the NIH Record

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

March 14, 1972
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NATIONAL INSTITUTES OF HEALTH

Dr. Alvin M. Weinberg, ORNL Director, Delivers NIH Lecture Tomorrow

Dr. Weinberg was on the President's Medal of Science Committee and the President's Science Advisory Committee.

Dr. Alvin M. Weinberg, Director of the Oak Ridge National Laboratory, will deliver the NIH Lecture tomorrow (March 15) at 8:15 p.m., in the Jack Masur Auditorium, Clinical Center.

Dr. Weinberg's lecture is entitled Science and Trans-Science.

He has noted that many of the pressing social issues that lie at the interface between science and politics involve questions that can be stated in scientific terms but that are in principle beyond the proficiency of science to answer.

For such questions Dr. Weinberg has proposed the term, "trans-scientific."

While still an undergraduate at the University of Chicago, Dr. Weinberg chose a career as a research mathematical biophysicist.

He received his B.S. degree in 1935, his M.S. a year later, and

(See DR. WEINBERG, Page 6)

Nixon Urges Congress To Approve Health Plan

Calling "the general good health of our people . . . the foundation of our national strength," President Nixon sent Congress a message on March 2 requesting health care reform.

His proposals included legislation for national health insurance and health maintenance as well as Medicare and Medicaid reforms.

The President directed HEW to make an intensive study and as soon as possible recommend "a plan for developing a safe, fast, and efficient nationwide blood collection and distribution system."

Secretary Elliot L. Richardson was also asked to plan a series of projects to "demonstrate the feasibility of developing integrated and uniform systems of health information."

Noting recent measures enacted by Congress—the Comprehensive Health Manpower Training Act of 1971, the Nurse Training Act of 1971, and the National Cancer Act—President Nixon urged the Congress to act on his health care system proposals.

One portion of the Message of

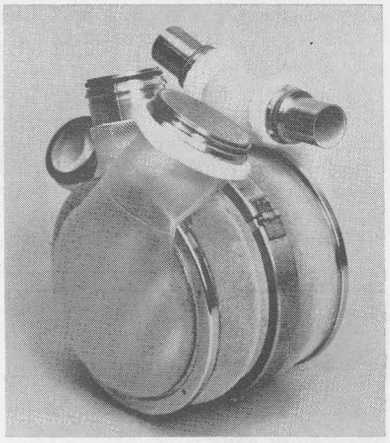
(See HEALTH PLAN, Page 7)

Atomic-Powered Heart Engine Developed; NHLI Begins Long-Term Animal Trials

The first atomic-powered heart engine has been developed by the National Heart and Lung Institute and its contractors. A heart-assist system with the nuclear engine was implanted in a calf on Feb. 14.

Thus begins evaluation of the nuclear engine for powering the artificial heart or heart-assist device in the living animal.

The first total replacement artificial heart to be totally implanted has been developed and has undergone short-term animal tests.



A totally implantable artificial heart, designed by Dr. Harmison and developed by contractors under the direction of NHLI, is intended as a total replacement for the sick, living heart.

All Systems 'Go'

This implant is powered electrically, but may also be powered by a small implantable nuclear engine. The complete system is now ready for long-term animal trials.

These developments were announced at a press conference March 2 by Dr. Theodore Cooper, NHLI Director, and Dr. Lowell T. Harmison, acting chief, Medical Devices Applications Branch, NHLI, and project director.

Both the artificial heart and the heart-assist system are performing up to design specifications and yielding vital information.

Dr. Harmison said that the nuclear-powered devices might become available for use in humans by the end of the decade.

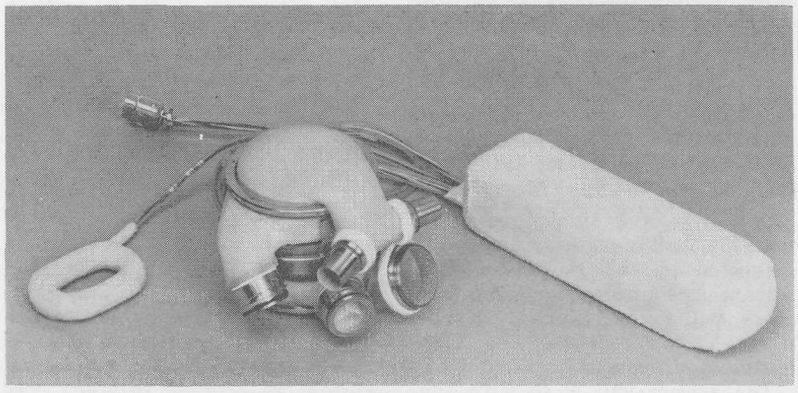
The system implanted in a calf on Valentine's Day consists of two major units; one in the chest, and the other in the abdomen.

In the abdomen is a 6-pound, 3-by-8-inch cylinder containing a miniature thermal engine with a nuclear heat source.

Hydraulic pressure generated by the engine is conveyed by a tube to the blood pump and its control

(Continued on Page 5)

Dr. Cooper (at the podium) and Dr. Harmison answer questions following the NHLI press conference held March 2 in HEW's Snow Room.



The electrically powered total artificial heart system (Harmison Heart) is recharged periodically without the use of wires piercing the skin. The implantable electrical energy storage (battery-pack) unit (r), houses a heart control computer. The batteries are recharged by an outside electrical source through a "pick-up" coil (l) implanted under the skin. The heart itself (c) is driven by an electric motor nested between the two pumping chambers. It is also designed to be powered by an implantable nuclear-powered engine.

the NIH Record

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NIH Television, Radio Program Schedule

Radio

DISCUSSION: NIH

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

March 17

Dr. Lionel M. Bernstein, NIAMD
Subject: Gastroenterology

March 24

Dr. Elizabeth Weisburger, NCI
Subject: Environment and Cancer

Interview during intermission, Library of Congress Concerts.

Television

ISSUES

WRC-TV, Channel 4, 11:30 a.m.

March 19

Dr. Carl Kupfer, Director, NEI
(One of three panelists)
Subject: Your Eyes

FAES Chamber Music Concert Ends Series Sunday, March 26

The fifth and final concert of the 1971-72 Chamber Music Series, presented by the Foundation for Advanced Education in the Sciences, will be held Sunday, March 26, at 4 p.m. in the CC Jack Masur Auditorium.

The season will close with the French cellist, Pierre Fournier, and pianist, Leon Pommers, presenting a program of music by Beethoven, Schubert, Bach, and Stravinsky.

Admission is by ticket only.

Separation Procedures Explained At Meeting for Comm. Officers

A special meeting for NIH Commissioned Officers who are separating from active duty this coming June or July will be held Wednesday, March 22, at 2:30 p.m. in the Jack Masur Auditorium, Clinical Center.

Officers will be informed about separation procedures, travel entitlements, shipment of household effects, and veteran benefits by the Office of the Assistant Director for Commissioned Officers, OPM.

