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NATIONAL INSTITUTES OF HEALTH
PUBLIC HEALTH SERVICE

Scientists Develop Mouse Leukemia Test Tube Study

Mouse leukemia viruses can now be studied in a test tube. Developed by scientists at the National Institute of Allergy and Infectious Diseases, the new procedure is an adaptation of the standard complement fixation antibody test for the study of mouse leukemia viruses grown in tissue culture.

The new test provides a precise, sensitive, reproducible method for detecting laboratory-adapted as well as naturally occurring strains of mouse leukemia within two to six weeks.

Inoculation Test Slower

Previously, virus growth could be determined only by inoculating mice and observing them for the development of leukemia—a procedure which requires three to 12 months.

The test is based on the observation that mouse leukemia viruses have at least one major common antigen. Virus growth was demonstrated by the formation of viral

(See *MOUSE*, Page 4)

PSB Announces New T-6,7,9 Bus Service To NIH Reservation

Additional public transportation to NIH is now being provided by the D.C. Transit Company. The Plant Safety Branch announced that arrangements were completed for the new service to begin this week.

Last Sunday, June 13, the local T-6 bus was rerouted to include a stop within the NIH reservation. Express buses T-7 and T-9 were rerouted Monday, June 14, for extra rush hour service.

Enters NIH First

The T-6 bus, which formerly proceeded from the Friendship Heights Terminal at Wisconsin and Western Avenues, N.W., to the Naval Medical Center, will now enter the NIH reservation before continuing to the Naval Medical Center.

The bus will proceed north on Rockville Pike and enter the NIH reservation at South Drive, stop at Center Drive east of Building 1, and exit on Wilson Drive. It will then cross Rockville Pike, proceed through the Naval Medical grounds and return south on Rockville Pike to the Friendship Heights terminal.

(See *BUS SERVICE*, Page 2)

Seminar Explores Progress, Trends in Research on Aging



Dr. Ewald W. Busse, Director, Center for the Study of Aging, Duke University (far right foreground) explains a point to writers attending the PHS Science Writer Seminar on Research Progress and Trends in Aging held at NIH. To the left of Dr. Busse, two other seminar participants are Dr. Reubin Andres, Assistant Chief, NHI Gerontology Branch, and Dr. Albert I. Lansing, Professor and Chairman, Department of Anatomy, University of Pittsburgh School of Medicine.—Photos by Jerry Hecht.

Investigators from seven universities and NIH discussed progress and trends in aging research with 23 writers at an all-day PHS Science Writer Seminar held here recently.

Organized by the National Institute of Child Health and Human Development Public Information Office, the seminar was held at the request of the President's Council on Aging as a special activity during Senior Citizens Month.

The seminar participants considered aging research from the sociological and psychological to the cellular and molecular aspects.

Many factors were suggested as being important in aging, including: Changes in connective tissue that make it increasingly less elastic; death of irreplaceable cells; and increasing errors in cells' abilities to reproduce new normal generations of cells.

Other Factors Cited

Also clogging of some cells with reticular membrane; effects of radiation; and improper diet in the young which hastens maturity and, hence, the process of aging.

The scientists pointed out that no one can be certain whether or not aging is paced by one or a few processes, is simply a product of many independent processes, or results from a central process.

Dr. Leroy E. Duncan, Head of the Section on Comparative and Human Biology in NICHD's Aging Program, opened the seminar with

a statistical description of our aging population, emphasizing the increasing portion of our population that is 65 years and older.

Dr. Bernice L. Neugarten, Professor of Human Development at the University of Chicago, next discussed the sociology of aging. She said changing age patterns in American marriages are making grandparenthood a phenomenon of middle age rather than later years.

Dr. Ewald Busse, Director of the Center for the Study of Aging at Duke University Medical Center

(See *AGING SEMINAR*, Page 5)

Clinical Center Blood Bank Reports Donations for May

The Clinical Center Blood Bank reports that 139 units of blood were received from NIH donors during the month of May. In the same period CC patients received 1,370 units of blood.

The bank also reports a new gallon donor: John E. Polen of the Shop Section, Plant Engineering Branch, Division of Research Services.

Stars and Stripes Flies Over the Nation As Flag Day Marks 188th Anniversary

Flag Day was observed yesterday throughout the Nation, and at NIH the large (10 x 19 ft.) Dress Flag of the United States was flown.

It was 16 years ago, on August 3, 1949, that President Harry S. Truman signed into law a bill officially recognizing June 14 as Flag Day.

Although not a legal holiday, this day is observed nationally to commemorate the adoption of a resolution by the Continental Congress on June 14, 1777, making the Stars and Stripes the flag of the United States.

There are five flag poles on the NIH reservation. Old Glory is always flown in front of Buildings 1, 31 and 38. At the Clinical Center, the American flag always flies from the right hand pole and one of three others flags may be flown from the other pole.

Usually, Monday through Friday, a white flag with the PHS Corps Device (a winged caduceus crossed with a fouled anchor) in

(See *FLAG DAY*, Page 8)



Old Glory and the white PHS Flag wave proudly in front of the Clinical Center.—Photo by Jerry Hecht.

the NIH Record

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NEWS from PERSONNEL

ORIENTATION CHECKLIST

New staff members and employees need on-the-job orientation to make them feel at home and to assist them in gaining personal satisfaction from effective work. During the first week, supervisors should explain the following:

- activities and organizational structure of the office;
- duties, responsibilities, and performance required;
- how and where to get supplies, location of cafeterias and other facilities;

Safety Rules Important

- safety rules, how to report accidents and where to obtain First Aid;
- hours of work, leave policies and practices;
- developmental opportunities.

Supervisors should also introduce new employees to co-workers and others with whom they will have contact, with an explanation of the supervisory chain.

Additional information pertinent to a particular office or laboratory could be added to help new employees succeed in their assignments.

Supervisors may also call on Institute and Division Personnel Officers to assist in orienting new employees.

PROPOSED SALARY INCREASE

The President has proposed an across-the-board salary increase of three percent for all Federal employees. This proposal is now under consideration by Congress and a decision may be expected soon.

COST OF LIVING ALLOWANCE

The 60 NIH employees in Puerto Rico have recently been affected by a reduction in the cost-of-living al-

CC Schedules June 24 Marine Band Concert

The first in this season's series of outdoor band concerts for Clinical Center patients will be presented on Thursday, June 24, at 7:30 p.m. by the United States Marine Band, on the patio adjoining the Clinical Center auditorium. In the event of rain, the concert will be held in the auditorium.

NIH employees, their families and friends are invited to attend. However, patients will have priority in seating. Arrangements were made by the CC Patient Activities Section through the courtesy of the U.S. Marine Band.

