

the NIH *Record*

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

October 15, 1968
Vol. XX, No. 21

NATIONAL INSTITUTES OF HEALTH

Soluble Forms of Human Transplantation Antigens Aid Organ Transplants

National Cancer Institute scientists participated in a study of the preparation of high yields of a purified and soluble form of human transplantation antigens, an important aid to successful organ transplants.

Transplantation antigens—human leukocyte antigens—are found on the cell membranes of white blood cells in the donor tissue.

Reaction Causes Rejection

The immune system of the recipient reacts against these foreign antigens and the ensuing antigen-antibody reaction causes the transplant to be rejected.

Such a rejection can be prevented by suppression of the entire immune system, but a preferable method is to induce tolerance.

Tolerance, a state in which the immune system does not react to a particular antigen as foreign, can often be induced by exposing the host to a series of small doses of the "unfamiliar" antigen.

(See *TRANSPLANTS*, Page 8)

Med. Oncology Service Established by NCI, VA

A new National Cancer Institute-Veterans Administration Medical Oncology Service has been established at the Washington, D.C. VA Hospital. The Service will function both as a part of the Medicine Branch of NCI and the D.C. VA Hospital Medical Services.

This collaboration is viewed by both NCI and the VA as an example of cooperative efforts between agencies for the betterment of both programs, and the furthering of mutual aims, including the best of patient care.

Dr. Kenneth M. Endicott, NCI Director, said the new Service reflects the growing importance of drugs in cancer treatment. The unit will serve as a focal point for NCI's expanding research program on lung cancer, and certain other forms of cancer.

Dr. Oleg S. Selawry, formerly
(See *NCI-VA SERVICE*, Page 4)



The changing colors of the hazy Autumn scene make this period the perfect time for a stroll around the grounds here. There are still spots on the NIH reservation untouched by tractors, trailers or sewer lines. Our evidence—this lovely Chinese corkscrew willow overshadowing a rustic area.

NIAID Study Seeks to Explain Role of Interferon System in Viral Resistance

National Institute of Allergy and Infectious Diseases scientists have found that induced viral interference in cell cultures can be characterized as interferon-related even before the production of detectable interferon.

Several laboratories have provided evidence which suggests

that interferon itself does not inhibit virus replication but that it stimulates the production of new macromolecules by the cell—a proposed antiviral substance.

The present study was reported by C. E. Buckler and Drs. K. T. Wong and Samuel Baron, of NIAID's Laboratory of Biology of Viruses.

It was undertaken to delineate further the role of the interferon system in viral interference through comparison of the effects of various interferon inducers on primary mouse embryo (ME) and African green monkey kidney (AGMK) cell cultures.

The PR8 strain of influenza A virus, Semliki Forest virus, rubella virus, Sindbis virus, monkey interferon, and statolon (a fungal product) were used for induction of the interferon system in AGMK cell cultures.

(See *INTERFERON*, Page 7)

Dr. Alton Meister To Give Next NIH Lecture Oct. 30

Dr. Alton Meister, professor and chairman of the Department of Biochemistry at Cornell University Medical College, has been selected to give a National Institutes of Health Lecture at the Clinical Center auditorium Wednesday, Oct. 30 at 8:15 p.m.

His topic will be "On the Synthesis and Functions of Glutamine and Asparagine."

Dr. Meister will be the first of four lecturers in the 1968-69 series.

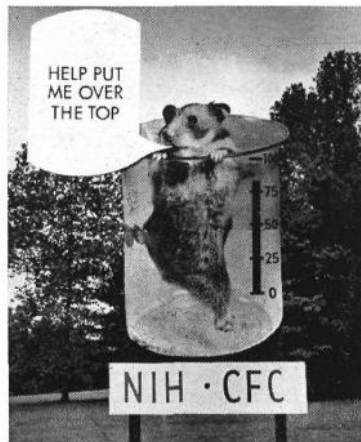
Lecturers Outstanding

The NIH Lectures have been held since 1953 to recognize outstanding scientific accomplishment and to facilitate the exchange of scientific information. The Lectureships are awarded by the Director, NIH, on the advice of the Scientific Directors.

Dr. Meister and his collaborators at Cornell University Medical College and the Sloan-Kettering Institute for Cancer Research recently reported that tumors that are sensitive to L-asparaginase either lack the enzyme asparagine synthetase or have very little of it.

Tumors that do not respond to treatment with L-asparaginase contain asparagine synthetase, often in large amounts.

The scientists have hypothesized that a tumor lacking asparagine
(See *NIH LECTURE*, Page 4)



Sam the Hamster is busy these days keeping the NIH employees up to date on the progress of the Combined Federal Campaign.

Turn Back, But Only 1 Hour, Oh Time in Thy Flight!

A majority of NIH employees can look forward to an extra hour of sleep on Oct. 27, when most of the country (including the Washington Metropolitan Area) returns to Standard Time.

Get ready to set your clocks back one hour to compensate for the time change which occurs at 2 a.m., Sunday.

NIH employees who go on duty starting midnight Oct. 27, will work one extra hour that day for which they will receive overtime pay.

the NIH Record

Published biweekly at Bethesda, Md., by the Publications and Reports Branch, Office of Information, for the information of employees of the National Institutes of Health, principal research agency of the Department of Health, Education, and Welfare, and circulated by request to interested writers and to investigators in the field of biomedical and related research. The content is reprintable without permission. Pictures are available on request.

The NIH Record reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policies of the paper and the Department of Health, Education, and Welfare.

NIH Record Office Bldg. 36, Rm. 1C-18. Phone: 49-62125

Editor Frances W. Davis
Assistant Editor Fay Leviero

Staff Correspondents

Tony Anastasi, DRS; Bari Attis, NIND; Lloyd Blevins, NICHD; Thomas Bowers, CC; George Bragaw, NHI; Katie Broberg, NIAMD; Robert Callahan and Florence Foelak, BHM; Sue Hannon, NIDR; Walter Jacob, OAM; Sheila Jacobs, NCI; Elizabeth Y. James, DEHS; Betty Kuster, DCRT; Hugh J. Lee, DRG; Ann R. Lindsay, NLM; Art McIntire, NIMH; Martha Mader, NIAID; Faye Peterson, DBS; Wanda Wardell, NIGMS; Beverly Warran, DRFR.

NEWS from PERSONNEL

HEALTH INSURANCE ID CARD

Employees enrolled in the Federal Employees Health Benefits Program receive an identification card from the insurance company. This card should be carried at all times.

