the NIH Record

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Vol. XI, No. 23
November 10, 1959

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

Dr. Eyestone Heads NHI Primates Program; Dr. Holden Promoted

Dr. Willard H. Eyestone, Chief, Laboratory Aids Branch, DRS, has joined the Grants and Training Branch, NHI, where he will be in charge of the Primates and Veterinary Grants Program. His appointment was effective on October 27.

Dr. Preston Holden has been appointed Chief of the Laboratory Aids Branch to succeed Dr. Eyestone. Prior to his appointment he was Assistant Chief of the Branch.

Two Centers Planned

In the development of primate research, Dr. Eyestone plans to encourage establishment of two primate research centers, at locations to be selected in the near future. Two million dollars has been earmarked for the program, and further expansion is contemplated, including development of breeding centers.

Dr. Eyestone, who became a PHS Commissioned Officer in May, 1959, came to NIH in 1949 as a veterinarian with NCI. In 1955 he was appointed Chief of the Laboratory Aids Branch, then a function of the Office of the Director.

A member of the National Ad-

(See HOLDEN, Page 2)

Dr. Joseph Smadel Chosen to Receive 1959 Stitt Award

Dr. Joseph E. Smadel, Associate Director for Intramural Research, NIH, has been selected to receive the 1959 Stitt Award of the Association of Military Surgeons. The presentation will be made at the Association's Honors Night dinner in Washington, D. C., on November 11.

The award is named in honor of the late Rear Admiral Edward R. Stitt, U. S. Navy authority on tropical medicine. Dr. Smadel's citation will read: ". . . . for his many contributions in microbiology and immunology."

Dr. Smadel

Dr. Smadel is recognized as the leading force behind the studies in Malaya in the late 1940's which proved the efficacy of chloramphenicol in the cure of scrub typhus (tsutsugamushi disease) and typhoid fever. He is one of the world's authorities on viral and rickettsial diseases and has contributed valuable scientific data on Q fever, influenza, smallpox, Japanese B encephalitis, and epidemic hemorrhagic fever.

(See SMADEL, Page 2)

Assembly of Scientists Established By Vote of NIMH and NINDB

Scientists of NIMH and NINDB voted recently to establish an Assembly of Scientists "to help develop and promote the professional excellence and scientific achievements of the Institutes."

The organization is the outcome of several years of discussion and planning. Ratification of a constitution and election of officers were announced at the first annual meeting, October 15.

As presently organized, the Assembly is open to the participation of scientists of the other Institutes on a non-voting membership basis. Its founders anticipate that it will serve to interest other scientists at NIH and possibly foster the development of an NIH-wide Assembly.

Purpose Stated

Purpose of the Assembly, more specifically stated in its constitution, is to "serve as a general forum for communication, as a means to formulate and express opinion, and as an instrument to render advice and to take action pursuant to the general objectives of the scientists."

The constitution further notes that, "The last decade has seen the assembling of an unprecedented number of scientists in the National Institutes of Health for the purpose of conducting biomedical research for the benefit of mankind."

Constitution Adopted

Copies of the proposed constitution were distributed for consideration and vote, prior to the October 15 meeting, to the 255 scientists in NIMH and NINDB who were eligible for membership. The results, announced at the meeting, were 174 replies received, of which only four were negative.

Committees were appointed to recommend action on the possible formation of a faculty club, the regulation of human and animal experiments to assure humane treatment of subjects, freedom of government scientists to attend international meetings, relations between scientists and the press, and

(See ASSEMBLY, Page 2)

NIH Tops UGF Goal By $771 in 5th Week

For the first time, NIH has attained its UGF goal. As of November 5, the $60,469 quota was exceeded by $771. This represents 101 percent of the quota and 95 percent participation by NIH employees.

Dr. James A. Shannon, NIH Director, expressed his pleasure at the report. "This is a wonderful showing," he said. "I'm confident that each Institute and Division will reach 100 percent within the next week."

According to Dr. Jack Masur, UGF Chairman here, each employee who has not yet had an opportunity to contribute to the campaign will be reached by a keyman during the early part of November.

During the past two weeks, these groups reached their quota: NHI, 106%; CC, 103%; NIAMD, 104%; and NINDB, 100%.

(See UGF GOAL, Page 2)

500 EXPECTED AT CHEMOTHERAPY RESEARCH CONFERENCE

More than 500 scientists and physicians are expected to attend a two-day conference on clinical chemotherapy research, November 11 and 12, at the Statler Hilton Hotel, Washington.

Sponsored by the Cancer Chemotherapy National Service Center, NIH, the meeting will include a series of discussions on recent developments in the cooperative clinical trials program being carried out under the Center's direction.

Informal presentations on Wednesday morning will include discussions by Dr. I. S. Ravdin, University of Pennsylvania, on "The Cooperative Clinical Program"; by Dr. Bernard R. Baker, Stanford Research Institute, on "Chemical Structure as Related to Antitumor Action"; and by Dr. C. Chester Stock, Sloan-Kettering Institute for Cancer Research, on "Biological Screening for Determination of Antitumor Activity."

The remaining conference time will be devoted chiefly to panel discussions on specific aspects of clinical chemotherapy. There will be panels on therapy of the leukemias and lymphomas, cancer of the lung and breast, and other solid tumors.

Other panel meetings will cover surgical adjuvant chemotherapy, the use of alkylating agents, hormone therapy, some newer techniques and problems in cooperative studies, and the basis for seeking new types and structures for chemotherapeutic agents.

Dr. Sidney Farber, Children's Cancer Research Foundation, will conclude the meeting Thursday with a talk on "The Future of the Cancer Chemotherapy Program."

The conference is open to interested observers and to the press.

the NIH Record

Published bi-weekly at Bethesda, Md., by the Scientific Reports Branch, Division of Research Services, for the information of employees of the National Institutes of Health, principal research center of the Public Health Service, U. S. Department of Health, Education, and Welfare.

Chief, Publications & Reports Section ..... E. K. Stabler
Editor ..... Elizabeth D. Mok

Staff Correspondents

Elaine Johnson, NCI; William Sanders, NHI; Kathryn Mains, NIAID; Lillie Bailey, NIAMD; John Kley, NIDR; Lucille Furman, NIMH; Janet Gallagher, DGMS; Phyllis Snyder, DRG; Virginia Lundblad, DRS.

HOLDEN

(Continued from Page 1)

visory Committee on Primates, Dr. Eyestone is chairman of the Committee on Primates, Institute of Laboratory Resources, National Research Council.

Dr. Holden has been with PHS since 1950. His career includes service as Chief of the Virology Unit, Encephalitis Section, Communicable Disease Center. He joined the NIH staff in 1958.

