Thermostats Set at 65° To Conserve Energy Here

In compliance with President Carter's directive to conserve energy during this time of national crisis, heating thermostats in NIH offices and laboratory areas have been reset to maintain 65° F.

No adjustments will be made to settings in hospital patient rooms, animal rooms, and other special areas.

If an adjustment is permissible in these areas, responsible personnel should advise the Buildings Unit which serves the area.

Reduction of ventilation (outside air supply) in office buildings during night and weekends—where such adjustment can be made—will continue.

All employees are urged to join the effort to conserve energy and to wear warm clothing to combat the inconvenience of lowered thermostats.

Employees Take Note: Parking Fines Higher

Parking fines have recently been raised. A $15 fine is in effect for unauthorized parking in a space or area reserved for disabled persons, Government officials, carpools, or employees with specific work-related duties.

A $15 fine may also be charged for parking where prohibited at any time or by an employee in a visitors space.

Fines of $20 may be imposed for parking on the lawn, in a walkway or pedestrian crossing zone, or for prohibited double parking.

A $25 fine will be levied for parking in a fire lane or where prohibited during a snow emergency.

A $10 fine will be incurred for vehicles parked overtime, unauthorized vehicles, or those not parked within marked parking spaces.

Cars parked in an assigned area without displaying a currently valid parking permit may be fined $5.

NLM Publishes Experimental TOX-TIPS, A Monthly Bulletin on Toxicology Tests

Newspaper headlines attest the average citizen's concern with the possible deleterious health effects of the many industrial chemicals, food additives, pesticides, drugs, and other substances to which he is frequently exposed.

To learn more about these effects, Government and industry scientists are engaged in long-term toxicology testing to evaluate the hazard or safety of substances used by man.

With this growing reliance on long-term toxicology research, scientists need to know that testing is going on in other laboratories to avoid needless duplication of testing in other companies, agencies, universities, and even countries.

Begins June 1976

Foreseeing the growing acuteness of this need, the National Library of Medicine began publishing in June 1976, an experimental monthly bulletin, Toxicology Testing in Progress.

Sponsored jointly by NLM and the Toxicology Information Subcommittee of the DHEW Committee to Coordinate Toxicology and Related Projects, TOX-TIPS has strong support from industry and (See TOX-TIPS, Page 6)

Dr. Nathan Shock Named NIH Scientist Emeritus

Dr. Nathan W. Shock has been named the 11th Scientist Emeritus of NIH. The appointment was made upon Dr. Shock's retirement as scientific director of the National Institute on Aging at the end of 1976.

In his new role, Dr. Shock will consult with NIA scientists on aging research matters and will help analyze Baltimore Longitudinal Study data prior to publication.

Continues Editing Duties

He also will continue to compile and edit "Current Publications in Gerontology and Geriatrics," the listing which appears in each issue of the Journal of Gerontology covering worldwide literature related to aging.

Dr. Shock has been the catalyst in building the NIA Gerontology Research Center from a small two-man research unit in 1941 to today's modern facility with more than 150 scientists and supportive staff investigating biomedical and psychological factors involved in the aging process.

NIH Director Dr. Donald S. Fredrickson said it is in his congratulatory letter sent to Dr. Shock last fall: (See DR. SHOCK, Page 8)

Dr. Rowe Is Honored By Cancer Institute

Dr. Wallace P. Rowe, chief of the Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases, recently received the National Cancer Institute Annual Virus Cancer Program Award for his many valuable contributions to virus cancer research.

The plaque was presented to Dr. Rowe at the Virus Cancer Program 11th Joint Working Conference in Hershey, Pa.

In recent years, Dr. Rowe's research on genetic transmission of the mouse leukemia virus and on virus activation by chemicals has helped demonstrate the presence of a chemical blueprint for the cancer virus in the genes of normal mouse cells.

Other work has focused on hybrid viruses and the defective nature of transforming viruses.

Previous award recipients were: Drs. Werner and Gertrude Henle, 1976; Dr. Charlotte Friend, 1974; Dr. W. Ray Bryan, 1973; Dr. Ludwik Gross, 1972; and Dr. Joseph Beard, 1971.