It contains the employee's identification number (also known as carrier control number) and enrollment code number, essential when claims for services are submitted.

An employee who has lost or misplaced his Health Benefits identification card may obtain a duplicate by contacting his insurance carrier.

VISITS TO PERSONNEL AND EEO OFFICES

Any employee may visit his personnel office to seek advice on matters he believes his personnel representative can help him with.

While an employee does not have to explain his reasons for visiting this office, he does have to arrange with his supervisor for a visiting period that will not interfere with his work.

Federal policy also insures an employee the right to contact the Deputy Equal Employment Opportunity Officer or his I/D EEO Representative with regard to a discrimination complaint.

PERFORMANCE EVALUATION

Official annual performance ratings are given to NIH employees each year in April, but supervisors should evaluate their employees work throughout the year—to praise when justified—to correct if

Television, Radio Programs On NIH Scheduled in Oct.

NIH REPORTS

On TV—WRC
Channel 4—Saturday, Oct. 19
and Oct. 26—3:55 p.m.

Dr. Robert Q. Marston, Director, NIH

DISCUSSION NIH

On Radio—WGMS
AM-570—FM Stereo 103.5
Interview during intermission,
Library of Congress Chamber
Music Series
Friday, Oct. 18—About 9:15
p.m.

Dr. Philip Corfman, Head,
Center for Population Research
and Associate Director, NICHD
Friday, Oct. 25—About 9:15
p.m.

Dr. Robert J. Nelsen, Chief,
Collaborative Research and
Chief, Materials Science and
Special Clinical Studies Program,
NIDR

necessary.

Employees also have a responsibility: they should discuss work problems with their supervisor and cooperate in improving their ability to do an effective job.

Classical Music Buffs— NIH Orchestra Needs You

The NIH Orchestra wants instrumentalists who enjoy playing classical music. Membership is open to all NIH employees and their families. There are no auditions, but talent and experience are helpful.

Rehearsals are held every Monday evening from 8 to 10 p.m. in the CC auditorium. Bring your

Listing Room at Housing Registry Brings Double Reward—Friendship and Finance

By Thomas Bowers

Two things that most of us can always use a bit more of—friendship and money—often are not easy to come by. However, Elizabeth B. Brooks, who works in the Biochemistry and Pharmacology Laboratory of the Clinical Center has solved the problem.

The solution for Mrs. Brooks is one that may also serve to enrich the lives of other NIH employees.

Accommodations Needed

About 6 years ago, it occurred to Mrs. Brooks that a spare room in her apartment at 5121 - 4th Street, N. E. in Washington was wasted space.

She had heard of the need for accommodations for out-of-town relatives visiting CC patients so she decided to investigate.

A call to the CC's Red Cross Hospital Volunteer Service revealed a shortage of living quarters for the visitors. Faced with long-term stays in the area, these relatives may be upset and worried. They find themselves in an unfamiliar region where prices for rooms and meals are unexpectedly high, and they need help.

Response Is Rapid

Mrs. Brooks received her first guest in less than a week after her name was put on the Red Cross housing registry. Her guest, from West Palm Beach, Fla., had a daughter participating in a study on arthritis at the Clinical Center. Indications were that the mother might have to stay in the area for several months. As it turned out, she did remain for a little over 3 months.

While she was here something happened—she and Mrs. Brooks discovered that they had many similar interests, and they enjoyed doing things together. They developed a lasting, personal friendship. Mrs. Brooks' first guest has been back to Washington several times, and Mrs. Brooks has visited her twice in Florida.

Acquires New Friends

Since taking her first guest, Mrs. Brooks has accommodated visitors from Alabama, Florida, Pennsylvania, and Virginia. Some have stayed only a few days, while others have been with her as long as 3 months. With most, she has developed rewarding friendships, exchanging visits and correspondence.

The story doesn't end here—besides acquiring many new friends, Mrs. Brooks has been paid for the use of her spare room.

Like most people listed on the Red Cross housing registry, she music stand. For further information call Dr. John B. Wolff, Ext. 67070.



Elizabeth Brooks lists her name with the Red Cross Hospital Volunteer Service housing registry at the CC. Getting details about Mrs. Brooks' accommodations is Volunteer Irene Dietrich.

has received from \$5 a night to between \$25 (the average) and \$30 a week. The price varies depending on the number of persons.

Mrs. Brooks estimates that since she began renting the room, it has been occupied 8 months or more each year—"with never a minute's trouble from anyone."

Call Volunteer Service

It's nice work, and you can get it if you have a spare room and would like to help fill a growing need for accommodations, she comments. Simply call the CC Red Cross Hospital Volunteer Service housing registry on Ext. 65891.

The Volunteer responsible for the registry will make necessary arrangements and match the guests to the requirements of the host.

NIH Golf Team Wins! Declared Fed. Champions

An NIH golf team has won the Federal championship in its first try.

A six-man team representing the NIH R & W Golf Association won the championship Oct. 5, beating the Labor Department team 5½ to 3½ at Northwest Park.

Playing in the finals for NIH Golf Association were Woody Awkard, Art Broering, Luther Johnson, Art McIntire, Nat White and Oscar Young, the team captain.

Players representing NIH in the Federal League were all active in the 12-team NIHGA. Other members of the NIHGA entry in the Federal League were: Al Dale, Frank Rosenweige, and Dan Nebert.

CFC Tabulation Reveals Need for Increased NIH Employee Participation

The Combined Federal Campaign at NIH has reached \$163,656.23 or 78.8 percent of its \$207,722 quota.

These figures, tabulated on October 3, were reported by Dr. Seymour J. Kreshover, Director of the National Institute of Dental Research and this year's NIH-CFC Chairman.

Participation Noted

"The figure represents 76.8 percent employee participation," Dr. Kreshover said.

The first report, tabulated a week earlier, showed contributions and pledges totalling \$149,859.28 with 69.6 percent employee participation.

While the monetary increase in the second report (\$13,796.95), was substantial, the percentage of employee participation only increased from 72.1 to 78.8 percent.

Gifts now average \$20.30 per person with 8,058 employees listed as contributors. Over 2,000 employees have not yet participated, and the campaign is scheduled to end the end of October.

Appeals for Support

Dr. Kreshover appealed to those not yet contributing, "We must remember the need is far greater this year than before. NIH long has been known for its support of community activities and support by our employees of welfare projects on an individual as well as a joint participation basis.

"I know the warmth and understanding for need is here in the hearts of all of us, and I urge those who have not yet given to reconsider."