June 19-20 Showings Conclude Film Series

A group of old-time comedies and historical short subjects will be presented by the NIH Recreation and Welfare Association as the final program of its silent film series next Saturday and Sunday, June 19 and 20.

The films to be shown are "Putting the Pants on Philip," with Laurel and Hardy; a chapter from an early serial entitled "The Mystic Message of the Spotted Collar;" and "The Opening of the New York Subway."

Movietime is 8 p.m. in the Clinical Center auditorium. Admission is free to all.

lowance rates from 12½ percent to five percent of basic compensation.

These rates are fixed by the Civil Service Commission by comparing consumer price levels in Puerto Rico and the District of Columbia, and by comparing goods and services available and the manner of living of persons employed in Puerto Rico with that of U.S. employees living there.

Dances of 6 Nations Captivate Patients At CC's 1st International Folk Festival

By Lauren Binda
CC Normal Volunteer Patient

"Fourteen, please—and hurry!" the spunky 8-year-old in the wheelchair exclaimed to the elevator operator in the Clinical Center.

"Where's the fire?" a member of the older generation asked, winking good-naturedly to his companions.

"Don't you know? The International Folk Festival in the Assembly Hall. We can't be late!"

Enthusiasm of this nature typified the feeling at the "first, and hopefully annual, International Folk Festival for CC patients," according to Arnold Sperling, Chief of the CC Patient Activities Section, who was M.C. for the event.

Six countries were represented in the song and dance presentation for the patients and their guests recently in the CC, sponsored by various clubs and organizations in the Washington area.

The Scots led the way with the U.S. Air Force Pipe Band. The 9-member unit piped and drummed through five selections, entering and exiting through the audience.

The Japanese dancers, whose translated names mean "little cherry blossoms," included 14 young girls in red and white kimonos. Their three dance numbers portrayed a legend or facet of Japanese life.

Swiss Dancers Perform

The Swiss took the stage next and held it for seven selections. One of the highlights was a solo performance of flag "twirling" with the red and white Swiss flag.

The Golden Greeks, eight accomplished teen-age girls, presented several dance selections. Later, they volunteered to teach their circle dance to those interested.

Fifth were the Spanish with the torrid Flamenco dance. These four dancers, who performed separately and as a group, were accompanied by lively guitar music.

The Germans concluded the program with rollicking Bavarian dances. Four couples kept a lively pace, and the men especially delighted the spectators with their nimble clapping dance.

After the door prize had been awarded and the Greeks completed their dance instructions, everyone felt as the little 8-year-old in the wheelchair had anticipated—"Boy, that was fun!"

BUS SERVICE

(Continued from Page 1)

The T-7 and T-9 buses will follow the same route, but will be express buses from 13th St. and Pennsylvania Avenue, N.W., with regularly scheduled stops in the District, for the convenience of employees living in the downtown area.

Schedule information may be obtained from the D.C. Transit System, Washington, D.C.

Dr. Geisser Participates In First Int'l Symposium On Multivariate Analysis

Dr. Seymour Geisser, Chief of the Biometry Section of the Epidemiology and Biometry Branch, National Institute of Arthritis and Metabolic Diseases, is participating this week in the first International Symposium on Multivariate Analysis.

The symposium, which began yesterday and will continue through June 19, is being held at the University of Dayton in Ohio under the sponsorship of the U.S. Air Force's Aerospace Research Laboratories.

Considers Variables

Multivariate Analysis—statistical analysis made on the basis of the simultaneous consideration of many variables—is an important branch of statistics.

It is instrumental in obtaining greater assurance of the validity of experimental results, maximum precision of experimentation, and efficient experimentation with respect to economy of time and cost and the availability of equipment and personnel.

Dr. Geisser will present a paper, "Predictive Discrimination," which concerns classification schemes for rationally assigning individuals or objects to categories based on one or more observational characteristics.



Dr. Murray A. Diamond, Chief, Office of Personnel, PHS, admires the meritorious service medal presented to Dr. Harold M. Janney, Training and Manpower Resources Branch, National Institute of Mental Health. Dr. Jack Masur, Director of the Clinical Center, presented the award on June 3 for Dr. Janney's "... development and expansion of the medical services in the Bureau of Prisons."—Photo by Ralph Fernandez.

Dr. Gilbert L. Woodside Wins University Honor

Dr. Gilbert L. Woodside, Assistant to the Director for Scientific Program Planning and Development, National Institute of Child Health and Human Development, was awarded an honorary Doctor of Science degree from the University of Massachusetts on June 13.

Dr. Woodside, Provost of the University before coming to NIH in 1963, was honored for his significant contributions to the development of higher education in the Commonwealth of Massachusetts, and for his service to students during his almost 30 years at the university.

An experienced scientist-administrator-educator, he began teaching biology at the University of Massachusetts in 1936. Later he was head of the Zoology Department, Dean of the Graduate School, and became University Provost in 1961.

Chairs College Committee

Dr. Woodside was also chairman of the Four-College Committee responsible for establishing a unique cooperative Ph.D. program involving Amherst College, Mount Holyoke College, Smith College and the University of Massachusetts.

Dr. Woodside earned his Ph.D. from Harvard University in 1936 where he was an Edward Rector Fellow and Austin Teaching Fellow.

His research interests include the effect of hormones on development; embryonic mortality as influenced by nutrition; and chemotherapy of mouse tumors.

Film on Heart Attacks To Be Shown by EHS

Heart-attack—and the care necessary for recovery—is the subject of this month's Employee Health Service movie.

In the 22-minute film, "Reprieve," former President Dwight D. Eisenhower and other heart patients discuss how sensible living habits and adherence to doctor's orders have enabled them to return to active and useful living.

The Health Service movie will be shown at the Clinical Center auditorium tomorrow (Wednesday), June 16, at 11:30 and 1 p.m.; North Bethesda Office Center #2, Conference Room 113, Thursday, June 17 at 1:30 p.m.; North Bethesda Office Center #1, Conference Room 202, Thursday, June 17 at 2:30 p.m.; and at the Westwood Building, Conference Room A, Friday, June 18 at 1 and 1:45 p.m.

2 Korean Orphans Find New Home With Family of NIH Employee, Edwin W. Bliss

By Martha Kovacic

Last month an NIH employee and his wife flew to Korea on an important mission. Their destination was the Seoul Sanitarium and Hospital Orphanage where, after two years of correspondence, they were able to complete arrangements to adopt two Korean orphans.

Now Myung Kil and Yung Chin are in their new home in America with their adopted family, and are known as David and Todde Bliss.

