the NIH Record

FILE COPY

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

July 7, 1971
Vol. XXIII, No. 14

NATIONAL INSTITUTES OF HEALTH

New Method Retrieves Latest Data on Epilepsy In Matter of Minutes

For scientists engaged in epilepsy research, keeping up with the scientific literature means keeping track of more than 3,000 possible sources a month—practically impossible for the researcher on his own.

This is no longer necessary, the Epilepsy Abstracts Retrieval System of the National Institute of Neurological Diseases and Stroke is making the information available in minutes.

The EARS system is operated by the Section on Epilepsy, Collaborative and Field Research, headed by Dr. J. Kiffin Penry.

To acquaint NIH users with the system, Dr. Richard Rapport will demonstrate it in the NIH Library the next three Wednesdays (July 14, 21, and 28).

The computer system (Data Central) developed by Mead Data Central Inc., operates via an acoustically coupled remote terminal, op-

(See EPILEPSY, Page 5)

Single Civilian Career System Suggested To Replace PHS Commissioned Corps

Phasing out of the Public Health Service Commissioned Corps as well as the post of the PHS Surgeon General was recommended in a recent study, entitled *Report of the Secretary's Committee to Study the Public Health Service Commissioned Corps.*

The committee made its study at the request of HEW Secretary Elliot L. Richardson.

Dr. Marston Seeks Views On PHS Report Findings

Secretary Richardson, in seeking widespread advice on the important question of the future of the Commissioned Corps, has asked Dr. Robert Q. Marston, NIH Director, to comment by July 16 on the *Report of the Secretary's Committee to Study the Public Health Service Commissioned Corps.*

Dr. Marston, accordingly, would welcome opinions from individuals and groups of NIH employees (both Commissioned Corps and civil service) on the report's recommendations.

Present Corps strength is over 5,500—this includes almost 2,000 professional employees here.

The committee's basic conclusion was that "the system should be replaced by a unified civilian career system for the Public Health Service within the civil service framework."

One committee member strongly prefers the restoration of the Commissioned Corps to its former status as the comprehensive management structure of the PHS. However, he agreed that if this were not possible, the plan outlined in the report represents the most constructive alternative.

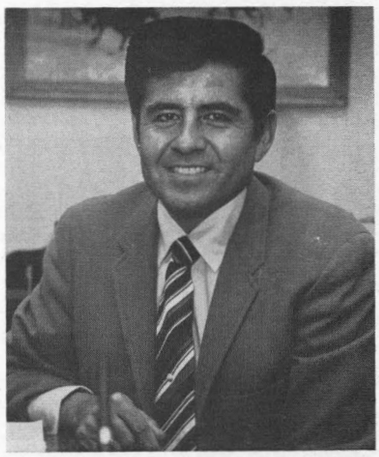
It was suggested that, in order to accomplish this, "modifications in the civil service should be obtained to provide features which will attract and retain the quality of health professionals required for the challenging responsibilities of the Nation's principal health organization."

Dr. John A. Perkins, chairman of the Secretary's Committee, is a former HEW Undersecretary. He is now Director of Studies in the Administration of Public Affairs at Northwestern University.

Richard L. Seggel, NIH Associate Director for Administration,

(See SINGLE SYSTEM, Page 7)

Dr. George Blue Spruce Named Special Assistant To Director of BHME



Dr. Blue Spruce developed a mobile dental clinic for Indian children, and also visited South American countries where he taught dentistry that can be used in primitive areas.

Dr. George Blue Spruce, a dental program administrator in the Division of Dental Health, and the Nation's only full-blooded Indian dentist, has been named a special assistant to Dr. Kenneth M. Endicott, BHME Director.

Dr. Blue Spruce will head a new effort to improve the health of Indians and will also recruit Indians into the health professions.

He will carry out his new assignment in cooperation with the Indian Health Service, which provides care for more than 500,000 Indians living on Federal reservations.

According to HEW Secretary Elliot L. Richardson, the program is a step in carrying out the President's pledge in his Message on Indian Affairs to "expand our efforts to train Indians for health careers."

"With increasing national attention being given to minorities, this is the time for a major effort to help the First Americans," Secretary Richardson said.

"We want to improve the quality of their lives by getting more Indians into all the health professions, particularly into medicine,

(See DR. BLUE SPRUCE, Page 4)

Monkeys Develop Lymphocytic Leukemia Similar to Type Common in Children

By Dave Dunlap

A team of researchers at the New England Regional Primate Research Center, Southboro, Mass., has shown for the first time that owl monkeys can develop a form of leukemia similar to the type most commonly seen in children.

Dr. Luis V. Melendez, head of the team supported by the Division of Research Resources, said the monkeys could provide an animal model for drug treatment of the disease.

Lymphocytic leukemia, the type developed by the monkeys, accounts for 80 percent of all childhood leukemia. An estimated 15,000 men, women, and children in the United States die of leukemia each year.

Reporting in a recent issue of *Science*, Dr. Melendez and his associates said the extension of the disease's progress over 70 days in these monkeys could give scientists a better opportunity to study the effects of drugs against leukemia.

The leukemia was induced in owl monkeys by injections of *Herpesvirus saimiri*, a virus found in latent form in squirrel monkeys. Other viruses of the Herpes group cause such diseases as cold sores, fever blisters, and eye infections in humans.

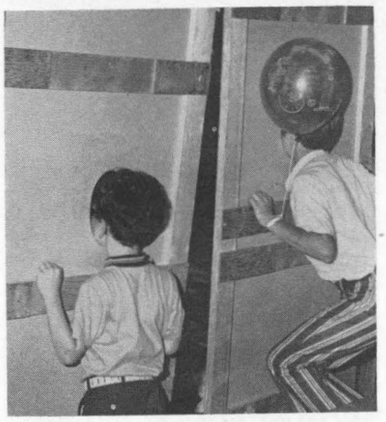
The 12 monkeys in the study received the virus by various routes: injected into and under the skin, into the abdominal cavity, and intravenously.

The purpose of inoculating the monkeys in different ways was to determine if malignant lymphoma could be induced through these various routes of injection.

The team had found in previous studies that intramuscular injections of *Herpesvirus saimiri* could cause malignant lymphoma.

Six of the 12 monkeys developed

(See LEUKEMIC MONKEYS, Page 8)



What can these children be looking at? For the answer see page 3.

the NIH Record

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Sgt. Jessie W. James, Guard, Dies Suddenly

Sgt. Jessie W. James, a veteran guard, died suddenly on June 25. He was on duty the night before.

He was a familiar figure to employees who work at NIH in the evening as he made his rounds of the buildings on the reservation.

Sgt. James had served in the NIH Guard Force since October 1950.

During World War II, he served in the Infantry and was awarded the Bronze Star, Purple Heart, and Good Conduct Medal.

He is survived by his wife, Bernice (Mrs. James is with the National Institute of General Medical Sciences); three children, Gerald W., Carole Thumma, and Jacky; three grandchildren; three sisters, and three brothers.

NIH Television, Radio Program Schedule

Radio

DISCUSSION: NIH

WGMS, AM-570—FM Stereo 103.5—Friday, about 9:15 p.m.

