* * * * *

Robert A. Kevan, of Falls Church, Va., has been appointed Coordinator of International Affairs, a new position recently established by DHEW.

* * * * *

Jack Tait, a newspaperman with nearly 20 years' experience, has been appointed Assistant for Public Affairs to HEW Secretary Arthur S. Flemming.

* * * * *

The Association for the Advancement of Psychoanalysis has established the Karen Horney Award, a \$150 prize to the author whose paper makes a contribution to the advancement of psychoanalysis.

WORLD GROUP RECEIVES NINDB TRAINING GRANTS

The first Government-supported grants made to an international neurological organization have been awarded by NINDB to the World Federation of Neurology. The grants total \$138,207.

The Federation, with offices in Antwerp, Belgium, is an international professional organization composed of delegates from the leading neurological societies of 33 countries, including the United States.

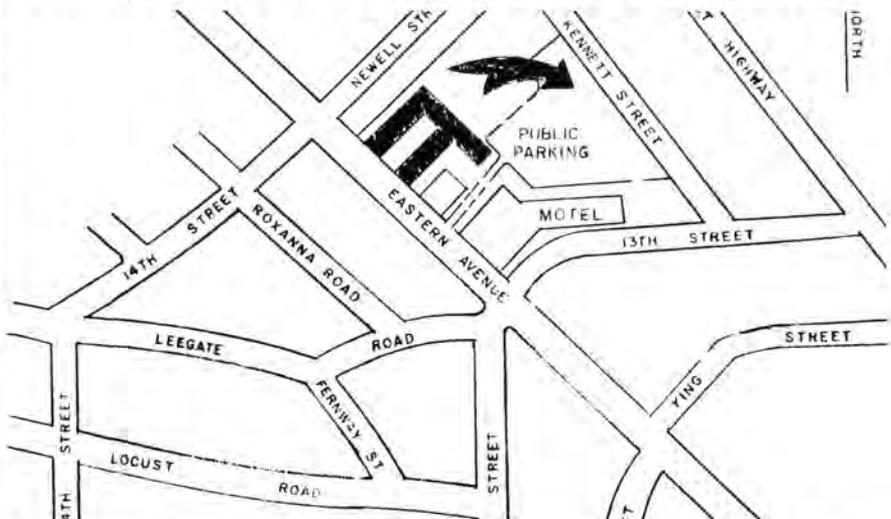
One grant of \$126,190 will provide partial support for a small central staff in Belgium working with consulting medical scientists from various countries. The other grant of \$12,017 will be used for the travel expenses of neuropathologists attending a Federation symposium on encephalitis at Antwerp in May.

Entries may be forwarded to Louis E. DeRosis, M.D., Chairman, Award Committee, 815 Park Ave., New York 21, N. Y.

* * * * *

Dr. Joseph Margolin, NIMH, recently was appointed to the Maryland Board of Examiners of Psychiatrists by Governor Millard Tawes. Dr. Jerry Carter, also of NIMH, is currently a member of the board.

NIH OPENS NEW SILVER SPRING BUILDING



Map above locates new NIH offices in the Robin Building (outlined in black), 7981 Eastern Ave., Silver Spring. Arrow identifies public parking lot, available to employees. NIH personnel begin moving into the new four-story building this month from Colemont, Progress, and Perpetual Buildings, and from the Bethesda reservation. (See story, page 1.)

NIH TV SHOWS SURGERY IN GERM-FREE TANK



Local high school science students and members of a recent conference on Television and Postgraduate Medical Education watch a demonstration of a guinea pig cesarean section performed in a germ-free animal tank in the CC auditorium. The television screen at upper left shows the operation. From left are W. C. Whitehouse, CC TV Unit, operating the camera; J. L. S. Hickey, DRS, commenting on the procedure; and Dr. R. E. Horton, NIAID, performing surgery.

DR. VESTERMARK DIES

Dr. Seymour D. Vestermark, 56, recently retired Chief of the Training Branch, NIMH, died February 22 at the PHS Hospital in Baltimore.