Their new parents are Edwin W. Bliss, a machine operator in the Office Services Branch of the Office of Administrative Management, OD, and Enoth Bliss, who works in the library of the Technical Information Division of the Naval Research Laboratory.

Friends Aid Quest

Mr. and Mrs. Bliss, who are Seventh-day Adventists, had heard through friends in the church of the many Korean orphans in need of care and adoptive homes.

They already had one adopted child, Doris Raena-Marie, age 10, whom they had adopted from a home in Germany seven years ago. They had learned of Doris through a minister at the church, who helped with the adoption procedures.

Doris, who is in the 6th grade at the George Truesdell School, 9th and Ingraham Streets, N. W., is now helping her two brothers adjust to a new way of life.

The two boys have been enrolled in Raymond School, 10th and Spring Road, N. W. David Myung Kil Bliss, age 10, is in the 4th grade and Todde Yung Chin Bliss, age 6, is in the 1st grade.

During the day, when Mr. and Mrs. Bliss are at work, Mrs. Bliss' sister, Vel Ellis, helps take care of the children.

Children Adjusting Easily

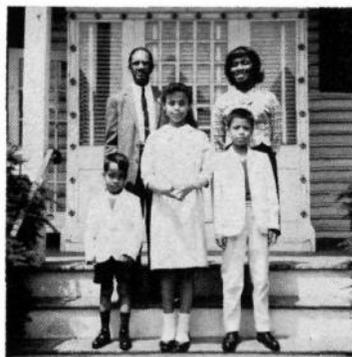
Mr. and Mrs. Bliss are "delighted with the boys' interest and enjoyment of school, church, picnics and concerts.

"Our great amazement is that the boys are adjusting smoothly and that language is no barrier. "Every new experience," they say, "such as using a hammer, spinning a top, wearing a new garment, even tasting new foods, fills our boys with delight."

At present David and Todde are attending the Sligo Seventh-day Adventist Church at Carroll and Flower Avenues, Takoma Park, Md., where special services are conducted for its Korean membership.

When the boys acquire more understanding of the English language, they will join their sister and parents in attending services at the DuPont Park Seventh-day Adventist Church at 3985 Massachusetts Ave., S. E.

Mr. and Mrs. Bliss state that several denominations maintain orphanages in Korea and that the children who are eligible for adop-



Shown on the front steps of their comfortable home are Mr. and Mrs. Bliss and their children (from left) Todde, Doris and David.

tion are numerous. They will be happy to provide information about adoption procedures to any interested persons.

The Bliss family resides at 3600 13th St., N. W., Washington, D. C.

NICHD Aids Publication Of Anatomical Atlas

A new anatomical atlas to clarify the interpretation of human ovarian and testicular development by comparison with those phases of differentiation that are most easily seen in the monkey, *Macaca mulatta*, was published recently with support from the National Institute of Child Health and Human Development.

There is no comparable accumulation in the literature of such data on either man or monkey. The presentation in the atlas of the two species together, both male and female, is unique.

Photomicrographs Used

Titled "Embryology of the Ovary and Testis," the atlas presents photomicrographs in chronological series from the first differentiation of the gonads to the early post-natal years.

The 90 plates of black and white photomicrographs are preceded by a text and accompanied by explanatory legends. Detailed tables complement the data in the text.

The investigations on which the book is based were supported by grants from the Division of Research Grants, National Cancer Institute, and the National Institute of General Medical Sciences.

The atlas, authored by Dr. Gertrude van Wagenen, Yale Medical School, and Dr. Miriam Simpson, University of California at Berkeley, was published by Yale University Press.

2 States Awarded Community Mental Health Center Aid

Two States—Minnesota and Missouri—are the first to qualify for Federal grants to aid in financing construction of community mental health centers under terms of the 1963 Community Mental Health Centers Act. Approval of the State Plans for the two States was announced last week by Secretary of Health, Education, and Welfare Anthony J. Celebrezze.

With approval of the State Plans, communities in Minnesota and Missouri may now submit applications for construction projects to the mental health authority in their State. These applications will be assigned a priority by the State agency and forwarded to the Public Health Service for final review and approval.

\$35 Million Appropriated

The first \$35 million of the \$150 million authorized by Congress for construction of community mental health centers over a 3-year period was appropriated for Fiscal Year 1965 and will continue to be available throughout Fiscal 1966.

In the allocation of funds to the States—based on total population, financial need and need for mental health facilities—Minnesota is eligible to receive \$639,160 of the available \$35 million, and Missouri's allocation is \$760,373.

State Plans for Community Mental Health Centers include an inventory of existing resources, a survey of the area needs, and establishment of priorities to meet those needs.

They also take into account other planning efforts, since mental health centers will be designed to mesh with plans for medical facilities, mental retardation facilities, planning in mass transportation and in other special problems such

(See CENTERS, Page 7)

Study Sections Complete '65 Application Reviews

The 52 Study Sections of the Division of Research Grants reviewed 3,953 research grant applications during their April-May meetings, the third and final round of review periods during Fiscal Year 1965.

During FY 1965, a total of 12,553 applications were reviewed, compared with 11,732 for FY 1964 and 11,704 for FY 1963.

These figures include new applications, supplemental applications and renewal requests, and represent a seven percent increase within this 3-year span.

The first round of meetings for FY 1966, which begins July 1, will open August 30 and extend into early October.

Leading Health Legislators to Speak at NLM's John Shaw Billings Centennial

Ceremonies marking the 100th anniversary of the National Library of Medicine as a national medical resource will be held Thursday (June 17) with addresses by three of the Nation's leading health legislators.

The anniversary has been named the John Shaw Billings Centennial in commemoration of Dr. Billings who was the Library's first Director.

Sen. Lister Hill of Alabama, Rep. John E. Fogarty of Rhode Island, and Rep. Leo W. O'Brien of New York will be the principal speakers at the centennial program to be presented at 2 p.m. on the front steps of the Library. Rep. O'Brien will give the address originally scheduled to be delivered by Rep. Oren Harris of Arkansas, who will be attending a meeting in Paris. The program is open to the public.

Secretary of Health, Education, and Welfare Anthony J. Celebrezze, Under Secretary Wilbur J. Cohen, and Surgeon General Luther L. Terry of the Public Health Service, also will participate.

An internationally known surgeon, sanitarian, medical bibliog-



Sen. Hill



Rep. Fogarty

rapher, educator, and authority on hospital construction, Dr. Billings was chiefly responsible for developing the Library into the world's leading institution for the collection and dissemination of biomedical knowledge.

Dr. Billings was assigned to Washington in the Office of the Surgeon General, U.S. Army, after distinguished service during the Civil War as a military surgeon in the field. He assumed charge of the Library of the Surgeon General's Office, forerunner of the National Library, in 1865.