July 9

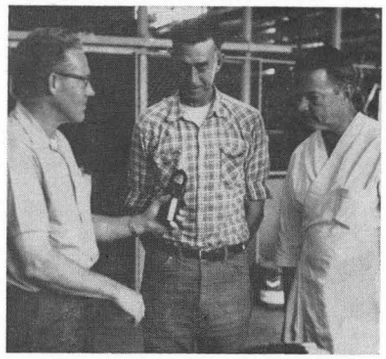
Dr. Thomas C. Chalmers
Director, Clinical Center
Subject: Recent Advances in Hepatitis Knowledge (R)

July 16

Dr. Christian J. Posner, NHLI
Subject: Clinical Problems of Drug Interactions (R)

Interview takes place during intermission of the Library of Congress concerts.

'Les' Wheeler Retires; Finishes 30 Years Service to the Day



"Les" Wheeler (c), electrical maintenance man, talks shop with Manly Miller (l), head, Biological Engineering Shop, and Dr. Robert N. Philip, assistant director, RML.

George "Les" Wheeler retired on June 11 from the NIAID's Rocky Mountain Laboratory after 30 years of Federal service to the day.

"Les" spent all of his service in RML with the exception of 16 months with the U.S. Air Force from February 1945 to June 1946.

He plans to continue living in Hamilton, Mont., where he has several self-employment projects scheduled.

Dr. John Greene Given Citation Of Merit by Boston University

Dr. John C. Greene, Director of the Division of Dental Health, BHME, has been awarded a Citation of Merit from Boston University in recognition of his "distinguished service in dental administration and investigation."

Revolutionary Printing Suggestion Merits Cash Award, Citation for 'Ken' Miller

By Irene Golub
Summer Information Aide

An idea introduced by "Ken" Miller, printing specialist, will result in savings of time, editing, typesetting and printing cost for manuscripts by NIH scientists. By using this concept, the cost and time required to produce a publication can be cut in half, if not more, depending upon manuscript length.

In recognition of his suggestion, Mr. Miller received a citation and $950 award.

He has combined the Wylbur, a machine which functions as a text editor and remote job-entry facility, to serve as an input mechanism for another machine—the Linotron, a device which produces a camera copy positive or a negative of a type set page.

In other words, the Linotron can reproduce a page of copy directly from magnetic tapes typed on Wylbur.

Mr. Miller first formulated his idea to combine these devices after he had attended an exhibit on the Keymatic Data Systems.

Subsequently, he took a computer course at Montgomery College in Rockville and a special course on the Linotron photocomposer at the U.S. Department of Agriculture Graduate School.

Utilizing the Wylbur as an input device for the photocomposer, the console operator can correct typing mistakes immediately by means of over-typing.

This system enables the author or editor to review the manuscript and mark typing errors and revisions. Selective corrections can be made without retyping the entire manuscript page.

At the same time the manuscript is typed onto the console, it is also stored in the system on discs. The operator can direct the material to be rewritten on the magnetic tapes. By adding a very limited number of function codes, the tape can be used as input for the Linotron.

Because the photocomposer sets characters of varying point sizes and face types at amazing speeds, the system is much less time consuming and expensive than the hot- or cold-type setting methods.

For example, a publication of 256 pages would require 17 weeks and cost about $2,560 using the hot-type method. With the Wylbur-Linotron setup, however, only 3 weeks would be necessary at an expense of approximately $1,018.

Saves Space, Paper

Another plus is its space saving and, hence, paper saving feature.

Covers, title pages and other irregular materials would not be readily adaptable to the photocomposer, however, Mr. Miller has already begun to eliminate this difficulty. A method has been devised whereby the machine can allow for a one-column, non-mandatory picture (inserted within the text as soon as possible and appropriate).

For information on the system, call Mr. Miller, Printing and Reproduction Branch, General Services Management, Ext. 66077.

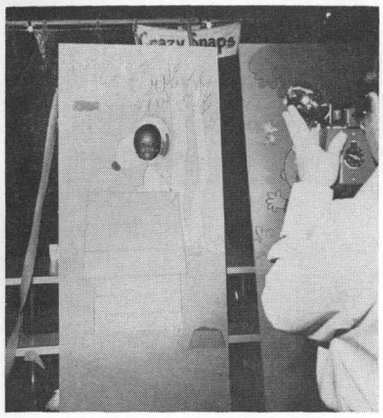
CC Patient Activity Section Will Sponsor 3 Concerts

NIH employees are invited to join patients at summer band concerts sponsored by the CC Patient Activity Section.

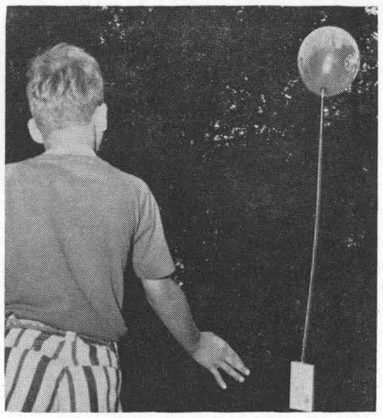
Performances, which begin at 7:30 p.m., will feature the U.S. Navy Band on July 23, the U.S. Marine Band on August 5, and the U.S. Navy Sea Chanters on August 17.

Concerts will be given on the patio east of the Jack Masur Auditorium.

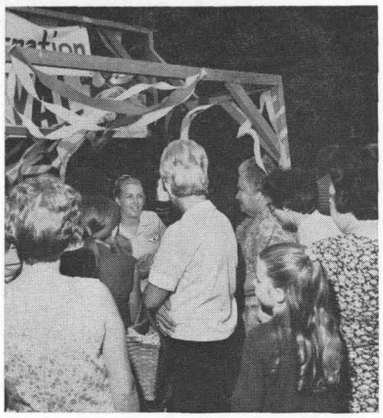
James B. Davis, Director (l), Office of Administrative Services, and D. R. Cushing (c), assistant director for General Services Management, compliment Ken Miller upon receiving a citation and check for his award-winning suggestion.



A camera. The children are posing behind pictures of "Snoopy" characters in the "Crazy Snaps" game at the annual CC Patient Activity Section's Carnival held June 23.



A youngster watches his balloon and postcard slowly rise in hopes it will reach California. The card with the furthermost postmark wins a transistor radio.



A large crowd of patients and NIH employees gather around the Carnival registration booth to obtain tickets for the games from the CC Red Cross Volunteers.

Under the halo of her balloon, a young Clinical Center patient watches the "fast and thrilling" turtle race from her wheelchair.—Photos by Ralph Bredland.

Gwendolyn Boklund Tells Advantage of Retiring At Gift-Giving Lunch

Gwendolyn Boklund has acted as "buffer"—the official term is secretary—for over 14 years to the chief of Clinical Care, NIMH Intramural Research Program.

Over the years the chief has changed, but Mrs. Boklund was there ready to assist a new head.

She now has retired from that post, and a luncheon and gifts given by friends and fellow co-workers marked the occasion. However, Mrs. Boklund plans to come back and work in the office on a part-time basis.

Dr. Harold Greenberg, chief of Clinical Care, expressed his appreciation and the feelings of the entire staff for "Gwen's help in softening the collisions with administrative walls," and that she was returning part-time.

Mrs. Boklund is thoroughly enjoying her freedom. She pointed out one great advantage—she doesn't have to worry about covering the office phone during lunch.

