

the NIH Record

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

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NATIONAL INSTITUTES OF HEALTH

Dr. Bruce, Dr. Whiteside Named Division Directors Of Manpower Bureau

Two Directors of Divisions in the Bureau of Health Professions Education and Manpower Training were recently appointed.

They are Dr. Harry W. Bruce, Jr., Director of the Division of Educational Research Facilities and Dr. Daniel Whiteside, Director of the Division of Health Manpower



Dr. Bruce



Dr. Whiteside

Educational Services. Both are career commissioned officers of the Public Health Service.

The appointments were announced by Dr. Robert Q. Marston, NIH Director.

Dr. Bruce was formerly assistant director for Manpower and Edu-

(See MANPOWER, Page 8)

Cancer Institute Scientists Produce First Mouse Cancer Virus RNA Micrographs

The first electron micrographs of ribonucleic acid from a virus which produces cancers in mice have been produced by scientists at the National Cancer Institute.

This further clarification of virus structure makes an important contribution to the knowledge of those viruses which cause cancer in animals and those which are suspected as agents in human cancer.

Drs. Tsuyoshi Kakefuda, Cancer Etiology, and John P. Bader, Cancer Therapy, extracted the ribonucleic acid (RNA) from Rauscher mouse leukemia virus and highlighted it with platinum-carbon vapor so that it could be seen in an electron microscope.

Seen as Single Filaments

The RNA molecules were seen as single continuous filaments from 6 to 14 microns long. A micron is equal to one millionth of a meter. This structure is not observed in nucleic acids from other kinds of viruses.

Curly areas were seen in many of the shorter filaments. These and the twisting of other strands indicated that the RNA had been unwound from a natural coiled state

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Dr. Albert Hastings Given 2-Volume Oral History of Self at Farewell Meeting

Dr. Albert Baird Hastings, a member of the Training Review Committee of the National Institute of Child Health and Human Development, was presented with a 2-volume, 706-page oral history of himself on April 21. Dr. Hastings is with the Department of Neurosciences, University of California in San Diego.

The presentation was made by Dr. Peter D. Olch, NLM's History of Medicine Division, at a committee meeting at NIH; it was Dr.

Hastings' last meeting with them.

With Dr. Olch, Dr. Hastings took part in a 39-hour series of tape recorded interviews from December 1967 to May 1968.

The interviews will provide an autobiographical memoir which is to be placed in the Oral History Collection of the NLM. This will supplement a vast collection of Dr. Hastings' personal papers which will also be deposited with NLM.

Since its beginning in 1966, the Library's Oral History Program, under the direction of Dr. Olch, has accumulated over 175 hours of oral history materials.

The majority of these audio tapes are interviews with individuals who have made significant contributions to the development

(See DR. HASTINGS, Page 7)

'Lucky Joe,' PHS Cancer Film, Shown Tomorrow in Building 1

"Lucky Joe," a film that shows "safeguarding oneself against cancer is not a game of chance," will be presented at Wilson Hall, Bldg. 1, tomorrow (Wednesday), April 30, at 11 a.m.

It was produced by the Cancer Control Program of PHS, and stars Rod Serling.

Dr. William L. Ross is chief of the program.

structure makes an important con-

Dr. Vincent T. Oliverio Named Chief of NCI Lab

The appointment of Dr. Vincent T. Oliverio as chief of the Laboratory of Chemical Pharmacology, National Cancer Institute, has been announced by Dr. Kenneth M. Endicott, NCI Director.

The laboratory is under the supervision of Dr. David P. Rall, associate scientific director for Experimental Therapeutics, who was also chief of the laboratory until Dr. Oliverio's appointment.

Dr. Oliverio joined NCI in 1959 as a senior investigator in the Laboratory of Chemical Pharmacology and was appointed head of the Biochemical Pharmacology Section in 1966.

Continues Research

He is continuing his classic work with folic acid antagonists, and also has an important role in the Institute's national chemotherapy program on the pharmacology of anticancer drugs.

Folic acid is a widely distributed vitamin which is an essential growth factor for many animals. Dr. Oliverio's first major contribution was the development of a method to separate and purify an-

(See DR. OLIVERIO, Page 8)

4 NIH Scientists Named To Board of Journal

Three National Cancer Institute scientists and a scientist at the National Institute of Environmental Health Sciences have been named to the Editorial Board of a new international journal *Chemico-Biological Interactions*. They are Drs. Harry V. Gelboin, Abraham Goldin, and John H. Weisburger, NCI, and Dr. Hans L. Falk, NIEHS.

The journal will be published this fall by Elsevier Publishing Co. under the editorship of Dr. G. P. Warwick of the Chester Beatty Research Institute, London.

NIH Savings Bond Drive To Begin May 1; DHEW Goal Is 80 Percent

NIH will officially open its annual U.S. Savings Bond campaign on Thursday, May 1.

Nearly 600 canvassers will carry the bond message to fellow employees not now enrolled under the payroll savings plan. The DHEW goal is 80 percent. NIH now has just over 40 percent participation.

Weekly prize drawings are planned for the 7-week campaign.

They will be supplied through R&W discount merchants. Those eligible will include current bond holders and new participants.

A final grand drawing is set for the campaign's closing day. First



NIH Bond Drive chairman, Dr. Dorland J. Davis (l), and working chairman, Charles Meyers, go over plans for the annual campaign which opens Thursday.

week's prize is dinner for two at the Shangri-La Restaurant.

Those now enrolled in the program will be asked to wear a "bonded" badge which denotes that they are participating.

The "bonded" badges and prize drawing cards will be distributed this week.

Rally Held Last Week

Bulletin boards will carry progress reports, the prize of the week, and current prize winners.

The drive was given an informal pre-campaign send-off last Friday at the Clinical Center auditorium.

NIH Bond Drive Chairman, Dr. Dorland J. Davis, Director of the National Institute of Allergy and Infectious Diseases, and NIH Director Dr. Robert Q. Marston, spoke briefly.

(See BOND DRIVE, Page 6)

the NIH Record

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Federal Program Offers College Level Courses After Working Hours

More than thirty college level courses will be offered after working hours this summer through the Federal After-Hours Education Program.

This program—coordinated by the Civil Service Commission, Bureau of Training, in cooperation with George Washington University—offers undergraduate or graduate courses leading to a B.S. or M.S. degree.