Publishes Bibliographic Guides

Serving as Library Director for 30 years, Dr. Billings laid the foundation for modern medical librarianship through the publication of key bibliographic guides.

He also conceived the idea of a punch card tabulation system for manipulating statistics, the first step in developments which have led to the Library's present computer-based Medical Literature Analysis and Retrieval System (MEDLARS).

Dr. Billings was born in Indiana in 1838 and died in 1913.

More than 500 special guests, including Members of Congress, sen-



This portrait, painted by Cecilia Beaux in 1895, shows Dr. Billings wearing the gown of a Doctor of Civil Law of Oxford. The painting now hangs in the reading room of the National Library of Medicine.

ior officials of the Federal Government, and leaders in the fields of medicine, medical librarianship, and medical communications have been invited to the centennial.

Following the afternoon program, the public may tour the Library and view an exhibit depicting Dr. Billings' achievements during his long and varied career.

The Library was named the Army Medical Library in 1922 and the Armed Forces Medical Library in 1952. It became the National Library of Medicine in 1956 when it was made part of the Public Health Service.



Under Secretary Cohen



Secretary Celebrezze

A symposium on Dr. Billings' life will be held at 8 p.m. in the Library. Symposium panelists will include Dr. Jean A. Curran, Professor Emeritus of the History of Medicine at the State University of New York; Bess Furman Armstrong, former Washington newspaperwoman and author now at work on a popular history of the PHS; and Dr. Frank B. Rogers, Librarian of the Denison Memorial Library at the University of Colorado Medical Center, and former NLM Director.

Attendance at the symposium will be by special invitation.

Annual MRA Conference Reviews Collection of U.S. Blindness Data

The Fourth Annual Conference of the Model Reporting Area (MRA) for Blindness Statistics was held here recently to review the year's progress in collecting complete, reliable data on blindness in the United States.

MRA is an association of States whose blindness registers have been revised and adapted to collect complete and uniform data on blind persons.

The Biometrics Branch of the National Institute of Neurological Diseases and Blindness provides assistance in preparing State registers for MRA membership and assimilates data from the entire area for an overall report yearly.

Member States Participate

Participants included representatives of the 12 States (Connecticut, Kansas, Louisiana, Massachusetts, New Hampshire, New Jersey, New Mexico, North Carolina, Oregon, Rhode Island, Vermont, and Virginia) which make up the membership of the Model Reporting Area.

Also, five non-member States (District of Columbia, Georgia, New York, South Dakota, and Utah) which plan to join; and voluntary, private, and governmental agencies interested in blindness.

In addition to progress reports from member and non-member States and from the Biometrics Branch, participants heard discussions on the definitions of blindness and the use of blindness statistics in program planning.

The conference, sponsored by NINDB, was conducted by Dr. Hyman Goldstein, Chief of the Institute's Biometrics Branch.

MOUSE

(Continued from Page 1)

antigen in mouse embryo tissue culture cells infected with mouse leukemia viruses.

With one exception, all the mouse leukemia viruses produced antigens which reacted positively in the complement fixation test.

These findings open new avenues in leukemia research. It will now be possible to undertake definitive studies of the natural occurrence and transmission of mouse leukemia and, hopefully, other mammalian leukemia as well.

In addition, these findings will be used to explore possible antigenic relationships between human and mouse leukemia.

The new procedure was reported recently by Dr. Janet W. Hartley, Dr. Wallace P. Rowe, Worth I. Capps, and Dr. Robert J. Huebner, all of the Laboratory of Infectious Diseases, NIAID.

Dr. Hollister Receives PHS Meritorious Medal

Dr. William G. Hollister, former Chief of the Community Research and Services Branch of the National Institute of Mental Health, received the PHS Meritorious Service Award June 4



Dr. Hollister

from Dr. Stanley Yolles, NIMH Director.

The medal was awarded in recognition of his "... sustained superior performance throughout his career and his accomplishments in, and contributions to, the Mental Health Program at the community level."

In January 1965 Dr. Hollister retired from the Commissioned Corps of the Public Health Service to join the medical faculty of the University of North Carolina at Chapel Hill as professor of community psychiatry. He has previously taught sociology, anthropology, and psychiatry at nursing schools, universities and medical schools in Omaha, Dallas, and Atlanta.

Serves As Consultant

Prior to joining NIMH in 1956, Dr. Hollister served as Regional Mental Health Consultant for the PHS, DHEW Region IV, Atlanta, Georgia.

A medical graduate of the University of Nebraska in 1941, Dr. Hollister completed his psychiatric residency at Bishop Clarkson Memorial Hospital in Omaha.

He also holds the degree of Master of Public Health from Johns Hopkins University and is a Diplomate in Psychiatry as well as in Preventive Medicine in Public Health.

He is a Fellow of the American Psychiatric Association and the American Public Health Association, and is an authority on mental health in education and group processes in staff development.

Dr. Heppel Lectures on Biochemistry at Cornell

Dr. Leon A. Heppel of the National Institute of Arthritis and Metabolic Diseases recently delivered the first annual summer Lectureship in Biochemistry at Cornell University.

The newly established Lectureship is named in honor of the late Cornell Professor, James Batcheller Sumner, who shared the Nobel Prize in chemistry in 1946 for his discovery that enzymes can be crystallized.

Dr. Heppel, who is Chief of NIAMD's Laboratory of Biochemistry and Metabolism, gave four lectures on his work in enzymology and nucleic acid metabolism.

AGING SEMINAR

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ter, in discussing the psychopathology of aging, said those who suffer a decline in mental ability as they grow old tend to be of the lower social and economic levels, but there is no clear explanation for this relationship.

An overall view of the physiology of aging was presented by Dr. Reubin Andres, Assistant Chief of the Gerontology Branch, National Heart Institute.

He emphasized the difficulties in diagnosing diabetes in the elderly because glucose tolerance levels vary with age, and a level that may indicate diabetes in a 30-year-old could be an average value for people 65 years old.

Lifespan Discussed

Dr. Robert Kohn, Associate Professor of Pathology at Western Reserve University, in discussing the pathology of aging, stated that the human lifespan could only be increased by about 11 years if a cure were found for the major chronic diseases.

Dr. Kohn said any substantial increase in lifespan would be dependent on major advances in our knowledge of aging which may well come with a complete understanding of arteriosclerosis.

Dr. Morris Rockstein, Professor of Physiology at the University of Miami, pointed out that much can be learned from lower animals because their short lifespan permits many generations to be studied.

He noted that X-irradiation not only hastens the process of aging in some animals, but it also may eliminate or minimize factors normally responsible for aging in others, thereby increasing lifespan.