Mrs. Boklund looks back over her years at NIMH, remembering the interesting scientists that she has worked with. And among the most interesting was Dr. Lyman Wynne in the Adult Psychiatry Branch—she was in that branch before entering the Clinical Care Office.

She considers her duties at NIMH the most rewarding of her 27 years of Government service. Opportunities for other jobs in other places developed, but she always turned them down.

She preferred working for scientists who worked with patients.

The young doctors in the Clinical Associates Program also have reason to praise Mrs. Boklund—they often came to her and asked for assistance with administrative problems.

And the nice thing about asking questions of Mrs. Boklund is that she always has the right answers.

In Computer Parlance Properly-Phrased Questions Will Receive Logical Answers

Someone recently wrote on a blackboard in Bldg. 12-A: "God watches those who watch computers and He worries."

Now, that quote would be less funny, but a great deal more accurate, had it read "God watches those who question computers and He worries."

And the reason for the switch in quote is that in using computers the ability to ask questions properly is a fundamental requirement.

The Division of Research Grants has an information system which is an invaluable guide to asking the right question at the right time. The system is called IMPAC, an acronym for Information for Management Planning, Analysis, and Coordination.

Human Errors at Fault

IMPAC stores (input), retrieves (output), and analyzes information relating to extramural programs at NIH.

"Input" is facts or data that is stored, or put into, a computer by tapes, records electronic impulse, or other methods.

"Output" is the retrieval part of the operation. It is the material that is taken out—retrieved—in answer to the question.

An IMPAC expert offers sage advice: Be specific. It's the human's fault not the computer's if a wrong answer is arrived at.

A computer may very well come up with several correct answers on this question: What is NIH supporting in medical research? The question is too imprecise.

Does the questioner want training grants or fellowships included? Should construction grants be included?

The logic of the answers depends on how specifically the questions are phrased, hence the importance of the questioner.

It is up to the analyst to sift the data, decide the importance of the

(See COMPUTER PARLANCE, Page 4)

Adele H. Nusbaum Heads Fed'l Women's Program

Adele H. Nusbaum has been named to a newly established post, Coordinator of the Federal Women's Program in the NIH Equal Employment Opportunity Office.

She will develop and coordinate programs that enhance the employment status of women at NIH in all classifications and grade levels.

Miss Nusbaum will work under the direction of Dr. Colvin Gibson, Equal Employment Opportunity Officer.

For the past 2 years she has been an information specialist in

Miss Nusbaum has been a consultant for several communications projects at Federal and local levels. On campus, she will develop programs to enhance the job status of women.

the Division of Physician and Health Professions Education, BHME.

There, she developed plans related to recruitment and utilization of minorities and women in the health professions.

Before coming to NIH, she was a consultant on special communications projects for organizations which included the U.S. Commission on Civil Rights; the Office of the Mayor, District of Columbia, and the National Urban Coalition.

She also served as director of public relations of B'nai B'rith Women, a national service organization involved in public affairs and human rights activities.

She has also been public relations director of a community-wide social planning and fund-raising organization in Pittsburgh.

Miss Nusbaum is a graduate of the University of Rochester, and received her Master's degree in Public Administration and Political Science from Columbia University.

Dr. G. Donald Whedon Receives Alumni Award

The 1971 University of Rochester Citation to Alumni was awarded to Dr. G. Donald Whedon, Director of the National Institute of Arthritis and Metabolic Diseases.

The award, highest honor given by the university to alumni, was presented to Dr. Whedon at its 121st annual commencement ceremonies in June.

Dr. Whedon was cited for his directorship of NIAMD, his work on disorders of calcium metabolism, and for his studies of the role of nutritional factors such as dietary calcium in osteoporosis.

In addition, he was cited for his work as the principal investigator on the first and only metabolic study in space. This study was carried out on Gemini 7 in 1965.

Dr. Whedon was appointed NIAMD Director in November 1962 after having served as assistant director since 1956.

He first came to NIH in 1952 as chief of the Institute's Metabolic Diseases Branch and served as a clinical investigator until 1965.

Carol Nacy, Laboratory of Infectious Diseases, NINDS, places virus material into a drawer of the 17' x 9' x 8' freezer which is kept at 34 degrees Fahrenheit. The drawers are maintained at minus 112 degrees F. The freezer—the only one of its kind in this country—stores virus in a live state. It is located in the newly opened lab in Bldg. 36.

Dr. David F. Johnson Appointed Section Chief

Dr. David F. Johnson has been appointed chief of the Section on Microanalytical Services and Instrumentation, Laboratory of Chemistry, National Institute of Arthritis and Metabolic Diseases.

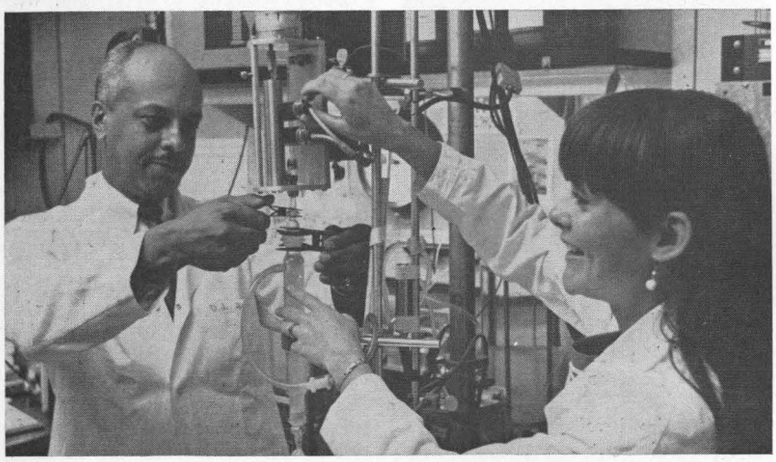
Currently, Dr. Johnson is president of the NIH Credit Union, a member of the board of trustees at Prince George's Community College, and a lay reader at the Calvary Protestant Episcopal Church in Washington.

He also serves as an Equal Employment Opportunity hearing officer for all of HEW.

Dr. Johnson received his B.S. degree from Allegheny College, his M.S. from Howard University, and his Ph.D. from Georgetown University.

Since 1952, he has been a research chemist with NIAMD and has published almost 30 scientific papers.

His particular areas of interest include steroid metabolism, toxic studies in young plants and frogs, and column chromatography of adrenocortical steroids and ketosteroids.



Dr. Johnson adjusts equipment with technician, Nancy S. Lamontagne.

COMPUTER PARLANCE

(Continued from Page 3)

facts and then present the answer to the scientists who have requested the information.

A programmer, the person who feeds questions into a computer, can ask a question as pinpointed as: How much money for NIH research project grants in FY 1970 was awarded for urology research in surgery departments of N.Y. medical schools, and how does this compare with other NIH research grants to the same departments?

The computer has the answers on tape, just waiting to be deciphered by the analyzer.

In computer parlance, there is a query titled "non-recurring." It is an out-of-the-ordinary, or one shot question.

Take this example: The Congressman from "anywhere" calls DRG and asks how many grants is NIH supporting in a given area in a specific county in his state.

Sol Eskenazi, chief of the Statistics and Analysis Branch which maintains and operates IMPAC, explained that the system processes 300 non-recurring queries a month.