The Recreation and Welfare Association of NIH conducted a drawing in connection with the

Johnson Designates '68 As Human Rights Year

President Johnson has designated 1968 as Human Rights Year. The year marks the 20th anniversary of the Universal Declaration of Human Rights by the United Nations.

In the Declaration article 25 promulgates for everyone "... the right to a standard of living adequate for the health and well-being of himself and of his family ..."

In honor of Human Rights Year DHEW has developed a program for its observance. Articles, speeches, reports and teaching material will be utilized in order to bring the awareness of the right to health before the public.

DHEW will also disseminate posters and brochures, and enlist the cooperation of national associations with a membership of health professionals.

DRG Issues Part II Tabulation Of Training Grants and Awards

Publication of *Part II, Public Health Service Grants and Awards, Fiscal Year 1967 Funds* was recently announced.

The new booklet lists all current PHS support of medical research, training grants, fellowships, traineeships, and research career development awards to institutions and individuals.

Single free copies are available from the DRG Information Office.

Copies of Part II are also available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, at \$2 each.

campaign and announced the winners: Francine Pinkney, Central Sterile Supply, CC, \$50; Lewis Pollack, Research Contract Section, \$25; Joan Y. Green, DCRT, \$15, and Iona Solomon, NLM-RSD, \$10.



Around the conference table the Bureau of Health Manpower Secretary Training Committee discuss activities aimed to make BHM secretaries more proficient in work skills. Sessions on letter writing, telephone techniques, and office grooming and etiquette are among the training topics. The Committee includes (l to r): Dorothy Johnson, Dorothy Whitehead, Cornelia Hesselbach, Elizabeth Maffre, Rita Jenkins, Fern Manning, and Mary Hupper.

Dr. Whang-Peng Honored by Taiwan Daily, Chosen 'Woman of the Year' in Medicine

Dr. Jacqueline Whang-Peng, a senior investigator in the National Cancer Institute's Clinical Trials Area, was honored recently by the Lions International, and the China Daily newspaper in Taipei, Taiwan. She received the Woman of the Year Award in Medicine in ceremonies in Taipei.

Dr. Whang was selected because of her work in malignant cell biology and chromosomes in human malignancy. She is the first woman residing outside the Republic of China to receive the award.

Presentation of the award by Dr. Yun-Wu Wang, former Vice Premier, was the climax of a day which included newspaper and television interviews.

Graduates From Taiwan U.

A native of China, Dr. Whang was graduated from the Medical College of Taiwan University in 1956. She came to the United States in 1957.

She was an intern, resident, and then chief resident in surgery at the New England Hospital in Boston until 1959, and then resident in pathology at Quincy City Hospital.

In 1960 she joined NCI as a Fellow. Subsequently she was appointed Visiting Scientist until her recent appointment as a senior investigator.

Dr. Whang's scientific contributions, particularly in the field of cytogenetics, have earned her an international reputation. In collaboration with Dr. J. H. Tjio of the National Institute of Arthritis and Metabolic Diseases, she developed a technique for the preparation of mammalian cells for the study of their chromosome complement.

This technique is now utilized by many investigators and is considered responsible for much of the progress that has been made in the area.

Studies Tumor Cells

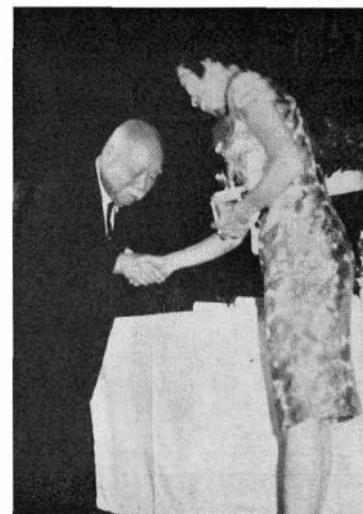
Her studies of the Burkitt tumor have revealed the presence of a specific chromosome alteration in both the cells from the original tumor and in tumor cells after culture.

Dr. Whang is a member of the Reticuloendothelial Society, American Society of Hematology, American Association for the Advancement of Science, and the Federation for Advanced Education in the Sciences.

She has also served as associate editor of the Journal of the National Cancer Institute.

Dr. Whang is married to George Peng, a mechanical engineer. They are the parents of four children, ages 6, 4, 3, and 1½.

The PHS Commissioned Corps was authorized in 1889, establishing by law the policy of a mobile corps subject to duty anywhere.



Dr. Whang-Peng receives a congratulatory handshake from Dr. Yun-Wu Wang at the recent ceremony in Taipei.

DRS Sponsoring Course On Amino Acid Analyzer

The Division of Research Services invites interested employees to enroll in a training course on the Model 120 Amino Acid Analyzer.

The one-week course, sponsored by the Systems Maintenance Section of the Biomedical Engineering and Instrumentation Branch, in cooperation with the Beckman/Spinco Company, is scheduled in two sections, beginning the latter part of October.

Instructions will be given in the following:

Subjects Listed

Preparation of the reagents and ninhydrin operation of the analyzer; column preparation; sample application; stream divider and peptide analysis; utilization and interpretation of chromatograms for correct analysis and isolation of problem areas; physiological analysis; operation and maintenance of the colorimeter and pumps, and expanded scale high sensitivity operation.

Classes, consisting of lecture periods and laboratory sessions, will be held from 8:30 a.m. to 4 p.m., Mondays through Fridays.

Requests for areas of particular interest will be included into the course wherever feasible.

Contact Mrs. Louise Christy, Ext. 64131, for an application. Only a limited number can be accommodated.

NIAID Lab Asks Volunteers To Participate in Its Study

Expressing appreciation of employee's past contributions to its "common cold" study—many more than once—NIAID's Laboratory of Infectious Diseases reminds everyone that it continues to need volunteers.

Employees with colds are urged to contribute samplings of nasal secretions plus two blood samples, one at the start of the illness and one 3 weeks later. Participants receive \$2 for each blood sample.

Appointments may be made by calling Sara Kelly or Harvey James, Ext. 65811, preferably within the first 3 days of infection.

If possible, employees are requested to schedule appointments in the morning to give investigators ample time for processing.

NIH LECTURE

(Continued from Page 1)

synthetase must obtain the amino acid, asparagine, from the body's extracellular fluid in order to survive. The drug L-asparaginase destroys this extracellular source of asparagine and thereby stops the tumor's growth.

Normal cells also contain asparagine synthetase and are independent of exogenous supplies of L-asparagine.