Dr. Albert Lansing, Professor of Anatomy at the University of

Drs. Mueller and Harvey Named to NCI Board of Scientific Counselors

The appointment of two new members to the National Cancer Institute's Board of Scientific Counselors was announced last Friday by Dr. Kenneth M. Endicott, Institute Director.

The new members are Dr. Gerald C. Mueller, Professor of Oncology at the McArdle Memorial Laboratory of the University of Wisconsin, whose term begins July 1, and Dr. A. McGehee Harvey, Director of the Johns Hopkins University Department of Medicine and Physician-in-Chief of Johns Hopkins Hospital, Baltimore, whose term begins October 1.

The 6-member Board, established in 1957, meets periodically to review research conducted in NCI laboratories and clinics, and to advise on plans for future studies. Each member serves a 4-year term.

Dr. Mueller has been on the staff of the McArdle Memorial Laboratory since 1950. His professional activities have included membership on the Drug Evaluation Panel of the Cancer Chemotherapy National Service Center from 1959 to 1962, part of the time as Chairman.

Research Interests Cited

His research interests include the biochemistry of cancer, the mechanism of action of estrogenic hormones, and the biochemistry of growth regulation. Dr. Mueller was graduated from the University of Wisconsin with an M.D. degree in 1946 and a Ph.D. degree in biochemistry in 1950.

Dr. Harvey received his M.D. degree from Johns Hopkins University Medical School in 1934, and first joined the faculty in 1940. His other professional activities have included membership on the Advisory Committee of the Armed Forces Institute of Pathology from 1956 to 1961.

He will complete a 4-year term on the National Advisory Cancer Council in September. Dr. Harvey's research interests are neurophysiology and clinical therapeutics.

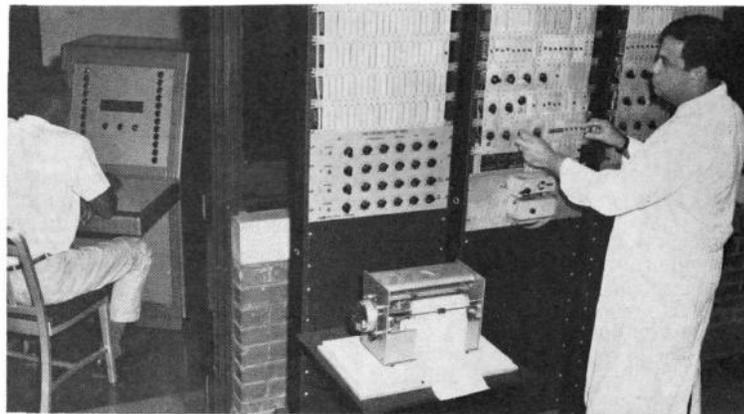
have a finite lifespan.

Dr. F. Marott Sinex, Professor of Biochemistry at Boston University, predicted that the secret of the physiological process of aging will be tapped eventually, but there will always be wear and tear—the human lung, for example, cannot breathe polluted air forever.

Dr. Donald Harting, NICHD Acting Director, was chairman of the seminar and Dr. James Birren, Director of NICHD's Aging Program, was scientific moderator.

J. Stewart Hunter, Assistant to the Surgeon General for Information, served as information mod-

Intelligent Human Brain Can Trick Itself Into Types of Mental Disorder Behavior



Dr. Harold Weiner adjusts his electronic machine to trick normal subject (left) into responses similar to those found in some emotional disturbances. Findings from his laboratory are expected eventually to shed light on the basic nature of mental illness.

How rational is the normal human mind? Despite keen intelligence and accurate information to guide it, the normal brain can trick itself into behavior that is similar in some ways to certain types of mental disorders. This conclusion was reported by Dr. Harold Weiner, Director of the Human Operant Conditioning Laboratory at St. Elizabeths Hospital, Washington, D. C.

For four years, Dr. Weiner has been conducting a wide variety of conditioning studies of human behavior in a laboratory environment. He described his methods and the results of one of his studies at a National Institute of Mental Health seminar at the Clinical Center May 10.

Normal subjects were seated before an electronic machine and told to get as high a score as possible on an add-subtract counter by using a button.

Subjects Seek Rewards

During their first experience with the machine, the subjects were required to press the button a certain number of times in order to get 100-point rewards. The subjects pressed fast to better their score.

When the button-pressing performances of the subjects were consistent from day to day, Dr. Weiner changed the reward situation so that the subjects could score only every 10 seconds no matter how often they pressed the button. Yet despite normal to high I.Q.s, the subjects continued to press rapidly and stated "they had to," because "speed mattered."

Dr. Weiner penalized them by subtracting a point for each unnecessary press, and even told the subjects how the machine was set. Most of the subjects, however, continued to press as fast as they

erator for the meeting. Guest speakers were Warren T. Roudebush, Staff Director, President's Council on Aging; Dr. David Price, PHS Deputy Surgeon General; and Dr. James Shannon, NIH Director.

could.

In other words, despite punishment, the subjects were unable to overcome their first experience with the machine to adjust appropriately to a new situation.

Dr. Weiner suggested that "such responding in the face of punishment maintained by an erroneous conviction that it is required for greater reward" is similar to observations that have been made by some psychoanalysts about mental disease.

Goals Noted

In conclusion Dr. Weiner said, "Our goal is to uncover key facts about inappropriate human behavior in the laboratory which we can apply to the understanding of the mentally ill."

"Our long-range mission is to develop a basic laboratory science for the assessment and treatment of maladaptive behavior in normal humans and in patients. We believe that, in time, our laboratory findings and methods will be applicable to mental disturbance as seen in medical practice."

Dr. Weiner recently received a DHEW superior service award in recognition of his research.

Dr. Yolles Presents 55 With Service Awards

Dr. Stanley Yolles, Director of the National Institute of Mental Health, presented length-of-service awards to 55 staff members of the Institute on June 4. Thirty-five employees received certificates and pins for 10 years of service and 19 received 20-year awards.

Charles Taylor, a budget analyst in the Office of the Director, was cited for completing 30 years of service with the Government.



Listening to questions from writers at the Science Writer Seminar are (l. to r.): Dr. James E. Birren, Aging Program Director, NICHD, and scientific moderator of the meeting; Dr. Donald Harting, NICHD Acting Director and seminar chairman; and Warren T. Roudebush, Staff Director of the President's Council on Aging, a guest speaker at the seminar.

Pittsburgh School of Medicine, spoke on the cellular biology of aging. He said that tissue culture studies indicate that fibroblasts

Dr. Helen Dyer Retires After Noted Career As Cancer Researcher

Dr. Helen M. Dyer of the Nutrition and Carcinogenesis Section, Laboratory of Biochemistry, National Cancer Institute, retired May 31.