Dr. Holden was the first veterinarian in the U. S. to earn a degree as Doctor of Public Health. The degree was granted by the University of Pittsburgh School of Public Health.

Among Dr. Holden's contributions to the literature are a number of papers on encephalitis research. He is a member of the American Veterinary Medical Association.

ASSEMBLY

(Continued from Page 1)

professional designations for scientists at NIH.

Officers of the Assembly, elected at a prior meeting, were announced as follows:

President, Dr. H. Enger Rosvold, Laboratory of Psychology, NIMH; president-elect, Dr. Karl Frank, Laboratory of Neurophysiology, NINDB; secretary, Dr. Sanford Palay, Laboratory of Neuroanatomical Sciences, NINDB.

The elected councilors of the Assembly are Drs. Marian Yarrow, Paul MacLean, Edward Evarts, Herbert Posner, John Clausen, Seymour Kety, and Giulio Cantoni, all of NIMH, and Michael Fuortes, of NINDB.

Officers of the Assembly of Scientists discuss business of the new organization. From left are Drs. Sanford Palay, Karl Frank, and H. Enger Rosvold.

UGF GOAL

(Continued from Page 1)

A breakdown of the figures follows:

	% of quota	% of participation
DGMS	147	100
NIDR	125	111
NIMH	119	95
NIAID	116	95
DRG	114	105
OD-NIH	112	104
NHI	107	98
CC	105	99
NINDB	100	94
NIAMD	104	107
OAM	99	99
DBS	99	80
NCI	87	94
DRS	74	88
Averages	101	95

INSTRUMENT SPEEDS LAB WORK

A new instrument which mechanizes the pipetting process for bacteriophage typing has been developed by the Instrument Section, DRS, for Dr. Frederick A. Fox, Clinical Pathology Department of the Clinical Center.

Dr. Fox built a test model of an instrument which enabled him to add suspensions of many different bacteriophages to a single Petri dish simultaneously. From this model, the Instrument Section developed the instrument pictured above.

This apparatus contains 26 syringes which need be removed only for replacement, and the entire instrument can be sterilized in the autoclave. In use, up to 26 phage suspensions are drawn up into the syringes from a nylon filler block. One hundred and sixty typings can be performed from each filling.

The plungers of the syringes are advanced by turning a nut, and the hanging drops formed on the tips of the needles are touched off on the agar surface of the bacterial culture.

The Bacteriology Service of the Clinical Pathology Department does about 200 bacteriophage typings each week. With this instrument, tests which formerly required more than 10 hours may be performed in less than one hour.

The instrument will be reported in the February issue of the American Journal of Clinical Pathology.

Advisory Council Appointments

The following appointments were made recently to National Advisory Councils:

National Advisory Heart Council: John T. Connor, president of Merck and Company, Inc.; Dr. Robert W. Wilkins, professor of medicine at Boston University School of Medicine; Dr. H. Burr Steinbach, professor of zoology at the University of Chicago.

National Advisory Mental Health Council: Dr. Ralph Winfred Tyler, director of the Center for Advanced Study in the Behavioral Sciences, Stanford, California; Dr. Eli Ginzberg, professor of economics at Columbia University Graduate School of Business; Dr. John C. Whitehorn, Henry Phipps professor and director of the Department of Psychiatry at the Johns Hopkins University School of Medicine.

National Advisory Neurological Diseases and Blindness Council: Roger S. Firestone, president of Firestone Plastics Company, Pottstown, Pa.; Mrs. Edward F. McSweeney, Armonk, N. Y., a vice-chairman of the National Committee Against Mental Illness; and Dr. Alson E. Braley, professor and chairman of the Department of Ophthalmology at the State University of Iowa, who has been reappointed to the Council.

National Advisory Dental Research Council: Mrs. George F. Jewett, Spokane, Washington; Dr. John F. Reed, dean of the Graduate School, University of New Hampshire; and Dr. William J. Simon, dean of the College of Dentistry, State University of Iowa.

SMADEL

(Continued from Page 1)

The Stitt Award has been made annually since 1954 by the Pfizer Laboratories for "the most outstanding contribution in the field of antibiotics."

Dr. Smadel will receive an honorarium of $500, medal, scroll, and a life membership in the Association of Military Surgeons.

Correction

In the story on presentation of incentive awards, in the October 27 issue, the RECORD inadvertently omitted the name of Clydis A. Jones from the list of those who shared in a group award to members of the Budget Management Section, OAM. Her name was erroneously printed as Carl A. Jones, who is a member of the Plant Safety Branch, OAM. The RECORD extends apologies to both.

The ratio of dentists to population remains below pre-World War II levels, the PHS reports, and the decline is expected to continue.

Science Section

This four-page section is devoted chiefly to summaries of research findings that have been reported by scientists of the National Institutes of Health. This section is prepared by the Office of Research Information, NIH, and the Information Offices of the Institutes and Divisions.

GERM-FREE RESEARCH AT NIH

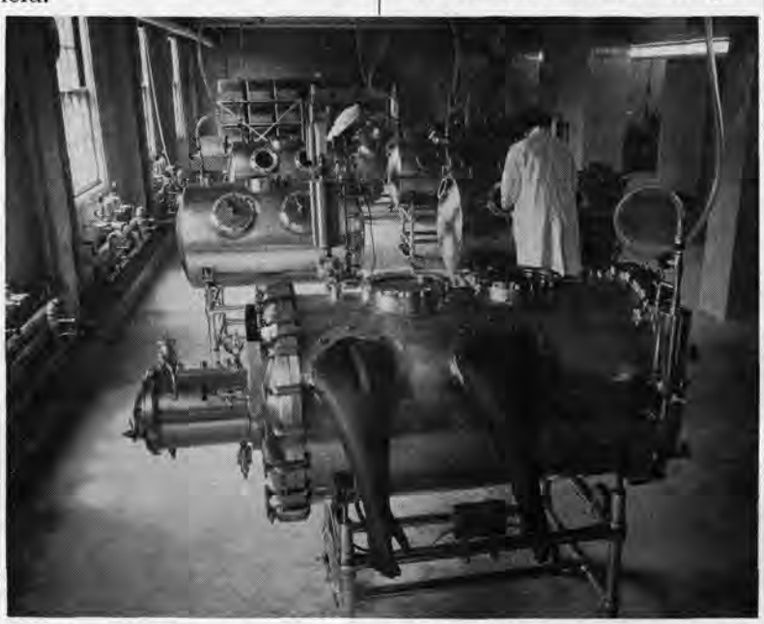
Three Kinds of Tank, Each with Its Advantages, Complement One Another in Institutes' Studies

Germ-free research (gnotobiotics), although a comparatively new discipline, is now well established and promises to assume a position of increasing significance in biological research. Three Institutes (National Institute of Allergy and Infectious Diseases, National Institute of Arthritis and Metabolic Diseases, and National Institute of Dental Research) have active programs in this field.