The master file on extramural programs in DRG's computer system contains data on all grants, awards, and contracts supported by NIH. Each record has about 130 items of data.

One item will have the principal investigator's name, another item, the title of his project.

Other IMPAC files include data on grantee institutions, and biographic and academic information on trainees and awardees.

IMPAC answers thousands of queries a year for NIH Institutes and Divisions, other Government agencies, Congress, and the general public.

The IMPAC system is also the source for many DRG publications, including the "Blue Books"—the 4-volume annual on PHS grants and awards.

Latest Participants in NIH Visiting Scientists Program Listed Here

5/13—Dr. Emilio Carbone, Italy, Laboratory of Neurobiology. Sponsor: Dr. Ichiji Tasaki, NIMH, Bldg. 36, Rm. 1D02.

5/16—Dr. Hinrich Cramer, Germany, Laboratory of Clinical Science. Sponsor: Dr. Irwin J. Kopin, NIMH, Bldg. 10, Rm. 2D46.

6/1—Dr Thor Andreas Alvegard, Norway, Human Tumor Cell Biology Branch. Sponsor: Dr. Robert C. Graw, NCI, Bldg. 10, Rm. 2B51.

6/1—Dr. Gunter Niemeyer, Germany, Laboratory of Vision Research. Sponsor: Dr. Peter Gouras, NEI, Bldg. 10, Rm. 10D19.

6/3—Dr. Tokuro Oh-ishi, Japan, Section on Medicinal Chemistry. Sponsor: Dr. Everette L. May, NIAMD, Bldg. 4, Rm. 135.

6/22—Dr. Ilse-Hanny Tretner, Germany, Department of Nuclear Medicine. Sponsor: Dr. Steven M. Larson, CC, Bldg. 10, Rm. 1B51A.

DR. BLUE SPRUCE

(Continued from Page 1)

dentistry, and nursing," the Secretary added.

Dr. Blue Spruce, a Pueblo Indian from Santa Fe, will work with Indian groups, students, health organizations, educational institutions, and officials of other Federal, state, and local agencies.

Served with DDH

Before his present appointment, Dr. Blue Spruce was chief of the Auxiliary Utilization Section, Education Development Branch, DDH.

He received his D.D.S. degree from Creighton University, and an M.P.H. degree from the California School of Public Health.

Dr. Blue Spruce served for 2 years as a dentist in the Navy, and then entered private practice for a brief period. He joined the PHS in 1958. For the next 5 years he was with the Indian Health Service at Taos, and at Fort Belknap.

Later, he was named deputy chief at the PHS Outpatient Clinic in New York. From 1963-66 he was chief dental officer at the U.S. Merchant Marine Academy.

In 1967-68, as a dental public health resident at the Dental Health Center, San Francisco, he developed a mobile dental clinic for Indian children in Nevada.

Dr. Blue Spruce also served as a consultant for the Pan American Health Organization. He visited most of the countries in South America, and taught methods of dentistry that can be used in primitive areas.

His organizations include the Congress of American Indians, the National Indian Education Association, The American Dental Association, and the American Association of Dental Schools.

Dr. Blue Spruce who was captain of his college tennis team, is also a member of the U.S. and the Mid-Atlantic Lawn Tennis Associations.

His brother, Dr. Beryl Blue Spruce, teaches at the University of Michigan School of Public Health.

Ten Approaches Outlined By Dr. Eugene Confrey For Manpower Needs

Ten new or stepped-up approaches which the Bureau of Health Manpower Education will employ to tackle health manpower shortages in the seventies were outlined by Dr. Eugene A. Confrey, keynote speaker at a recent health manpower conference.

Dr. Confrey

Dr. Confrey, associate director for Program Planning and Evaluation, BHME, spoke at the Health Manpower Planning and Development Conference of six states held in Oklahoma City June 20-25.

The approaches are among several proposals contained in recent legislation before Congress and in policies developing in the Bureau.

"All of these ideas will shape the character of health manpower educational planning in this decade, irrespective of details of pending legislation," Dr. Confrey said.

The approaches include accelerating the output of medical personnel by educational institutions, revising the medical curriculum, training more medical people in primary care, using more medical assistants, and training medical personnel in a team approach to delivering health care.

Programs will extend training opportunities in health professions to students who cannot afford such training, Dr. Confrey said.

New Forms Proposed

New institutional forms have been recommended, such as health education centers in areas which do not have medical training facilities and lack medical manpower.

Efforts are under way to determine why many medical institutions are in financial trouble.

Dr. Confrey said that systems analysis will be used in planning for the Nation's health needs.

The conference was sponsored by the BHME and HEW Regional Offices in conjunction with the University of Oklahoma Medical Center.

EPILEPSY DATA

(Continued from Page 1)

erating at either 30 or 120 characters per second, with an IBM 360 computer in Arlington, Va.

Basically it works like this. The user has before him a machine that looks like a typewriter and a television screen.

He types out the desired information in a simple English code designed for people who are not computer trained. His message, displayed on the TV screen, is electrically transmitted to the computer in Virginia.

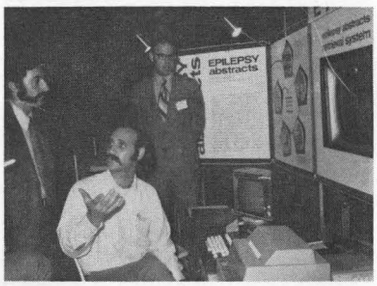
The computer then conducts the search, transmits back the desired information which is then displayed on the TV screen. This entire process is completed in seconds.

The system's main feature is its keyword dictionary which contains every word in the abstract and citation, any one of which may be used to locate the abstract.

The Section on Epilepsy has contracted for computer time from 10 a.m. to 2 p.m., Wednesdays, but the system is commercially available to anyone through Mead Data Central Corp. Computer tapes are available from NIH on request.

The system's updated information is obtained from a monthly, *Epilepsy Abstracts*, published by the Excerpta Medica Foundation, with assistance from NINDS.

Scientists can obtain *Epilepsy Abstracts* through a $15 yearly subscription from the Excerpta Medica Foundation, Nassau Bldg., 228 Alexander St., Princeton, N.J. 08540.



Dr. Rapport explains the EARS system to scientists at a recent American Neurological Association meeting. He will demonstrate the system again at the NIH Library July 14, 21, and 28.

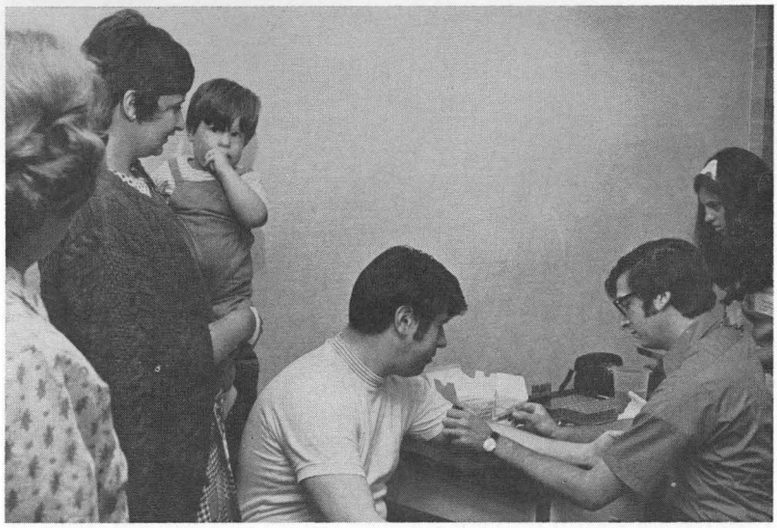
Dr. Stanley Dies, Served On Nat'l Cancer Council

Dr. Wendell M. Stanley, a 1946 Nobel Prize winner, who served a term on the National Advisory Cancer Council, died of an apparent heart attack on June 15.