Administrative personnel concerned with these procedures may also attend.

Free Clinic Seeks Volunteers

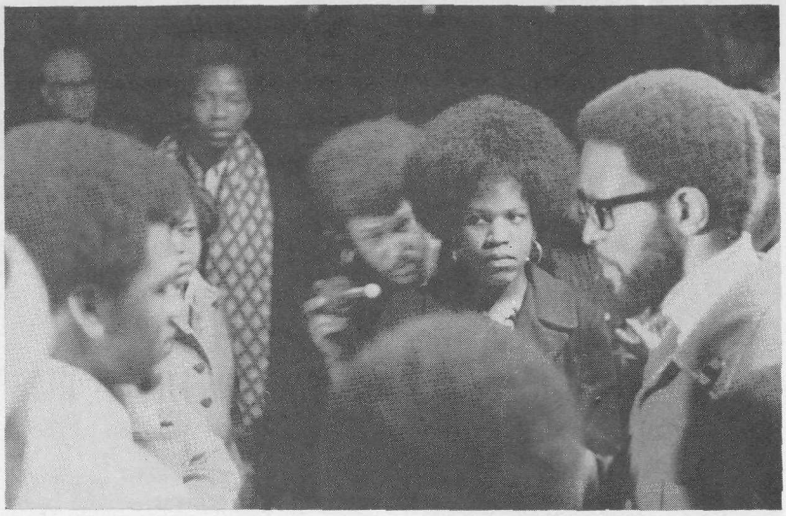
In order to expand medical services, the Bache Memorial Bethesda Free Clinic is seeking volunteers to help staff its programs.

The clinic, located in the basement of St. John's Episcopal Church, 6701 Wisconsin Ave., Bethesda, is staffed by physicians, nurses, pharmacists, lab technicians, and trained nonprofessionals—all volunteers.

Psychiatric counseling, medical diagnosis and treatment, and drug problems are among the services offered at the clinic. It is open on Sunday, Tuesday, and Thursday evenings from 7 to 10 p.m.

For further information call Dr. Mike Friedman in the evenings: 933-8772, or John Eubank, daytime at the Free Clinic number: 565-3222, or evenings at home: 942-3519.

'Code Blue' Called Best Recruitment Film



Dr. Evans (r) is interviewed by Fremont High School students in Oakland, Calif., during the filming of "Code Blue."

"Code Blue," a 27-minute film, has been called "the best documentary made" in the field of minority recruitment by National Medical Association officials.

In initial screenings, the reaction of black and other minority audiences has been exciting.

Invariably met with applause at its conclusion, "Code Blue" is in unprecedented demand among minority groups and schools across the country.

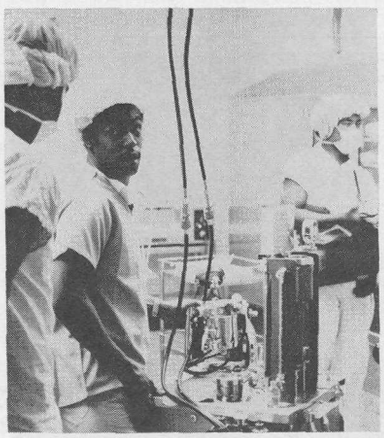
Dr. Therman Evans, a recent graduate of Howard University College of Medicine, narrates the production which tries to overcome the main reasons minority students have for not entering medical careers—"Too long, it costs too much, and it's too hard."

The film was produced by Blackside of Boston for the Bureau of Health Manpower Education.

According to BHME, American minorities are vastly underrepresented in health careers.

For example, blacks account for 11.5 percent of the Nation's population, but only 3 percent of its physicians, 2.7 percent of the dentists, and 5.7 percent of the professional nurses.

(See CODE BLUE, Page 4)



In the film, two obstetricians (left) from Harlem Hospital in New York City prepare to deliver a baby.

NIH Schedules 'Code Blue'

"Code Blue" will be shown to NIH employees on Wednesday, March 22, at noon in the 14th floor auditorium of the Clinical Center.

The film may also be seen in the CC Jack Masur Auditorium on Wednesday, March 22, at 5:15 p.m.; Wednesday, March 29, at noon, and Thursday, March 30, at 5:15 p.m.

Training Seminars Planned For Supervisory Personnel On Assisting the Alcoholic

Seminars on the subject of alcoholism have been planned by the Office of Personnel Management and the Employee Health Service.

This training program, for supervisory personnel, will provide information on how to try to help the alcoholic employee return to full productive capacity.

Experts in professional fields will speak on such topics as Behavior Problems; Modification of Attitudes; Modern Methods of Dealing with Troubled Employees, and Employee Health Counseling and Community Resources.

A representative from the U.S. Civil Service Commission will discuss established guidelines.

The program will not exceed one full day during official working hours. Registration forms will be sent to managers and supervisors in the near future. The program will be repeated until all who register have attended the seminar.

Katherine Steele Dies, Secretary With NIAID

Katherine E. Steele, 58, secretary to the head of the Medical Mycology Section, Laboratory of Microbiology, NIAID, died in Washington, D.C., on Feb. 28, after a long illness.

Miss Steele worked for NIH for almost 21 years and for the Federal Government for more than 29 years.

When she came to work at NIH in July 1951, she joined the staff of the National Microbiological Institute, the predecessor of the National Institute of Allergy and Infectious Diseases.

She worked in NIAID for the remainder of her career.

Miss Steele was the recipient of a sustained superior work performance award in 1962.

A native of Winchendon, Mass., she attended Burdett College and Wilson's Teachers College.

According to Dr. Herbert Hasenclever, head of the section, "Miss Steele was a dedicated individual ready to expend the additional effort needed on any occasion. She will be greatly missed by her co-workers."

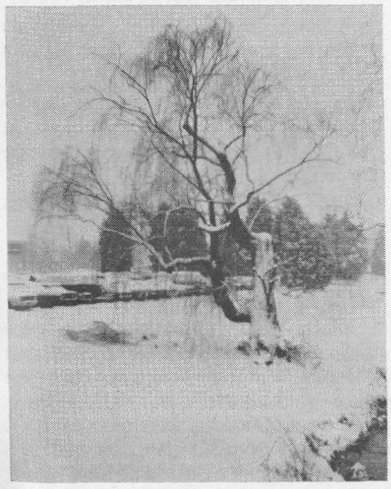
She is survived by her sister Gertrude S. Bresnahan of Washington, D.C.

Prof. Granit, Fogarty Scholar, To Chair International Meeting

Professor Ragnar A. Granit, Fogarty Scholar, will be the chairman of a 2-day conference on Control of Movement and Posture.

The meeting, to be held on March 27-28, at Stone House, Bldg. 16, will bring together neurologists and neurophysiologists from NIH, other parts of the U.S., and several foreign countries.

For further information call Tanya Fried, Ext. 64625.



