Equine Influenza Virus Shown to Infect Humans

National Institute of Allergy and Infectious Diseases scientists have shown that equine influenza virus can infect humans and that there is an antigenic relationship between equine and human influenza viruses. Although lower animals have been considered extrahuman sources of influenza viruses, there has been no direct evidence that animal influenza viruses can infect man.

No Prior Evidence

Conversely, there has been no evidence to clarify the role of human influenza viruses in animal disease.

In a recent study conducted with prisoner volunteers, NIAID scientists showed that a strain of A/Equine-2 virus obtained from a naturally infected horse could infect man.

All of five previously antibody-negative volunteers were infected and one actually became clinically ill.

Inoculation, moreover, produced (See INFLUENZA, Page 8)

Live Animal Heart Study Here Holds Hope for Saving Lives

At left, Dr. Peter Mansfield, PHS surgeon in the National Heart Institute, switches a dial to stop momentarily the small, beating animal heart in the instrument foreground. The monitoring equipment is used to record and study a variety of physiological functions of the heart. At right, an oxygen electrode is inserted into the tube that drains the special perfusion fluid passing through the heart. The short tube at lower tip of the heart keeps the main pumping chamber empty during metabolic studies.—Photos by Jerry Hocht.

By Tony Anastasi

The tiny animal heart, suspended alone in mid-air, was beating normally. Only a transparent plastic tube passed into it, bringing life-giving oxygen. The young U. S. Public Health Service surgeon probed the heart and used an array of complex electronic gadgetry to study, record, and analyze results of his experiment.

"We're trying to find out what the precise triggering process is in excitable tissue during electronic stimulation," said the National Heart Institute's Dr. Peter Mansfield.

Dr. Mansfield's efforts are uncovering answers concerning the effects of electrical stimulation on the whole heart and on individual heart cells.

"In this study," he said, "we can measure a variety of physiological functions such as potassium, sodium and calcium fluxes, temperature effects, pressures and fluid movement through the heart."

Responses Studied

The suspended heart preparation is perfused through the coronary arteries but does not pump fluid through its chambers. When electronic stimulation patterns are varied, basic metabolic and dynamic responses can be studied uncomplicated by the extra work of pumping.

In addition, intracellular microelectrodes are used to study the electrical responses in cells immediately adjacent to the stimulating electrodes.

(See HEART STUDY, Page 4)

Fete Develops New Concepts of Design For Community Mental Health Centers

Top professionals in the fields of hospital architecture and psychiatry recently completed a 2-week Design Fete sponsored by the National Institute of Mental Health at the Rice University School of Architecture, Houston, Tex., where they developed designs for a new kind of community mental health center.

The community mental health centers concept, which every State is currently applying to its network of community-based services for the mentally ill, demands a departure from traditional architectural styles.

Cooperative Effort

The Design Fete was organized to provide examples of how psychiatry and architecture can blend together to produce a workable, pleasant environment for treatment.

Led by Clyde Dorsett, NIMH architectural consultant, planners collected data on six communities, representing six different types of situations, from a rural center with mobile provisions to cover a large territory, to a neighborhood clinic in a city slum.

Teams Construct Models

This package was presented to the six teams participating in the fete on the opening day, June 7. Each team, which included a noted architect, a psychiatrist, and four students from graduate schools of architecture across the country, then had two weeks to study the community, design a center suited to its needs, and construct a model.

No restricting guidelines were (See NEW CONCEPTS, Page 7)

Shannon Appoints Dr. Kennedy Head Of DRFR July 1

Dr. Thomas J. Kennedy Jr. has been named Chief of the Division of Research Facilities and Resources, effective July 1, Dr. James A. Shannon, NIH Director, announced recently.

Dr. Kennedy has been Special Assistant to the Director, NIH, for Scientific Communications since 1962.

DRFR provides a focal point for the administration and management of some of the major NIH activities and programs intended to supply a wide institutional base of support for health-related research.

Programs Listed

It is responsible for the Health Research Facilities program, the program of support for Primate Centers, the General Clinical Research Centers program, the Special Resource Centers program, and the General Research Support Grant program.

Dr. Kennedy, a Public Health Service Commissioned Officer, joined the staff of the National Heart Institute in 1950. He was (See DR. KENNEDY, Page 8)

New Members Named to Advisory Health Council

Three appointments to the National Advisory Child Health and Human Development Council were announced today by Surgeon General Luther L. Terry of the Public Health Service. The new Council members begin 4-year terms on July 1.

The council appointees are Dr. Richard Blandau, Professor of Biological Structure, University of Washington School of Medicine; Dr. Philip M. Hauser, Professor and Chairman, Department of Sociology, University of Chicago; and Dr. John W. McConnell, President, University of New Hampshire.
Deafness Leads to Rewarding Career as Dental Technician for Frances Cannon

By Bob Callahan

From nutrition and dietetics to histopathology in the span of little over a year is the unusual career story of Frances Cannon.