Dr. and Mrs. Nathan Shock (l), and Dr. Richard C. Greulich, acting NIA scientific director, admire the portrait recently unveiled at the Gerontology Research Center in Baltimore. The painting commemorates Dr. Shock's 35 years (1941-76) as Center director. Alfred C. Loong, DRS Medical Arts and Photography Branch, was the artist.
Join NIH Joggers, Enter Cherry Blossom Classic

It's time for joggers to get in shape and register for the Fifth Annual Cherry Blossom Classic—Sunday, April 3—this year offering 2-mile and 10-mile runs beginning from Hains Point, Washington, D.C. Registration for the national competition is free this year.

Teams Forming

In addition to individuals, 5-person teams, including women's groups, may enter. The NIH Health's Angels—an endowed, non-profit, all-female, 5-person team—will again be entered, with approximately 250 women strong—hopes to enter several teams. Contact Alice Lewis, Bldg. 10A, Rm. 1E38, for registration forms and information.

Run Friday at Noon

When the weather allows, NIH's Angels members sponsor Friday noon Fun-Runs beginning in front of Bldg. 1. Anyone may participate. Business meetings are held at noon the first Monday each month in the Medical Board Room, Bldg. 10, Rm. 1S219.

Women's Golf Ass'n to Meet March 2 to Plan 1977 Season

The NIH Women's Golf Association will hold an organizational meeting from noon to 1 p.m. on Wednesday, March 2, in Conference Room 5, Bldg. 31, B1 level. All NIH women—especially new members—interested in the 1977 season are invited.

Sponsored by the Recreation and Welfare Association, the group provides golfing activities for women of all ages, including tournaments for beginners to scratch handicappers.

Spring Computer Classes To Fill Increasing Demand

The DCRT Computer Center is planning a special “double feature” program this Thursday evening, Feb. 10, at 7 p.m., in the Masur Auditorium.

The presentation is open to the public.

AMWA Chapter Meets Feb. 10; To Hear Eicholtz, See Film

The Mid-Atlantic Chapter of the American Medical Writers' Association is planning a special “double feature” program this Thursday evening, Feb. 10, at 8 p.m., in the Masur Auditorium.

The film was made in California with NIH funds. Dinner will be at 7 p.m., and the program starts at 8 p.m. For reservations, please call Mary Matzen, 654-0564 by Feb. 8.

Quartetto Italiano Returning On Feb. 13 For FAES Concert

The Quartetto Italiano is being welcomed back at the next FAES concert to be held on Sunday, Feb. 13, at 4 p.m. in the Clinical Center Masur Auditorium.

This is the fifth concert this season sponsored by the Foundation for Advanced Education in the Sciences.

Admission is by ticket only.

And When You Grow Old Film to Be Shown on Feb. 23

A 26-minute film, “And When You Grow Old,” will be shown Wednesday, Feb. 23, at 11 a.m., in the Masur Auditorium.

Developed by the American Occupational Therapy Association, the film presents sketches of five elderly Americans and discusses their concerns and philosophies. The presentation is open to the public.

NIH PLATELETPHERESIS CENTER nurse Joyce Heller extracts a blood sample from Col. Arthur K. Herold, Commandant of the 207th U.S. Army Reserve School at the Riverdale, Md. Members of the Reserve Unit recently stopped by the Center before attending their weeknight drill. Leukemia patients, mostly children, need blood platelets to prevent fatal hemorrhaging. The chance of matching platelets is approximately 1 in 5,000, so many potential donors need to be tested. To make an appointment, call Ext. 64321.

Booklet on 'Diverticulosis And Diverticulitis' Now Available From NIAMDD

A new booklet on a common digestive disorder, Diverticulosis and Diverticulitis, published by the National Institute of Arthritis, Metabolism, and Digestive Diseases, is now available.

Diverticulosis is a condition of the digestive tract characterized by tiny pouches (diverticula) which protrude through the muscular wall of the large intestine. If these sacs become infected, the condition is known as diverticulitis.

Complications of this disorder plagued former Presidents Johnson and Truman and ex-Secretary of State John Foster Dulles as well as thousands of other Americans.

More than 20 percent of Americans over 40 years of age and over 60 percent of those over 65 have diverticulosis. Of these, more than 20 percent develop the infected form, diverticulitis.

The condition is found more often in women than in men.

Many doctors believe prevention or management of these disorders is best accomplished through diet.

The diet most often prescribed is high in bulk-producing fiber-containing foods to facilitate the easy passage of feces through the large bowel and to prevent the strong intestinal wall contractions (“straining at stools”) which are believed to be responsible for the development of the bowel outletting over the span of many years.