The snow that made some of us cringe Feb. 24 changed a barren weeping willow tree into a work of art.—Photo by Ed Driscoll

Shoichi Yokoi, World War II Hold-Out On Guam, Helps Science—Unintentionally

A World War II Japanese soldier who was afraid to return to Japan after the war, has inadvertently made a significant contribution to medical science. The soldier, Shoichi Yokoi, hid on Guam for 28 years living off the plant and fish life of the island.

One of the foods he ate was cycad, a plant that has been considered a possible cause of two fatal neurological disorders which have a phenomenally high incidence on Guam.

Disease Explained

One is amyotrophic lateral sclerosis (ALS), a fatal progressive muscular atrophy, sometimes referred to as Lou Gehrig's Disease. The other is parkinsonism-dementia (PD). Cycad is also being studied as a possible cause of cancer.

But, said Dr. Jacob Brody, head of the National Institute of Neurological Diseases and Stroke Epidemiology Branch, who examined him, "If cycad is involved in ALS or PD you couldn't prove it by him.

"Outside of cultural shock and being a little thin, he was in excellent shape mentally and physically. He had no evidence of either disorder."

The cycad plant, explained Dr. Brody, "looks like a palm tree with nuts growing on it. Guamanians make flour from the nut, which contains a product that is highly toxic unless it is soaked in water for a week.

Natives Find Yokoi

Dr. Brody was at the NINDS Research Center on Guam conducting drug trials on ALS patients when Yokoi was first discovered by some islanders who saw him fishing.

Since 1956, the branch has been studying a number of genetic and environmental factors at the Guam Center which could be related to ALS and PD, including the possibility of a slow virus.

In both diseases a deficiency in the brain chemical dopamine occurs as in Parkinson's disease.

The Guam PD patients respond favorably to treatment by L-dopa, but the drug does not appear to help the ALS patients.

Doctors Obtain Permission

ALS is the cause of approximately one in every 10 Guamanian deaths in persons 25 years or older, and PD is the cause of one in every 10 adult deaths.

Before examining Yokoi, Dr. Brody and his two consultants at the Center, Drs. Kwang-Ming Chen and Yoshiro Yase, first obtained permission from the Guamanian Governor, the Guam Memorial Center Administrator, and Yokoi's attending physician on the Guam Memorial Hospital staff.

Dr. Brody, who was on Guam when Yokoi was found, said the Japanese soldier offered to return and help with research "because he knew all about the edible plants on Guam."

Dr. Chen is from the National Taiwan University Hospital in Taipei. Dr. Yase is chief of the Division of Neurological Diseases, Wakayama Medical College, in Japan.

They brought Yokoi samples of the cycad nuts and he recognized them, described how he prepared the nuts and told of seeing Guamanians make flour from the nuts during the war.

"Yokoi was obliging and cooperative," Dr. Brady said. "In fact, he said he wanted to come back and help us with our research because he knew all about the edible plants on Guam."

Schools Request Programs On Black History Material

There have been many requests for the program and insert given to the audience attending ceremonies honoring Black Contribution to America (see *NIH Record*, March 1), according to Spencer Logan, chairman of the Program Committee, and Deputy EEO Officer.

The program includes biographies of authors who have written about black history, and the insert contains material on famous black Americans and their accomplishments.

Mr. Logan said that schools and Sunday schools are using the material in history and race relation classes.

EEO offices in the Washington, D. C., area have also asked for this subject matter.

Louis Raymond Perkins, adjunct professor of Black Studies, Federal City College — Upward Mobility College, developed the program and insert material.

Mr. Perkins is using these facts in his black history course at Upward Mobility College.

Civil Service Announces Retroactive Pay Decision On Wage-Price Freeze

The U. S. Civil Service Commission has announced that many Federal employees will receive retroactive payments to make up for the within-grade increases that were lost as a result of the 90-day—Aug. 15-Nov. 14—wage-price freeze.

This move is based on a recent decision by the Comptroller General of the United States.

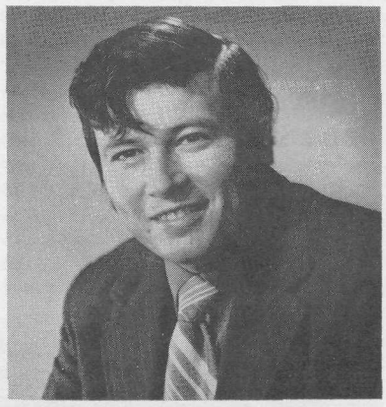
NIH employees will be notified how and when those who are eligible will receive their retroactive payments.

The Comptroller General also ruled that most wage-grade employees who had adjustments in their basic pay rates held up by the freeze will receive those adjustments, retroactive to their original effective dates—if the wage surveys on which the adjustments are based were ordered before Aug. 15.

In the Washington, D.C. metropolitan area the wage-grade survey was not ordered until after Aug. 15. Therefore, the adjustments will be retroactive to Nov. 14.

Because of a later survey, lithographic employees are covered by an adjustment effective Feb. 13.

For further information, employees may contact their personnel offices.



Dale D. DeWald has been named personnel officer for NEI, NICHD, and DRR. He received his B.A. degree from Pennsylvania State University, and has completed course requirements for an M.P.A. degree. Mr. DeWald has been doing research in air pollution control.

International Scientists Meet on Campus To Assess Forms of Cancer Therapy

The results of the studies of various cancer therapies were reported by distinguished breast cancer investigators from Europe, Canada and the U.S., at a meeting, Jan. 31-Feb. 1, of the National Cancer Institute Breast Cancer Task Force Treatment Subcommittee.

The therapies under discussion included surgery, radiation, and drugs.

At the opening session, Dr. H. Stephen Gallager, M.D. Anderson Hospital and Tumor Institute, Houston, urged the establishment of a national pathology center for breast cancer declaring that in most clinical studies, the pathologic correlations are rarely done.

Dr. Bernard Fisher, professor of Surgery, University of Pittsburgh, was among the scientists describing clinical studies using surgery and radiotherapy.

Dr. Fisher summarized the work of NCI's National Surgical Adjuvant Breast Cancer Project since 1958.

The Scandinavian Adjuvant Chemotherapy Study, covering research in 11 hospitals in Finland, Sweden and Norway, was reviewed by Dr. R. Nissen-Meyer of Det Norske Radiemhospital in Oslo.

A preliminary report of this study appeared in *Cancer Chemotherapy Reports* in December 1971.

Reports Discussed

J. L. Hayward, Surgeon at Guy's Hospital, London, reported on a clinical study comparing the usefulness, for patients whose lymph nodes showed no evidence of cancer, of wide excision of their cancer versus radical mastectomy.

A difference of opinion in the United Kingdom regarding "radical" versus "conservative" primary treatment of breast cancer was described by Dr. Michael Baum, King's College Hospital in London.