The unplanned turn of events that led Mrs. Cannon to a position as histotechnician in NIDR's Oral Medicine and Surgery Branch has been mutually rewarding to her and the Dental Institute.

Referred to by her co-workers as "a remarkable person," Frances exhibits a charm and responsiveness that belies the fact she "hears" others only by lip-reading. She became totally deaf at the age of six as a result of meningitis.

A 1960 graduate of Seton Hill College (Greensburg, Pa.) with a B.S. degree in nutrition and dietetics, Frances searched for a job in her native Washington for seven months. But fate held other plans. Her handicap prevented her from finding employment in that specialty field.

Training Offered

Dr. Harold R. Stanley, Chief of the OMS Branch, in an interview with Frances, was so impressed by her determination and personality that he hired her for training in histopathologic procedures.

To become better oriented in the position, she took a course in histology in the NIH Graduate Training Program. The 22 minor credits in chemistry and seven in biochemistry that she had crammed into two years at Seton Hill now served her well.

This knowledge, plus her faculty for deep concentration, enabled her to master the new job in outstanding time. She has progressed steadily, becoming more expert in the work, and has received several promotions as well as a quality step increase.

The handicap has not deterred (see FRANCES CANNON, Page 4)
The first Statewide Psychiatric Case Register in the Nation is ticking off counts of Maryland's mentally ill and where they get treated.

The Register is counting individual patients, recording information about their age, sex, and other characteristics, following the sequence of their hospital and clinic care, and reporting changes in their diagnosis. This kind of information has never before been available on such a wide, systematic scale.

A joint project of the National Institute of Mental Health and the State of Maryland, its significance was emphasized by Dr. Stanley F. Yolles, NIMH Director.

Dr. Yolles Quoted

"In the attack on mental illness as a serious national problem of public health," said Dr. Yolles, "we have for years desired to have data which can trace the services provided to a citizen when he becomes mentally ill."

"The Maryland Case Register counts individual patients as well as their admissions to psychiatric facilities, and shows the sequence of their care. In other words, the register shows how many times a mentally ill patient is hospitalized and whether he receives outpatient treatment.

"It charts the movement of patients from one facility to another and any changes that may occur. For the first time it provides a picture of the combined hospital and clinic care a patient receives.

Aids Community Planning

"This is the kind of information we need," Dr. Yolles added, "in planning the new community mental health services that will be part of every community's health protection within the next few years."

How many people in a State are treated during a year for psychiatric illness? How many are "repeaters" at the hospital and how many are maintained solely as outpatients? How many received aftercare in a clinic?

These questions are being answered by the Maryland Psychiatric Case Register, which was several years in the making. It requires an automatic computer system and the cooperation of 120 outpatient facilities in Maryland and the adjacent District of Co-

PHS Officials Will Address New Commissioned Officers

Top staff of the Public Health Service will address the new Commissioned Officers at an orientation meeting in the Clinical Center auditorium at 1 p.m., July 15.

The speakers will be Dr. Luther L. Terry, the Surgeon General; Dr. G. Burroughs Mider, NIMH Director of Laboratories and Clinics; and Dr. Murray A. Diamond, Assistant Surgeon General for Personnel.

They will discuss the mission of the Public Health Service, the Commissioned Corps' part in achievement of this mission, and the evolving intramural research programs at the NIMH.

The orientation meeting will be followed by special meetings for Clinical, Research, and Staff Associates.

NINDS Forms Advisory Subcommittees on Vision, Human Communications

Rapid expansion of medical research activities in vision and human communications has led the National Institute of Neurological Diseases and Blindness to establish special advisory subcommittees in these two fields.

The vision subcommittee will be concerned with basic mechanisms of sight as well as the many disorders. The human communications subcommittee will be concerned with research on hearing, language, and speech.

Both of the two subcommittees will analyze the Nation's research accomplishments and professional manpower needs in these fields. They will report their findings to the Institute's National Advisory Council.

The Subcommittee on Vision and Its Disorders will be chaired by Dr. Bernard Becker, Professor of Ophthalmology, Washington University, St. Louis.

The Subcommittee on Human Communication and Its Disorders will be chaired by Dr. Francis A. Sossy, Professor and Chairman, Division of Otologyngy, University of California Medical Center, San Francisco.

Lumbia. A staff of trained statisticians and other professionals collects, processes, and analyzes the data. The register required special State legislation to ensure the confidentiality of the records it keeps. Under the Maryland law, no information on any individual patient can be released. The records are kept on electronic tape, filed under register numbers rather than names, and are accessible to project researchers only.

An annual series of statistical tables is now being produced, demonstrating a model system that other States can adopt.

The register studies were reported by Dr. Anita K. Bahn and Dr. Morton Kramer of the Office of Biometry, NIMH; Kurt Gorwitz and Dr. Isadore Tuerk, of the Maryland State Department of Mental Hygiene; and Dr. Gerald Klee of the University of Maryland Psychiatric Institute in the May issue of Public Health Reports.