Describes Research

In addition to describing his research on the amino acid asparagine, Dr. Meister will discuss another amino acid, glutamine, required for the synthesis of asparagine.

Present data indicate that the enzyme glutamine synthetase, essential in glutamine production, is widely distributed among normal tissues and is present in greater or lesser amounts in various tumors.

Dr. Meister suggests that a possible approach to cancer therapy might be the chemical inhibition of glutamine synthetase, thus setting up a series of biochemical roadblocks that would deny asparagine to the cancer cell.

Dr. Meister, who was on the staff of NIH from 1946 to 1955, was head of the Clinical Biochemical Research Section, National Cancer Institute, from 1951 to 1955. From 1956 to 1967 he served as professor and chairman of the Department of Biochemistry at Tufts University School of Medicine.

Background, Achievements Cited

He has held his present position at Cornell University Medical College since 1967.

He received the B.S. degree (cum laude) from Harvard College in 1942 and the M.D. degree from Cornell University Medical College in 1945.

Dr. Meister has authored or co-authored more than 160 scientific papers. He has been responsible for many advances in the biochemical investigation of amino acids and proteins and the mechanism

Joint Research Project Publishes Monograph on African Food Analysis

A monograph, *Food Composition Table for Use in Africa*, has just been published. It is the second in a series developed from research programs related to international food data.

Is Cooperative Project

The research was initially undertaken by the Nutrition Section of the former NIH Office of International Research. It was a cooperative project with the Nutrition Division of the Food and Agriculture Organization of the United Nations.

The unit recently became part of the Nutrition Program of the National Center for Chronic Disease Control.

The food table incorporates and analyzes data on common foods in Africa. Included in the treatise are scientific names with their English and French counterparts and bibliographies which refer to African food composition, plus botanical terms.

French Edition Planned

Dr. W. T. Wu Leung, chief, Food Science Information of NCCD's Nutrition Program, is the project officer. She was also project officer for a *Food Composition Table For Use in Latin America*.

FAO plans to publish the African food table in French. Copies of the English edition are available upon request from the Nutrition Program, National Center for Chronic Disease Control, 9000 Rockville Pike, Bethesda, Md. 20014.

of enzyme action.

He was the recipient of the Paul-Lewis Award in Enzyme Chemistry presented by the American Chemical Society.

NCI-VA SERVICE

(Continued from Page 1)

chief of Chemotherapy at St. Jude's Children's Research Hospital, Memphis, Tenn., will head the new Service.

The Service will plan and conduct clinical trials with new and established anticancer drugs, and investigate the activity of new agents.

Dr. Selawry and his associates will also join investigators from other units of NCI's Clinical Trials Area in a study of cell kinetics in patients with solid tumors.

A 30-bed facility at the VA Hospital will be devoted to the cancer chemotherapy studies. At the present time the unit has two senior investigators, a junior physician, and a VA staff physician, in addition to Dr. Selawry.

Dr. Schiaffino Appointed Acting Br. Chief, DRG

Dr. Stephen S. Schiaffino has been appointed acting chief of the Research Grants Review Branch, Division of Research Grants.

Dr. Schiaffino has been assistant chief for referral in RGRB since 1964. From 1961 to 1964 he was a scientist administrator with the Research Grants Branch of the National Cancer Institute.

He was associated with Hazleton Laboratories, Inc. from 1960 to 1961.

Serves with FDA

From 1948 to 1960, except for a 3-year tour of duty in the U.S. Army Medical Corps, Dr. Schiaffino was a chemist and biochemist with the Food and Drug Administration.

Dr. Schiaffino is an alumnus of Georgetown University where he received the B.S. degree in 1946, the M.S. degree in 1948, and the Ph.D. degree (biochemistry) in 1956.

Dr. Schiaffino is a member of the American Institute of Chemists, the American Institute of Nutrition, the Animal Nutrition Research Council, and the American Association for the Advancement of Science.



Jessie Mayhew, CC Environmental Sanitation Control Department, received an Employee Suggestion Award for an idea that resulted in a sensible safety measure—wall hooks to control loose hanging cords on nurses' lights.

NIGMS Issues Brochure Analyzing Nature of Pain

"There is only one pain that is easy to bear and that is the pain of others."

Opening with that statement by the French surgeon Rene Leriche, a new brochure, *Pain*, explores the nature of pain and man's attempts through the ages to endure it, cure it, explain it, and, at times, to use it for his own purposes.

Issued by the National Institute of General Medical Sciences, the brochure explains why pain defies a universal definition.

The brochure makes a strong case for research in the nature of

pain. It advocates special training for physicians, and the development of new diagnostic and treatment techniques, including analgesics that control chronic pain over long periods without producing addiction.

Single copies of *Pain* may be obtained without charge from the Information Office, NIGMS, Bethesda, Md. 20014.

Quantity copies may be purchased at 15 cents a copy, \$11.25 per 100, from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.



Before coming to NIH Dr. Schiaffino was a chemist and biochemist with the Food and Drug Administration.

PHS Newcomers Club to Honor Surg. Gen. and Mrs. Stewart

Surg. Gen. William H. Stewart and Mrs. Stewart will be given a reception, sponsored by the PHS Newcomers Club, on Nov. 2 at the PHS Officers Club, 9101 Old Georgetown Road, Bethesda.

The purpose of the Newcomers Club is to welcome newly-arrived PHS officers, acquaint them with the Washington area, and introduce them to other club members.

PHS officers interested in joining the organization may contact Dr. Charles A. Daniels via telephone: 933-7982.

Latest Participants in NIH Visiting Scientists Program Listed Here

9/23—Dr. Francis Gasser, France, Laboratory of Microbiology. Sponsor: Dr. C. L. Wittenberger, NIDR, Bldg. 30, Rm. 307.

10/1—Dr. Colin G. D. Morley, England, Laboratory of Biochemistry. Sponsor: Dr. Thressa C. Stadtman, NHI, Bldg. 3, Rm. 121.

10/1—Dr. Richard V. Phillipson, Great Britain, National Center for Prevention and Control of Alcoholism. Sponsor: Dr. Thomas F. A. Plaut, NIMH, Barlow Bldg., Rm. 12A03A.

10/1—Dr. William J. Louis, Australia, Experimental Therapeutics Branch. Sponsor: Dr. Albert Sjoerdsma, NHI, Bldg. 10, Rm. 7N260.

10/1—Dr. Takeshi Yoshida, Japan, Laboratory of Immunology. Sponsor: Dr. Ralph A. Reisfeld, NIAID, Bldg. 10, Rm. 11N204.