Fifteen years ago, the laureate urged intensification of research on viruses as likely etiologic agents in human cancer.

Last March, Dr. Stanley, with other noted scientists, was consulted by Dr. Carl G. Baker, NCI Director, on plans for expanding the Institute's programs.

Over 3,500 People in D.C.-Baltimore Program Tested for Tay-Sachs Disease



Dr. Allen Nimetz, one of the 15 NIH physicians who assisted at the opening clinics, draws a blood sample at a recent Tay-Sachs screening in Rockville.

By Robert White

More than 3,500 persons in the Washington-Baltimore areas have been screened during the first 6 weeks of an unprecedented community involvement program designed to prevent Tay-Sachs disease—an inherited disorder of children which causes destruction of the central nervous system and death by age four.

Five thousand people will be screened before Labor Day and 60,000 are expected to be tested before the formal phase of the program is concluded in 1973.

First of its kind in the U.S., the Tay-Sachs Program is directed by Dr. Michael M. Kaback, a former NINDS researcher, now with the John F. Kennedy Institute in Baltimore.

Background Noted

Dr. Kaback also is assistant professor of Pediatrics at the Johns Hopkins University School of Medicine and a Joseph P. Kennedy Jr. Memorial Foundation Junior Research Scholar in mental retardation.

Fifteen physicians—clinical and research associates from NIH organized by Dr. Robert S. Zeiger, NCI—and eight hospital corpsmen from the National Naval Medical Center in Bethesda, are among volunteers assisting at the opening clinics.

Dr. Kaback, who conceived the idea and helped move the Jewish communities toward voluntary involvement, describes the program as financially practical and technically feasible, an important pilot program for preventive genetic medicine.

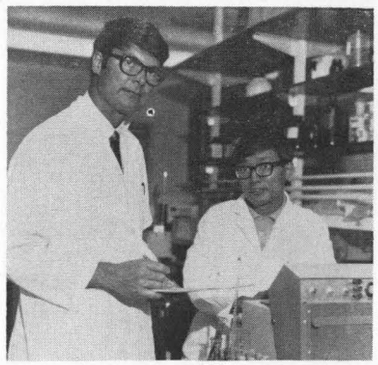
He cites the program as a prototype for the prevention of genetic diseases, adding that it may later be applied to other genetic diseases such as sickle cell anemia and cystic fibrosis.

Critical biochemical studies dealing with lipid and biochemical abnormalities in Tay-Sachs disease were developed recently in the NINDS Laboratory of Neurochemistry, by Dr. Roscoe O. Brady Jr., and his associates.

These studies and others provided the basis for important findings in 1969 by Drs. John O'Brien and Shintaro Okada at the University of California (San Diego) which delineated the specific enzyme deficiency in Tay-Sachs disease.

They discovered that the enzyme Hexosaminadase-A was totally deficient in the brain and other tissues from children with Tay-Sachs disease.

(See TAY-SACHS, Page 6)



The Tay-Sachs disease voluntary screening program was made possible through the efforts of several scientists, including Drs. John S. O'Brien (l) and Shintaro Okada of the University of California (San Diego). Drs. O'Brien and Okada, who delineated the specific enzyme deficiency in Tay-Sachs disease and developed a simple blood test for the enzyme, are supported by NIGMS and NINDS.

Rapid, Simple Technique To Purify Enzyme TAT Aids Synthesis Study

In order to study an enzyme—of which the synthesis is increased by the administration of steroid hormones—researchers at the National Cancer Institute have employed a rapid and simple new technique for its purification.

Drs. James V. Miller, Jr., and E. Brad Thompson, Laboratory of Biochemistry, recently reported this technique at the annual meeting of the American Society of Biological Chemists in San Francisco.

Dr. Miller explained that scientists are interested in this enzyme —the protein tyrosine aminotransferase (TAT)—normally occurring in all humans, because it serves as a model for the study of steroid hormone effects on protein synthesis.

Researchers have been investigating these effects for many years. Purification of the enzyme is an essential step in creating an antibody which will be an aid to the synthesis study.

TAT metabolizes tyrosine, an amino acid that is an essential constituent of body tissues.

To purify TAT, Drs. Miller and Thompson have used affinity chromatography, a relatively new and powerful method for purifying proteins.

Separates Solution Components

Chromatography is a technique used in separating the various protein components of a solution from one another by such characteristics as size or electrical charge.

This is done by making a column of absorbing material and passing the solution through it. The proteins then emerge from the column in bands containing proteins of similar size or charge.

In affinity chromatography, a specific molecule to which a particular component of a solution will bind is linked to a gel and a column is made of this material.

When a solution containing a protein, for instance, is passed through such a column, the protein is removed from the solution by binding to the molecule.

The protein is then stripped from the column significantly purified.

The molecule to which TAT binds, said Dr. Miller, is pyridoxamine phosphate, a derivative of vitamin B_6.

A column prepared from a gel to which this molecule is linked will selectively remove rat liver TAT from a cell solution.

The enzyme can subsequently be removed from the column, purified more than 100 fold, that is, obtained in a form more than 100 times more concentrated than the original substance.

TAY-SACHS

(Continued from Page 5)

In addition, Drs. O'Brien and Okada were able to establish that carriers for the Tay-Sachs gene could be detected by a simple serum test for this enzyme.

Just last month, Drs. O'Brien and Okada—with support from the National Institute of General Medical Sciences and NINDS—demonstrated the accuracy and usefulness of genetic disease control measures in a study involving 15 pregnant women who previously had given birth to children with Tay-Sachs disease.

In their diagnostic study, the scientists received fetal cells drawn during the 16th to 18th weeks of pregnancy from the amniotic fluid of each of the 15 women known to be of high risk.

In nine cases, the enzyme was detected in time and the investigators were able to assure parents of fetuses free from disease.

In the other six cases, the enzyme was totally absent and the prospective parents were counseled as to the virtual certainty of having a Tay-Sachs child. The parents in five of these cases chose to terminate the mothers' pregnancies.

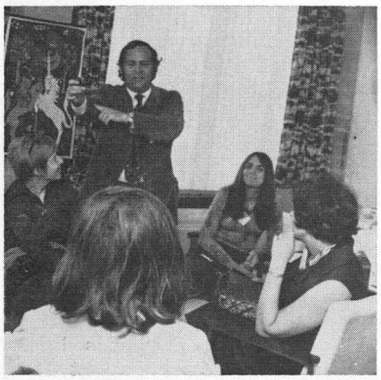
The diagnosis of Tay-Sachs disease was confirmed in the five aborted fetuses and in the child who was born—and who subsequently developed the disease.