You know what happens to fellows who fail their drivers' tests? They become parking lot attendants—The Washington Post.
Parental Interest, Even ‘Fault-Finding,’ A ‘Must’ for Well Being of Adolescent

Parental interest, even if reflected in fault-finding, is a “must” for the adolescent’s well-being. Without it, he may be headed for unhappiness and failure, according to Dr. Morris Rosenberg, a National Institute of Mental Health research scientist.

Dr. Rosenberg surveyed 5,000 students in New York State high schools, and several hundred in the Washington, D.C. area, for his study. He measured parental interest by asking the children three questions: 1) How much do your parents know about you? 2) How do your parents react to your report cards? 3) How often do they take part in conversations at the family dinner table? Dr. Rosenberg found that parents who knew all or most of their children’s friends, who took a strong interest in their report cards, and who permitted the children to engage in conversation at the table, had happy, self-confident youngsters.

Children low in self-confidence had parents who ignored them. Even negative interest such as sharp criticism and punishment at report card time, and criticisms of friends, did less damage to the children than indifference, Dr. Rosenberg said.

Self-Esteem Measured

The Institute sociologist used test scores for self-esteem as the measuring stick for the child’s well-being. He learned that children from upper-class families had higher self-esteem than those from lower economic groups.

The reason, he explained, lies not in the class in which the child happened to inherit, but in the amount of time and interest the parents, especially the father, showed him.

The report noted that “upper-class boys are 37 percent more likely than lower-class boys to have close relationships with their fathers... Adolescents who report close relationships with their fathers... Adolescents who report close relationships with their fathers are considerably more likely to have high self-esteem and stable self-images...”

According to the questionnaires, divorce cuts into the self-confidence of the child. The younger the child was at the time of the divorce, the more it affected him. Children whose father or mother died also suffered, but not so deeply.

The hazard to self-esteem is particularly great for the child whose very young mother bore him soon after marriage and then quickly got a divorce.

The study also reported that the self-esteem of the child is lower if the mother or father remarries.

Remarriage Increases Anxiety

“It is surprising to find that parental remarriage, rather than helping the adjustment of the child,” Dr. Rosenberg commented, “is associated with lower self-esteem and greater anxiety...

“It is surprising because the new father can lend moral and psychological support. On the other hand, the mother and child (without a father) may ‘huddle together for warmth.’ A common problem strengthens the bond.”

Dr. Rosenberg summed up the low-esteem child as “a gloomy, unhappy and discouraged” youngster, with little confidence in himself or in other people.

He does not participate fully in class, makes poor grades, avoids joining school clubs or groups, and in general “does not stir up much of a breeze in high school.”

He expects his future to be dark and, Dr. Rosenberg said, “there are powerful reasons for expecting his dire predictions about his future to come true. His low self-esteem makes him anticipate failure and very likely helps produce it.”

Attributes of Self-Esteem

In contrast, the high self-esteem child thinks of himself as successful and popular with many different kinds of people. He likes competition, makes good grades, has a variety of interests, is not afraid of criticism, joins a number of high school groups and frequently leads them.

He believes his future will be bright, and according to Dr. Rosenberg, he is probably right. “The young man who is confident of himself,” Dr. Rosenberg said, “and is not afraid of failure is likely to throw himself wholeheartedly into his work and to make full use of his creative potential.”

Dr. Rosenberg’s findings are described in “Society and the Adolescent’s Self Image,” published recently by the Princeton University Press.

**HEART STUDY**

(Continued from Page 1)

Heart Study

Hopefully, Dr. Mansfield’s work may be clinically useful in treating patients with irregular heartbeats and some other forms of heart disease. It may eventually be beneficial in the postoperative care of patients undergoing heart operations.

This is one example of the hundreds of basic medical research projects going on in the NIH Clinical Center. This one, like many others, might someday provide answers to improve and save human lives.

A paper based on the initial investigations of this problem appears in the June issue of the Bulletin of the New York Academy of Medicine.
Mechanisms Regulating Cell Activity Discussed in Lecture Series Here

Some of the mechanisms which regulate cell activity, turning enzymes off and on as needed, were explained in a lecture here recently by Dr. Bernard L. Horecker, former NIAMD scientist and now Professor and Chairman of the Department of Molecular Biology, Albert Einstein College of Medicine in New York.

This lecture was the fifth in a series sponsored by the National Institute of General Medical Sciences and the Division of Research Facilities and Resources, to acquaint scientist administrators with recent trends and concepts in biomedical science.

Dr. Horecker said that enzyme molecules have evolved over the ages, just as life has, from simple to more complex forms. It is thought that the atoms in primitive enzymes were linked in a single chain-like arrangement called a tetramer.