Those seeking self-improvement courses to expand their career may enroll as non-degree students.

Most of the classes, which begin the week of June 2, are held in downtown Federal buildings; however, a few courses are offered at the National Naval Medical Center.

Queries Answered

For further information on the downtown courses inquiries may be directed to Robert W. Stewart, the G.W.U. field representative, telephone 676-7018. Ed Wright, also a G.W.U. field representative, telephone 676-7024, will answer queries on the courses at NMC.

Registration for the 15-week session will be held on May 27 in Conference Room D, Department of Commerce lobby, 14th Street and Constitution Avenue, N.W. from 10 a.m. to 3:30 p.m.

Registration for the 7½-week session will be held on July 22 at the same location and time.

The tuition rate is \$47 per semester hour.

The NIH Office of Assistant Director for Training and Development, Office of Personnel Management, Bldg. 31, Rm. B2B-07, has a list of the courses offered.

NIH Television, Radio Program Schedule

Television

NIH REPORTS

WRC, Channel 4
Sundays—4:55 p.m.

May 4 and 11

Dr. Marilyn K. Hutchison, assistant director, Division of Physician Manpower, BEMT

Subject: Physician Manpower Shortage

Radio

DISCUSSION: NIH

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

May 2

Dr. Seymour J. Kreshover, Director, NIDR
Subject: Future of Dental Research

May 9

Jesse Scott, director, Division of Nursing, BEMT
Subject: The Doctor and the Nurse: The Shifting Line

Both interviews take place during intermission, Library of Congress Chamber Music Series.

Peter J. Romola Dies; Was DRS Electrician

Peter J. Romola, a DRS electrician, died April 17 at the Clinical Center following a heart attack.

Mr. Romola joined the General Services Administration in 1945, and came to NIH in 1956. He was a veteran of World War II.

He leaves a wife, Bernice and two children, David and Linda. Their home is in Sterling, Va.

At 17 Diane Waters Jumps so High She Competes in Foreign, Domestic Meets

Diane Waters, 17-year-old daughter of Lorenzo E. Waters, a technician with the Macromolecular Biology Section, National Cancer Institute, has returned from an invitational track meet in the Soviet Union and West Germany. She competed as a high jumper.

This was her first trip out of the country, but she has competed extensively throughout the United States.

Diane has her sights set toward



In W. Germany Diane placed second with a 5'7" jump. In U. S. she doesn't compete with boys—but she does coach them.

the Olympic Games at Munich, Germany, in 1972.

She is rated first in the country in the girls' high jumping division (18 years and under) and third in the women's division.

She also holds the South Atlantic Women's High Jumping crown and recently broke the women's State high jumping record at Albuquerque, New Mexico, with a 5'6" leap. She was a national champion at age 13.

Diane says she has to be able to clear the 6-foot mark before the Olympic tryouts in order to make it to Munich. A jump of 5'7" won her the second place prize in the recent West German contest.

The 5'9" student will be working toward the 6-foot jump at



Four NIH members studying endocrinological and metabolic disorders were speakers in a Clinical Nursing Conference. They are: (l. to r.) Dr. Charles Pak, NHI, and CC nurses Eloise Mullen, Hazel Carr, and Stanley Brassington.

Tennessee Agricultural and Industrial State University in Nashville, where she has an athletic scholarship next year.

While there she will be studying medical technology as well as practicing jumping, and upon graduation will give up sports for research, hopefully at NIH.

Diane isn't allowed to compete in meets with her male counterparts at the High Point High School. However, the boys do ask her to coach them.

Employee Health to Show Cancer Cell Film in May

"The Embattled Cell," a film which shows the actual behavior of normal and cancerous living cells within the human lung, will be presented by the Employee Health Service.

The 20-minute color film, recently shown on television, gives an insight into the nature of cancer. Employees may select literature on that subject displayed by the Research Information Branch of the National Cancer Institute.

The film will be shown at the following locations: CC auditorium, Tuesday, May 13 at 11:30 a.m. and 12:15 p.m.; Westwood Bldg., Conference Room A, Wednesday, May 14 at 12 noon and 1 p.m., and the Barlow Bldg., Room 13C-05, Thursday, May 15, 12 noon and 1 p.m.

NIH Annual Art Exhibit In CC Lobby to Include Collage and Graphics

The 11th Annual NIH Art Exhibit sponsored by R&W will be held from Monday, May 19 through Friday, June 13, in the Clinical Center lobby. An informal ceremony will take place on the opening day.

R&W members and their families (children over 16 years of age) may submit art work on Friday, May 16 from 4 to 6:30 p.m., in the CC auditorium.

The judges for the exhibit will be Ben Forgey, assistant art critic and editor of the Sunday Star Magazine; Andrew Hudson, painter, art critic and lecturer at the Corcoran Gallery of Art, and Blaine Larson, painter, and instructor in drawing and art appreciation, Corcoran School of Art.

Prizes will be awarded for painting and collage, sculpture, graphics, water color and pastels, and drawing.

Students Advocate Need For Reform at Meeting On Medical Education

Medical students from the U.S. and foreign countries advocated changes in medical education at a Colloquium sponsored by the Fogarty International Center's Conference and Seminar Program.

The meeting, chaired by Dr. Julius R. Krevans, Johns Hopkins University, was cosponsored by the Board on Medicine of the National Academy of Sciences. It was held at NIH on April 9 to 11.

Others Participate

Medical educators and biomedical investigators also took part in the Colloquium on Reform of Medical Education.

Geoffrey Lloyd, president of the British Medical Students Association, was spokesman for the students attending the meeting. The students were from the U.S., United Kingdom, Peru, Canada, and France.

Mr. Lloyd advocated such reforms as additional free time to pursue problems which interest the individual student; increased relevance in basic science studies and greater flexibility in curriculum; a change in methods of assessing achievement with less emphasis on final examination grades, and lower entrance requirements for admission to medical schools.

Pressures Explained

Dr. John R. Ellis, London Hospital, London, England, said in a summary statement the pressures to change medical curriculum were due to the highly developed social consciences of medical students. The students wished for an active role in community involvement; curriculum changes would help to better equip them for this role.

Mass communications media have made social injustice more apparent, Dr. Ellis stated. This had led to dissatisfaction with society, medical care—especially to underprivileged people, and medical education.