10/1—Dr. Peter McPhie, Great Britain, Section of Enzymes and Cellular Biochemistry. Sponsor: Dr. William Jakoby, NIAMD, Bldg. 10, Rm. 9N109.

10/1—Dr. Derek Boyd, Great Britain, Laboratory of Chemistry. Sponsor: Dr. Bernhard Witkop, NIAMD, Bldg. 4, Rm. 330.

10/2—Dr. Alberto Chersi, Italy, Immunochemistry Section. Sponsor: Dr. Ralph A. Reisfeld, NIAID, Bldg. 10, Rm. 11N204.

Dr. Jim L. Shields Joins Heart Institute Staff

Dr. Jim L. Shields has been appointed to the National Heart Institute staff as a health scientist administrator in the Program Projects Branch, Extramural Programs.

In his new post, Dr. Shields will direct the activities of two Program Project Review Committees, which study and evaluate applications for program project grants and planning grants toward the establishment of Cardiovascular Research and Training Centers.

Grants Offer Flexibility

These grants provide long-term support that enables recipient institutions to conduct broadly based research on a variety of cardiovascular problems. They also provide the flexibility needed to encourage multidisciplinary approaches to complex problems.

Dr. Shields comes to NHI from the U.S. Army Medical Research and Nutrition Laboratory, Fitzsimmons General Hospital, Denver, Colo., where for the past three years he headed a multidisciplinary research team and served as Assistant Chief of the Physiology Division.

A graduate of the Central Methodist College, Fayette, Mo., Dr. Shields earned an M.A. in physiology



Speakers of the first panel session and committee chairmen of the 18th Annual Instrument Symposium are pictured with Dr. Robert Q. Marston, NIH Director (l to r): James B. Davis, OD-SMB; Dr. Robert Steiner, Naval Medical Research Institute; Dr. Alan J. Sheppard, Food and Drug Administration; Dr. Marston; Dr. James Riordan, Harvard Medical School; Dr. H. Robert Horton, North Carolina State University; Dr. Henry Metzger, NIAMD, and Dr. John A. Yankeelov, University of Louisville.

2 Distinct Insulin Chemical Components Discovered by NIAMD Research Team

Insulin, the body chemical that enhances utilization of sugar, has been found to have two distinct chemical components by scientists of the National Institute of Arthritis and Metabolic Diseases.

One component, so-called "little insulin," is indistinguishable from the hormone produced by the pancreas, while the second component, "big insulin," is larger in size and comprises up to 50 percent of the insulin in the circulation.

Dr. Jesse Roth, who headed the team of scientists which discovered the dual insulin components, declared that the physiology of insulin production must be completely re-examined in light of the new findings.

Coming under particularly close scrutiny, he said, will be insulin production in patients suffering from obesity or adult-onset diabetes, disorders which are characterized by intolerance to sugar with excessive production of insulin.

In a series of sensitive chemical procedures the investigators were also able to show that the pancreas is the source of "big insulin," that nearly all circulating insulin is "little insulin" immediately after sugar ingestion, and that up to 50 percent of circulating insulin is "big insulin" one to two hours after sugar ingestion.

Dr. Shields' research interests have been in high altitude physiology with particular reference to carbohydrate and lipid metabolism and the cardiovascular effects of oxygen deprivation.

The concentration of "big insulin" in the circulation is most marked when the sugar is given after a prolonged fast.

Dr. Roth and his associates currently are seeking to determine the biological activity of "big insulin" and its relationship to "little insulin."

During the past year other scientists working under research grant support from NIAMD reported the discovery of "proinsulin," a substance within the pancreas which is believed to be a precursor of insulin.

Relationship Under Study

Whether or not there is any relationship between "proinsulin" and "big insulin" is yet to be determined.

Scientists at the NIH and researchers supported by NIH grant funds are continuing their studies to learn the exact mechanism of insulin release from the pancreas, and how insulin does its vital work in human tissue, and why it fails in diabetes.

Dr. Roth, who is chief of the Institute's Diabetes Section, together with Drs. Phillip Gorden and Ira Pastan of the same section, reported their findings to the annual meeting of the American Society for Clinical Investigation in Atlantic City and at the recent annual meeting of the American Diabetes Association in San Francisco.

NCI Develops Technique For Immunizing Defenses Against Growing Cancers

Dr. Herbert J. Rapp, chief of the National Cancer Institute's Biology Branch, has reported a new laboratory technique that promises to help scientists learn to arouse a patient's immunizing defenses against his own growing cancer.

Dr. Rapp, who was one of the principal investigators, reported these studies at the Sixth National Cancer Conference held recently in Denver.

Tumor Cells Injected

In these studies, live cells from tumors induced in guinea pigs by a chemical cancer-causing agent (diethylnitrosamine) were injected intradermally into other inbred guinea pigs.

This injection produced a papule which grew to the size of a pea, ulcerated, and disappeared without a trace in 2 weeks.

A second intradermal injection produced no visible skin reaction after 4 hours, but by 24 hours there was redness and swelling at the site of injection. The investigators suggest that this reaction is evidence of a type of immunological response.

Response Noted

The response, called cutaneous hypersensitivity reaction, shows that the animal had been protected against the second injection of cells.

They further suggest that the studies have provided evidence that the tumor cells used for immunization had antigens specific for the tumor; these induced the formation in the guinea pigs of cells with antibody-like activity capable of killing the cancer.

An important factor was the injection of live tumor cells; attempts to produce immunization with killed cells were unsuccessful. Site of injection was also important. If the cells were injected into a muscle or the abdomen, the animal died of cancer.

Provides Early Results

It was reported that this technique is well suited for use in studies of cancer immunotherapy. Guinea pigs, like human beings but unlike other laboratory animals, are capable of developing vigorous and prolonged delayed cutaneous hypersensitivity.

Results can be read in 24 hours, as contrasted with weeks or months for other types of tests.

Other parts of the studies showed that immunotherapy alone may not be sufficient to eliminate a large, established tumor.

Three Educators Named To Council on Education For Health Professions

Three leading educators have accepted appointment to the National Advisory Council on Education for Health Professions, DHEW Secretary Wilbur J. Cohen announced recently.

They are Dr. Merlin K. DuVal, dean of the College of Medicine of the University of Arizona; Dr. William H. Knisely, director of the Institute of Biology and Medicine, Michigan State University, and Dr. Alvin L. Morris, assistant vice president of the University of Kentucky Medical Center, formerly dean of its College of Dentistry.