This difference resulted in the May 1970 launching of the Cancer Research Campaign Trial, designed to determine whether the regional nodes of a patient with apparently early breast cancer should be treated with irradiation at the time of surgery to the primary tumor.

A comparison is being made between simple mastectomy followed by radiotherapy and simple mastectomy alone, with treatment of regional nodes only when undoubted progression occurs.

Hormone Treatment Evaluated

Dr. James W. Meakin, assistant professor of Medicine, Ontario Cancer Institute in Toronto, reviewed a study, started in 1965, to assess the effect of hormone therapy — ovarian irradiation and prednisone — on the recurrence of the disease and patient survival following surgical treatment of the primary lesion.

Long-term results of a 1948-1955 clinical trial at the Christie Hospital in Manchester, England were summarized by Dr. Mary P. Cole of that hospital and Holt Radium Institute.

The purpose of the study was to assess the value of artificial menopause by ovarian irradiation in the treatment of breast cancer patients.

Summarizing the results of the trial, Dr. Cole stated that ovarian irradiation does appear to increase the crude survival rate of early breast cancer patients.

There also appears to be a delay, sometimes of years, in the recurrence of cancer in the ovary-irradiated group contrasted with the control group. Younger patients appear to do less well than older women.

Current clinical studies of the European Breast Cancer Group were reviewed by Dr. J. C. Heuson, Institut Jules Bordet, Brussels. Dr. Henri Tagnon of that Institut, and chairman of the European Group, was also at the meeting.

Recent chemotherapy findings using single drugs were reviewed by Dr. Stephen K. Carter, chief of the Cancer Therapy Evaluation Branch, NCI.

Drug Studies Reviewed

Combination drug regimens under study in the U.S. were described by Dr. Ezra M. Greenspan, Mount Sinai Hospital, New York City. Combination therapy for advanced breast cancer was initiated there on a routine basis in 1959.

NCI-funded cooperative group studies of single drugs and combination regimens were outlined by Dr. Pierre Band, a Canadian scientist now working with the Eastern Cooperative Oncology group, and by Drs. Robert Johnson, University of Wisconsin; Barth Hoogstraten, University of Kansas Medical Center, and Louis Leone, Rhode Island Hospital in Providence.

The breast cancer meeting was arranged by Dr. Erwin P. Vollmer, chief, Endocrine Evaluation Branch, and executive secretary of the Task Force. Dr. Nathaniel I. Berlin, scientific director for General Laboratories and Clinics, is chairman of the Task Force.

Co-chairman is Dr. Alfred S. Ketcham, clinical director. Dr. Paul Carbone, associate scientific director for Clinical Trials, is chairman of the Treatment Subcommittee.

Researchers from Europe and Canada who attended the meeting were: (front row, (l to r), Dr. J. C. Heuson, Brussels; Dr. Mary P. Cole, Manchester, and Dr. Henri Tagnon, Brussels; (back row, l to r), J. L. Hayward, and Dr. Michael Baum, London; Dr. James W. Meakin, Toronto; Dr. Pierre Band, Edmonton; Dr. D. J. A. Sutherland, Toronto, and Dr. R. Nissen-Meyer, Oslo.

Dr. W. Watson Alberts Named Grants Associate

Dr. W. Watson Alberts has joined the DRG Grants Associates Program for one year of training in grants administration.

Dr. Alberts

Dr. Alberts comes to the Division of Research Grants from the Mount Zion Hospital and Medical College, San Francisco, where he served as a biophysicist and attending staff member since 1956.

He received his B.A. in 1951 and his Ph.D. in Biophysics in 1956, both from the University of California.

From 1963 to 1968, he was the recipient of a Research Career Award from the former National Institute of Neurological Diseases and Blindness.

Since 1969, Dr. Alberts has been an advisory editor of the *Journal of Biomedical Systems.*

He is the author of 36 publications stemming from research done predominantly with human subjects.

Dr. Yoshio Sato Dies, NIAMD Section Chief

Dr. Yoshio Sato, 60, chief of the Section on Steroids in the Laboratory of Chemistry, National Institute of Arthritis and Metabolic Diseases, died of cancer Feb. 20 in Bethesda.

Dr. Sato, who received his Ph.D. degree in Organic Chemistry from the University of Rochester in 1946, specialized in the study of steroidal alkaloids.

He significantly contributed to the elucidation of the structure of the alkaloids solasodine and tomatidine.

Dr. Sato joined the staff of the Steroids Section in 1950 after 4 years at the Rockefeller Institute for Medical Research in New York City.

At NIH, Dr. Sato worked on research projects involving the fundamental chemistry of the steroids with the dual objective of clarifying the chemistry of the biochemically important steroids and of devising new synthetic methods for making these and their derivatives available for biochemical and medical research.

A native of Portland, Oreg., Dr. Sato obtained his M.S. degree from Oregon State College and his B.A. from Reed College.

He was the author or coauthor of more than 60 technical articles on drugs and held two patents on drug degradation procedures.

Over the past several years, Dr. Sato was an invited speaker at four international chemical meetings held in Germany and Japan.

Dr. Sato is survived by his wife, Lury, and two children, Paul and Ronald, at the home address, 6206 Rockhurst Road, Bethesda.

CODE BLUE

(Continued from Page 2)

Among the 827,000 American Indians, there are 38 physicians and only one Indian dentist.

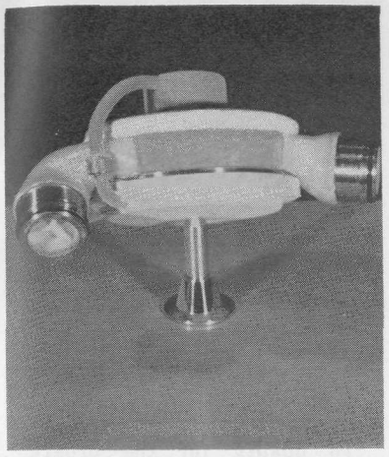
In 1969 fewer than 750 minority students entered as freshmen in the Nation's medical schools. The figure rose to 1,370 in 1971.

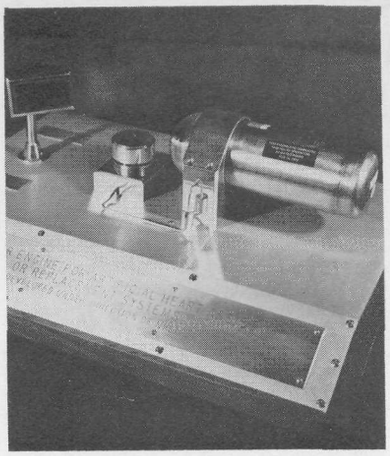
The number will continue to grow only if minority students set their sights higher in order to increase their representation in the medical profession.

The film is available on a free loan basis from Modern Talking Picture Service which reports more than 800 bookings with schools and organizations during the first month of availability, as well as telecasts on 61 TV stations.

Clips of the film have appeared on the WRC-TV evening news, and other area stations are contemplating its use.