The germ-free animal is, as far as can be determined, completely free of the microbes ordinarily associated with all forms of animal life on earth. Because of this, it is a living test tube in which many kinds of biological research can be carried out which would be extremely difficult or impossible with ordinary animals. We can now study, under more controlled conditions, the role of a single microbe, combinations of microbes, or even the absence of any microbe in a variety of diseases.

Although the first germ-free animal was produced in Germany in 1895, it has been only within the last 25 years that techniques have improved sufficiently to permit extensive use of these unique biological tools. Since the 1930's, germ-free research has expanded from a single laboratory at the University of Notre Dame until there are now several such research centers, both in the United States and abroad.

Here at the National Institutes of Health, germ-free animals are now being used in studies on nutrition, dental diseases, and a variety of diseases caused by viruses, bacteria and parasites.



Germ-free animals are used increasingly in research by three Institutes. The sterile tanks, or chambers, in which the animals are bred, housed, and studied are shown in this picture from the Laboratory of Germ-Free Animal Research, National Institute of Allergy and Infectious Diseases.

Infection and Immunity

In the field of infection and immunity, these animals have already shown us, for example, that the organism which produces amoebic dysentery cannot survive in the intestine unless bacteria are present. On the other hand, animals that have not had to cope with the variety of microbes usually associated with ordinary contaminated animals tend to be more susceptible to certain bacteria, protozoa and worm infections.

Nutrition

The harmful effect of certain pathogenic organisms in the gastrointestinal tract has long been recognized. However, nutritionists have also considered the possibility that certain of the intestinal bacteria may have beneficial effects. For example, there was speculation some decades ago that a portion of the population in Bulgaria had a longer than usual active life span because a beneficial microbial flora had been established and maintained through the use of cultured milk. Widespread use of cultured milk and yogurt resulted. There was further speculation that some essential vitamins might be obtained by humans as well as animals from intestinal bacteria.

In this connection, germ-free experiments of the last few years in the United States and Sweden have demonstrated that in experimental animals certain vitamins, in particular vitamin K and folic acid, are synthesized by intestinal bacteria and made available to the host animal.

Dental Diseases

Because of the wide variety of bacteria normally present in the mouth, scientists have been unable to determine which organisms cause tooth decay or pyorrhea. Since it has been found that the germ-free rat does not develop tooth decay, it is now possible to study these problems by introducing suspected microbes into the mouth of germ-free animals and determining their effects on the teeth and oral tissues.

We have now found one type of streptococcus which will specifically cause dental caries when it is the only organism present in the animal. Studies are being continued to discover how many other microbes may also be involved in the production of tooth decay and pyorrhea under normal conditions.

Germ-Free Equipment

Three types of germ-free animal chambers are currently in use at the National Institutes of Health. All three types of chambers have the same essential features in common: (1) A main sterile chamber in which the animals are kept, (2) long rubber gloves for access to the interior of the chamber, (3) a means of sterilizing the air supply, and (4) a sterile lock through which animals and supplies may be passed into and out of the chamber.

Each of the chambers has specific features which makes it useful for a particular purpose.

The plastic chamber developed recently in the United States (Trexler at Notre Dame) is lightweight, relatively inexpensive, transparent, and quite suitable for short-term experiments. The chamber and the access lock are sterilized by germicidal chemicals such as peracetic acid.

(See GERM-FREE, Page 4)

COMMITTEE REVIEWS STATUS OF LIVE POLIOVIRUS VACCINE

The Public Health Service Committee on Live Poliovirus Vaccines met recently to review the status of live poliovirus vaccine and to draft requirements which could serve as the basis for regulating the manufacture of such vaccine in this country.

The Committee, chaired by Dr. Roderick Murray, Director, DBS, includes Dr. David Bodian, Johns Hopkins University; Dr. William McD. Hammon, University of Pittsburgh; Dr. Alex Langmuir, Communicable Disease Center, PHS; Dr. Joseph Melnick, Baylor University; and Dr. John Paul, Yale University.

At the November 5 meeting of the Committee, reports were presented on the most recent experience with the vaccine in the U.S.S.R. and in Central and South America. In general, the field experience in all areas has been satisfactory with respect to safety, and preliminary information on protection, particularly from the U.S.S.R. studies, is promising. Since the first of the year, over ten million persons in the U.S.S.R. have received oral vaccine produced in the U.S.S.R. from Dr. Sabin's strains.

Large-scale trials of live attenuated poliovirus vaccine in the U.S. would be unproductive because so large a proportion of the population has already been immunized with killed vaccine—the Salk vaccine, now giving good results in protecting against paralytic poliomyelitis. The main advantages visualized for a vaccine made from live attenuated poliovirus are: 1) ease of administration (oral rather than injected), 2) longer lasting immunity, and 3) presumably lower costs of production.

The Committee continues to evaluate all data as they become available from field trials of the vaccine in various part of the world, as well as information being developed in laboratory studies. A realistic consideration of the remaining technical problems that must be resolved makes difficult any prediction as to when such a product could be licensed for commercial production.

New Method Found for Dissolving Carcinogens In Human Lipoproteins

A method for incorporating cholesterol into human lipoproteins *in vitro* has been recently devised by Dr. Joel Avigan of the National Heart Institute's Metabolism Section.

An immediately useful consequence of this advance is the availability of better cholesterol preparations for intravenous injection in studies of lipid metabolism. (The lipoprotein—a "natural" vehicle for cholesterol transport—is superior to the detergent-stabilized cholesterol suspensions previously used when this insoluble lipid had to be injected into the circulation.)

More recently Dr. Avigan has found that the water insoluble cancer - producing hydrocarbons also can, like cholesterol, be dissolved in human or animal serum, where they are similarly incorporated into the lipoproteins. This suggests that serum lipoproteins might represent the vehicle by which such cancer-producing agents are ordinarily transported throughout the body.

In the journal *Cancer Research*, where he reports his *in vitro* method for incorporating the carcinogenic hydrocarbons into lipoproteins, Dr. Avigan also suggests uses for the method in cancer research.

"The transport mechanism of carcinogens and the relative affinities of the tissue cells for the various compounds could be conveniently studied with the aid of the soluble preparations . . . ." he writes.

Among the cancer-producing hydrocarbons studied were a number of anthrocenes, related to the carcinogens in coal tar, as well as fluorene derivatives, including 2-acetylaminofluorene.