Dr. Ellis indicated that medical students in advanced countries today have not come of age in a stable society with fixed guidelines. They are accustomed to changes and are willing to press for changes of their own. He thought these pressures should be understood in the light of today's environment.

Etchings, Serigraphs on Display In Bldg. 31 Lobby Until May 9

Etchings and serigraphs by Phyllis Hoffman will be on display in the lobby of Building 31 until May 9.

The one-woman art show is sponsored by the R&W.

Mrs. Hoffman is the wife of Dr. Harold Hoffman, NCI.

NICHD's Betty Barton Safaris to Africa And 'Shoots' Wild Game With Camera



Miss Barton took this "shot" of another shutterbug "shooting" leopards.

By Lloyd Blevins

It's a rare occasion to be able to participate in an African "safari"—especially for a lady.

But recently Betty Barton, chief of the Scientific Conference Branch, National Institute of Child Health and Human Development, and Council Secretary—probably the last person you would expect—journeyed through the wild game reserves of Kenya.

An official safari is usually con-



Ten minutes ago this scene of lions devouring their kill was much less peaceful.

sidered a 30-day journey in search of one particular animal. Miss Barton's safari to Kenya and Tanzania in East Africa was for 3 weeks.

While there, she shot about 360 animals—all through the lens of a 35 millimeter camera.

On the Serengeti plain, she lived in an adobe hut, but in the wild game preserves, her home was a tent, a camping luxury in that part of the world.

Uninvited guests in the middle of the night can be a problem in the jungle.

One night, while all were asleep, an elephant jabbed a tusk through the side of one of the tents. Quite a commotion ensued, augmented by the clanging of tin pans to scare away the mighty pachyderm.

During visits to the wild game

reserves, Miss Barton, an enthusiastic bird watcher, observed many species.

At one point she stood in awe as hundreds of thousands of flamingos rose up in a kaleidoscope explosion of pink against the blue of the sky.

She also observed the colorful sun birds, hornbills, weaver birds, and crested cranes, and she saw the cattle egrets riding the backs of the rhinoceroses.

Wildlife Abundant

Each day, Miss Barton's camera focused on the wildlife; there were giraffes, leopards, hyenas, wildebeests, cape buffalo, hippopotamuses, elephants, baboons, monkeys, lions, and zebras.

Many of the larger animals were content to remain when the safari vehicles approached. Fumes from vehicles masked human scent, and this enabled pictures to be taken at a few yards distance.

At times the animals thought the vehicles were intruders. Miss Barton's car was once charged by an irate rhinoceros, but her chauffeur through crafty maneuvering, blinking of lights, and flashing direction signals, confused the beast and saved the party from the raging rhino.

Elephant Approaches Car

Near the snow-capped mountain of Kilimanjaro, which towers over 19,000 feet, a large bull elephant walked out of the bush within 20 feet of the car.

The animal was huge and bore tusks measuring nearly 7 feet. His ears flapped like sails.

Miss Barton also visited Ngorongoro Crater in Tanzania which

(See SAFARI, Page 7)

John A. Beglin Retires, Helped Start Automated Payroll System for NIH

John A. Beglin, a supervisory computer systems analyst with the Division of Computer Research and Technology, retired recently. He had been with NIH for 19 years.

Mr. Beglin came here from the PHS Hospital in Baltimore, where he had been fiscal and budget officer. His first job at NIH was chief accountant for the Financial Management Branch.

Later he was made supervisory accountant in the Division of Business Operations, and then became a digital computer systems analyst in that Division.

Joined NIH in '58

In 1958 he joined the Management Policy Branch in the Office of the Director, NIH.

Mr. Beglin was instrumental in designing the automated payroll system for NIH.

He served on the steering committee which recommended the direction NIH's data processing functions should take, and prepared the groundwork for the establishment of DCRT.

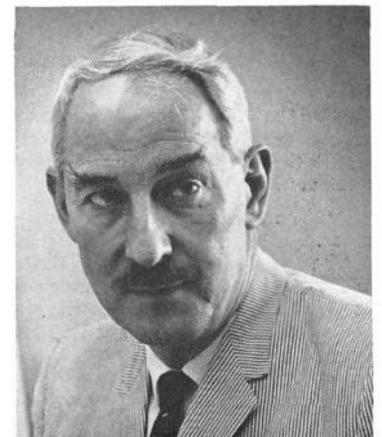
Mr. Beglin was also a member of the NIH-National Bureau of Standards team charged with determining the requirements for a new NIH computer system.

Mr. Beglin came to DCRT as special assistant to the division chief for ADP (automatic data processing) policy.

He reviewed and evaluated NIH plans and proposals for computation and data processing applications, equipment and services.

For several years he was treasurer of the NIH Federal Credit Union.

Mr. Beglin now hopes to do some cross-country traveling in his camp trailer.



Dr. John C. Eberhart, associate director, Mental Health Research, NIMH, was presented the DHEW Distinguished Service Award by Secretary Robert H. Finch on April 11. Dr. Eberhart was cited for "his role in advancing research of high quality in the mental health disciplines."

New System Provides Easy, Rapid Preparation Of Biological Samples

A new system for rapid and convenient preparation of biological samples for liquid scintillation counting has been developed by Dr. J. I. Peterson, staff chemist, Biomedical Engineering and Instrumentation Branch, Division of Research Services.

The system is based on a combustion apparatus which allows preparation of a much larger number of samples for radiotracer measurement than was formerly practical.

Liquid scintillation counting is the most common method for doing radiotracer analyses in biological experiments. Combustion is often an ideal method of preparing samples for liquid scintillation.

In the past it has been avoided because the technique was tedious and time consuming.

The new apparatus increases the number of samples a technician can prepare for counting by as much as five times.

The system accepts a variety of sample materials, and provides a method for evaporating tissue hom-



While visiting NIH to take part in an international medical education conference, Madame Claudine Escoffier-Lambiotte, medical editor of the Paris newspaper *L'Monde*, met other French nationals who work at NIH. At a tea given by the Fogarty International Center in her honor, she talks with Dr. Milo D. Leavitt, Jr., FIC Director (center) and Dr. Charles Hutterer, chief of International Liaison Activities, FIC.

Monitoring System Developed for Care Of Coronary Patients in Small Hospitals

Scientists at the University of North Carolina have developed a computerized monitoring system designed to facilitate the care of coronary patients in small hospitals. They were assisted by a grant from the National Institute of General Medical Sciences.