The author of more than 50 technical papers, Dr. Dyer devoted much of her research career to the biochemical examination and comparison of normal and malignant tissue, seeking an observable, qualitative difference between the two.

In recognition of Dr. Dyer's contributions to research and teaching, Goucher College, her Alma Mater, awarded her an honorary Doctor of Science degree at its commencement exercises June 13.

Dr. Dyer came to NCI in 1942 as a Research Fellow, recruited by Dr. Carl Voegtlin, the first NCI Director. For some years she has investigated the metabolism of the carcinogen fluorenylacetylamide and many chemically related compounds in animals.

Studies Enzyme Systems

Recently she has studied a number of enzyme systems, comparing their activities in liver, in minimal deviation—and in multiple deviation experimental-liver cancers. In addition to her laboratory studies, Dr. Dyer prepared the first comprehensive Index of Tumor Chemotherapy, published in 1949.

Looking back, Dr. Dyer gratefully recalls the influence and guidance of Dr. Voegtlin, "a most inspiring teacher for a beginner in scientific research . . . a sound, exacting scientist."

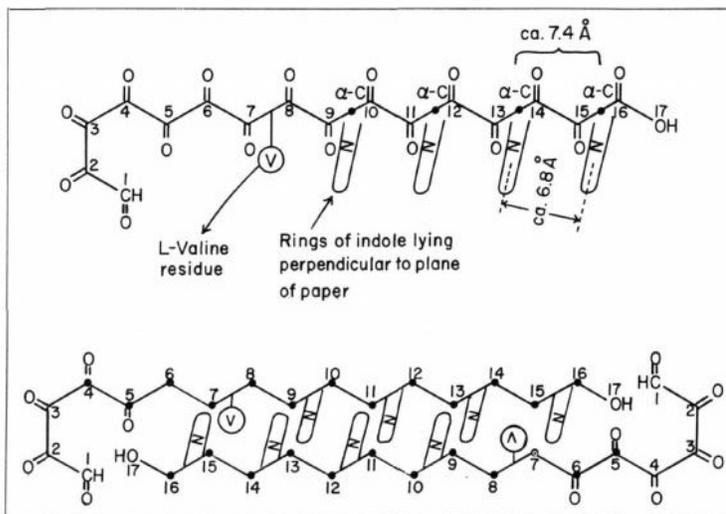
Dr. Dyer began her research in 1920 under his direction in the Laboratory of Chemotherapy at the Hygienic Laboratory, U.S. Public Health Service, studying the mechanism of action of arsenicals used in chemotherapy in spirochete infections and the potential value of lead and other metals in the treatment of cancer.

Because the results with metals in transplanted tumors in rats were



Dr. Helen Dyer seated at desk in her NCI laboratory.—Photo by Ralph Fernandez.

NIAMD Scientists Elucidate, Confirm Structure of Gramicidin by Synthesis



This diagram shows the structure of gramicidin A, a commercially-used antibiotic against gram-negative bacteria which has been known since 1940, but whose structure has only recently been elucidated by NIAMD scientists. The unprecedented features of this structure are (1) the alternating sequence of natural L- and unnatural D-amino acids; (2) the occurrence of a formyl group which blocks the first amino acid valine; (3) the amino-ethanol group which is linked to the last amino acid tryptophan, and (4) the accumulation of water-repellent groups, which is probably the reason for the association of gramicidin A into a dimeric form shown in the diagram.

Gramicidin, a polypeptide antibiotic used topically in treatment of local infections, was first isolated in 1940. Determination of its molecular structure has since defied solution.

Complete knowledge of this structure is of fundamental importance for establishment of correlations between the sequence of the component amino acids and gramicidin's antibiotic activity.

Scientists of the National Institute of Arthritis and Metabolic Diseases now have elucidated the structure of gramicidin A, the major component, and its congeners, gramicidin B and C, and have confirmed the structure of the major component by total synthesis.

Commercially available gramicidin was fractionated into gramicidin A, B, and C by countercurrent techniques and the fractions were analyzed for their amino acid composition.

Early Research Noted

A highlight of this period was her synthesis in 1938 of ethionine, the ethyl analog of methionine, now recognized as the first amino acid antimetabolite and used extensively in protein studies and in its role as a liver carcinogen in rats.

Among her honors are the Goucher College Achievement and Service Award for Teaching and Research, and the George Washington University Alumni Achievement Award for Biochemical Research in the Field of Cancer.

In 1962 the American Chemical Society presented Dr. Dyer its gold Garvan Medal and \$1,000, awarded annually for distinguished services to chemistry by a woman chemist.

Dr. Dyer is a member of Sigma Xi, Iota Sigma Pi and Sigma Delta Epsilon, a Fellow in the American Association for the Advancement of Science, and a member of numerous other professional societies.

Dr. Eyestone Discusses Primate Center Concept

Dr. Willard H. Eyestone, Chief of the Animal Resources Branch of the Division of Research Facilities and Resources, gave the principal address at the opening of a 2-day symposium in London this week on recent developments in comparative medicine.

Dr. Eyestone, who spoke on the scientific and administrative concepts of the Regional Primate Research Center Program which he helped organize and now administers, was introduced by Professor Sir Solly Zuckerman, Secretary of the Zoological Society of London.

The symposium, sponsored by the Zoological Society of London and the World Health Organization, centered on two main topics: the use of primates in medical research with special reference to cardiovascular disease and oncology; and the role of viruses in the etiology of leukemia in man and other animals.

Chairmen Named

Session chairmen included Sir Julian Huxley and Dr. William Montagna, Director of the Regional Primate Research Center at the University of Oregon.

Dr. Montagna's session dealt with the subject of primates in medical research: phylogeny, availability, husbandry, breeding, nutrition, disease hazards of different primate species, and the suitability of each species for various research procedures.

Besides the United States and Great Britain, other countries represented at the symposium were Belgium, France, the Netherlands, Russia, and Switzerland.

In gramicidin B, phenylalanine substitutes for tryptophan as the 11th amino acid while in gramicidin C, tyrosine substitutes for tryptophan in the same position.

The chemical structure of gramicidin A is particularly unique. It features an alternating sequence of eight L-amino acids (natural amino acids of which proteins are built) and six unnatural D-amino acids.

The latter have been encountered so far only in peptide antibiotics and have never before been found in such an unprecedented ratio and arrangement.

This unprecedented alternating pattern of L- and D-amino acids, an unusual accumulation of hydrophobic groups, and the complete insolubility in water of gramicidin A readily explains its resistance to attack by the conventional proteolytic enzymes such as pronase, chymotrypsin, and pepsin.