Since 1915, when application of coal tar to the ears of rabbits led to the first reported instances of experimental cancer, hundreds of industrially produced and naturally occurring hydrocarbons and their derivatives have been tested and a large proportion have been found capable of causing cancer in experimental animals. Such cancer - producing hydrocarbons are found in many substances obtained from coal tar and petroleum, in smoke, soot, auto exhaust, paving materials and in the atmosphere.

Like cholesterol and most of the body's other normally occurring fatty substances, these cancer-producing hydrocarbons do not generally dissolve in water—yet, when orally administered, they may be absorbed into the aqueous medium of the blood and distributed throughout the body.

Past attempts to follow orally administered hydrocarbons in the circulation did not reveal how they were made soluble in the blood. Incorporation into the lipoproteins appears to be the answer, Dr. Avigan's findings suggest.

Fear Mobilizes Fatty Acids from Body Fat

A study showing that fear increases the free, or unesterified, fatty acids (UFA) in the blood has been reported by scientists from two Institutes. This free form is the one in which fatty acids are normally transported from storage (in body fat deposits) to the tissues to provide energy for life processes.

"Confronted by an emergency," the investigators suggest, "an individual burns fat wherever possible and conserves glucose for use by the central nervous system, expecting, as it were, not to eat until the emergency passes."

Studies conducted at National Heart Institute over the past few years indicate that the fatty acids stored in adipose tissue are made available for life processes by release into the blood in an "unesterified" state (not bound, as esters, to cholestrol and other lipids in the lipoproteins). Studies published during 1957 by Dr. Robert S. Gordon, Jr., of NHI indicate that these unesterified fatty acids (UFA) increase in the blood during fasting, reaching levels sufficient to provide energy for the metabolic activities of virtually all body tissues except the brain.

More recently Dr. Philippe V. Cardon of the National Institute of Mental Health teamed with Dr. Gordon in a study of the effects of fear on the UFA in the blood of 15 normal volunteers. The "fear" to which the young volunteers were subjected was the unexpected (and unfulfilled) threat of a painful injection.

In most of the subjects this hoax produced a rapid rise in the plasma UFA to peak levels within 10 minutes. In some the UFA more than doubled (two subjects) or tripled (one subject).

The findings from this study are published by Drs. Cardon and Gordon in the *Journal of Psychosomatic Research*.

"On the basis of the data presented we believe that psychic phenomena can change plasma levels quickly and profoundly," they write. "It is reasonable to infer that in a large majority of individuals plasma UFA increases when fear is experienced."

GERM-FREE

(Continued from Page 3)

Another type of chamber was developed in Sweden (by Professor Gustafsson, who is now at NIH as a visiting scientist). This is a thin-walled stainless steel chamber of moderate cost. The chamber together with the necessary food and supplies is sterilized in a large autoclave. The large plate glass top affords excellent visibility. Rapid access and exit to and from the chamber is possible through the built-in germicidal trap.

The first practical one to be produced, and the type currently in widest use (Reyniers, Notre Dame), is especially suited for long-term experiments and the rearing of germ-free animal colonies. Its thick stainless steel walls permit it to be sterilized with steam under pressure. A small autoclave is either built into or can be attached to the chamber for introduction and removal of materials and animals, including direct transfer from other similar units. It also can be fitted with a germicidal trap for the introduction of materials that would be harmed by heat.

Study Case of Rare Brain Malformation in Cerebral Palsied Child

The case of a ten-year-old cerebral palsied child who suffered from congenital hemiplegia caused by a rare brain malformation and who, at 7 years of age, developed leukemia, was studied by Dr. E. Clarence Rice, D. C. Children's Hospital and Dr. Anatole Dekaban, National Institute of Neurological Diseases and Blindness' Surgical Branch, and reported in the *AMA Archives of Pathology*.

The leukemia, however, was not the immediate cause of death. Unilaterally undeveloped brain convolutions (agyria) were discovered at postmortem examination. Malformation of the brain is a relatively frequent finding in children with cerebral palsy, but the majority of cases reported have had bilateral brain involvement.

History elicited from the parents revealed that the mother had an apparently normal pregnancy and delivery although ensuing study suggested that there may have been a birth injury.

From the age of nine weeks, the child began to have frequent cerebral seizures which were characterized by stiffening of all extremities and an upward deviation of the eyes. With medication, the attacks decreased in number. Neurological examination at three months disclosed right hemiplegia and left estotropia.

At the age of seven months, when being treated for chronic constipation, she was found to have an abnormally large colon. At the age of 18 months, she began to walk, although with a right limp, and at 2 years began to talk. Between the ages of 3 and 7 years she was seen and treated in the cerebral palsy clinic for right hemiparesis and epilepsy.

At the age of 7, during hospitalization for increased difficulty in bowel movements and a poor general condition, a high white cell count revealed chronic myelocytic leukemia.

The patient died at ten years of age following uncontrollable convulsions. Post-mortem examination disclosed the following findings: undeveloped convolutions (agyria) of the anterior part of the left cerebral hemisphere; absence of ganglion cells in the myenteric ganglion, associated with enlarged colon; recent hemorrhagic infarction of the anterior half of the right cerebral hemisphere, and myeloid leukemia.

Agyria is one of the most primitive malformations of the cerebral cortex and is generally considered to be a result of arrested development of the brain before the fetus has reached 14 weeks of gestation.

The estimation of the earliest possible teratogenic period is difficult, although it is unlikely that a noxious factor acting as early as the first weeks of prenatal life could lead to this anomaly.

The authors stated that it is of interest that the right hemiparesis and also the epileptic attacks were attributed to a suspected birth trauma, but the possibility of malformation of the brain was not considered at all.

Children suffering from congenital malformations have a slightly higher risk of developing leukemia than their normal mates.

Two NIH Men Join In Antarctic Study

To gain firsthand knowledge of Antarctic research, Dr. Dorland J. Davis, Scientific Director, NIAID, and Dr. Elsworth R. Buskirk, physiologist in the Metabolic Diseases Branch of NIAMD's Clinical Investigations, are now at Antarctica as NIH members of a ten-man party. They left the country October 31 and will return about November 23.

Sponsored by the National Science Foundation, the Antarctic Research Program began on a large scale during the International Geophysical Year, 1957-58. During the current season about 70 scientists will conduct 29 new projects.

The group including Drs. Davis and Buskirk will fly to the site of Little America V.

STUDY FAMILY PSYCHOTHERAPY

Broad Patterns of Relationship Found Consistently Among Members of Schizophrenic Patients' Families

A method of family psychotherapy has been developed by NIMH scientists as part of a research project for the study of schizophrenic patients and their families.