The unit, built under the direction of Dr. Ralph W. Stacy, professor of Bioengineering and Biomathematics, and Dr. Richard M. Peters, Department of Surgery, is undergoing a trial at North Carolina Memorial Hospital in Chapel Hill.

The system consists of two small computers plus monitoring technicians.

It works by obtaining electrocardiogram signals and other electronic data continuously from the patient through electrodes attached to his body.

These are fed into and stored by a small computer. Periodically, every few minutes or on a continuing basis if necessary, the monitoring technician "recalls" the stored electrocardiogram information which in turn is displayed on

tested and in use since 1968 in the National Cancer Institute's Laboratory of Chemical Pharmacology.

Another new unit was delivered to the National Institute of Child Health and Human Development in the beginning of April. Two additional units are being built for NIH investigators.

A complete description of the system has been submitted for publication. It was presented for the first time at the Symposium on "The Current Status of Liquid Scintillation Counting" at the Massachusetts Institute of Technology on April 1.

Scientists interested in the new apparatus may obtain further information from Dr. Peterson, Ext. 65771.

an electronic screen in the form of ECG "waves."

The technician is trained to select various "peaks or dips" that are of medical significance. This he does by tracing waves or portions of waves seen on the view scope with a light pen.

In this way, insignificant data is eliminated while that which is most meaningful is automatically transmitted to and stored by another slightly larger computer.

As requested by attending physicians, the second computer prints out an up-to-date report on the condition of each patient under surveillance.

Technician Monitors Patients

Through central console facilities, the new system makes it possible for a single technician to monitor up to six or more patients simultaneously.

If an emergency were developing—signaled, say, by the appearance of a pre-ventricular contraction or "PVC" wave which reliably indicates forthcoming fibrillation in a coronary patient—it would be spotted by the monitor and medical teams summoned quickly.

"Cost and efficiency are both involved here," Dr. Stacy said. "A totally automated heart monitoring system requiring much larger computers may cost more than \$1 million.

"Our system, using small computers and a technician, may cost under \$100,000, a far more realistic figure for the small hospital," he explained.

Limited Motor Activity May Cause Weight Loss Associated With Cancer

A new understanding of the weight loss associated with cancer growth in patients may result from recent research on cancer in rats, according to a report presented at the 53rd annual meeting of the Federation of American Societies for Experimental Biology.

Dr. S. D. Morrison, Laboratory of Physiology of the National Cancer Institute, reported that cancer-bearing rats reduce their food intake as part of a general restriction of their physical activities.

Activity Level Explained

Normal rats have been found to spend about 25 percent of their total daily energy on spontaneous motor activity, such as exploring, grooming, feeding, and drinking. This activity level is not altered by food deprivation or food availability.

In the present study, five rats were injected subcutaneously each with one-milligram fragments of a type of cancer known as Walker 256 carcinosarcoma. With the growth of the implanted cancer beyond about 10 grams (3 percent of body weight), the percent of energy the rats spent in motor activity began to fall progressively.

When the implanted cancer attained 15-30 percent of total body weight, only 15 percent of the rats' daily expenditure of energy was spent on motor activities.

A decrease in food intake did not occur until several days after the decrease in motor activity. When the rats' activity level fell below the normal lower limit of 20 percent, daily food intake became significantly correlated with the activity level.

Thus the decline in food intake appears to be a direct consequence of the depression of the entire motor activity, including feeding, caused by cancer's growth.

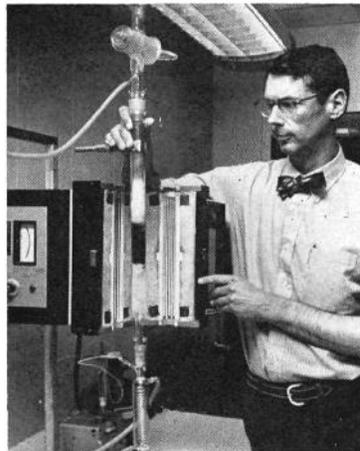
Sodium Added to Food

Both the food intake and level of motor activity were temporarily and partially restored to normal by the addition of sodium to the food to replace the amount depleted by tumor growth.

Lowering the environmental temperature to increase the overall energy expenditure of the rats had the same effect.

Surgical removal of the tumor also restored food intake and motor activity levels to normal. Twenty-four hours after removal of a 116-gram tumor from one of the rats, the motor activity level returned to 23.3 percent, as compared to 15.7 percent before the operation.

The rats' food intake, which had fallen to approximately half-normal, returned to normal by the third day after the operation.



Dr. Peterson displays the interior of the system which rapidly prepares samples for liquid scintillation counting at the rate of one sample every 3 minutes.

ogenate in gelatin or plastic capsules.

The operator drops a capsule into the top of the apparatus and collects the combustion products in scintillation solvent at the bottom, ready for counting, at a rate of one sample every 3 minutes.

The system accepts samples of at least 500 milligrams, limited by solvent capacity for water or carbon dioxide.

The apparatus provides catalytic combustion in a flowing stream of oxygen. Collection of the water and carbon dioxide into scintillation solvent is done simultaneously with combustion.

The first apparatus has been

Dr. O'Brien, Exec. Secy. At DRG, Retires April. 1 **DPM Tackles Problems of MD Shortage, Medical Education, Health Care Services**

Dr. Thomas O'Brien, executive secretary of the Neurology B Study Section in the Division of Research Grants, retired on April 1 after 20 years at NIH.

Commissioned to the PHS Corps in 1949, Dr. O'Brien was assigned as an assistant to the chief, National Heart Institute.

In 1952 he joined DRG as executive secretary of the Virology and Rickettsiology and the Microbiology Study Sections. A year later he took over the Neurology and Sensory Diseases Study Section. In 1962, after holding several other posts at DRG, he assumed his present position.

Worked With Dr. White

Dr. O'Brien was introduced to NIH by Dr. Paul Dudley White under whom he worked in the Cardiac Laboratory at Massachusetts General Hospital from 1946 to 1949.

A 2-year tour as Captain in the Army Medical Corps and 7 years as an instructor in pharmacology at Tufts University preceded his work with Dr. White.

Dr. O'Brien earned his M.D. degree from Tufts University Medical School.

A gift from his friends and colleagues at DRG was presented at a farewell luncheon. He was also honored by 35 study section members during the January round of meetings at a special dinner party in Philadelphia.