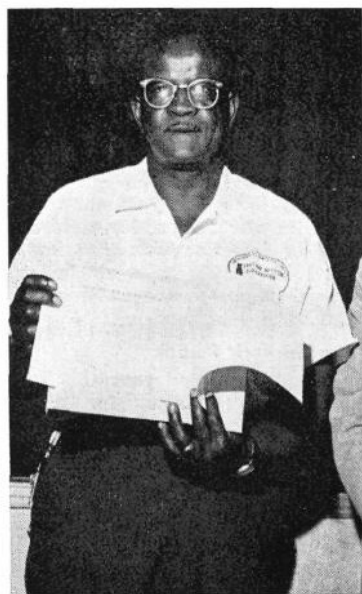
"We are deeply grateful to these outstanding educators for being willing to take time periodically from their heavy schedules to share their expertise with us in solving the serious manpower problems afflicting every health profession in the Nation.

Join Other Leaders

"They will join 15 other distinguished leaders, including the Commissioner of Education and the Director of the National Institutes of Health, as members of this important council," Secretary Cohen said.

The National Advisory Council on Education for Health Professions was established by Congress in 1963 to advise on policies relating to the administration of the Health Professions Construction Program.

These policies deal with the review of applications for grants to support research in health manpower as well as for construction of health educational facilities.



John Stanmore, CC, receives a certificate and cash award for his "employee suggestion" that a break-resistant window key might result in a savings for NIH.

Timetable Correlates Fetus Abnormalities With X-Ray Exposure; Developed by NIND

Physicians in the Section on Child Neurology, National Institute of Neurological Diseases, have developed a timetable which correlates exposure to radiation during various stages of gestation with specific abnormalities in the newborn or the developing child.

The study is based on 26 mothers who, between 1921 and 1956, received X-ray treatments to the pelvic region. (Smallest total body dose to the fetus was 250 rads and average over 560 rads.)

Pregnancy was either not suspected at the time of irradiation or the therapy was deemed necessary in spite of possible consequences to the fetus.

It was learned that most, though not all, of the surviving children had marked abnormalities and malformation.

Data Analyzed

Upon analysis of obstetrical, clinical, pathological, and irradiation data, the following timetable of abnormalities was proposed:

- 1) Irradiation prior to 3 weeks of gestation usually causes death through abortion or absorption, but if the pregnancy is continued the child is likely to be normal;
- 2) Irradiation between 4 and 11 weeks leads to severe abnormalities involving the brain, eyes, the genital, skeletal, and other systems—leading to clinical manifestation of mental retardation, microphthalmia, dwarfism and other manifestations;
- 3) Irradiation between 12 and 16 weeks produces stunted growth, and mental retardation generally related to microcephaly (undersized or malformed brain) but eyes and other systems generally escape damage;
- 4) Irradiation between 16 and 19 weeks of gestation leads only to mild forms of microcephaly, mental retardation, and stunted growth, and
- 5) Irradiation between 20 and 25 weeks of gestation generally leads to no organ or system abnormalities and the children are apparently normal mentally; however, evidence of healed radiation burns of the skin, epilation and suppression of the hematopoietic system may be evident at birth.

Radiation Study Conducted

A separate study on experimental radiation of pregnant mice was conducted. After approximating gestational days in mouse pregnancy to gestational weeks in humans, the tabulated results were comparable.

Moreover, histological findings in the brains of irradiated mice permitted speculation on the type of brain pathology in children exposed to excessive radiation; this was rarely possible to determine directly in human studies.

This study was reported by Dr. A. S. Dekaban, head of the Section on Child Neurology, NIND.

Blood Bank at CC Reports On 'Special Status' Donors

The Clinical Center Blood Bank reports that six more donors achieved a special status during the last half of September.

Dr. W. Glen Moss, NHI, reached the 2-gallon mark.

Dr. Lewellyn F. Barker, DBS, Judith L. Bergmann, NIMH, Preston H. Grantham, NCI, Margaret G. McElwain, NIAID, and Dr. J. Frederic Mushinski, NCI, joined the Gallon Donor Club.

More blood is needed. Make an appointment to donate—call Ext. 64506.

Dr. Newman Appointed NICHD Administrator

Dr. Sidney H. Newman has been appointed behavioral scientist administrator in the Reproduction and Population Research Branch, Extramural Programs, National Institute of Child Health and Human Development.

Dr. Newman will administer research programs which concentrate on the behavioral science or psychosocial aspects of reproduction, family planning, and population dynamics.

He will also administer research grant funds and develop program concerning family planning and other related facets.

Dr. Newman received his B.A. degree from Washington and Lee University and his M.A. and Ph.D. degrees from Clark University.

3 New Members Join NICHD Advisory Council

Three new members—Dr. Heinz F. Eichenwald, Dr. Kenneth J. Ryan, and Walter M. Beattie, Jr.—have been named to serve on the National Advisory Child Health and Human Development Council for 4-year terms.

The appointments were announced recently by Dr. Philip R. Lee, Assistant Secretary for Health and Scientific Affairs, DHEW.

Dr. Eichenwald, who is professor and chairman of the Department of Pediatrics, Southwestern Medical School, University of Texas, has done extensive research in pediatrics.

Dr. Ryan is professor and director of the Department of Obstetrics and Gynecology, School of Medi-

New Antigenic Type of C. Neoformans Reported By NIAID Investigators

Studies of antigenic variation among isolates of *Cryptococcus neoformans* by the National Institute of Allergy and Infectious Diseases suggest major geographical differences in distribution of serotypes of this pathogenic fungus.

This yeast-like fungus causes a self-limiting respiratory disease in some persons and, in others, a more serious disseminated infection with a marked tendency to invade the central nervous system.

Found in Soil

The organism is found in the soil and elsewhere, living on dead or decaying animal matter, particularly pigeon droppings.

Previous serological studies have resulted in the division of the species into three antigenic types: A, B, and C.

In the current studies, scientists of NIAID's Laboratory of Clinical Investigations—Dr. J. E. Bennett, J. W. Bailey, and Dr. D. E. Wilson (now with the Thorndike Memorial Laboratory, Boston)—further examined the antigenic variation among isolates of *C. neoformans* to determine whether serotyping would have value as an epidemiological tool.

One hundred six isolates of *C. neoformans*, obtained from patient material or from nature, were investigated. Agglutination and absorption studies were carried out, using anticryptococcal sera from immunized rabbits.