Enzymes Complex

Later the chains became doubled (dimers), redoubled, or tripled (polymers). Some have acquired side chains, until many enzymes today are highly complex in shape.

The evolution of these side chains and polymers has led to the development of mechanisms which control the chemical reactions of cells.

One of these mechanisms, known as feedback inhibition, is comparable to a thermostat which cuts off the furnace when the heat reaches a desired level. When the product of an enzyme reaction reaches a certain level, the product itself, like the heat, blocks the activity of the enzyme which, like the furnace, started the reaction.

The inhibitor in some instances actually boosts enzyme activity. Dr. Horecker said, by altering the bonds between the various polymer and chain subunits of the molecule. Heat and urea, which "loosen" bonds between subunits, block inhibition of some enzymes without interfering with normal enzymatic activity.

Reaction Described

The active site, which is the exact place on the enzyme where it reacts with another molecule, or substrate, may be an entirely different portion of the enzyme from the site where the inhibitor reacts. Sometimes it is possible to increase the effectiveness of an enzymatic reaction by changing the strength of the bonds and the geometric shape of enzyme molecules.

Dr. Horecker has trebled the activity of one enzyme, an aldolase, found in muscle cells. He pointed out that, in rabbits, aldolase molecules from liver cells are very similar in structure to those from muscle cells. Both have three chains and two active sites, and it is thought that the inhibition site is on the third chain.

During a question period following the lecture, Dr. Horecker stressed the need for more scientists trained in advanced chemistry and computer methods to do biological research. He said college advisors should encourage any student interested in biomedical research to acquire a substantial background in chemistry and mathematics.

Dr. Horecker served at NIH for 18 years, and was Chief of the Laboratory of Biochemistry and Metabolism, NIAMD.

Participants Value GA Seminar Series On Public and Science Administration

Members of the Grants Associates Board confer with directors of the first week of the 1965 seminar series, conducted here May 17-21. Left to right: Dr. Stephen P. Hatchett, Chairman of the Board's Committee on Seminars and Deputy Chief of the Division of Research Grants; Dr. Charles A. Goodman, Professor and Associate Dean of the School of Government and Public Administration, American University; Dr. Marshall E. Dimock, authority on Public Administration; and Joseph A. Stoton, Executive Secretary of the Grants Associates Program.—Photo by Ed Hubbard.

Dr. Karl R. Johansson, Chief of the Research Grants Branch, NINDB, and Chairman of the Grants Associates Board, reported recently that participants highly evaluated a concentrated 2-week seminar dealing with public and science administration.

The third of a series of such seminars conducted here annually, the objectives of the program are: 1. To give new science administrators an objective understanding of the political, social, economic, and scientific forces which affect governmental policies, procedures, and programs. 2. To give new science administrators an understanding of the broader restraints affecting decision-making. 3. To provide a clarification of concepts affecting the administrative process.

Ten Grants Associates, currently training here at the postdoctoral level, and 10 senior extramural staff members from the Public Health Service participated in the seminar.

Dr. Charles A. Goodman, Associate Dean, School of Government and Public Administration, American University, was overall director of the seminar series. The first week in the series, held May 17-21, was under the direction of Dr. Marshall E. Dimock, former Head of the Department of Government, New York University. Dr. Robert G. Gilpin, of the politics and public affairs faculty, Princeton University, was senior seminar leader during the second week of the meeting, June 7-11.

The seminars are given for the benefit of Grants Associates and other selected science administrators. The Grants Associates Program which is administratively based in the Division of Research Grants, has been markedly successful in allaying PHS-NIH needs for well-trained science administrators.

"A Federal science administrator," Dr. Eugene A. Confrey, DRG Chief, told the participants, "manages, innovates, decides, organizes and articulates in the public arena. "He is accountable to the public, available to the press, his actions or inaction subject to public scrutiny. Is this a problem? I view it as a challenge to test one's intellectual and emotional maturity."

PHS Reports Change in Flu Vaccine Composition For 1965-66 Season

A slight change in the composition of influenza vaccine for the 1965-1966 season was announced recently by Luther L. Terry, Surgeon General of the Public Health Service.

In addition to the representatives of the four influenza virus strains, A, A2, and B—which are used in the vaccine, next season's formula will include another A1 strain, isolated in Taiwan in 1964.

This strain is closely related to the A3 strain which has been associated with epidemic influenza during the past season.

The licensed influenza vaccine manufacturers have been advised by the Division of Biologics Standards of the addition of the Taiwan A1 strain for the 1965-66 season.

3 Strains Studied

Three A1 influenza strains which were responsible for influenza epidemics in various parts of the world during 1964 have been under intensive study as possible candidates for inclusion in the current vaccine.

Identified as A1/Taiwan/1/64, A1/Puerto Rico/1/64, and A2/Sidney/2/64, they were evaluated for their antigenic properties as well as for suitability for commercial production.