The members expressed their esteem for Dr. O'Brien by presenting him with a bound volume of 80 letters from those study section members with whom he had been associated during his years with the NIH, and a silver tray engraved with their message of appreciation.

They also presented him with airline tickets to Europe and a book of rail passes to travel in various European countries.

USIA Selects NHI Film For Internat'l Festival

An 18-minute National Heart Institute color film was one of the entries selected for showing at the Festival International du Cinema Medical held recently in Nantes, France.

The movie, "Implantation of a Radio Frequency Corotid Sinus Nerve Stimulator for Relief of Angina Pectoris," had been previously selected to represent this country by the U.S. Information Agency from numerous applicants.

The film is based on the promising clinical results obtained by NHI scientists on the application of a device for angina pain.

Its use has allowed a number of patients to resume a relatively normal life after years of enforced inactivity.

By Judy Roberts

NIH Information Trainee

America's remarkable population growth and increasing demands for medical care for the aged, the dependent, and the deprived serve to highlight the acute shortage of physicians in this country.

Current estimates indicate a need for 50,000 additional physicians to provide adequate health care for the Nation's people.

To meet these problems, a Federal focus on physician manpower activities was set up in the Division of Physician Manpower, under direction of Dr. Frank W. McKee.

The Division is one of seven components in the Bureau of Health Professions Education and Manpower Training.

Although a relatively young organization (the division was created Jan. 1, 1967), DPM has several vigorous programs to allevi-



Dr. Margaret L. Brown, one of the first women physicians to enroll in a program for retraining inactive physicians, talks with program director, Dr. Arthur Seltzer at Presbyterian Medical Center.

ate physician shortages and improve the quality of health care.

Tackling these problems not only calls for increasing the number of physicians, but also for finding ways for the physician to better utilize his time and increase his awareness of medical research advances.

The Physician Education Branch, headed by Dr. Donald M. Pitcairn, works with schools of medicine and osteopathy.

This branch has three objectives: increase the number of physicians coming out of medical schools, improve the quality of medical education, and focus on all activities relating to it.

From its inception, a primary concern of PEB has been medical schools with serious financial or accreditation needs. Basic and special improvement grants have helped those schools meet the problems.

Most medical schools have maintained rigid curricula which medical students have had to follow.

Growing student and faculty unrest plus innovative ideas from administrators call for reform in the medical education system.

Through its grant support programs, the branch facilitates the development of new programs that

help to break the rigidity of the past.

By contract, PEB supports proposals for research in medical education, application of new teaching techniques and means for increasing student enrollment and thus the number of physicians.

Studies have been made of retraining programs for inactive physicians, greater use of community hospitals as teaching resources, and a semi-annual admission system for increasing the number of graduates.

Although very important, medical schools cannot provide all the answers to physician manpower problems.

"From the time planning for a new medical school begins, up to 10 years can pass before the school receives its first class and another 5 to 7 years after that before the first graduates enter practice," Dr. James W. Long, chief of the Professional Activities Branch, pointed out.

"If the quality and quantity of health care are going to be improved now, better ways to use the already-practicing physician's time need to be found," he added.

Health care often is trapped by the old way of doing things. Tra-

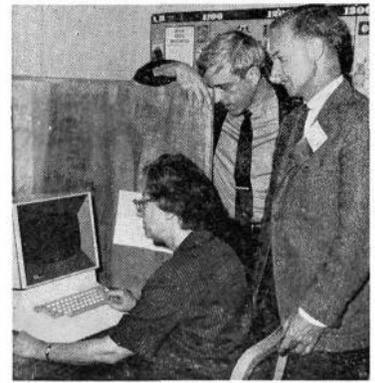


A chart in Dr. Daugherty's office, called "Year Planner," illustrates the organization of his medical practice for the entire year. He points out to his assistant, Mildred Larsen, some of the fine details of the plan.

ditionally, only doctors have performed certain tasks, yet some tasks may very well be carried out by trained intermediate workers and with the use of automated record-keeping and laboratory equipment.

Some doctors already have found more effective methods of practice, such as Dr. Robert I. Daugherty of Lebanon, Ore.

In order to satisfactorily test the complaints of half his patients



Viewing the first computerized program on heart functions at Oklahoma U. are (l to r) Dr. Marilyn K. Hutchison, assistant director of DPM; Dr. William Harless, and Dr. Frank W. McKee, DPM Director.

Dr. Daugherty received special training in psychiatry and also reorganized his practice. Now he uses group sessions, films, and tapes to counsel patients with many types of problems.

Another major interest of the Division is the continuing education of physicians.

"Once doctors leave their formal training, there is no organized plan for keeping them abreast of advances in research and technology that are applicable to patient care," Dr. Alan S. Kaplan, acting chief of the Continuing Education Branch, said.

To develop this plan, branch contract activities are aimed at the community hospital—the place of the greatest physician activity.

Techniques Demonstrated

In one project, physicians from teaching centers go out and spend 3 days in a community hospital. While there, they take part in demonstrating the latest techniques in medical care.

In another study, 40 physicians from the Jacksonville, Fla., area are going to spend a week in special training at the University of Florida at Gainesville.

After that training, Norman Tucker, education expert for the Continuing Education Branch, will conduct a 2-day teaching techniques seminar for the physicians. Then some will be appointed to the university staff and return to Jacksonville to provide continuing education to other physicians.

An outgrowth of one study led to a cooperative plan with the National Library of Medicine.

Libraries with basic medical literature were established in several community hospitals enabling doctors to keep up with medical research reported in journals.

To further assist medical schools and physicians, the Physician Resources Branch, headed by L. C. R. Smith, collects information and data on the nation's medical and osteopathic schools, students, graduates and physicians.

Changes in Heart Wall May Indicate Rejection Of Transplanted Heart

Changes in the stiffness of the heart wall may be an early indication of rejection of a transplanted heart, according to a study aided by NIH grants.

A research team at Stanford University believes stiffening can be detected through use of a phonocardiograph, an instrument which graphically records heart sounds.

Such information may then aid in determining the proper use of immunosuppressive drugs to reverse acute early rejection before there is damage to the transplanted heart.

Usual indirect measurements of change in heart function are not suitable indicators of rejection, according to the scientists, because it is likely that during early rejection the heart continues to function quite well pumping blood throughout the body.

Early Warning Important

Knowledge of early acute rejection is important in beginning immunosuppressive drug therapy at the optimum time.