Long recognized as an international authority in the field of professional training for mental health, Dr. Vestermark was cited in January by the American Psychiatric Association for his outstanding services to psychiatry.

Dr. Vestermark was graduated from Coe College, Iowa, and from the Medical School of the University of Iowa. A PHS commissioned officer, with the medical director grade, he served at various posts throughout the country before coming to NIH in 1948.

In 1937 and 1938, he participated in a pioneer field investigation of the epidemiology of mental disorders in Lexington, Ky.

During 1950 and 1951, he was President of the PHS Commissioned Officers' Association.

Dr. Vestermark is survived by his wife, Lucille, and daughter, Sandra, of Bethesda, and his son, Seymour, Jr., of Cambridge, Mass.

SCHIZOPHRENIA Contd.

the Laboratory subsequently confirmed that this takes place in man. This discovery has finally defined the major pathways in the metabolism of epinephrine, and opens new areas for study of nervous system functioning

17 Countries Added To PHS Fellowship Program

Seventeen countries will begin participating this year in PHS' foreign fellowship program. Their inclusion, along with the 13 European countries already in the program, brings to 30 the total of nations taking part.

The 17 new participants are Argentina, Australia, Brazil, Ceylon, Chile, Colombia, El Salvador, India, Iran, Japan, Mexico, New Zealand, Pakistan, Peru, the Philippines, Thailand, and Uruguay.

All of the countries recently established research fellowship review panels, which nominate candidates for the PHS study awards. Final recommendations for the awards are made by an NIH research fellowship board under Dr. John R. Paul, Yale University, Chairman.

Q & A Period Planned For Departing C.O.'s

A question and answer meeting for commissioned officers leaving NIH around July 1, 1959, will be held March 25 at 3 p.m. in the CC auditorium. Questions concerning matters such as the terminal physical examination, inactive status, and retirement refund must be understood and action initiated well in advance of the separation date.

Administrative personnel are invited to attend, and other commissioned officers who have questions may attend from 4 to 5 p.m.

PHONE BOOK ANALYSIS TELLS WHAT'S IN A NAME

With listings from Abbey to Zurborg, the latest edition of the NIH Telephone and Service Directory has been delivered to all desks on the reservation.

Again, William R. Abbey, CC, is the first name listed and Bertha V. Zurborg, CC, is the last.

Exclusive of the 66 yellow pages comprising the service portion of the directory, this issue lists at least 6,000 names, telephone extensions, and room numbers.

According to the book, the Johnsons at NIH outnumber the Joneses 71 to 49. In the second place numerically are the Smiths, who total 69. Also, there are 46 Browns, 42 Jacksons, and 36 Williamses. In addition to all the Browns, the directory lists 29 Whites, 17 Greens, 12 Grays, and seven Blacks.

Fourteen Fords, three Austins, a Nash, and a Kaiser are not autos but employees here.

Planning a trip to Europe? Why leave the reservation when right here are Berlin, Dublin, Ireland, Israel, England, Hamburg, Holland, Lancaster, and Napoli. NIH also contains 16 Washingtons.

And autograph collectors might want the signatures of NIH's own Lloyd George, Elizabeth Bowen, Jerome Kern, Loretta Young, Vincent Price, and John Daly.

P.S.--This nonscientific, time-consuming, statistical study was conducted without benefit of electronic computers on non-office time.

Two Employees Retire

Two NIH employees, with long records of Federal service, retired recently.

Wilfred Grosjean, 71, translator in the DRS Translating Unit, retired this month after five years at NIH. A native of Belgium, Mr. Grosjean was formerly a translator for the State Department. Previously, he operated a French language school in New York. He is the author of six books of French grammar.

In Hamilton, Mont., Frederick B. Thraikill, 64, retired January 31. A supervisory laboratory technician in NIAID's Rocky Mountain Laboratory, he has been an employee there since 1925. Mr. Thraikill is a native of Montana, and was formerly an employee of the Montana Entomology Board.