When the project started, the research was focused on the intense interdependence existing in the relationship between schizophrenic patients and their mothers. Three mother-patient pairs, who had been brought to live in the Clinical Center ward for study and treatment, were given individual psychotherapy on the premise that this would permit each to mature and grow away from the other. Observations made by the psychiatrists suggested that the phenomenon they were studying went beyond the mother-patient relationship, that the fathers also played an important part in it, and that it could involve several family members. Accordingly, the research plan was changed so that fathers and, in some cases, brothers and sisters were brought into the study. A new plan of psychotherapy was also introduced in which the family would be viewed and treated as a unit. The new procedure was based on the hypothesis that the psychosis in the patient is a symptom manifestation in one person of an active process that involved the entire family.

During the 4-year course of the project, three mother-patient families and eight father-mother-patient families (some with normal brothers or sisters) live "in residence" on the ward for periods as long as 33 months. An additional eight families, including fathers, mothers and moderately disturbed psychotic patients, were treated in outpatient family psychotherapy for periods up to 2½ years.

In observing the 16 research families the scientists noted some broad patterns of family relationships which occurred with such consistency that they incorporated these phenomena into the principles of family psychotherapy.

The most striking observation was that in each of these families with a schizophrenic son or daughter, the father and mother were separated by an emotional distance which was described as an "emotional divorce." There was considerable variation in the way the parents maintained this distance. Some presented a surface appearance of closeness and harmony but carefully maintained a formal, controlled distance in dealing with each other where their personal feelings and emotions were concerned. At the other end of the scale were emotionally-separated parents who could not remain long in physical proximity without open arguments, shouting and disagreement. In the middle of the scale were parents who had personal differences which they could not discuss without heated disagreement but who consciously avoided getting close at these touchy points so that they could keep arguments and fights to a minimum.

The greatest conflict between the parents concerned their convictions about the proper treatment of the patient. In all the families, the parents held these emotionally charged, intense, opposite viewpoints about what should be done for the patient. While the parents could not become close to each other, either could develop a close relationship with the patient if the other parent would permit.

Another clinical observation was that in family living from day to day, one parent functioned in an over-adequate way, and the other was consistently inadequate. In the families studied, the mother most often assumed the adequate position in relation to a helpless, hostile infantile patient and the father remained outside the intense mother-patient twosome.

In family therapy as developed on the NIMH project, the group attending therapy sessions consisted of the primary family threesome of father, mother and patient. (Normal siblings participated in the family studies but the intense conflict observed in these families was found to be pretty much confined to the father, mother, and patient.) The treatment situation was structured so that the family group worked on its own problem in the hour. Viewing the family as a unit the therapist observed and analyzed relationships between family members as they affected the family as a whole, much as a football coach observes how individual players function as parts of a team. He used his observations to help the family work out its problems together.

In this therapeutic situation, changes occurred in the functioning of the family members. In the usual family, the initial conflict was between mother and patient. Then the conflict shifted to the mother-father relationship. Then, when the two parents could become more invested in each other than either was invested in the patient, the patient made rapid gains.

Dr. Murray Bowen was the director of the project. Associated with him were Dr. Robert Dysinger, Dr. Warren Brodey and Mrs. Betty Basamania. Dr. Bowen and Dr. Brodey, who until recently were serving in the Adult Psychiatry Branch of NIMH, are now associated with Georgetown University where they are continuing work in this area, Dr. Bowen as Clinical Associate Professor of Psychiatry and Dr. Brodey as Clinical Assistant Professor.

The transparent chamber technique gives scientists a "window," as shown in this picture, through which many important observations can be made.

Electric Shock Helps Explain Age Difference In Reaction Time

In a study aimed at validating, under varying test conditions, previous findings regarding the effect of a mild electric shock stimulus on the reaction time of old and young subjects, investigators in the National Institute of Mental Health's Laboratory of Psychology found that the regularity or irregularity of the preparatory interval was a key factor.

When the time interval between the warning signal and the shock stimulus was kept constant, the performance of older subjects (measured in terms of speed of response) improved even more significantly than did that of the younger subjects. The studies were reported by Joseph F. Brinley, Joseph S. Robbin, and Jack Botwinick, Ph.D., at the American Psychological Association meeting in Cincinnati.

NCI Biologists Induce Tumors Resembling Multiple Myeloma

One of the striking characteristics of human multiple myeloma is the frequent production of large amounts of abnormal plasma proteins. Since plasma-cell tumors also produce these abnormal plasma proteins in animals, a better understanding of multiple myeloma may be possible through studying experimental plasma-cell neoplasms.

Dr. Ruth M. Merwin and the late Dr. Glenn W. Algire, of the National Cancer Institute's Laboratory of Biology, have reported the unexpected occurrence of plasma-cell tumors in BALB/c mice, in an experiment originally designed to study passage of the mouse mammary tumor agent through diffusion chamber membranes.

These induced plasma-cell tumors are of particular interest because they are transplantable—four have been maintained in two or more transplant generations—and they synthesize abnormal proteins.

Microscopic examination of the plasma-cell neoplasms revealed large cells with plasma-cell characteristics. Metastases were found in the ovary, pituitary gland, spleen, and lymph nodes. One tumor line of the plasma-cell tumor produced a myeloma-type change in the kidney, while another caused osteolytic lesions.

The results were reported in the *Proceedings of the Society for Experimental Biology and Medicine.*

Chromium Essential Diet Factor in Rats

Identification of a trace element, chromium (III), as the active ingredient of a dietary factor necessary for the maintenance of normal glucose tolerance in the rat, and possibly other mammalian organisms, is reported in the current issue of the *Archives of Biochemistry and Biophysics* by Drs. Klaus Schwarz and Walter Mertz of the Laboratory of Nutrition and Endocrinology, National Institute of Arthritis and Metabolic Diseases.

Discovery of the glucose tolerance factor (GTF) as a dietary agent necessary to maintain normal glucose tolerance in the rat was made in 1955 by the two investigators when they found that animals fed semipurified sucrose diets as well as some widely used commercial stock diets developed impaired glucose tolerance.

The rate of disappearance from the animal's blood stream of intravenously injected glucose was 2.8 percent or less per minute in GRF-deficient rats as compared to 4.0 percent in normal control animals fed a diet which included the required factor.

Studies of GTF since that time demonstrated that it can be fractionated by physical and chemical means from natural source materials such as brewer's yeast or pork kidney powder. Through six to 12 steps of fractionation, GTF concentrates were prepared which reconstituted normal glucose removal rates in deficient rats by a single, stomach-tubed dose of 50-100 micrograms per 100 grams of body weight.

GTF was found to be water-soluble, extractable with phenol and isobutanol, adsorbable on charcoal and ion exchange resins, and possessing distinctly cationic properties. Chromium in trivalent form was identified as the active ingredient.