However, a major problem is to obtain maximum effectiveness from such drugs without altering the patient's resistance to infection.

Because no reliable method has been available to monitor early heart rejection in humans, surgeons have walked the tightrope between too much drug treatment and not enough.

Hopefully, if the proper immunosuppressive drug is introduced in the appropriate quantity before the first rejection episode and in later crises, long-term survival of the patient may be achieved.

The Stanford research is supported by grants from the National Heart Institute and the former Division of Research Facilities and Resources, now the Division of Research Resources.

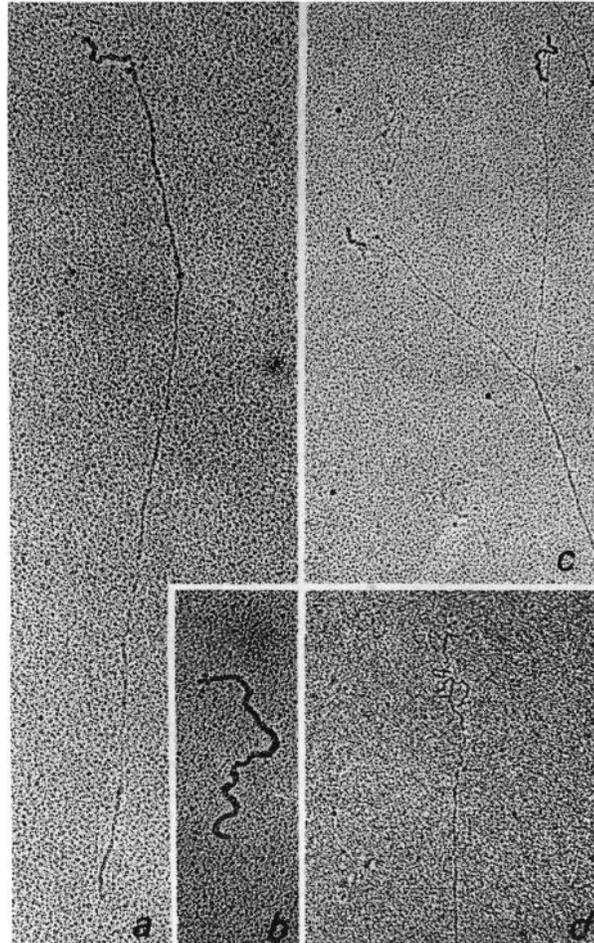
Population Research Ctr. Issues Report on Family

A 7-page report, entitled *Relationships Among Intended, Expected, Desired, and Ideal Family Size: United States, 1965*, has been issued by the Center for Population Research, National Institute of Child Health and Human Development.

The research conducted by the authors, Drs. Norman B. Ryder and Charles F. Westoff, was supported by NICHD.

Dr. Ryder is professor of Sociology at the University of Wisconsin; Dr. Westoff is chairman of the Department of Sociology and associate director of the Office of Population Research, Princeton University.

NCI MOUSE CANCER VIRUS RNA MICROGRAPHS



The four electron micrographs illustrate the single-stranded RNA molecule from a Rauscher leukemia virus seen at different stages of uncoiling. Note (a) the coiled section at the top of the filament; (b) the entire molecule coiled as it is separated from the virus particle; (c) a stage similar to (a), while (d) shows the final state of uncoiling. Drs. Kakefuda and Bader explain that the molecule exists in a super-coiled state within the virus.

BOND DRIVE

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Two films were shown. Both provided practical pointers and one—fun; it was a "Laugh In" film starring Martin and Rowan.

Charles Meyers, NIAID, is working with Dr. Davis on organizing and directing the drive.

Institute and Division Chairmen are: Genevieve Garner, OD; Marjorie Previti, OAS; Clifford Allen, BEMT; Stanley Phillips, NLM; Mary Batchelor, NIEHS; Arthur Furnia, FIC; Fred Lash and George Brandner, NCI; Betty Rice, NHI; Charles Criswell, NIAID, and Eve Larson, NIAMD.

Also, Charles DiGiacinto, NICHD; Ed Fitzgerald, NIDR; Dan McMonagle, NIGMS; John McCarthy, NINDS; Louise Anderson, CC; Ray Jones, DBS; Doren Vest, DCRT; Errett Straley, DRG, and Carl Pergler, DRS.

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as a result of the chemical extraction.

These findings suggest that viral RNA, which constitutes the genetic and infectious portion of the virus, has a specific structure within the viral particle.

The scientists state that viral RNA within an infected cell, perhaps in association with protein, attaches to the cell wall along with a critical concentration of viral structural protein.

The RNA attaches at one end and begins twisting into a tight coil.

The coil forms a larger, rope-like super coil within the budding particle and develops into a hollow sphere of coiled RNA, forming a complete virus particle.

The researchers feel that the natural coiled viral RNA is kept from collapsing by an unknown hydrogen-bonded factor which is broken down by further chemical treatment of the molecule.

Study is now in progress to learn more about the nature of this

Collagen Protein 'Cuffs' Can Be Used to Identify Tumors of Cherubism

Deposits of the protein collagen in "cuffs" around small blood vessels can now be used to distinguish the tumors of cherubism from other bone tumors, Dr. J. E. Hamner, National Institute of Dental Health, reports.

Cherubism is a painless tumor of the jaw bones that causes facial roundness and sometimes forces the eyes to turn upward. Sometimes the growth is so great that surgery is necessary to enable a young child to eat and talk comfortably.

Although there is no explanation of the physiological significance of the cuffs of collagen, their presence serves to identify the tumor, and helps decide how it should be treated.

Because the cherubism tumor differs little in cell make-up from other giant-cell lesions, Dr. Hamner made a histochemical analysis of cherubic tumor tissue from eight children as compared with a number of other jaw tumors — cementifying fibroma, "brown tumor," fibrous dysplasia, benign giant-cell tumor.

Collagen Deposits Form

He found that deposits of collagen form the recently discovered "cuffs" around the smallest vessels—capillaries—in all cases of cherubism, but no collagen cuffs appeared in any of the other tumors he examined.

There was no clinical or histological evidence to associate cherubism with the usual collagen diseases or with hypersensitivity.

Cherubism is often familial and generally becomes noticeable between the ages of two to five. The tumor increases rapidly in size during the first few years; then growth slows. At puberty improvement begins and by age 30 reshaping of the jaw bones and regression of the lesions occur.