In essence, the voluntary screening program employs a three-pronged attack on Tay-Sachs disease.

The first is carrier detection followed quickly by intrauterine diagnosis where needed, and, where further necessary, by genetic counseling of potential carriers of the Tay-Sachs trait.

The mass screening of high risk populations is the first step in the procedure since this screening pinpoints those who are carriers.

Tay-Sachs disease is concentrated almost exclusively in American Jews of Eastern European ancestry. Jewish persons of this ancestry comprise more than 90 percent of all American Jews.



Dr. Michael M. Kaback, director of the Washington-Baltimore area voluntary screening program for Tay-Sachs disease, instructs volunteers at the clinic in Rockville's Jewish Social Service Agency. More than 500 persons were screened at the session.

In the Jewish population, one of 30 persons is estimated to carry the Tay-Sachs gene.

Because Tay-Sachs disease is a genetically-recessive disorder, both parents must be carriers for the Tay-Sachs gene to be a risk for producing a child with the disease.

One in every 900 Jewish couples undergo a risk of having a child with Tay-Sachs disease.

Where both parents are carriers, there is statistically a one-in-four chance with each pregnancy of producing a child with Tay-Sachs disease.

The community involvement program began with the mailing of letters and brochures to physicians and with the briefing of Rabbis in the two areas.

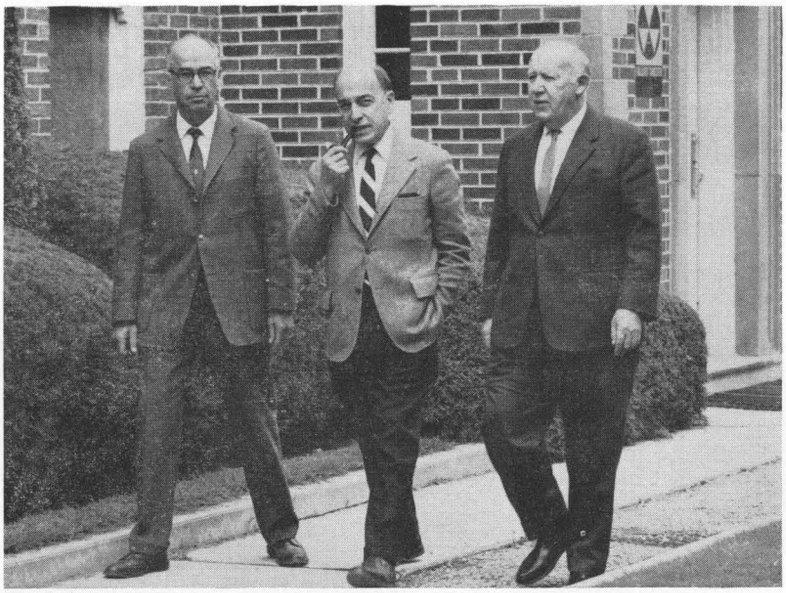
Thus far, more than 500 volunteers have assisted in mass screening programs at Beth-El Synagogue in Bethesda, the Baltimore Hebrew Congregation, the Jewish Social Service Agency in Rockville, and Ohep Shalom and Beth-El Synagogues, both in Baltimore.

Additional summer clinics will be held at the Baltimore Jewish Community Center, July 27 and August 24.

Activities will resume in the fall with another mass screening drive in Montgomery County. Included in the 1971-72 plans is a mass screening of NIH employees.

Key groups in organizing the program are the Kennedy Institute in Baltimore and the National Capital Tay-Sachs Foundation and the Service Guild in Washington.

All funds for operating the clinics come voluntarily from concerned individuals and organizations.



NIAID's Rocky Mountain Laboratory at Hamilton, Mont., was host at a recent 2-day meeting for NIH Directors. The group met the RML staff and toured the labs. Guests showed special interest in RML's cancer and slow virus studies. Dr. Herbert G. Stoener, RML Director (l), conducts a tour for Dr. Robert W. Berliner, Deputy Director for Science, NIH (c), and Dr. John R. Seal, Scientific Director, NIAID.

Exhibit Displays Therapy Of Original Art Work By Depressed Patients

An exhibit demonstrating effectiveness of diagnosis and treatment through art therapy on patients suffering from extreme depression won third place among exhibits at a recent APA meeting.

A brochure of brief case histories accompanied the exhibit, which pointed out clues to suicidal thinking in the original art work of patients.

The American Psychological Association meeting was held in Washington last month.

The exhibit displayed how Harriet Wadeson, Section on Psychiatry in the NIMH Laboratory of Clinical Sciences, employed therapy.

Design and production were a joint effort of the Laboratory and the Audiovisual and Telecommunications Branch of the NIMH Office of Communications.

Frank Carey Awarded AMA's Highest Honor For Medical Series

The American Medical Association recently awarded Frank Carey their highest honor for "Man's Common Ills," a 5-part series on interviews with NIH researchers and grantees.

The Washington-based Associated Press science writer received the Medical Journalism Award for Newspapers at the annual meeting of the National Association of Science Writers in Atlantic City.

The five articles discussed the common cold, insomnia, backache, dental trouble, and indigestion.

Cooperating grantee institutions were Brown University, the University of California at Los Angeles, Baylor University, the California State Department of Health, New York University, and Georgetown University.

The award recognizes "journalism that contributes to a better public understanding of medicine and health in the United States."

Dr. Jane Wilcox Retires; With PHS 23 Years

Dr. Jane Wilcox, National Heart and Lung Institute, retired on July 1, after 23 years of service with PHS—18 of those years were spent in the Commissioned Corps.

Dr. Wilcox, who was acting chief, Cardiac Disease Branch, Extramural Research and Training Program, has held important administrative posts at NIH and the Johns Hopkins School of Hygiene and Public Health.

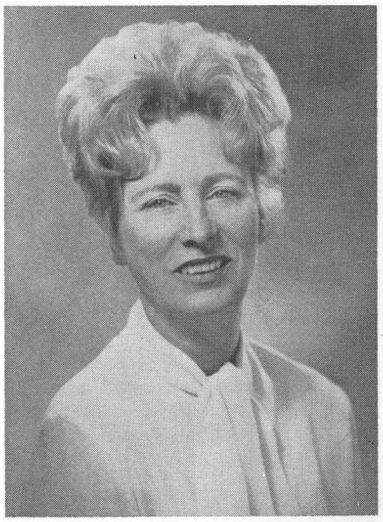
At NIH, Dr. Wilcox served as chief, Heart Nursing Section, CC; special assistant for Nursing Research, CC, and executive secretary, Epidemiology and Disease Control Study Section, DRG.

At Johns Hopkins she was assistant to the chief of the Nursing Department.

Dr. Wilcox has been with her present branch since 1969. She is responsible for the planning and development of the grants program supporting research that includes cardiac and congenital and rheumatic heart diseases.

She has also served on the nursing staffs of St. Luke's Hospital, New York, and the Yale University School of Medicine.

Dr. Wilcox will move to Jacksonville, where she has accepted a position with the Florida State Department of Health as director of its public health nursing program.



Dr. Wilcox will retire to Jacksonville. She has accepted a position with the Florida State Department of Health as director of its public health nursing program.