Both clinical and laboratory information indicated that of the three candidate strains, the Taiwan/1/64 had the most desirable properties. It showed broader coverage than the other two, it had greater antigenicity in animal and clinical tests, and was considered suitable for production.

The laboratory and clinical work was carried out by Dr. J. Anthony Morris, Division of Biologies Standards; Dr. Vernon Knight, National Institute of Allergy and Infectious Diseases; Dr. Fred Davenport, University of Michigan; Dr. Edward Buescher, Walter Reed Army Institute of Research; and Dr. Joseph Quilligan, Loma Linda University, Los Angeles.

DBS Advises Manufacturers

After careful consideration of the data, DBS advised the manufacturers to proceed with the manufacture of a vaccine in which the A1 influenza virus strain representation is equally divided between Japan/170/62, the current A1 representative in the vaccine, and Taiwan/1/64.

"It is clear that we continue to be in a period of antigenic change," Dr. Terry said, "and that examination and analysis of the strains isolated in this country and abroad during the current season, or later in the present year, may call for further recommendations."
Dr. Barrett and Wife To Retire Next Month From Cancer Institute

Dr. Morris K. Barrett, a National Cancer Institute biologist since 1940, will retire next Friday, July 2. He holds the rank of Medical Officer. His wife, Dr. Margaret K. Deringer (who retains her maiden name for professional use) is also an NCI biologist and will retire July 31.

Dr. Barrett joined the Institute as a Research Fellow and has been a member of the biology research staff since it was organized first as the Biology Section and later as the Laboratory of Biology. For a number of years he headed a Gastric Cancer Unit and served as Executive Secretary for a Gastric Cancer Committee of the National Advisory Cancer Council.

Research Listed

Dr. Barrett has conducted research on cancer causation and the relationships between immunity to the disease and the genetic makeup of the individuals with emphasis on host-tumor relationships and adaptive changes in transplanted tumor tissue.

He observed that red blood cells when broken up by three different methods, which reduced the cell’s constituents to very small size, lost their ability to produce immunity.

This finding introduced the concept that antigenicity of cells may depend upon more than their molecular structure. In recent work, Dr. Barrett explored the relationships between the interactions between animal gastric mucosa and its secretions.

Educational Background

A native of Brookville, Ky., Dr. Barrett was graduated from the Colorado School of Mines in 1924 and worked as a research metallurgist and geologist before studying medicine. After receiving an M.D. degree from the University of Colorado in 1937, he was for two years an NCI Fellow at the Rockefeller Institute in New York. His research career was interrupted for three years, from 1942 to 1945, while he served as a surgical technician in the U.S. Army Medical Corps during World War II.

Dr. Barrett is a Fellow of the American Association for the Advancement of Science and the New York Academy of Sciences, a member of the American Association for Cancer Research, Society for Experimental Biology and Medicine, Washington Academy of Sciences, Tau Beta Pi, Alpha Omega Alpha, and Phi Lambda Upsilon, and an affiliate of the Royal Society of Medicine, London.

A graduate of Hood College and Johns Hopkins University, Dr. Deringer joined the Institute as a Research Fellow in 1942. She has specialized in developing experimental animals of unusual genetic strains.

In addition to her independent studies, she has collaborated extensively with her husband, supplying him with laboratory animals of unique and complicated genetic background vitally to his work.

The Barretts, whose home is in Bethesda, are looking forward to the leisure of retirement and the freedom to travel.

Study Shows Reticulum Cell Sarcoma Is Transmittable in Hamsters by Mosquito

A joint study by three NIH Institutes has demonstrated that the reticulum cell sarcoma (TM) of hamsters can be transmitted from one hamster to another by a mosquito, probably by transfer of viable tumor cells rather than passage of an oncogenic virus.

In this study, conducted by the National Cancer Institute, National Institute of Allergy and Infectious Diseases, and the National Institute of Dental Research, the contagious tumor, a lymphomatous tumor present in hamsters at a high white cell count, has been transmitted by subcutaneous implantation, feeding tumor tissue, and cannibalism among cage-mates.

Transmission is believed to be by direct passage of tumor cells because a very consistent and highly specific chromosome pattern, differing from the normal hamster karyotype, is maintained in the transmitted tumor cells.

Chromosome changes known to be induced by oncogenic viruses do not approach the degree of specificity observed in these tumor cells.

The present study was designed to determine whether TM could be transmitted by the mosquito, Aedes aegypti, and if such transmission involved chromosome changes consistent with the hypothesis of direct cell implantation.

Investigation of Interest

Speculation that Burkitt’s lymphoma may be caused by a mosquito-borne agent makes such an investigation of special interest.

In one series of experiments, mosquitoes that had been fed on either tumor-bearing or tumor-free hamsters were implanted subcutaneously in normal hamsters. Tumors developed in 24 of 2G hamsters implanted with mosquitoes fed on tumor-bearing hamsters, but no tumors developed in seven hamsters implanted with mosquitoes fed on tumor-free hamsters.