Results of these studies by Drs. R. Sarges, E. Gross, and B. Witkop of NIAMD's Laboratory of Chemistry appeared in the *Journal of the American Chemical Society*.



Dr. James E. Drorbaugh, Project Director of the Collaborative Perinatal Research Study at Children's Medical Center in Boston, is shown being examined by one of his young patients, who is participating in the NINDB Study. The infant's mother lends a hand during the eye examination.—Boston Advertiser Photo.

CENTERS

(Continued from Page 3)

as juvenile delinquency control and alcoholism.

Dr. Stanley F. Yolles, Director of the National Institute of Mental Health, said "Both Minnesota and Missouri found that they had specific problems and needs, and their plans include specific methods by which they can begin to meet the needs and solve the problems.

Center at Columbia

"The Missouri plan includes the proposed construction of a mental health facility in Columbia, Mo. The center will be linked to the University of Missouri School of Medicine. In addition to offering mental health services to residents of the area, the new center will provide training for mental health personnel from adjacent communities and will aid these communities in planning their own centers and learning how to operate them," Dr. Yolles explained.

"In Minnesota, a highly organized State system of mental health clinics already exists," Dr. Yolles continued. "Through the Federal construction grant program, Minnesota will be able to expand its mental health services program and provide new services."

The mental health planning process is a complex one, Dr. Yolles said, because planning of such comprehensive scope has never before been initiated by the States.

Manufacturers shipments of biological products were valued at \$155 million in 1963, 29 percent higher than 1958, according to a preliminary report of the 1963 Census of Manufactures just issued by the U.S. Department of Commerce's Bureau of the Census.

Study Seeks Firmer Basis for Diagnosis Of Neurological Abnormalities in Infants

Results of an extensive investigation into postural reflexes promise important aid to the pediatric neurologist in differential diagnosis of motor dysfunction or deficits in infants.

Findings in the National Institute of Neurological Diseases and Blindness Collaborative Study showed the normal sequence of evolution of postural responses to be both delayed and distorted in the majority of infants suffering from cerebral palsies, degenerative disease of the central nervous system, or general psychomotor retardation.

Also, responses to stimuli and other reflex activities of normal infants appear to occur in a wider range than generally has been recognized. Particular attention was given reflexes characteristic of early infancy, including traction response, head control, tonic neck reflexes, and palmar and plantar grasp.

It was demonstrated in addition that suspension in space accentuates subtle alterations of tone and postural attitudes which may furnish early diagnostic clues.

In the study, 129 abnormal in-

fants were followed periodically for a 3-year period; postural reflexes were compared with guidelines established from a serial study made with 66 carefully selected normal infants.

The normals, examined at 4- to 6-week intervals during their first year of life, had been thoroughly documented by the NINDB Collaborative Study as to obstetrical and neonatal normalcy.

The range of variation in evolution of their postural reflexes was used as a basis for comparison with the development of the abnormal infants over a 3-year period.

The present study reporting numerous and detailed observations in both normal and abnormal infants helps establish an average "timetable" of the responses under consideration and the range of variations, that is, the earliest or latest age at which a particular response can be stated to be "abnormal."

Normal Responses Tabulated

For example, while 84 percent of the normal infants acquired thumb-to-forefinger pincer grasp before the age of 10 months, 16 percent of normal infants acquired this grasp somewhat later, but all by age 1 year.

Thus, failure to thumb-to-forefinger pincer grasp would be in the abnormal range after age 1 year.

Authors of the 13-page report in Neurology are Dr. Richmond S. Paine, Dr. T. Berry Brazelton, Desmond E. Donovan, Dr. James E. Drorbaugh, Dr. John P. Hubbell Jr., and Dr. E. Manning Sears.

The publication credits Harvard Medical School; Boston Lying-in Hospital; Children's Hospital Medical Center, Boston; George Washington University School of Medicine, Washington, D.C.; and Children's Hospital of the District of Columbia. The work was supported in part by NINDB's Collaborative Perinatal Research Project.

Human Rights Committee To Provide Medical Aid

The Metropolitan Washington chapter of the Medical Committee for Human Rights will conduct a health education program and diagnostic clinic in rural Virginia this summer.

The Medical Committee for Human Rights is a national organization created in 1964 to provide medical care for civil rights workers in the south. It also seeks to help people in all sections of the country who are deprived of proper medical care through poverty,

Virginia Porter Retires From Heart Institute

Virginia B. Porter, Personnel Officer in the National Heart Institute, will retire June 18 after more than 33 years of Government service.

At a farewell party in her honor, employees of the Heart Institute and Mrs. Porter's many other friends throughout NIH and the Public Health Service presented her with a pair of diamond earrings and a Steuben glass figurine.

She also received a scrapbook of photographs of the people and events during her years at NIH and a book of farewell letters written by her colleagues and friends, including Dr. James A. Shannon, Director of NIH, and Dr. Ralph E. Knutti, NHI Director.

Joins NIH in 1946

Mrs. Porter first joined the staff of NIH in 1946 as a Personnel Assistant, and later became a Personnel Management Specialist. She joined the National Heart Institute as Personnel Operations Officer in March 1961, and became Personnel Officer of NHI in November 1962.

Prior to coming to NIH, Mrs. Porter was Employee Relations Officer in the Office of the Chief of Finance of the War Department. She had served in various other positions at the War Department since first joining the Federal service in September 1930.

Mrs. Porter resides at 6817 Fairfax Road, Bethesda, Md.



Dr. Ralph E. Knutti, NHI Director, has words of praise for Virginia B. Porter, retiring NHI Personnel Officer, at a farewell party given in her honor.—Photo by Jerry Hecht.

ignorance or racial discrimination.

The Metropolitan Washington chapter has been asked to help conduct a health project in two rural Virginia counties southwest of Richmond since this area has an insufficient number of medical personnel.

Doctors, nurses, dentists, psychologists, social workers and other health workers who wish to volunteer their services may contact Dr. David Savitz, Building 4, Rm. 122, Ext. 64193.

FLAG DAY

(Continued from Page 1)

blue is flown for the highest flag rank officer on duty that day. The Deputy Surgeon General's outdoor flag is the same design.

A solid blue flag with the PHS Corps Device in white is the Surgeon General's. It is flown whenever Dr. Luther L. Terry is on the NIH reservation on official business. In this event, it replaces the Assistant Surgeon General's flag.

On Saturdays, Sundays, and holidays, the yellow PHS flag with the blue seal flies alongside the Stars and Stripes. The plain solid yellow flag denotes quarantine anywhere in the world.