Struggling with a gift at his retirement party, Woodrow "Woody" Duvall (r) is offered assistance by NIAMD clinical director, Dr. Robert S. Gordon. "Woody" was an animal caretaker and laboratory aid for 23 years.

NICHD Scientists Meet, Discuss Latest Studies

In a daylong meeting held at NIH recently, scientists from the Intramural Research Program of the NICHD presented papers describing their latest findings on topics ranging from hearing systems of monkeys to pulmonary emphysema in humans.

Dr. Charles U. Lowe, scientific director of the National Institute of Child Health and Human Development, opened the meeting with a discussion of future expansion planned for the Institute's intramural research.

Investigators from the NICHD Gerontology Research Center in Baltimore and the Institute's laboratories on the reservation participated in the Annual Spring Research Day Program.

SINGLE SYSTEM

(Continued from Page 1)

was staff director for the study.

The report specifically recommends that HEW propose legislation in the next session of Congress, to be effective July 1, 1973, to establish a single personnel system for the Department's health programs.

In its brief history of the Corps, the committee cites the Corps' accomplishments, but points out that the character of the Corps has changed dramatically in recent years and has become heavily dependent on the military draft.

The report states that "suggestions concerning a specific program mission for the Corps would leave out a significant number of officers now in the Corps, such as those at the National Institutes of Health."

Further, the committee notes that such a suggestion could not be reconciled with the currently established organization of HEW's health programs.

In addition to its conclusions and recommendations, the committee report devoted chapters to needs and problems ahead and to the alternatives, and summarized other recent studies and related actions concerning the PHS Commissioned Corps.

Research Program on Inherited Diseases Expanded Through New Research Grants

The research program on the basic nature and causes of genetic or inherited diseases which affect some 15 million Americans is being expanded by the National Institute of General Medical Sciences.

Dr. DeWitt Stetten, Jr., NIGMS Director, recently announced the award of 26 new genetics research grants totaling $1,024,710.

Studies will be directed toward the understanding of factors that control genes, the fundamental units of heredity.

Authorities estimate that seven to eight percent of the American population has one or another genetic disorder which seriously affects the quality of life.

It also is reported that 25 percent of all hospitalized patients suffer from some aspect of hereditary disease. Included are forms of neurological and mental disorders, various blood diseases like sickle cell anemia and hemophilia, and such metabolic diseases as cystic fibrosis and gout.

It has been known for many years that each of man's thousands of genes are duplicated in every cell of the body.

And it is generally accepted by scientists that only a fraction of these genes are in operation at a given time.

Supposedly, it is this sort of control that endows a cell with its particular attributes and function; that is a kidney cell compared to a skin or heart muscle cell.

Biochemical Substances Present

But only within the past year or two has laboratory evidence shown that certain biochemical substances are present in cells which allow some genes to be "turned on" while others are "turned off."

Through this unique process, differing cells are directed to do whatever work is required for life and growth.

Further knowledge of these control mechanisms should lead to better treatment and prevention, and perhaps—ultimately—to the cure of genetic diseases.

For example, the knowledge might be used against the problem of sickle cell anemia.

This disease is caused by an inherited defect in the hemoglobin, or oxygen-carrying component of red blood cells. The result is prolonged illness and early death for thousands of affected Americans.

In the human embryo and in early infancy, most of the individual's red blood cells contain a form of hemoglobin known as fetal hemoglobin.

After six to nine months of life the fetal hemoglobin gives way almost entirely to a slightly different form, called adult hemoglobin. Following birth the genes which operate to synthesize fetal hemoglobin become dominant.

In sickle cell anemia, the basic error is in the adult hemoglobin molecule, not in the fetal form. Thus, the disease is not expressed until about one year of age when fetal hemoglobin which adequately serves the body is diminished.

However, the genes for fetal hemoglobin, even though inactive, remain in the body's cells.

Scientists therefore reason that if these genes can be stimulated to "turn on" there is good chance that enough fetal hemoglobin would be produced in red cells instead of adult hemoglobin, to lessen considerably, and possibly eliminate, the symptoms of disease.

Dr. Stetten explained that the knowledge required to modify genetic processes in order to control genetic diseases will not come from any single or sudden breakthrough.

Instead, this understanding will come from the contributions of many scientists doing research in basic and human genetics, he said.

System of Instant Data On Psychotropic Drugs Explained at Meeting

A comprehensive computer-centered system for instant information input and retrieval on new and useful drugs which affect the mind was demonstrated at a recent meeting in Yugoslavia by the Division of Computer Research and Technology.

At the request of the National Institute of Mental Health, the demonstration took place in Plitvice during the first meeting, June 21-25, of the International Reference Center for Information on Psychotropic Drugs.

This organization, operated and developed for the World Health Organization by the NIMH, now has 20 cooperating centers throughout the world that serve as an information network.

Dr. Leeds Presides

Dr. Alice Leeds, NIMH, is chief of the Center. She opened the meetings' scientific sessions and presided at an evaluation and planning discussion at their conclusion.

Dr. Jerome Levine, chief of the NIMH Psychopharmacology Research Branch, reported on a "Research Plan for An Information System for Clinical Psychotropic Drug Studies," and participated in other presentations.

On the last day of the meeting, Dr. Stephen R. Heller and Richard J. Feldmann, both in DCRT, discussed recent contributions of computer technology and its potential for advancing the effectiveness of the Psychotropic Drug Information Network.

NLM Displays 'Medicine Of the American Indian'

A wide range of books and artifacts illustrating the "Medicine of the American Indian" will be on display in the lobby of the National Library of Medicine through Sept. 30.

Artifacts include masks, drums, and rattles from various tribes.

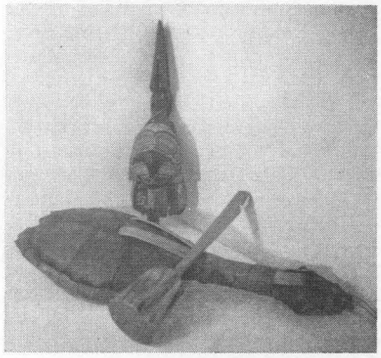
Sacred masks were worn by the Iroquois Nation's "False Face Healing Society." They were intended to represent goblins or spirits able to expel diseases.

Drums and rattles were used to drive the demon out of the patients. The noise was accompanied by howling and violent gestures.

Objects used by many North and South American Indians including the Mohave, Sioux, Peruvian, Meominee, and Tlingit are on display.

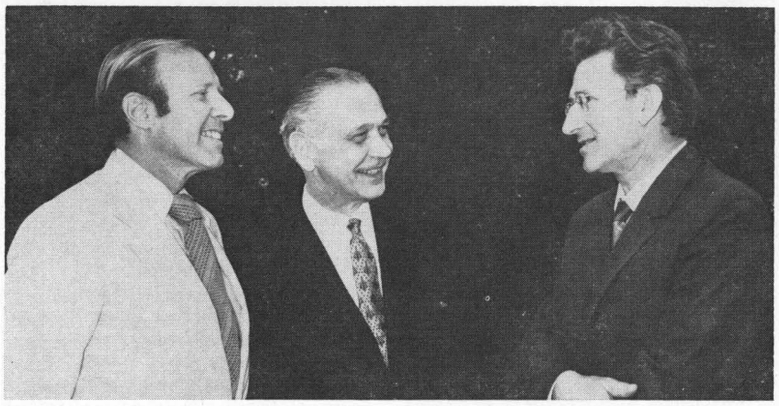
The NLM's hours are 8:30 a.m. to 5 p.m., Monday through Saturday.