NUCLEAR-POWERED ENGINE DEVELOPED BY NHLI





The Harmison-TECO artificial heart pump (left) is the latest in a series of experimental pumps designed by NHLI to assist the sick heart. Implanted in the chest, the pump accepts blood under low pressure from the heart's left ventricle and pumps it at high pressure into the aorta. The cylinder (right) is a modified Stirling-cycle engine designed to power the artificial or heart assist devices. A digital display unit (1) monitors, in watts, the hydraulic energy generated by the nuclear-powered engine.

(Continued from Page 1)

unit located within the chest.

The heat-energy source is about 100 grams of plutonium-238 (Pu-238) in a 3-layer metal capsule designed and proven to withstand corrosion, high impact and crush pressures, and cremation to insure against leakage of the radioisotope in an accident.

Two nuclear thermal engines have been tested. One is a vapor cycle steam engine, the other a modified Stirling cycle engine that has undergone over 5000 hours of continuous operation in a bench test.

The vapor engine develops hydraulic pressure to operate the blood pump in synchrony with the irregular beating of the sick natural heart on a beat by beat basis.

In this system, the water alternates many times each second between the vapor and liquid phases—the steam generated from a single drop of water is enough to run the system.

Converts Heat to Gas

The modified Stirling engine converts heat from the isotope to pressurized gas by heating and cooling helium in a closed cycle.

The high pressure pneumatic energy is converted to hydraulic fluid energy to drive the blood pump.

The nuclear engines provide adequate power in a controlled form for operating either the assist or the total replacement heart implanted wholly within the chest.

The hydraulically operated heart-assist pump, based upon the total heart designed by Dr. Harmison, connects the apex of the heart's main pumping chamber (left ventricle) to the descending portion of the body's main artery (the aorta).

The alternate withdrawal and re-entry of hydraulic fluid into the pump's actuating chamber activates the controller unit to compress the pumping chamber, causing the blood to flow into the aorta at normal physiologic pressures—sparing the left ventricle most of the effort required to pump the blood throughout the body.

The new pump also features a blood cooled heat exchanger that dissipates 70 percent or more of the excess heat from the engine, and a lining of flocked Dacron fibers to promote the growth of a compatible layer of "living tissue" on all blood contacting surfaces.

Unit Totally Implantable

The first complete unit—a totally implantable artificial heart—to replace the heart and be self-contained within the body has been developed.

Similar to the natural heart, the total artificial heart contains four pumping chambers—two atria and two ventricles with the energy unit nested between the blood pumping chambers.

The system consists of the pumping chambers, the energy converter, the heart control computer, and implanted energy storage and receiving units.

The complete heart has been designed to adapt to three types of internal power control systems—electrical, nuclear, or pneumatic.

The artificial heart is attached to the stumps of the major blood vessels that remain after the natural heart has been removed.

The total heart responds immediately to the changes and physiological needs by altering heart rate and stroke volume.

The efficiency of the total heart is in the range of 30-40 percent, which is at least as high as the natural heart.

The totally implanted system is now entering the phase of long-term evaluation in animals after 2 years of engineering and short-term animal tests.

Information Center for Communications Gives Data for Students, Researchers

Whether you are a concerned parent wondering why your child is having trouble learning to talk, a graduate student in audiology (hearing testing), or a researcher studying properties of nerve deafness, the Information Center for Hearing, Speech and Disorders of Human Communication can be a valuable resource.

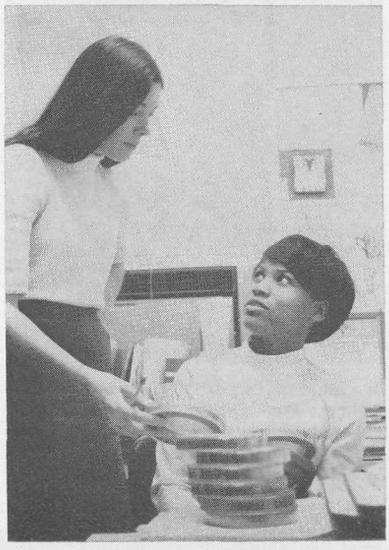
The Center, supported and guided by the National Institute of Neurological Diseases and Stroke, provides one of the most comprehensive data analysis services in the country.

It is directed by Dr. John E. Bordley, Professor Emeritus, Johns Hopkins' Department of Laryngology and Otology.

The staff, under the program direction of Lois Lunin, is bringing together material from other bibliographic services. They are integrating it with their own highly selective analysis of articles appearing in more than 1,700 communication journals.

An offshoot of this integration is a regular alerting service, *Current Citations on Communication Disorders*, available from the Center free of charge.

In addition to their bibliography program, the Center emphasizes other services to the otolaryngology community.



Yvonne Wulff and Ann Kelly (r) organize computer tapes containing speech bibliographies.

These include holding workshops and conferences and publishing state-of-the-art reports.

The Center, along with the Brain Information Service at UCLA and the Clinical Neurology Information Center at the University of Nebraska, is directed and sponsored by the Institute's Special Program Branch under Dr. Edgar A. Bering.

The staff of 5 part-time and 16 full-time workers has assisted in the publication of several reference monographs on communication.

Many publications were prepared by scientific advisors at Johns Hopkins, working in a variety of disciplines involved in communication research.

These include understanding how the normal functions of hearing, speaking, and putting ideas into language occur, and finding the cause and treatment for disorders of these processes.

Requests Varied

Requests for bibliographies have come from 46 states. Slightly less than a third come from librarians and graduate students; the remainder come from requestors in 21 foreign countries.

More than two-thirds of the requests are from scientists, clinicians, and educators and administrators.

The Center has sponsored two conferences. The proceedings from the meeting on the *Neuroanatomy of the Auditory System*, held in May 1970, will be published as a supplement to the *Archives of Otolaryngology*.

Proceedings from the meeting on the *Neurophysiology of the Inner Ear and Auditory System*, held in June 1971, will be published by National Education Consultants.

The Center plans to sponsor a workshop this year, in April, on the *Neuropathology of Circulatory Problems Affecting the Inner Ear and Auditory Pathways*.

Impaired circulation is believed by some scientists to be a cause of Meniere's disease, characterized by hearing loss, vertigo, nausea, and ringing in the ears. It may also be involved in other ear diseases and hearing loss itself.

A conference on *Sensory Processing in Hearing-Impaired Children* and a workshop on *Noise* are also planned.

Edith Dunlap Elected Manager, NIH Branch, Bank of Bethesda

Edith E. Dunlap has been elected manager and assistant cashier of the Bank of Bethesda, NIH branch.

Mrs. Dunlap, with the bank since 1953, has been at this post since last June. Previously, she was with the Kensington branch.