The fact that chromium (III) is necessary for the maintenance of a normal glucose tolerance in the rat may indicate, the researchers report, that the trace element may be a biological necessity for all mammalian organisms. In contrast to reports in the older literature, they state, chromium is found throughout the organism when modern methods of determination are employed.

The element is supplied by nutrients at widely varying levels, with pork kidney powder, brewer's yeast, and dextrin especially rich sources. It is possible, the investigators declare, that for absorption and handling of the small amount of chromium (III) which is biologically active, special mechanisms are necessary and provided for within the organism.

Chromium in other studies has been found to catalyze the phosphoglucomutase reaction, to stimulate other enzyme systems such as succinate-cytochrome c reductase, and to influence plant growth and other biological phenomena favorably.

Although the impairment of glucose tolerance due to a GTF deficiency does not cause serious damage to the animal, Drs. Schwarz and Mertz report, the phenomenon resembles the disturbance of glucose tolerance in diabetes and other diseases. The problem of how and if various unclarified aspects of diabetes, such as etiology and the mode of action of insulin and the sulfonylureas, are related to chromium utilization is under investigation.

Rocky Mountain Lab Investigates Dysentery Outbreak in Family

Shigellosis as the cause of severe dysentery and death was demonstrated in a family outbreak investigated by the National Institute of Allergy and Infectious Diseases Rocky Mountain Laboratory. Nine members of a single family of 10 developed acute shigellosis. Only the father escaped infection, while the mother and eight children ranging from 1 to 10 years of age developed typical symptoms. One child died before and the other after hospitalization. The patients were treated with various antibiotics.

At the time of examination by investigators from Rocky Mountain Laboratory, it was not possible to demonstrate organisms in the stools or antibodies in the blood. After antibiotic therapy had been discontinued and a suitable time had elapsed, it was possible to demonstrate *Shigella sonnei* in the stools of four individuals and antibodies against this organism in blood specimens of all survivors. The father had neither organisms nor antibodies.

This study demonstrates that shigellosis may be a severe and fatal disease, and may present problems in diagnosis, especially if antibiotic therapy is started before stool specimens are taken for bacteriological examination.

It had been the general opinion that this organism causes a summer illness and is not found in the northwestern United States, but this study reveals that *S. sonnei* may be present in this area during the early spring season. Results of the investigation have been reported by Mary L. Casey and Bettie Smith of Rocky Mountain Laboratory in the *Rocky Mountain Medical Journal.*

Nutrition Survey Team Finds Oriente Natives Well Nourished

Nutrition survey teams sponsored by the Interdepartmental Committee on Nutrition for National Defense (ICNND) have now completed studies of the nutrition problems in Peru and Ecuador.

The surveys, patterned after previous ones done by the ICNND, have been expanded to include large samplings of the civilian as well as military population, and include physical examinations, dietary studies and biochemical work-ups. They were done at the request of the Peruvian and Ecuadorian governments.

The ICNND, which operates administratively through the National Institute of Arthritis and Metabolic Diseases, has designed the surveys to help each country assess the nutritional status of its people and aid in the establishment of a nutrition service to continue the work.

Survey team members include clinicians, biochemists, nutritionists, food specialists, statisticians and dental researchers. They are assisted by counterpart personnel in each country. When the surveys are finished, the ICNND makes recommendations to the country regarding methods of improving its nutrition.

The survey team in Peru examined approximately 8000 troops. In general, they were found to be in good health, although there was evidence of a riboflavin deficiency in some locations, and anemia in certain jungle areas. The anemia, apparently associated with parasitic infections, did not respond to iron therapy alone and further research is being done to see if other nutritional factors are involved.

The survey team in Ecuador found riboflavin and thiamine deficiencies to be fairly common in the 2500 military personnel and 6000 civilians that were examined.

A highlight of the Ecuadorian survey was the examination of natives in the Oriente, the thick jungle region of Ecuador where several missionaries were killed. The natives were one of the healthiest groups in the country, and from a biochemical standpoint had a higher level of nutrients than has been found in any of the countries previously visited by ICNND survey teams.

The sampling of the civilian population as well as the military began in Ethiopia where the ninth ICNND survey was made (Oct.-Dec. 1958). It has now become an integral part of the teams' operations.

Evidence on Question Of Live vs. Killed Virus Vaccines

Evidence pertinent to the complex question of live vs. killed virus vaccines is provided in the work of Dr. Leon Jacobs and Marjorie L. Melton of the Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases. Their studies were reported at the meeting of the American Society of Tropical Medicine and Hygiene in Indianapolis.

Working with the parasite, *Toxoplasma gondii*, the investigators employed various routes of inoculation and dosages of their experimental vaccines. Results with a live but relatively mild strain of the organism not only enabled guinea pigs to survive later challenge with a virulent strain but prevented these invaders from establishing themselves in guinea pig tissues.

With vaccines prepared by killing the parasites with heat or with chemicals such as phenol or formalin, the guinea pigs did not die, but the *T. gondii* parasites introduced at challenge were able to proliferate to some extent.

When live *T. gondii* were used in a vaccine, the "quality' of immunity seemed higher. Even when challenge was delayed to a point where antibodies produced by vaccination had diminished to levels approximating those obtained with killed vaccine, the extent of proliferation of the parasite in tissue was less with the live-agent vaccine.

Study Parasitism in Agricultural Laborers

A study of intestinal parasitism in a group of agricultural laborers in the Clewiston, Florida, area was reported by Miss Elizabeth Guinn, National Institute of Allergy and Infectious Diseases, at the meeting of the American Society of Tropical Medicine and Hygiene in Indianapolis.

One hundred and forty stool specimens from British West Indian workers, aged 21 to 48 years, were tested. Miss Guinn and her co-investigators, Drs. Henry K. Beyes and Charles M. Brooks of the Laboratory of Clinical Investigation, found multiple parasites in 66 percent of the specimens.

Hookworm was the most prevalent, occurring in 54 percent of the stools. Workers residing in the United States for less than one year had a higher incidence of hookworm than those living here more than a year—68 and 41 percent, respectively.

Publication Preview

The following manuscripts were received by the SRB Editorial Section between May 26 and June 5.

NCI

Banfield, W. G.; Dawe, C. J.; and Brindley, D. C. Intracellular and extracellular particles in tissue cultures inoculated with parotid tumor agent (polyoma virus).

Boggs, D. R. The cellular composition on inflammatory exudate in human leukemias.

Condit, P. T.; Berlin, N. I.; and Nathan, D. G. Studies on the folic acid vitamins. VI. The effect of amethopterin or erythropoiesis in man.

Dawe, C. J.; Law, L. W.; and Dunn, T. B. Studies of parotid tumor agent in cultures of leukemic tissues of mice.