Although the tumor has affected both sides of the lower jaw in every case recorded, one side may enlarge considerably later than the other. Often the upper jaw is also involved. The tumor plays havoc with the development of both primary and secondary teeth.

This condition appears to be inherited as a dominant gene which is more likely to be fully expressed in males than females. Minimal involvement in a parent is often overlooked because it is not readily apparent.

factor.

Drs. Kakefuda and Bader recently reported their findings to the American Association for Cancer Research.

SAFARI

(Continued from Page 5)

drops 2,000 feet below its ledge and covers many square miles.

There is always water here, and the area serves as a maternity ward for hundreds of baby animals.

After spending nights listening to the sounds of nearby wild animals, safari members rose at 5:30 for the morning game drives. One morning, less than a hundred yards from Miss Barton's tent, vultures were fighting over the carcass of a beast which was killed by lions the previous night.

Visits Olduvai Gorge

A highlight was the trip to the Olduvai Gorge. Here, for almost 35 years, a British archeologist, Dr. Louis S. B. Leakey, has been conducting a search of ancient ruins with his wife and three sons.

A skull of near-man found by Mrs. Leakey in 1959, and named Zinganthropus, has been radium-carbon dated as more than 1,750,000 years old.

This spring, while Miss Barton was visiting Olduvai Gorge, Dr. Leakey was visiting the NIH campus.

On the way home Miss Barton went to Ethiopia and Egypt.

She left Cairo via Japan Airlines in the middle of the night. The Egyptian army had already moved into their airport because of Middle East tensions.



A water-buffalo, impervious to people, cameras, and autos, stares across the African Plains.

NIMH Scientists Receive Superior Service Awards At Ceremonies in CC

Five scientists of the National Institute of Mental Health at NIH were among the recipients of Superior Service Awards presented by Health Services and Mental Health Administration, at ceremonies held April 18 in the Clinical Center auditorium.

Honored were Dr. Giulio L. Cantoni, chief, Laboratory of General and Comparative Biochemistry; Dr. Seymour Kaufman, acting chief, Laboratory of Neurochemistry; Dr. Melvin L. Kohn, chief, Laboratory of Socio-Environmental Studies; Dr. David Rosenthal, chief, Laboratory of Psychology, and Dr. H. En-



Dr. Albert Baird Hastings, of the University of California at San Diego and a member of the NICHD Training Review Committee (center), receives a copy of his memoirs from Dr. Peter D. Olch, NLM History of Medicine Division, as Mrs. Hastings smiles with pride.

DR. HASTINGS

(Continued from Page 1)

of contemporary medicine and public health.

Among participants in the program are Dr. Stanhope Bayne-Jones, Brigadier General, U. S. Army Reserve Medical Corps (Ret.); Dr. Ward Darley, Dr. Michael M. Davis, Dr. Warfield M. Firor, Dr. Michael Heidelberger, U.S. Senator Lister Hill, Dr. William S. Middleton, Dr. Harvey B. Stone, and Dr. Albert Szent-Gyorgyi.

Others at the ceremony were: Mrs. Hastings, Dr. John F. Sherman, NIH Deputy Director; members of the Training Review Committee, and a number of former students and colleagues.

Dr. Hastings stated that he was "indebted to Dr. Martin Cummings, Director, NLM, for the opportunity to record my scientific experiences, my successes and failures, my intramural and extramural activities, and most importantly, my friendship with people. . . ."

He told the group that he wished to "take this occasion to thank the United States Public Health Service for the many opportunities it has given me to serve it over a span of half a century. As an agency of the American Government dedicated to the health of all

ger Rosvold, supervisory research psychologist, Laboratory of Psychology, Section on Neuropsychology.

The five scientists were cited for their leadership and outstanding contributions to scientific research.

Dr. Joseph T. English, HSMHA administrator, gave the address at the ceremony; Irving J. Lewis, deputy administrator, presented the awards.

ages, it has no peer.

"In spite of its prodigious post-war growth, it has maintained high standards of performance, a remarkable resistance to untoward bureaucratic forces and a reputation for integrity and conscience that all can applaud. To have it become, through the National Library of Medicine, the custodian of this grateful citizen's memoirs, begets but one thought: 'I have come home'."

During the presentation it was explained that Dr. Hastings was selected for the Oral History Program because of his distinguished career in biochemistry as related to medicine.

Dr. Davis Receives 1st Taylor Manor Hospital Award at Symposium

Dr. John M. Davis, chief of the Unit on Clinical Pharmacology, Laboratory of Clinical Science, National Institute of Mental Health, recently received the first Taylor Manor Hospital Award.

It was presented to him at a symposium on "Manipulating and Controlling Human Behavior by Drugs—Present and Future." Dr. Irving J. Taylor, Medical Director of the hospital, presented the award.

Dr. Davis is coauthor with Dr. Donald Klein of a new book, *Diagnosis and Drug Treatment of Psychiatric Disorders*, published by the Williams and Wilkins Co.

At NIMH he has done extensive scientific research on depressants and anti-depressants as they affect rat brains.

Dr. Davis received his B.A. degree from Princeton in 1956, and his M.D. from Yale University Medical School in 1960.

NIGMS Issues Report On Organ Transplants

A report on organ transplantation was recently published by the National Institute of General Medical Sciences.

Entitled *Status of Transplantation 1968*, the report discusses immunological problems and the requirement to find the closest tissue match between donor and recipient.

Also reviewed are problems and needs associated with the supply of organs for transplantation.

Among the subjects discussed are: cardiac transplantation, kidney transplantation, liver transplantation, renal transplantation, endocrine transplantation, the future of transplantation, and moral, ethical and legal implications of organ transplantation.

The report was prepared by a special subcommittee appointed by the Surgery Training Committee, NIGMS. Chairman of the subcommittee was Dr. George L. Jordan, professor of surgery, Baylor University College of Medicine.

Other Members Listed

Other members included: Dr. John N. Kinney, associate professor of surgery, College of Physicians and Surgeons, Columbia University; Dr. John S. Nagarian, chairman of the Department of Surgery, University of Minnesota Medical School, and Dr. James T. Priestley, professor of surgery, Mayo Clinic.

Working with the subcommittee in writing sections were the following guest contributors:

Dr. Richard R. Lower, professor of surgery, Medical College of Virginia, the section on heart transplantation, and Dr. Thomas E. Starzl, professor of surgery, University of Colorado School of Medicine, the section on the liver.