In another series of experiments, mosquitoes were fed on seven “donor” hamsters bearing tumors transmitted by subcutaneous transplanted. After the feedings were interrupted, these mosquitoes were then allowed to feed on “recipient” tumor-free weanling hamsters.

Within 13 to 23 days, five of the 50 recipients developed tumors histologically resembling those of the donors. The tumors appeared as subcutaneous nodules with or without stases or as widespread tumors involving most of the internal organs.

Structure Described

Chromosome studies performed on one of the mosquito-borne induced tumors showed a karyotype identical to the subcutaneously transplanted tumors previously described by these investigators.

The cells contained seven extra chromosomes with a characteristic distribution, a single X chromosome, and a minute marker chromosome.

Repeated examinations for a virus in the tumor used in these experiments using electron microscope, tissue culture, and aerial passage techniques, were unsuccessful.

A report of this study appeared in Science. The investigators were Dr. William G. Banfield and Carol MacKay, of the Laboratory of Pathology, NCI; Dr. Paul A. Woke, of the Laboratory of Tropical Virology, NIAID; and Dr. Herbert L. Cooper, of the Section of Cellular Biology and Cytogenetics, NIDR.

FRANCES CANNON

(Continued from Page 2)

either her performance as a histotechnician or her pursuit of various avocations. An interest in flying began at an early age when her father, Lt. Col. Joseph C. Bergling, was Commander of the National Capitol Wing, Civil Air Patrol.

Following graduation in 1958 from Immaculata Junior College in Washington, she took flying lessons at the old Congressional Airport on Rockville Pike, although she never quite reached the solo stage. She had to “give it up because of the expense, with college coming up.”

In November 1963, Frances took a commercial flight to Sicily to attend the wedding of a college girl friend traveling alone, as usual.

It was at a meeting of the club last year that she met her husband-to-be. Nine months later they were married “with colored rice, some of which I still have,” she remembers excitedly. Her husband, Richard, is partially deaf and wears a hearing aid. He is president of the club, she is treasurer.

Sight Is Keen

Dr. Stewart and Dr. Eddy Participate in Symposium By Women of Science

Two scientists from the National Institutes of Health participated in a “Symposium by Distinguished Women of Science,” sponsored recently by the Putnam Memorial Hospital Institute for Medical Research in Bennington, Vt.

The concept that viruses may cause tumors in man was explored by seven scientists distinguished for their work in the fields of virology, cancer research, and cellular biology.

Dr. Bernice Eddy, Chief of the Section on Experimental Virology, Division of Biologics Standards, presented a paper on “Studies on the Oncogenic Viruses: Simian Virus 40 and Human Adenovirus Type 12.”

“Viruses in Cultured Human Lymphoma Cells” was the title of a paper presented by Dr. Sarah E. Stewart, Division of Viral Oncology, National Cancer Institute.

Dr. Robert J. Slater, Dean of the University of Vermont Medical College, served as moderator for the symposium, the first to be sponsored by the Putnam Memorial Hospital Institute for Medical Research.

Dr. Eddy

Dr. Stewart
PHS Awards $5 Million To Aid in Construction Of Retardation Centers

Grant awards totaling almost $5 million to aid in the construction of three multidisciplinary mental retardation research centers were announced recently by Surgeon General Luther L. Terry of the Public Health Service.

The grants are:
1. $1,724,000 to the Children's Hospital, Cincinnati, Ohio, for construction of an 8-story building adjacent to the hospital to be known as Children's Hospital Institute for Developmental Research.
2. $2,401,000 to George Peabody College for Teachers, Nashville, Tenn., for construction of two units: a 4-story mental retardation laboratory building, and a 5-story medical building.
3. $827,000 to the Walter E. Fernald State School, Waltham, Mass., for a 4-story building for clinical research in mental retardation.

The award to the Children's Hospital will provide research space to extend ongoing retardation research and educational and research training programs. Research at the center emphasizes the biological and medical aspects of mental retardation.

Divisions of the Children's Hospital in which research will be directed entirely toward mental retardation and related aspects of human development include teratology and genetics, experimental pathologic embryology, fetal pharmacology, and chromatography.

The award to the George Peabody College will aid researchers in the field of mental retardation and related aspects of human development.

Grant Is 1st of Kind

The grant to Peabody is the first such grant under this program to an institution primarily emphasizing the educational, psychological and social aspects of mental retardation.

Strong emphasis in the new center will also be put on studies related to the impact of cultural deprivation on retarded intellectual development, an area in which Peabody has been investigating for several years.

The Walter E. Fernald State School houses 2,500 mentally retarded persons, and is the oldest of its type in the country. The new research building, constructed before 1900, with a modern facility suitable for comprehensive studies of retardation research centers.