The second U.S. Special Police class, pictured with their supervisors, recently graduated from special training (l to r): Pfc. John D. West, Jr.; Pfc. Gerald Oliver; Pfc. John M. Fuller; Cpl. George W. Brown, high scholastic award winner; William C. Wright, training officer; Willard E. Vincent, assistant director for Protection and Safety Management, OAS; Pfc. Oze Lemons; Pfc. George Cunningham; Pfc. Ronald Coleman; Pfc. Aaron Beckham; Pfc. Charles S. Taylor; Lt. Floyd D. Rush, class representative, and Capt. Richard F. Jones, commanding officer.

Dr. Stephan Retires; Dental Researcher Served Here 26 Yrs., Remembers When—

Friends and former colleagues of Dr. Robert M. Stephan honored the retired National Institute of Dental Research scientist recently with a surprise party held in Bldg. 30 in appreciation for his 26 years of service in dental research at NIH.

In addition to a Public Health Service plaque, Dr. Stephan, who was with the Oral Medicine Branch was given a rocking chair decorated with the University of Illinois seal. He received his D.D.S. from that school in 1932 and taught there in exchange for free tuition.

Those were depression years, and Dr. Stephan recalls that his "free teaching for free tuition" resulted from a budget cut that removed his allocated $1,000 per year salary.

Dr. Stephan has led an interesting and varied career in dental research. During World War II he was on the Medical School faculty of the University of Chicago and conducted studies in dentistry for the Navy.

In 1946, Dr. Stephan came to NIH as part of the Dental Section in the Division of Physiology, Experimental Biology, and Medicine. He worked on studies which showed the value of water fluoridation.

Food Effects Explained

Also, he determined the effects of various foods on the acidity developed by bacteria on animal teeth.

At that time, neither the Clinical Center nor NIDR existed. Dr. W. H. Sebrell directed NIH, and Dr. H. Trendley Dean shepherded dental research.

Dr. Stephan remembers that "Drs. Dean, Arnold, Scott, Elvove, McClure, Hampp, and I all worked closely together. A Miss Blue, although not part of our section, did all the typing, and Bill Poole was the only one available to help in the laboratories."

Dr. Stephan, whose father and grandfather were dentists, wanted to be an anthropologist, but he was told " . . . their lot was starvation," so the NIDR investigator turned to dentistry.

Dr. Stephan said that his most exciting scientific experience happened when he was trying to test the theory that decay is directly related to acidity on enamel surfaces.

He tested the teeth of children in a receiving home and found no acidity. Next, he tested the teeth of an otherwise healthy teenager who, during the past year, had developed decay on nearly every tooth. Again no acidity.

Dr. Stephan asked what the boy had done in the past months that was different from his usual routine—he worked as a grocery clerk for a year, but had lost his job a month before Dr. Stephan saw him.

The lad had helped himself to a cookie each time he opened the bin for a customer. Since losing the job he had not eaten cookies because his dad could not afford them.

Dr. Stephan gave the boy a quarter to buy his chocolate-covered favorites, with orders to return right after lunch.

And then a test (pH 4.0) given to the boy, convinced the dentist that mouth bacteria used dietary sweets to make strong acids in an astonishingly short time.

Further observations led Dr. Stephan to prove that human foods, especially sweets, really do cause bacterial reactions which increase acidity on teeth enough to dissolve enamel and cause decay.

Dr. Stephan thinks that the best thing a person can do to preserve his teeth for a lifetime is to "eat nutritious meals, starting with a good breakfast so that you need no between-meal sweets.

". . . and if children come home from school starved, give them milk and a sandwich instead of cookies and soft drinks. Avoid bedtime sweets, and if you must snack, rinse with water afterwards."

Dr. Stephan considers that the high-speed drill is the greatest advance in dental treatment in modern times because it has immeasurably "shortened operating time and reduced pain and the nerve-wracking aspects of dentistry."

Dr. Stephan was once president of the NIH Sailing Club, but says he rarely sails today. He and Mrs. Stephan love to square dance, and will continue that hobby. He also expects to enjoy his other hobbies of photography, classical music, explorations in the history of dentistry, and chess.

DR. WEINBERG

(Continued from Page 1)

his Ph.D. in Physics in 1939.

After receiving his doctorate, he spent 2 years as a research associate in mathematical biophysics at the university, where one of his prime areas of research was the theory of nerve function.

After 4 years with the university's Metallurgical Laboratory, he joined the staff of the Oak Ridge National Laboratory.

He became director of the laboratory's physics division in 1947, research director of the laboratory in 1948, and was named Director of the National Laboratory in 1955.

Dr. Weinberg is a member of the American Academy of Arts and Sciences and the National Academy of Sciences, a Fellow of the American Physics Society, and a Fellow and past president of the American Nuclear Society.

For his contributions to the theory and development of nuclear reactors, Dr. Weinberg shared the 1960 Atoms for Peace Award, and in the same year was named one of the winners of the prestigious E.O. Lawrence Memorial Award.

In 1963, he chaired the panel that prepared a report on the scientific information explosion for President Kennedy.

April 3 Deadline Is Set For Management Intern Program Applications

Applications now being accepted for the 1972 NIH Management Intern Program must be received by April 3.

This program develops men and women for administrative positions with the prospect of eventual senior level appointments.

Management interns receive a year of on-the-job training in general administration and administrative specialties. Graduates are eligible for appointments at GS-7, 9, and 11.

To qualify for the program, employees must have taken the Federal Service Entrance Examination and provide documented results.

Requirements Stated

Employees who need to take the FSEE, may obtain registration information from personnel offices.

Additional requirements are a bachelor's degree, or 4-5 years of responsible experience of a nonclerical nature, or a combination of college and work experience.

A Personal Qualifications Statement (SF 170 or 171) must be completed and sent to the ADA Personnel Office, Bldg. 31, Room B2B-39, Attention: MI Program.

Forms are available in the B/I/D personnel offices. For further information, call Ken Maize, Ext. 62146.

Election of Officers to Be Held At History of Medicine Meeting

An election of officers will take place at the next meeting of the Washington Society for the History of Medicine, March 22, at 8 p.m. in the Billings Auditorium, National Library of Medicine.

Before the election, Manfred Waserman and Dr. Peter Krivatsy, both with NLM's History of Medicine Division, will discuss historic medical topics.

Mr. Waserman's subject is An Itinerant Surgeon in the Revolutionary Era: The Papers of Dr. Zuriel Waterman. Dr. Krivatsy will speak on Paracelsus in Basle: A Loss of Nerve.

Ileen E. Stewart has been appointed to a 3-year term on the NIH Library Advisory Committee as a representative of the Division of Research Grants and the extramural program staff of the Institutes. She is executive secretary of the Applied Physiology, Biomedical Communications, and History of the Life Sciences Study Sections.

HEALTH PLAN

(Continued from Page 1)

special interest to NIH was the discussion of research and prevention programs.

"A truly effective national health strategy requires that a significant share of Federal research funds be concentrated on major health threats, particularly when research advances indicate the possibility of breakthrough progress," Mr. Nixon said.