Upon due notice of the death of a high ranking official or former official of the Federal Government, the flag of the United States and the Public Health Service (yellow) flag are flown at half mast for a period of one to 30 days depending on the official mourning period.

Other Rules Explained

The flags of the Surgeon General, Deputy Surgeon General, or an Assistant Surgeon General are at half mast only in the event of death, while on active duty, of that officer.

Also, the Director of NIH can order the American flag to be lowered to half mast at NIH on any occasion which he considers an appropriate one.

PHS flag rank officers (pay grades 07 and above) may display their appropriate flag in their offices. In addition, they are authorized to fly their small distinguishing automobile flag on occasions of ceremony, when participating in parades, or when performing official visits to stations and activities under their jurisdiction.

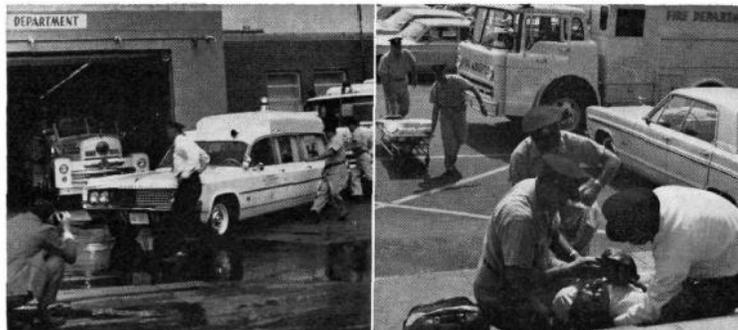
On ceremonial occasions, the flag of the senior rank official present is displayed with the United States and Public Health Service flags.

All indoor flags have a fringe trim on the three sides not attached to the flagstaff. The trim, cord, and tassel always match the color of the flag's seal or corps device. The only exception is an interwoven blue and white cord for the Deputy Surgeon General.

Dr. Minton Wins PHS Clinical Society Award

Dr. John P. Minton, Clinical Associate in the Surgery Branch of the National Cancer Institute, received an award for his presentation at the recent annual meeting of the United States Public Health Service Clinical Society, held at the Staten Island Public Health Hospital.

Dr. Minton is the first NCI affiliate to win an award from the Clinical Society for research done at NIH. He was selected to share the first prize for surgery research for



As a result of an NIH Record feature (April 6, 1965) on the emergency communications system maintained here, the Medical Tribune asked the Office of Research Information to set up a "mock emergency" picture story showing the cooperative efforts of the Employee Health Service, the Guard Force and Fire Department in handling an emergency situation. They sent contract photographer Fred Ward to capture the story on film, for publication sometime next month. This sequence of pictures, taken by Donald Nusbaum of the Plant



Safety Branch, as photographer Ward snapped the action, shows the procedure followed in one type of emergency. In upper left picture, members of the Fire Department rescue squad prepare to answer the alarm. Upper right, emergency treatment is being given the "casualty." Lower left and right, the patient following on-the-scene emergency treatment phoned in by EHS via "walkie-talkie," is carried to the stretcher and brought by ambulance to the EHS emergency room in Building 10 for definitive treatment by physicians.

NIMH Publishes Reports of '63 Research Findings

Research results reported to the National Institute of Mental Health during 1963 are summarized in a new publication, "Mental Health Research Findings 1963," issued by the Public Health Service.

It incorporates information obtained from grant-supported studies in the four principal areas of mental health research—biological factors, developmental disorders, diagnosis and treatment, and socio-cultural problems.

Prepared by the Program Analysis Section of the NIMH Research Grants Branch, this publication is one of a series designed to disseminate the findings of the Institute's nearly 2,000 investigators in its

work reported in the paper, "Pulsed Laser Energy—An Adjunct to Cancer Surgery."

Dr. C. H. Dahl from the PHS Hospital in San Francisco was co-winner for his paper, "Experimental Ascites."

Along with the surgery award, the society gave first prizes in dentistry, pharmacy and medicine, selected from more than 240 papers presented at the meeting.

The pamphlet's discussion of biological factors includes the genetics of behavior, psychosomatic illnesses, the biochemistry of mental illness, psychopharmacology, and progress in understanding and treating alcoholism and drug addiction. A large section is devoted to new knowledge of the structure and functions of the brain.

Studies of child development—from the mother's influence on her infant to the origin of occupational interests—are presented, together with reports on sources of aggression in delinquents and effective ways of treating adolescent delinquents.

The effects of aging on intellectual and emotional functioning are also covered.

Single copies of "Mental Health Research Findings 1963," PHS Publication No. 1136, can be obtained without charge from the Public Health Service, Washington, D.C. 20201.

Multiple copies may be purchased from the U.S. Government Printing Office, Washington, D.C. 20402, for 25 cents each, with rates available for orders exceeding 100 copies.

DBS Researchers Study Rubella Virus Infection In Rhesus Monkeys

Preliminary experiments with pregnant rhesus monkeys indicate that, analogous to the human disease, rubella virus infection occurring early in pregnancy may result in placental infection.

The rhesus monkey has been shown to be a sensitive laboratory host for the study of rubella virus infection. This study indicates that this animal has great potential as a model for exploring methods of controlling the disease in humans, particularly the rubella-induced congenital defects in children.

Inoculation of rhesus monkeys with rubella virus by a variety of routes produced an infection virologically resembling human rubella.

Similarities Noted

Similarities included the presence of virus in the blood, nose, throat, and intestinal tract during the first two weeks of infection, and the subsequent development of immunity.

Experimental infection was found to be moderately communicable to susceptible monkeys. While rash and other symptoms did not appear in the infected monkeys, many human infections are similarly inapparent and both the apparent and inapparent infections can be readily studied by current virologic techniques.

This experimental animal model has been used to examine two areas of special importance: the effect of rubella virus on the central nervous system, and the effect of infection during pregnancy.

Inoculation of rubella virus into the central nervous system did not produce clinical symptoms or pathologic evidence of inflammation of the brain (encephalitis).

Virus Persists

Despite this, the virus persisted in the spinal fluid for at least 32 days after inoculation, long after it had disappeared from the throat and blood, and the animals had developed antibodies. This persistence in the central nervous system was considered to be a remarkable phenomenon.

In preliminary experiments two monkeys inoculated early in pregnancy experienced rubella infection which spread to involve the products of conception.

These findings suggest the potential value of the primate host for studies concerning the pathogenesis and prevention of maternal-fetal rubella.

The work was done by Drs. Paul E. Phillips, Paul D. Parkmen, Ruth L. Kirschstein, and Harry M. Meyer Jr., all of the Division of Biologics Standards. Dr. Phillips presented the findings at the recent annual meeting of FASEB.