Copies of the pamphlet are available from the NIAMDD Office of Scientific and Technical Reports, Bldg. 31, Room 9A-04, Bethesda, Md. 20014.
**MEDLEARN** Helps Computer Students Gain Skills by Using MEDLINE Program

Since 1971, when the National MEDLINE, the tremendous growth retrieval services has been paralleled NLM to network users. Although MEDLINE use requires no special background in computers, data base searchers do not need to be acquainted with NLM indexing procedures, the vocabulary used for retrieving references, the techniques for accessing the system, combining search systems, and so forth.

### Teaching for Several Years

For several years, NLM has been teaching MEDLINE users through training courses, workshops, and demonstrations.

**A new approach, **MEDLEARN** uses a computer to teach students how to search NLM's on-line data bases. An example of CAI (computer-assisted instruction), MEDLEARN** eliminates the geographic restrictions of training classes by providing access to the same instructional program from remote locations by means of computer terminals. Although somewhat expensive to create, CAI courses may be given at modest costs and are easy to update or modify.

Also, a CAI program allows the student to experience a genuine interaction with the computer, enabling the transition from instruction to on-line searching to be much easier and smoother.

MEDLEARN** — a modularized instructional program — is written in chapters, each dealing with a specific aspect of searching MEDLINE.

Students who have had little or no experience with on-line searching are guided through a logical sequence of topics, while more experienced students may choose their own path through the material.

A complex and sophisticated computer program enables each MEDLEARN** user to bypass or to review instructional sequences at his own discretion.

Thus, each student may determine the length of time to devote to an instructional session, and simply resume at some future time at precisely that point in the program at which the previous session terminated.

### Highly Interactive Program

**MEDLEARN** is a highly interactive instructional program: students and "teachers" are constantly sending messages to each other. The student's level of comprehension is assessed through frequent questions and quizzes.

The computer responds to each of the student's answers, with clarification and reinforcement for a correct response, or a restatement of the lesson and further queries for an incorrect response.

The average total time of instruction is 4 hours. At the current lowest rate of $8 an hour for time connected to the NLM computer, (See **MEDLEARN**, Page 7)

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**Research in Dacca Proves Malnutrition Increases Severity in Cholera**

Scientists partly supported by the National Institute of Allergy and Infectious Diseases have verified and expanded earlier reports that nutritional status can affect the severity of diarrhea in cholera patients.

A study of hospitalized patients in Dacca, Bangladesh, found that a 30 to 70 percent increase in diarrhea duration in the more severely malnourished was not related to antibiotic therapy, intestinal parasites, or water diet, given as the patient recovered.

The investigations suggest that poor nutrition retards replacement of normally short-lived intestinal mucosal cells, allowing irreversibly bound cholera toxin to continue to exert an effect.

Malnutrition has long been thought to affect adversely the course of cholera, but no adequate documentation existed. A connection between malnutrition and prolonged diarrhea was noted in tetracycline-treated cholera patients in 1967 and corroborated in 1970.

The present study by Drs. D. L. Palmer, F. T. Koster, A. K. M. J. Alam, and M. R. Islam of the department of medicine, Johns Hopkins Center for Medical Research and Training, and the Cholera Research Laboratory, Dacca, was designed to determine the relationship of protein-calorie malnutrition to severity of cholera in both tetracycline-treated and non-treated patients.

97 Patients in Study

Ninety-seven confirmed cholera patients were entered in the study at the Cholera Research Hospital in Dacca during 1974 cholera epidemic, and assigned sequentially to groups which would or would not receive tetracycline. Most of the patients were younger children, typical of groups usually most affected during cholera epidemics.

(See CHOLERA, Page 7)
Scientists at the National Institute of Allergy and Infectious Diseases and their colleagues have reported temporarily successful use of a chemical in treating chimpanzees with chronic hepatitis B virus infection.

The chemical used—PICLC—induces interferon, an antiviral substance produced by the body. Interferon can also be produced in the laboratory from human white blood cells, but it is difficult to obtain and is very expensive.

Scientists have sought an effective and relatively inexpensive inducer to increase production of endogenous interferon to fight viral infections. PICLC (polyribino-1-sin-polyribocytidylic acid-poly-l-lysine carboxymethyl cellulose)—one of the most promising inducers—was relatively toxic and is not readily broken down by the body.

As reported in the Oct. 9 issue of Lancet, Dr. Robert H. Purcell and his associates used PICLC, a stabilized derivative of an earlier inducer, poly I:poly C, in a study with four chimpanzees.