He named as potentially high payoff health research and prevention programs: heart disease, cancer, alcoholism, drug abuse, and sickle cell disease.

Projection Made

If current rates of incidence continue, the Message noted, some 12 million Americans will suffer heart attacks in the next 10 years.

The President said he plans to assign a panel of "distinguished professional experts" to determine why heart disease is so prevalent and how to combat it.

The fiscal year 1973 budget provides funds for developing medical devices to assist blood circulation and improving instruments for early detection of heart disease.

In addition, tests will be made to investigate the relationship of smoking, high blood pressure and high blood fats to heart disease.

An all-out attack on cancer was launched with the National Cancer Act, signed into law Dec. 23, 1971.

A request that an additional $93 million be allocated for research on this disease in fiscal 1973 would bring the total funding available that year to $430 million.

To attack the problem of sickle cell anemia—an inherited disease trait is carried by about 2 million black Americans—$10 million was allocated in fiscal year 1972.

An advisory committee of prominent black leaders, organized to help direct the effort to combat this painful disease, made its recommendations and an aggressive action program is ready.

An increased budget of $15 million in fiscal 1973 is proposed.

Different Immunology in Primate Viruses May Aid Search for Human Cancer Cause

National Cancer Institute scientists have discovered that three new RNA viruses which may cause cancer in primates differ immunologically from similar RNA viruses found in the mouse, rat, hamster, and cat.

The investigators suggest that the distinction may provide clues that will aid in the search for a viral cause of human cancer.

The three primate viruses were found in muscle cancers of a 7-year-old child and a woolly monkey, and from a lymph cancer of the gibbon ape.

Drs. Edward M. Scolnick, George J. Todaro, and Stuart A. Aaronson of the Viral Leukemia and Lymphoma Branch, and Dr. Wade P. Parks of the Viral Carcinogenesis Branch, reported their findings in a recent issue of *Nature New Biology*.

The scientists based their conclusion on immunologic studies of an enzyme found in these primate viruses as well as in all other known RNA viruses of this type which cause cancers in animals.

Some RNA viruses, known as type-C, are the proven cause of many animal cancers and are strongly implicated in certain human cancers.

The scientists isolated the cancer-associated enzyme, RNA-dependent DNA polymerase, from two RNA type-C viruses, leukemia viruses of the mouse and cat.

RNA-dependent DNA polymerase, or reverse transcriptase, characteristic of all known type-C RNA cancer viruses of mammals, makes up less than 1/1000th of the virus, yet now appears to distinguish primate viruses efficiently from other mammalian RNA viruses, the scientists reported.

They inoculated the enzyme into rabbits, and harvested the resulting antibody.

Pattern Develops

A characteristic pattern developed when the scientists studied the effect of the anti-mouse and anti-cat antibody preparations on the various mammalian RNA viral reverse transcriptases.

In tests for inhibition with cat, hamster, rat, and mouse viral enzymes, each antibody preparation inhibited its "parent" enzyme best, but still appreciably inhibited the enzymes of the other types of animal viruses tested.

In similar tests with newly discovered RNA type-C viruses from the woolly monkey, gibbon ape, and human muscle cancers, the anti-mouse and anti-cat antibody prepared by the scientists inhibited the viral reverse transcriptases by less than 10 percent.

The low rate of inhibition suggests that primate viruses belong to a class of RNA viruses related to, but distinct from, lower mammals such as the mouse, rat, hamster, and cat.

Antibody Inhibition Compared

The NCI scientists also reported that reverse transcriptase from ESP-1, a proposed human cancer-causing RNA virus found in tumor cells from a child with a relatively rare lymphatic cancer, Burkitt's lymphoma, was inhibited by the antibody to an extent comparable to inhibition among the lower mammals, particularly the mouse.

These findings support previously reported evidence suggesting that the virus may have mouse virus characteristics.

Distinction Detected

The investigators suggest that the distinction they have detected between the lower and higher mammals reflects evolutionary differences between the leukemia and solid tumor RNA viruses of these two groups.

Many scientists have suspected for some time that each type of animal cancer virus may have evolved with its "parent" species, a phenomenon that would explain the species specificity and other immunologic and biochemical characteristics of the known animal cancer viruses.

Other Discoveries Reported

Discovery of the woolly monkey virus was announced by Drs. G. H. Theilen, D. Gould, M. Fowler, and D. L. Dungworth, USC School of Veterinary Medicine at Davis, Calif. in the October 1971 *Journal of the National Cancer Institute*.

Discovery of the gibbon ape virus was reported in the Feb. 9, 1972 issue of *Nature New Biology* by Drs. Thomas G. Kawakami, Sally D. Huff, Patricia M. Buckley, Donald L. Dungworth, and Stanley P. Snyder, the USC School of Veterinary Medicine at Davis; and Raymond V. Gilden, Flow Laboratories, Rockville, Md.

RD-114, the virus from human muscle tissue, was described in the Jan. 5, 1972 issue of *Nature New Biology* by Drs. R. M. McAllister, and M. Nicolson, the Children's Hospital of Los Angeles; M. B. Gardner, R. W. Rongey and S. Rashead, USC School of Medicine, Los Angeles; P. S. Sarma and R. J. Huebner, NCI; M. Hatanaka, S. Oroszlan and R. V. Gilden, Flow Laboratories, Inc., Rockville, and A. Kabigting and L. Vernon, Microbiological Associates, Bethesda, Md.

Dr. Karl E. Mason (l), extramural program director for nutrition, National Institute of Arthritis and Metabolic Diseases, discusses advances in muscular dystrophy research with Dr. Leon I. Charash, chairman of the Medical Advisory Committee of Muscular Dystrophy Associations of America at the Association's annual meeting in Houston. Dr. Mason was elected an MDAA Corporate Member.

Dr. Kreshover Wins Medal From Fauchard Academy

Dr. Seymour J. Kreshover, Director of the National Institute of Dental Research, was honored by the Pierre Fauchard Academy for his outstanding leadership in research, dedication to public service, and valuable contributions to dental research and education.

The Gold Medal for 1971 and accompanying citation were presented to Dr. Kreshover at the Academy's annual meeting on Feb. 12 in Chicago.

Artificial Kidney Meeting Weighs Research Results And Evaluates Progress

The research results and the evaluation of progress in artificial kidneys was discussed at a recent meeting of the Fifth Annual Contractors' Conference of the Artificial Kidney-Chronic Uremia Program, held at the Holiday Inn, Bethesda, Md.

The program, part of the National Institute of Arthritis and Metabolic Diseases, is currently funding about 70 projects.

Accomplishments Stressed

Dr. G. Donald Whedon, NIAMD Director, in his address to the research contractors, consultants, and members of his staff attending the meeting, stressed the accomplishments of the program.

"When this program began only 6 years ago, there were perhaps 500 patients on dialysis. Now there are about 6,000," Dr. Whedon stated.