A medicine drum used by the Plains Indians drove away evil demons.



Rattles used by American Indians during ceremonies include the Tlingit (Alaska) rattle (top), Iroquois turtle shell rattle (center), and an Iroquois buffalo horn rattle (bottom).

Dr. Novokhatsky of Soviet Eye Institute Discusses the Three Phases of Research



Just before his lecture on his interesting—and controversial—theories, Dr. Novokhatsky meets outside of Stone House with Dr. Carl Kupfer, NEI Director (l), and Dr. Milo D. Leavitt, Jr., FIC Director (c).

According to Dr. Alexander Novokhatsky, a scientist from the Soviet Union who visited NIH recently, every important scientific discovery passes through three stages of acceptance.

"In the first stage, everyone says, 'That is crazy, idiotic.' In the second phase, they say, 'Maybe there is something to it after all.' And, finally, in a few years everyone shrugs and says, 'So what? We've known that all the time.'"

Dr. Novokhatsky smiled as he explained that he hoped his research would soon pass into the third phase, referring to his controversial theories on the existence of "centrifugal and encephalo-retinal nerve fibers in mammals."

The existence of such fibers would mean that there is a feedback system from the brain to the retina. Whether there is such a system has been the subject of debate among neurophysiologists, neuroanatomists, and neuroophthalmologists.

Dr. Novokhatsky, who is chief of the Diagnostic Laboratory of the Filatov Research Institute of Eye Diseases and Tissue Therapy in Odessa, the largest ophthalmological institution in the Soviet Union, discussed his research at a seminar in Stone House.

The meeting was sponsored by the National Eye Institute in cooperation with the Fogarty International Center.

Dr. Novokhatsky has devoted the past 20 years to clinical research in diseases of the retina and optic nerve.

In addition to his investigations of centrifugal and encephalo-retinal fibers, he has been interested in the differential diagnosis of hereditary tapetoretinal degenerations and the classification of inflammatory diseases and atrophy in the optic tract.

An invitation to visit the United States was given to Dr. Novokhatsky by Sylvia N. Rachlin, executive vice president and founder of the Myopia International Research Foundation, a U.S. voluntary health agency.

Dr. Reitman Appointed Executive Secretary Of Grants Associates

Dr. Morton Reitman has been named executive secretary of the Grants Associates Program.

Dr. Reitman will assist in supervising the training of scientists for staff positions in grants administration.

Dr. Reitman

He has been with the U.S. Army Biological Defense Research Center, Fort Detrick, Md. since 1948, conducting studies in the fields of microbiolgy, virology, and immunology.

Dr. Reitman graduated from Transylvania College in 1941 with a B.A. degree in Biology and Chemistry. In 1950, he received his M.S. in Bacteriology from the University of Kentucky and his Ph.D. in Microbiology from George Washington University in 1955.

He has published 32 research papers and is listed in the *American Men of Science* and *Who's Who in the East.*

FAES Moves to Bldg. 10; Is Open 9 a.m. to 4 p.m.

The Foundation for Advanced Education in the Sciences, Inc., has moved. Their new offices are now in Bldg. 10, Room B1-L-101; hours are 9 a.m. to 4 p.m.

The schedule of classes and the Graduate Program catalog will be ready by the middle of July.

For further information call Ext. 66371.

LEUKEMIC MONKEYS

(Continued from Page 1)

malignant lymphoma, and four also developed lymphocytic leukemia. This is the first time lymphocytic leukemia has been induced in owl monkeys by this virus in association with malignant lymphoma, a cancer of the lymphatic system.

Only half the animals in this study developed malignant lymphoma, although in previous studies, all monkeys receiving the virus developed the disease.

The researchers believe the most likely explanation for this lower incidence is that natural genetic variability, age, indigenous viruses, and other factors might influence the ability of the virus to cause disease.

In addition, Dr. Melendez said variation in the virulence of the virus must be considered, although there is no evidence of it so far in cultures.

Related research is being carried out by Dr. Dharam V. Ablashi of the National Cancer Institute. He is using *Herpesvirus saimiri* furnished by the New England Regional Primate Research Center team.

Earlier this year in Chicago, Dr. Ablashi and his associates reported they had shown for the first time that virus can grow within, and then destroy, human cells in cultures.

Reports Antibody Tests

They also reported the results of complement fixation tests for antibodies against the virus in six species of monkeys.

Eighty percent of the squirrel monkeys they tested had antibodies to the virus, but no antibodies were detected in any of the other species.

The high level of antibodies in squirrel monkeys, the natural host for *Herpesvirus saimiri*, parallels a situation in Africa, where Burkitt's lymphoma and high levels of antibodies to a herpes-type virus (Epstein-Barr virus) are common in humans, according to Dr. Ablashi.

Herman E. Downey Dies; Long-Time NIH Friend

Herman E. Downey, 59, a longtime Senate Appropriations Committee aide and friend of NIH, died Saturday, June 26. Mr. Downey retired last April 30 after serving some 20 years on the staff of this committee.

For many years his assignment as clerk to the Labor-HEW Appropriations Subcommittee, chaired by former Sen. Lister Hill, brought him in close association with NIH.

Administrators here called Mr. Downey a "firm supporter" of NIH programs and aims.

Burch Gets PHS Medal For Meritorious Service

Dr. Thomas A. Burch, who recently retired as chief of the National Institute of Arthritis and Metabolic Diseases' Southwestern Field Studies Section, was awarded the Meritorious Service Medal of the PHS Commissioned Corps.

He received a medal and citation for his epidemiological research among Indians and other groups. He was also cited for his services when he headed this NIAMD section.

Dr. Burch, who now lives in Hawaii, flew in with Mrs. Burch for the ceremony held at the PHS Indian Hospital at Sacaton, Ariz. Their daughter, Jantha, and son, John, also attended.

Johnson, Whedon Present Award

Asst. Surg. Gen. Emery A. Johnson, chief, Indian Health Service, and Dr. G. Donald Whedon, NIAMD Director, presented the award to Dr. Burch.

Others who attended the ceremony were: Dr. Ernest C. Siegfried, Director, Phoenix Medical Center; Alexander Lewis, Governor, Gila River Indian Community at Sacaton, and James Cox, Service Unit Director, Sacaton Indian Hospital.

Also, members of the Indian Tribal Council and the Indian community and other representatives from Indian Health Services. W. G. Baylis, NIAMD executive officer, introduced a number of the guests

In presenting the award, Dr. Whedon lauded the former NIAMD chief, and said "Dr. Burch has distinguished himself as an international authority in epidemiology.

"He . . . demonstrated not only his dedication to disease-oriented research but also his effectiveness in coordinating vigorous research efforts."

In accepting the award, Dr. Burch expressed his appreciation for the cooperation the research group received from members of the Gila River Community.

Dr. Burch is now chief of the Office of Research and Statistics in the Hawaii State Health Department.

After the "pinning," Dr. Burch (l) greeted members of the Indian community. Dr. Johnson (c) and Dr. Whedon also took part in the ceremony.