Also, Dr. David A. Blumenstock, clinical professor of surgery, Columbia University, Imogene Bassett Hospital, Cooperstown, N.Y., the section on the lung, and Dr. John R. Brooks, assistant clinical professor of surgery, Harvard Medical School, the section on endocrine transplantation.

Single copies may be obtained from Information Office, NIGMS, NIH, Bethesda, Md. 20014.

Clinical Center Blood Bank Reports 2 Achieve 'Status'

The Clinical Center Blood Bank reports that two donors have achieved a special status. Dr. Clara E. Hamilton, DRG, reached the 3-gallon mark. Dr. Vincent H. Bono, NCI, joined the Gallon Donor Club.

Make an appointment to donate now by calling the Blood Bank, Ext. 64506.

Schedule of 30 Courses Of Laboratory Training In Atlanta Announced

Thirty training courses are being offered by the Laboratory Division, National Communicable Disease Center, Atlanta, Ga. from August 4, 1969, to June 26, 1970.

The schedule includes courses on laboratory methods in mycology, detection of rabies, virology, parasitology, and bacteriology.

Other courses cover such areas as problems in blood banking, fluorescent antibody techniques, complement fixation, isolation of salmonellae from food products and animal feeds, and diagnosis by serologic methods.

Also offered are courses on human blood cell morphology, clinical chemistry instrumentation, and management of scientific services for public health laboratories.

Information and application forms may be obtained from the Training Office, Laboratory Division, NCDC, Atlanta, Ga. 30333.



Dr. Robert Q. Marston, NIH Director (center), presents framed certificate and plaque to Dr. G. Burroughs Mider, Special Assistant to the NLM Director (left), commemorating establishment of The G. Burroughs Mider Lectureship Award. Observing the presentation, held April 18, is Dr. John F. Sherman, NIH Deputy Director. The new lecture, to be part of the NIH Lecture Series, will be presented annually by a member of the NIH intramural staff in "recognition and appreciation of outstanding contributions to biomedical research."

Artificial Heart Conference to Be Held June 9-13

Progress in artificial heart development will be discussed at an Artificial Heart Conference to be held June 9-13 at the Shoreham Hotel, Washington, D. C.

The conference, sponsored by the National Heart Institute, will be open to the scientific community and to the press.

At the meeting papers will be presented on the problems of scientists who are conducting bioengineering research on the development of circulatory-assist devices and artificial hearts.

The research is funded by the NHI Artificial Heart Program.

The Artificial Heart Program, which began operations in 1964, is seeking to reduce death and disability from heart disease through the development of techniques that will provide assistance to a failing circulation, and devices that will replace hearts damaged beyond salvage.

\$19 Million Awarded

Over the past 4 years the Program has awarded more than \$19 million in contracts to support research for bioengineering, physiological, biochemical and related problems of artificial heart development.

Research has been carried out not only in universities and medical centers, but also by private industry, including chemical and engineering firms and electronics corporations.

More than 100 scientists are expected to attend the conference.

They will review the current status of research in such areas as circulatory assist devices and the physiological effects of assist circulation, total heart replacement

devices, material development and evaluation, blood oxygenators, energy systems and control mechanisms.

DR. OLIVERIO

(Continued from Page 1)

tifolic agents such as methotrexate, used in the treatment of cancer.

He has studied three other anticancer drugs intensively. They are methyl-GAG, BCNU, and procarbazine, a derivative of methylhydrazine.

Dr. Oliverio was educated at Xavier University and received his Ph.D. degree from the University of Florida.



Dr. Oliverio, with NCI since 1959, is known for his research on folic acid antagonists.

Bacteria May Contribute To Plasma Cell Tumors

Recent studies at the National Cancer Institute indicate that bacteria and other normal body flora may contribute to the development of plasma cell tumors in mice that are genetically predisposed to plasma tumors.

Dr. K. Robert McIntire gave supporting evidence for the theory that microbial body flora may be necessary for the development of the plasma cells which respond to cancer-causing stimulus at the 60th annual meeting of the American Association for Cancer Research—held March 23-25 in San Francisco.

Following extended exposure to mineral oil, a substance known to cause tumors when injected in the strain of mice (BALB/c) used in these studies, 28 of 40 mice raised under normal optimal conditions developed plasma cell tumors.

Fewer Tumors in Germfree Mice

However, only 2 of 33 mice raised in a germfree environment and having no bacterial flora whatever, developed tumors.

Both of the tumors in the germfree mice developed 18 months after injections were started. Normal mice developed tumors approximately 11.5 months after the injections began.

In 24 of 31 mice born in a germfree environment but later placed in an ordinary environment, plasma cell tumors developed 11.3 months after mineral oil injections began.

Dr. McIntire noted that germfree mice have underdeveloped lymphoreticular systems and fewer than normal numbers of plasma cells.

Perhaps as a result, they developed a high incidence—80 percent—of lymphoreticular tumors, arising from cells less highly developed than plasma cells.

Medical Library Project Sponsored by NLM, DPM

Because of inadequate medical library facilities, research for developing a community hospital library project has been undertaken by the Postgraduate Medical Institute. The institute, an educational, non-profit corporation, is sponsored by the Massachusetts Medical Society.

The project is in cooperation with the New England Regional Medical Library Service at the Francis A. Countway Library of Medicine.

It is supported in part by a grant from the National Library of Medicine and by a contract with the Division of Physician Manpower.

In order to establish the nucleus of a medical library, 400 specialists were asked to recommend books in their area of special interest.



A Superior Work Performance award was presented to (l to r): Mary Steele, Anna Freda, and Blanche Sweeney, all in the Laboratory Unit of the Photography Section, Medical Arts and Photography Branch, DRS. They were congratulated by DRS Acting Director Dr. William B. DeWitt (l) and Charles Shinn, MAPB chief, for receiving a citation for "consistently delivering a high volume of quality work" and a group award of \$300.

MANPOWER

(Continued from Page 1)

cation in the Bureau's Division of Dental Health. The Division he now directs is a new one which will administer programs for the building of schools, research facilities, and medical libraries.

Dr. Whiteside was acting director of DHMES which administers grant, loan, and scholarship programs for the education and training of students of health professions. That Division also operates the Health Manpower Intelligence Center.