"A new generation of artificial kidneys is being developed and several models are in commercial production. Much remains to be accomplished, but improved dialysis equipment is now available to meet a variety of needs."

Dr. Whedon also pointed out that "our understanding of the functioning of the kidney itself, of the molecular configurations of uremic toxins, and many other aspects of the entire problem are being elucidated by your work."

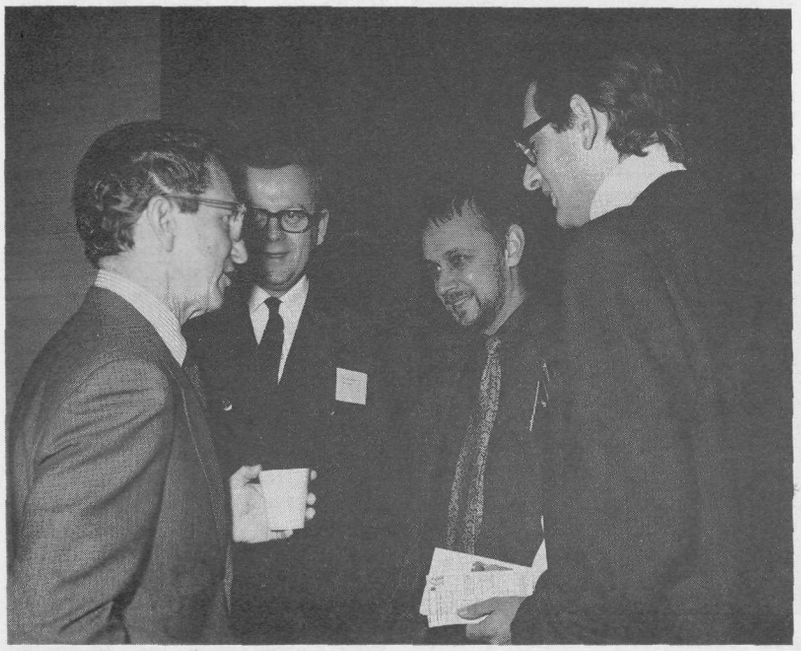
Topics reported on and discussed at the meeting included:

1) The development of chemicals in semipermeable capsules (microencapsulated detoxicants) that can be swallowed to absorb some of the blood wastes left in the body by ailing kidneys. The capsules are then carried away by natural elimination;

2) Determining criteria for optimal treatment with artificial kidneys within the limits imposed by hemodynamics (study of the movements of blood), and,

3) Evaluating and developing new blood access systems through which the artificial kidney is connected to the patient's circulatory system.

The report on conference topics will be published within a few months, and distributed to scientists in the field of dialysis research and development.



During a coffee break, a delegation of nephrologists from the Swedish Medical Research Council continues a discussion on conference proceedings with Dr. Benjamin T. Burton, NIAMD associate director for Program, and chief of the Artificial Kidney Program. The proceedings will be published soon.

Researcher Issues Report on Methadone As a Treatment for Addiction of Heroin

By Carolyn Holstein

Many people mistakenly assume that since methadone is used to treat heroin addiction it is automatically safe, according to Dr. Leon Roizin, professor of Neuropathology, New York Psychiatric Institute, Columbia University.

He spoke at a recent National Institute of Neurological Diseases and Stroke seminar.

"We have data conclusively showing that methadone can often be fatal when it is used in combination with other depressant drugs, including tranquilizers, or with alcohol," Dr. Roizin said.

Methadone is addictive, like heroin, but it is taken orally, while heroin is often injected. Methadone produces many of the same side effects but its cost is negligible compared to the black market cost of heroin.

Approximately 50,000 of the estimated 600,000 heroin addicts in the country are experimentally receiving methadone from several centers located in large cities.

"In the majority of cases, heroin addicts are by-products of the drug culture using a toxic cocktail of several drugs simultaneously," Dr. Roizin said.

"If you give a person 1 gram of barbiturates or a quart of alcohol, he will usually recover. But if you simultaneously give an addict heroin or methadone and a gram of barbiturates or a quart of alcohol, irreversible, fatal lesions result."

Dr. Roizin based his comments on a recently completed study of 405 heroin addicts now using methadone under an experimental program in New York City.

These users were selected for the study because they were found to be taking other drugs or alcohol in addition to methadone.

Studies of brain tissue from 14 deceased users showed that methadone accumulates in the tissues, producing changes in them.

Changes Listed

"In the long-term user," according to Dr. Roizin, "these changes could set off a whole new chain of abnormal processes."

The changes include hypertrophy (increased growth) of certain (glial) cells and evidence of increased permeability of cerebral blood vessels.

In addition, there may be a degeneration of nerve synapses (connections) and the presence of so-called senile plaques—a change similar to that found in persons with presenile dementia (premature aging).

Dr. Roizin observed this condition in three of the 14 deceased patients.

He also found that many methadone users continue to use some heroin as well. He also reported instances of users who "shot" (injected) methadone, a practice which can result in almost instant death.

Another concern is the user who goes off methadone and then returns to it at the same dosage. His body can no longer tolerate that amount of the drug.

Another problem user is the pregnant mother. Methadone has been shown to cross the placental barrier; babies addicted to methadone are now being born. And scientists are finding that in infants, methadone addiction is harder to combat than heroin addiction.

"Methadone is not the ultimate answer for treatment of heroin addiction," Dr. Roizin said.

"We are working to find a better treatment and to find improved antidotes to block and neutralize the destructive action of methadone overdose or methadone used in combination with drugs or alcohol."

Since methadone accumulates in the tissues, short-term antidotes are only temporarily effective, and the user can die after the antidote has worn off.

Dr. Roizin pointed out that most methadone users are not adequately warned about the hazards when receiving treatment from the centers.

He declared that ignorance is contributing to the "devastating number of young people dying from narcotic use and misuse."

Dr. Kirschstein Named Ass't Director of DBS

Dr. Ruth L. Kirschstein has been appointed assistant director (Research Contracts), Division of of Biologics Standards.

Dr. Kirschstein will plan and coordinate the scientific aspects of the DBS research contracts program. This program is an extension of the Division's intramural research relating to its regulatory functions.

Dr. Kirschstein

Dr. Kirschstein will continue to serve as chief of the Division's Laboratory of Pathology, a position which she has held since 1965.

The study of the pathogenesis of infectious diseases, particularly as related to biological products —including those in developmental stages—constitutes a major portion of the laboratory's program.

For 8 years prior to 1965, Dr. Kirschstein was responsible for the Division's neurovirulence and safety testing program for inactivated and live poliomyelitis vaccines.

She is an authority on infectious neuropathology of monkeys and has earned an international reputation in this field.

In 1971 she received the DHEW Superior Service Award for her contributions in the development and application of the monkey safety tests to live viral vaccines and for her research on viral oncogenesis.

A graduate of Long Island University, Dr. Kirschstein received her M.D. in 1951 from Tulane University School of Medicine.