Isolates Typed

Of the 106 isolates, 69.8 percent were Type A, 10.4 percent were Type B, 6.6 percent were Type C, and 4.7 percent made up a new antigenically distinguishable group which the scientists designated Type D.

A small number (3.8 percent) reacted with both A and D sera. The rest (4.7 percent) could not be typed.

Although most isolates were Type A, none known to have originated in California fell in this category. In general, the California isolates were Types B or C.

The investigators suggest that, on the basis of these findings, studies of the epidemiological distribution of *C. neoformans* serotypes would be warranted in an effort to obtain a clearer picture of the source of this fungal infection in man and its mode of transmission.

cine, Case Western Reserve University.

Mr. Beattie, who is dean and professor in the School of Social Work, Syracuse University, is interested in health and economic problems of the adult and aging population.

INTERFERON

(Continued from Page 1)

Statolon and polyoma, SV 40 Sendai, and Newcastle disease (ND) viruses were employed in ME cell cultures.

Following stimulation of ME tube cultures with statolon, interferon, or virus, the scientists observed development of cellular resistance to vesicular stomatitis virus (VSV) and the production of interferon. Significant cellular resistance was induced by ND virus and statolon and, to a lesser degree, by interferon.

Interferon Detection Slow

No resistance developed following the addition of polyoma, SV40 or Sendai viruses to the cultures. It could be demonstrated that resistance induced by ND virus or statolon appeared almost immediately and increased steadily. But interferon itself could not be detected for 8 hours.

The relative importance of the presence of the inducer and of interferon itself was further studied by removing all interferon from the cultures and measuring cellular resistance.

Cellular resistance declined less rapidly in those cultures stimulated by ND virus or statolon than in those treated with doses of interferon.

Similar experiments with AGMK cells also indicated that cellular resistance was generally detectable before interferon production.

In separate investigations, the NIAID scientists characterized this preinterferon resistance to viruses and found it similar in the following ways to known interferon-induced resistance: 1) non-specific for challenge virus, 2) most effective against viruses of known interferon sensitivity, 3) prevented by actinomycin D, and 4) eventually accompanied by production of detectable interferon.

Other Interference Possible

Although the authors propose that resistance of cells to virus observed in these studies is largely attributed to action of the interferon system, they acknowledge that other forms of viral interference could have been occurring independently.

More work is needed before it can be determined how frequently the many instances of viral interference are mediated by the interferon system.

Drs. Fishman and Rudolf Serve On Natl. Advisory Heart Council

Appointment of Drs. Alfred P. Fishman and Abraham M. Rudolf to serve on the National Advisory Heart Council was announced recently.

NIAID, Pakistan-SEATO Cholera Study Reveals Oral Glucose Aids Treatment

Two National Institute of Allergy and Infectious Diseases scientists working with researchers from the Pakistan-SEATO Cholera Research Laboratory, Dacca, East Pakistan, report that administration of glucose-containing electrolyte solutions to cholera patients reduces the net stool output.

This procedure could provide a much needed supplement to scarce intravenous fluids in cholera-stricken areas.

Present cholera therapy requires the intravenous replacement of the massive amounts of fluid lost through the stools during the course of the disease.

An agent that would diminish



Ralph Fleischman (center), scientific program specialist with NHI, receives a 30-year Service Award from Dr. Jerome Green (right), and Dr. Glen Moss. Mr. Fleischman has been with PHS since 1936; he came to NIH in 1948.

Dr. Lawrence Van Kirk Named to NIDR Post

Dr. Lawrence E. Van Kirk, Jr. has been appointed training grants officer in the Extramural Programs of the National Institute of Dental Research.

In this position, Dr. Van Kirk will coordinate policy for the Institute's support of graduate research training and will serve as Executive Secretary of the Dental Training Committee.

Dr. Van Kirk succeeds Dr. Emil L. Rigg, who will assist Dr. Clair L. Gardner, associate director for Special Programs, in administering the Dental Research Institute's program which already has established five centers in various parts of the country.

Prior Service Cited

Dr. Van Kirk comes to the NIDR from the Division of Health Examination Statistics, PHS National Center for Health Statistics. Before that, he was with the Division of Dental Public Health and Resources from 1954 until 1962.

Dr. Van Kirk holds both the B.S. and the D.D.S. degrees from the University of Pittsburgh and a Master of Public Health from the University of Michigan.

stool production or enhance fluid absorption would be clinically useful.

Previous *in vitro* and *in vivo* studies have shown that actively transported sugars (such as glucose) enhance sodium and water absorption by the intestine.

Output Compared

In the present work, glucose-containing electrolyte solutions were given to eight cholera patients by gastric tube. The net stool output was compared with patients given routine intravenous fluid replacement, and those receiving perfusions not containing glucose.

The patients selected for perfusion studies were first rehydrated intravenously until plasma specific gravity was normal, and then a gastric tube was passed for perfusion.

Body-temperature solution, approximately equalling cholera stool in electrolyte (sodium, potassium, chloride, and carbon dioxide) concentration, was infused at a rate of one liter per hour. Intravenous fluids were used to maintain water and electrolyte balance.

In 25 patients not given perfusions, the average net stool output declined at an approximately linear rate throughout the course of diarrhea.

Glucose Aids Decline

A similar decline was seen in perfusion studies when glucose was omitted. A much greater decline, however, was noted in every case where glucose was included in the solution.

When glucose was discontinued, the stool output returned to that expected for the normal course of the disease. The stool electrolyte composition during all perfusion periods, with or without glucose, was similar to that of the perfusing solution.

This suggested that glucose enhanced the absorption of all electrolytes, not just sodium.

Conclusions Cited

The researchers conclude that orally administered glucose-containing solutions could aid in the treatment of cholera and could lessen the need for scarce and expensive intravenous fluids.

The program at the Pakistan-SEATO Cholera Research Laboratory, supported by SEATO nations, is coordinated by the NIH Cholera Advisory Committee whose chairman, Dr. John R. Seal, is NIAID's Director of Intramural Research. The laboratory is partly staffed by NIAID personnel.

Dr. Feinleib Named Chief Of Field Epidemiological Research Section, NHI

Dr. Manning Feinleib has been named chief of the Field Epidemiological Research Section, National Heart Institute. The section, previously based in Cambridge, Mass., has been relocated within NHI's Epidemiology and Biometry Program.

Dr. Feinleib will supervise epidemiological studies which take advantage of unique population or project resources to investigate cardiovascular disease problems.