Committee to Advise NIAID On Research In Immunology of Organ Transplantation

Appointment of an advisory committee for collaborative research in the immunology of organ transplantation has been announced by Dr. Luther L. Terry, Surgeon General of the Public Health Service.

The committee will advise Dr. Dorland J. Davis, Director of the National Institute of Allergy and Infectious Diseases, on ways to develop and coordinate methods, procedures, and resources for researching in the immunology of organ transplantation, which Dr. Terry called “one of medicine’s most challenging frontiers.”

The committee will also advise on the development methods for evaluating and applying research results.

Dr. Amos Is Chairman

Chairman of the committee is Dr. Bernard Amos, Professor of Immunology, Duke University, Durham, N.C. The other members of the committee are from leading hospitals and university medical centers.

The entire collaborative transplantation immunology program is under the immediate direction of Dr. John R. Overman, Associate Director for Collaborative Research, NIAID.

Commenting on the present state of organ transplantation, Dr. Terry said:

“The main obstacle is a problem in immunology. The surgery is successful but the recipient rejects the transplant. The human body reacts to transplanted tissue in much the same way that it reacts to other invaders—viruses, bacteria, or other foreign substances.

Defense Mechanisms Studied

Little understood defense mechanisms which protect against infection unfortunately ‘protect’ against transplanted tissue.

In an effort to understand and eventually prevent tissue rejection, researchers are striving to answer two important questions: How does the body recognize the foreign invader, that is, the transplanted tissue? How can the body be ‘taught’ to live with the invader?”

The immediate goal of the NIAID collaborative program in a large group of mentally retarded.

In the planned center, an expanded research program will be carried out, combining the resources of the school and the Massachusetts General Hospital.

Grants for construction of mental retardation research centers are administered by the Division of Research Facilities and Resources. The National Institute of Child Health and Human Development is the focal point for program consultations with institutions interested in developing mental retardation research centers.

Floyd Swanson of NIH Person nel Branch Named NHI Personnel Officer

Dr. Ralph E. Knutti, Director of the National Heart Institute, and John M. Sangster, Chief of the Personnel Management Division, have announced the appointment of Floyd R. Swanson as Personnel Officer of the Institute.

Mr. Swanson replaces Virginia B. Porter who retired June 18.

Before joining NHI, Mr. Swanson was a staff specialist with the NIH Recruitment and Placement Section, PMB. His first position with NIH was as a personnel specialist with the National Institute of Allergy and Infectious Diseases from June 1962 until August 1963. He served in the same capacity with the National Cancer Institute from 1963 until this year.

Graduate of Boston U.

Born in Beverly, Mass., in 1932, Mr. Swanson received his B.S. and M.B.A. degrees from Boston University in 1959 and 1960. He came to NIH in Washington to join the Army Corps of Engineers as a personnel specialist in 1960.

Mr. Swanson is a member of the Society of Personnel Administration.

NEW CONCEPTS

(Continued from Page 1)

placed on architectural style, technique, or other design elements. The participants were encouraged to seek new concepts in architecture, construction methods, materials and processes.

The head architect taught only by example; each student contributed, criticized, and was criticized. Consultants on all aspects of the problem were available at a moment’s notice.

Scale Models Completed

Toward the end of a second week, a marathon effort transformed schematic sketches and blueprints into scale models, complete with paint and miniature trees. Climax of the fete came on the final day when each team presented its product to a critical audience of the other teams and special guests.

Previous fêtes have been conducted with great success on factory fallout shelters and community college. Called an “experiment in experience,” the fêtes bring together professionals and students in an informal atmosphere to provide imaginative and creative solutions to specific problems.
Disposition, Metabolism Of H\textsubscript{3}-Norepinephrine In Rat Brain Studied

The injection of radioactive norepinephrine into the brain ventricles of rats has enabled National Institute of Mental Health scientists to study the fate of this neurohormone within the brain. Such study was hindered previously by the inability of norepinephrine to penetrate the blood-brain barrier from the peripheral circulation.

The new technique of intraventricular administration of a small amount of H\textsuperscript{3}-norepinephrine makes it possible to do studies on a large number of animals under physiological conditions.

Norepinephrine is considered to play an important role in brain function. The introduction of H\textsuperscript{3}-norepinephrine into the brain makes it possible to study the dynamics of the metabolism and disposition of this neurohormone in the brain and also measure the effects of psychoactive drugs on the metabolism of this neurohormone in the brain.

Radioactivity Cut Half

The injection of small amounts of H\textsuperscript{3}-norepinephrine into the brain of rats was followed by an uneven pattern of distribution. Immediately after injection, about half of the radioactivity remained in the brain. The norepinephrine disappears rapidly at first and then more slowly over a period of days.

These findings suggest that norepinephrine is stored and metabolized in different ways: part is rapidly released and metabolized and part is retained in several reservoirs within the brain and gradually released and metabolized.