Law, L. W.; Dawe, C. J.; Rowe, W. P.; and Hartley, J. W. Antibody status of mothers and response of their litters to parotid tumor virus (polyoma virus).

Lipsett, M. B. and Riter, B. Urinary ketosteroids and pregnanetriol in hirsutism.

Mulay, A. S. Tissue and serum aldolase of rats with primary hepatoma.

Shack, J. The action of deoxyribonuclease II at neutral pH and its significance to the preparation of nucleic acid.

Shelton, E. and Dalton, A. J. Electron microscopy of emperipolesis.

Stewart, H. L. Experimental cancer and environmental factors in etiology of cancer.

Watkin, D. M. Protein nutrition in neoplastic disease.

Woods, M. W.; Sanford, K. K.; Burk, D.; and Earle, W. R. Glycolytic properties of high and low sarcoma-producing lines and clones of mouse tissue culture cells.

NHI

Andrew, W.; Shock, N. W.; Barrows, C. H., Jr.; and Yiengst, M. J. Biochemical and histological changes with age in a tissue composed of reversible postmitotic units (liver) and in one composed of irreversible postmitotic units (skeletal muscle).

Eichhorn, G. L. The role of metal ions in enzyme systems.

Fales, H. M. and Wildman, W. C. The structures of haemanthamine and crinamine.

Gordon, R. S., Jr.; Dasaneyavaja, A.; and Benyajati, C. The absence of plasma protein excretion in cholera.

Hess, S. M.; Redfield, B. G.; and Udenfriend, S. The effect of monoamine oxidase inhibitors and tryptophan on the tryptamine content of animal tissues and urine.

Hess, S. M. and Udenfriend, S. A fluorometric procedure for the measurement of tryptamine in tissues.

Strehler, B. L. and Mildvan, A. S. A general theory of mortality and aging.

Sweeley, C. C. and Moscatelli, E. A. Qualitative microanalysis and estimation of sphingolipid bases.

NIAID

Bell, E. J. and Stoenner, H. G. Immunologic relationships among the spotted fever group of rickettsias determined by toxin neutralization tests in mice with convalescent animal serum.

Dolan, T. F., Jr.; McCullough, N. B.; and Gibson, L. E. Nocardiosis: Report of two cases in children.

Hesselbach, M. L. and O'Gara, R. W. Fast green- and light green-induced tumors: Induction, morphology, and effect on host.

Jacobs, L.; Remington, J. S.; and Melton, M. L. The resistance of the encysted form of *Toxoplasma gondii*.

Jacobs, L.; Remington, J. S.; and Melton, M. L. A survey of meat samples from swine, cattle, and sheep for the presence of encysted *Toxoplasma*.

Jeffery, G. M. A three-year epidemiological study of intestinal parasites in a selected group of mental patients.

Olivier, L. Factors affecting the survival of aestivating pulmonate vectors of schistosomiasis.

Stone, S. H. and Freund, J. Hemorrhagic reactions in guinea pigs sensitized with ovalbumin in adjuvants containing mycobacteria. II. Relation to "delayed" hypersensitivity.

Young, M. D. The effect of small doses of primaquine upon malaria infections.

NIAMD

Ames, B. N.; Garry, B.; and Herzenberg, L. The genetic control of the enzymes of histidine biosynthesis in *Salmonella typhimurium*.

Beaver, D. L. Der einfluss verschiedener fixierungsmittel auf die histologie und histochmie der praputialdrusen der ratte.

Becker, E. D. Infrared studies of the self-association of chloroform.

Cohen, L. A.; Daly, J. W.; Kny, H.; and Witkop, B. Nuclear magnetic resonance spectra of indoles.

Glenner, G. G. A nitrosophenol reaction for tyrosine and related compounds in tissue sections.

Helander, E. and Emmart, E. W. The localization of myosin in the conduction bundle of the beef heart.

Kalckar, H. M. and Kurahashi, K. Studies of galactose metabolism in *Escherichia coli* mutants.

Lerner, E. M. Arthritis caused by streptobacillus moniliformis and pleuropneumonia-like organisms in small rodents.

Pedersen, C. and Fletcher, H. G., Jr. The anomeric 2,3,4-tri-O-benzoyl-D-ribopyranosyl fluorides and 2,3,5-tri-O-benzoyl-D-ribofuranosyl fluorides. A novel transformation from the D-ribopyranose to the D-ribofuranose series.

Pedersen, C. and Fletcher, H. G., Jr. A 2,3,4-tri-O-benzoyl-B-L-arabinopyranosyl fluoride and a transformation from the L-arabinopyranose to the L-ribopyranose series induced by hydrogen fluoride.

Ramachandran, L. K. and Witkop, B. Selective cleavage of C-tryptophyl peptide bonds in proteins and peptides.

Scow, R. O. Fat metabolism in experimental diabetes.

Sokoloff, L.; Lillie, R. D.; and Anderson, F. O. A papain digestion apparatus.

Spicer, S. S. A histochemical study of rodent acid mucopolysaccharides.

Zannoni, V. G. and La Du, B. N. The tyrosine oxidation system of liver. IV. Studies on the inhibition of p-hydroxyphenylpyruvic acid ovidase by excess substrate.

NIDR

Arnold, F. A., Jr. Highlights of American dentistry in the field of research.

NIMH

Carr, C. J. The contributions of medicinal chemistry to psychopharmacology.

Clyde, D. J. Self-ratings.

Cole, K. S.; Moore, J. W.; and Taylor, R. E. Ionic membrane current measurements in the squid giant axon

Gillette, T. L. Maternal employment and family structure: A preliminary report.

Hordern, A. Comments at Research Conference on Therapeutic Community.

Raush, H. L. Dittmann, A. T.; and Taylor, T. J. Person, setting and change in social interaction.

WHERE IS IT?

This service tunnel, about 2000 feet long, runs from the B-2 level of the Clinical Center to service areas of Bgs. 11, 13, and 14. Supplies and laundry; animal feed, bedding, and cages are delivered through the tunnel to the CC, and cages are returned to Bg. 14 for washing. At left, two members of the Transportation Section are moving supplies in an electric battery-operated "mule." Parallel to this passageway, a utility tunnel carries chilled water, steam, and compressed air to laboratories and offices from Bg. 11.

Health Benefits Act Effective Next July

The Federal Employees Health Benefits Act, signed by President Eisenhower September 28, offers Federal employees the opportunity to buy health insurance for themselves and their families, with the Government paying up to half the cost.

The Act becomes effective July 1, 1960, and full details will be available before that date. Until then, employees are advised to continue their present health benefit plans. The new program is not compulsory.

Employees will have a choice of insurance plans, and they will pay premiums through payroll deduction. Coverage can be continued after retirement if an employee has 12 years of Federal service, five of which must be civilian service, and continues to pay the premiums.