Involved in Twin Study

In addition to collaborating with other heart disease studies, Dr. Feinleib and his staff are also involved in a study of 300 pairs of twins in the New England area to investigate genetic factors in the occurrence of cardiovascular disease.

The Field Epidemiological Research Section also plans a study of cardiovascular morbidity and mortality rates of selected population groups based on the 1970 census.

Dr. Feinleib has been an NHI research epidemiologist since 1966. Prior to that time he served as assistant professor of Epidemiology at the Harvard University School of Public Health.

Academic Appointments Noted

He has held other academic appointments at the Tufts University Medical School and the State University of New York, Downstate Medical Center.

Dr. Feinleib is a graduate of Cornell University. He received his medical degree from the State University of New York, Downstate Medical Center, and a Masters degree and a doctorate in epidemiology and biostatistics from the Harvard University School of Public Health.

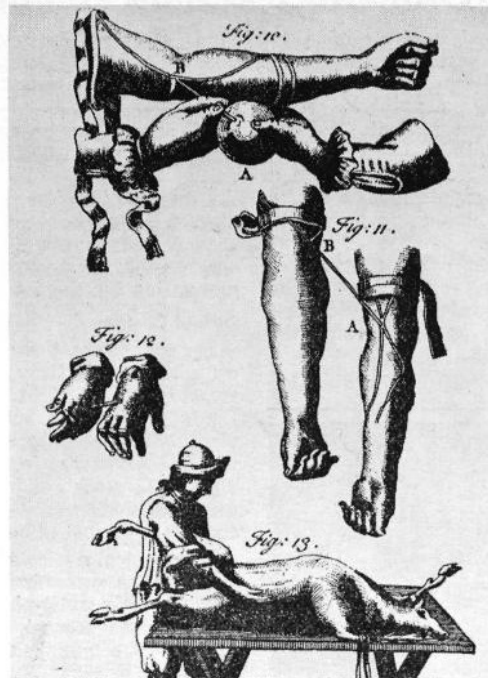


Theodore Orlin, a summer employee with the Bureau of Health Manpower, is now with the Peace Corps in the Republic of Malawi. "Ted" is teaching English and social studies to high school students, and learning Chin-
yonya, the language spoken in Malawi.

NLM Exhibit Highlights the History of Transfusion and Displays Weird Apparatus



The first illustration of an intravenous injection in man; from J. S. Elsholtz' "Clysmatica nova," Berlin, 1667.



Illustrations from Lorenz Heister's "Surgery" (1763), showing purely hypothetical transfusions: Fig. 10, an indirect transfusion; Figs. 11 and 12, vein-to-vein transfusions without a pump; Fig. 13, transfusions from the femoral artery of a sheep into an antecubital vein of man.



James Blundell's transfusion chair for the donor. The receiving vessel and pump, enclosed in a water jacket, are attached to the chair by a vise. (After Blundell, 1824.)

A new exhibit illustrating highlights of the history of blood transfusion has gone on display in the lobby of the National Library of Medicine.

The exhibit includes illustrations relating to early blood transfusion apparatus, material from the extensive collection of the Library's History of Medicine Division, and a number of actual implements used in the late 19th and early 20th centuries.

Among the blood transfusion apparatus displayed is a metal blood-warming device designed by Dr. Thomas G. Morton, who held clinical sessions at Pennsylvania Hospital in the late 19th century. Blood was stored in a conical container surrounded by hot water and stirred with broom whisks to prevent coagulation.

Displays Described

Pictorial material includes the first illustration of an intravenous injection in man. The illustration is from J. S. Elsholtz' *Clysmatica nova* published in Berlin in 1667.

Also on display are volumes from the Library containing the first description of blood transfusion by Andreas Libavius (1546-1616) and an article by Nobel prize winner Dr. Karl Landsteiner, who in 1901 described the existence of distinct blood types (the present A, B, and O).

Several illuminated panels, on

loan from the Army Research and Development Laboratory in Fort Knox, depict modern training techniques in the area of blood transfusion and blood grouping.

The exhibit is open to the public until Dec. 20, during the Library's regular hours: 8:30 a.m. to 9 p.m., Monday through Friday; and 8:30 a.m. to 5 p.m., on Saturday.

TRANSPLANTS

(Continued from Page 1)

The availability of large quantities of human leukocyte antigen in a soluble and purified form may eventually provide the opportunity to induce such tolerance to organ transplants.

In the present study, the investigators obtained soluble human transplantation antigens from human lymphoid cell membranes by enzymatic digestion. These soluble antigens were further purified by fractionation with acrylamide gel electrophoresis.

In the course of the work, two molecular sizes of the antigen were found. This may indicate that two different but very closely related genes control these antigens.

Further studies will be undertaken to determine the molecular form of antigen as it exists on cell membranes.

The next step will be clinical testing of the soluble transplanta-

NICHD Book on Aging Probes Leisure Problems

A new book, *The Retirement Process*, edited by Dr. Frances M. Carp, has been published by the National Institute of Child Health and Human Development. It reports on the first of a series of conferences on retirement, held by NICHD's Adult Development and Aging Branch.

The conference, held in December 1966, explored research ideas and suggested areas that required particular study.

The Nation's leading experts in aging research contributed to the book. They explained what is known—and what is not known—when an individual passes from active employment to, frequently, full-time leisure.

A retired person does not always know how to cope with the

empty hours. In addition, that period may be accompanied by decreased health, loss of prestige, and a feeling of uselessness.

The book identifies these and other problems of men and women who face this challenge.

At the time of the conference Dr. Carp was on the NICHD staff and is now Director, Human Development Research Program, American Institutes for Research, Palo Alto, Calif.

Copies of *The Retirement Process*, PHS Publication No. 1778, can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. for 70 cents.

Single free copies are available from the Public Information Branch, NICHD.

Dr. Wittenberger Named Chief, New NIDR Physiology Section

Dr. Charles Wittenberger has been named chief of the new Microbial Physiology Section in the Laboratory of Microbiology, National Institute of Dental Research.

Dr. Seymour J. Kreshover, NIDR Director, announced the Section's establishment, and designated Dr. Wittenberger as its chief.

tion antigen, with an evaluation of the possible therapeutic effects in recipients of organ transplants.

This will require correlation of physico-chemical characteristics of the soluble antigen, analytic testing, and clinical observations.

Drs. Dean L. Mann, G. Nicholas Rogentine, Jr., and John L. Fahey of NCI, and Dr. S. Nathenson of the Albert Einstein School of Medicine, reported the results of this study at the Second International Congress of the Transplantation Society, held recently in New York.