While it is stored in the brain, it is temporarily inactivated by binding; when released it is metabolized by O-methylation and deamination. H\textsuperscript{3}-norepinephrine binds within the subcellular structures of the brain, the nerve-ending particle, in a similar pattern as endogenous norepinephrine.

Work Conducted by Three

Analysis of the radioactive metabolites present in the urine after intraventricular and intravenous injection in the periphery indicates that the blood-brain barrier is operating in both directions. Norepinephrine has difficulty in leaving the brain as well as entering the brain.

This work, conducted by Drs. Jacques Glowinski, Irwin J. Kopin, and Julius Axelrod of the Laboratory of Clinical Science, NIMH, was reported in the Journal of Neurochemistry.

President Harry S. Truman laid the Clinical Center cornerstone on June 22, 1961.

**Influenza**

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not only antibody against the equine virus itself but also antibody against a human influenza A virus.

The lack of species specificity of equine influenza virus in this study, added to the knowledge that human influenza antibody has been found in horses, suggests that an exchange of equine and human influenza viruses in these hosts may occur in nature.

**Antigenic Relationship**

In addition, there appears to be an antigenic relationship between equine and human influenza viruses. These preliminary findings were reported in Nature by Drs. Julius A. Kasel, Robert H. Alford, and Vernon Knight, of NIAID's Laboratory of Clinical Investigation; also Drs. Glenn H. Waddell and M. Michael Sigel, of Variety Children's Research Foundation, Miami, Fla.

**Dr. Lee, Exec. Officer Of FASEB, to Retire**

Dr. Milton O. Lee, Executive Officer of the Federation of American Societies for Experimental Biology and Managing Editor of its publications, has announced his retirement effective July 1. He will then serve as Adviser to the Chairman of the Federation Board until his full retirement in September 1966.

Dr. J. F. A. McManus, Professor of Pathology in the Experimental Program of Medical Education, Indiana University, will succeed Dr. Lee as Executive Officer of the Federation, effective July 1.

Dr. Lee joined the Federation in 1947, when he became the Executive Director of the combined offices of the Federation and the American Physiological Society. In 1948 he was appointed Federation Secretary, succeeding Dr. William H. Chambers, and has continued in the same capacity since that time. His title was later changed to Executive Officer.

Robert Walters Named To Child Health Post

Robert S. Walters, Jr. was recently appointed Assistant Information Officer of the National Institute of Child Health and Human Development. Prior to joining the Institute's staff, Mr. Walters served as Information Officer of the Division of Research Services since 1955.

Mr. Walters will help plan and conduct the Institute's information program concerned with reporting direct research activities.

Before joining the NIH staff, Mr. Walters was a science writer with the University of Wisconsin News Service from 1959 to 1961. A former trainee in the NIH Information Training Program, he worked as a Technical Publications Writer for the National Institute of Neurological Diseases and Blindness from 1962 to 1963.

Born in Atlanta, Ga., he received his B.S. degree from Oglethorpe University, Atlanta, in 1957, and his M.S. degree in zoology from the University of Wisconsin, Madison, in 1961.

**Dr. Kennedy**

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engaged in research in renal and electrolyte physiology in that Institute's Laboratory of Kidney and Electrolyte Metabolism until 1960, when he became Assistant to the Director of Laboratories and Clinics, NIH.

Born in Washington, D.C., in 1920, Dr. Kennedy received his B.S. degree from Catholic University in 1940 and his M.D. degree from The Johns Hopkins University in 1943.

He has been certified as a Specialist by the American Board of Internal Medicine and is a member of the American Federation for Clinical Research and the American Physiological Society.

During World War II he served in the U.S. Army's Office of Scientific Research and Development.

*New Publications Issued On Nurse Training Aid*

A series of six pamphlets on aid to students and schools of nursing under the Nurse Training Act of 1964 (P.L. 88-581) has been released by the Public Health Service.

A general pamphlet, "Nurse Training Act of 1964," PHS Publication No. 1154, summarizes the legislation, which authorizes up to $283 million during the next five years for Federal aid to nursing.

Funds' Use Cited

These funds are for extension and expansion of traineeships for nurses in teaching, supervisory, and administrative positions, and for four new aid programs: project grants to help schools of nursing improve their training; payments to reimburse diploma schools in part for training students whose enrollment may be attributed to the Act; long-term, low-interest loans for students of nursing; and grants to construct, expand, renovate, and replace training space in new or existing nursing schools.

The series also includes separate pamphlets to explain the purpose, conditions for participation, and application and funding procedures for each provision of the Act.

*Titles Listed*

These pamphlets, PHS Nos. 1154-1 to 1154-5, are titled: "Professional Nurse Traineeship Program;" "Project Grants for Improvement in Nurse Training;" "Payments to Diploma Schools of Nursing;" "Nursing Student Loan Program — Information for Schools;" and "Construction Grants Program for Schools of Nursing."

Copies may be obtained by writing to the Public Health Service, Washington, D.C. 20201.