The Civil Service Commission has established a new Bureau of Retirement and Insurance to administer the program.

Memorial Lectures Given for Chapman

A series of six memorial lectures dedicated to the late Dr. Kenneth W. Chapman is being presented at the Bethesda First Baptist Church during October and November.

Dr. Chapman was Associate Director of the Clinical Center at the time of his death, September 18. He was also active in the Bethesda First Baptist Church, serving as superintendent of the Sunday church school and as a deacon. The memorial lectures honor his significant contributions to Christian education.

Speakers in the last half of the lecture series and their subjects and dates include Howard D. Rees, Baptist Student Union, "Are We Really Trying to Understand Our Young People?" on November 15; Chaplain William R. Andrew, NIH, "Religion in Medicine," November 22; and Dr. Joseph M. Bobbitt, NIMH, "Human Relations for Everyday Living," November 29.

V. E. Jay Will Speak to NFFE Meeting

Vincent E. Jay, national representative of the National Federation of Federal Employees (NFFE), will speak at a meeting of the NIH branch of the NFFE to be held at noon, November 19, in Wilson Hall.

Mr. Jay, a former government management analyst, will speak on "Recent Growth of the NFFE in the Washington Area." He recently helped to organize a branch of the NFFE in the Department of Health, Education, and Welfare.

Election of officers will be held following the talk. The meeting is open to all interested NIH employees.

The first PHS Medical Officer, Dr. Thomas Welsh, was appointed by President Adams in 1799 as the first medical officer of the newly-created Marine Hospital Service. A physician in the Continental Army during the Revolutionary War, Dr. Welsh also had a contract with the Secretary of War for attending the sick of the troops on Castle Island in Boston Harbor.

News Briefs

Dr. Erich Mosettig, Chief of the Steroid Section, Laboratory of Chemistry, NIAMD, left on October 11 for a two-month lecture and study trip through Japan, India, and the Near East. Part of his trip is on behalf of the Cancer Chemotherapy National Service Center, NCI, to talk with scientists working with synthetic and natural products of potential therapeutic value.

* * *

Dr. M. Katherine Cook, Laboratory of Infectious Diseases, NIAID, left early in October to spend a year in Paris teaching fluorescent antibody techniques at the Sorbonne, the Pasteur Institute, and in the virus laboratory of the St. Vincent de Paul Hospital.

* * *

Dr. Seymour S. Kety, Chief of the Laboratory of Clinical Science, NIMH, is chairman of the new Bio-Science Advisory Committee established by the National Aeronautics and Space Administration. The committee will study current U. S. capability in research and development, aimed toward maintenance of life in space, and will outline problem areas in the field of space biological sciences.

* * *

Dr. G. Burroughs Mider, Associate Director in charge of research, NCI, will give two addresses on cancer research and control at the first Latin American Cancer Congress, Buenos Aires, Argentina, October 25-31.

* * *

Dr. David B. Scott, Chief, Laboratory of Histology and Pathology, NIDR, was honored recently by the Tokyo Dental College for his outstanding contributions to dental research. The Diploma of Honorary Lecturer, the first to be awarded to an American scientist, was presented at a special ceremony in New York City.

* * *

Dr. David Shakow, Chief of the Laboratory of Psychology, NIMH, was given an award by the Division of Clinical Psychology of the American Psychological Association at its 1959 annual meeting. The honor was bestowed on him for his many contributions to the science and profession of psychology.

Dr. Johansson Joins DRG Study Section

Dr. Karl R. Johansson joins DRG November 6 as Executive Secretary to the Virology and Rickettsiology Study Section.

Dr. Johansson replaces Dr. Harvey I. Scudder who was reassigned to the Research Grants Branch, NCI, June 15. The new Executive Secretary has been associate professor of bacteriology and immunology at the University of Minnesota since 1949, and was a graduate research assistant there from 1942 to 1943 and 1946 to 1948.

Dr. Shannon Will Speak To New York Academy

Dr. James A. Shannon, NIH Director, has been invited to speak before the New York Academy of Medicine on November 18.

Following an introduction by Dr. René Dubos, of the Rockefeller Institute for Medical Research, Dr. Shannon will speak on the historical background and significant factors in development of the government role in support of medical research. He will trace the history of American medical research from its beginnings to the modern era of expanded voluntary and Federal support.

The newly-formed NIH Symphony Orchestra rehearses in the CC auditorium under the direction of Mark Ellsworth, concertmaster of the National Gallery Orchestra. The group needs bassoon, horn, and trumpet players and will welcome more violinists, according to the orchestra chairman, Dr. Marc Lewis, NIDR. Rehearsals are held each Tuesday night from 8 to 10 p.m.

Dr. Nathan Eddy Gives Sixth Lister Lecture

Dr. Nathan B. Eddy (right) talks with Dr. Everette L. May, NIAMD, after they announced the development of phenazocine (NIH 7519), a new pain-killing drug less addicting and many times more powerful than morphine.

Dr. Nathan B. Eddy, NIAMD, who is an international authority on the subject of drug addiction and analgesics, delivered the Sixth Lister Memorial Lecture, sponsored by the Society of Chemical Industry, at the University of Edinburgh, Scotland, on October 1.

In connection with the Lister Memorial Lecture, Dr. Eddy participated in two seminars at pharmaceutical firms in Edinburgh and presented a lecture at Lourain University in Brussels, Belgium. The subject of Dr. Eddy's lectures encompassed the field of analgesics and drug addiction, stressing the development of phenazocine (NIH 7519).

While he was abroad, Dr. Eddy participated as a panel member at the Tenth Session of the Expert Committee on Addiction Producing Drugs of the World Health Organization (WHO), in Geneva, Switzerland.

Silbergeld Joins DGMS

Dr. Sam Silbergeld, a senior surgeon in the Commissioned Corps of the Public Health Service, has been appointed to a staff position in the Research Grants Branch of the Division of General Medical Sciences.

Dr. Silbergeld transferred from the Division of Biologics Standards, where he was staff assistant to the Director.

Dr. Jeffery Receives 1959 Ashford Prize For Malaria Work

Dr. Geoffrey M. Jeffery, NIAID scientist at the Laboratory of Parasite Chemotherapy field station, Columbia, S. C., received the Bailey K. Ashford prize October 30.

Dr. Jeffery

Presented at the Eighth Annual meeting of the American Society of Tropical Medicine and Hygiene, the award consists of a gold medal and $1,000 honorarium. Each year a young scientist is cited for outstanding research in tropical disease problems.

Among his contributions, Dr. Jeffery isolated *Plasmodium ovale*, an uncommon species of human malaria, and demonstrated the possibility of its establishment in the U. S.