PICLC significantly reduced the number of Dane particle markers in the blood that indicated hepatitis B infection. Dane particles are thought to represent the complete hepatitis B virus.

The scientists’ success in treating the chimpanzees was only temporary in that cessation of therapy resulted in markers of infection returning to pretreatment levels. Dr. Purcell and his co-workers believe, however, that their failure to cure the animals may have been due to their inability to maintain constant serum levels of interferon in the experimental animals.

Parallels Other Studies

The results closely parallel findings recently reported by NIH grantees and by European scientists who administered exogenous interferon to chronically infected humans. The studies have not yet determined whether suppression of Dane particle production also limits the infectivity of the hepatitis carrier.

**Virus Doesn’t Stimulate**

The studies further indicated that the hepatitis B virus itself is a relatively poor stimulator of interferon production, perhaps accounting for the chronicity of the disease. However, even small amounts of interferon suppress virus synthesis.

Thus, PICLC (or exogenous interferon) may be useful in treating chronic hepatitis B virus infections in humans. It has been estimated that at any one time between 150 and 200 million of the Committee on Aging. He has also served as the Arkansas State Interagency served as Vice President of the Arkansas Gerontological Society.

In addition to the three new appointments, Bernard Nash, a consultant to the American Association of Retired Persons/National Retired Teachers Association, has replaced Dr. Carl Elsdorfer as an ex officio member of the Advisory Council representing the Federal Council on Aging.

Mr. Nash was formerly deputy commissioner to the U.S. Administration on Aging, as well as serving as executive director of the AARP/NARTA.
NBC's TODAY Show Features Clinical Center on January 21; Gives Live and Taped TV Coverage
Studies on Chromatin, Protein Synthesis Discussed at Science Writers Seminar

Dr. Korn (second from I) introduced the speakers at the recent Science Writers Seminar, held Jan. 25 at NIH. L to r: Dr. Nienhuis of NHLBI; Dr. Felsenfeld, NIAID; and Dr. Leder, NICHD.

Chromatin and Protein Synthesis were the general topic of the most recent Science Writers Seminar, sponsored by the Intramural Scientists and Its Relationship to Biological

Dr. Gary Felsenfeld, acting chief of the Laboratory of Molecular Biology, National Institute of Arthritis, Metabolism, and Digestive Diseases, discussed Organization of DNA in Higher Organisms and Its Relationship to Biological

TOX-TIPS
(Continued from Page 1)

trade associations which have voluntarily submitted reports of ongoing research projects.

By the end of 1976, TOX-TIPS had made public the information on nearly 100 current or planned toxicity testing projects involving more than 100 substances.

Project announcements carry information on chemical structure, how the substance is administered, dosage, species, and strain of test animals, duration of the test, control arrangements, and the like.

Each issue of TOX-TIPS includes a cumulative index by compound, investigator, and supporting and performing organization.

In fact, TOX-TIPS may be the only published notice for many toxicity projects. For various reasons—such as absence of any observable effect—results may never be published.

Knowledge that such a project was undertaken, however, could be critical to another toxicologist interested in the same or a structurally similar substance.

NLM plans to issue several more experimental issues before converting the publication to a subscription item available from the National Technical Information Service.

For sample issues or further information, write to Dr. Melvin Josephs, Chief, Technical Files Implementation Branch, Specialized Information Services, NLM.

Study Finds Hypnosis Is More Effective Than Acupuncture in Dental Pain Relief

Western theories of the mechanism of pain control by acupuncture can be classified as primarily psychological or neurological. Acupuncture has been likened psychologically either to hypnosis or the placebo effect attributable to a patient's confidence in a procedure.

Acupuncture has also been compared to electrical stimulation of specific regions of the brain which, when activated, block pain messages from reaching consciousness, and to the pain-relieving effects of narcotics which also seem to activate these same pain-inhibiting regions of the brain.

Thus, there appear to be specific regions of the brain with a normal function of inhibiting pain. These regions may be activated by morphine, electrical stimulation, or acupuncture.

Dr. Donald D. Price of the National Institute of Dental Research and Dr. David J. Mayer of the Medical College of Virginia determined the point of pain recognition in groups of volunteers by increasing the stimulation of incisor teeth with an electric vitality tester.

A higher pain threshold means that a stronger stimulus is required to evoke pain, and therefore scientists infer that pain relief or a decrease in pain sensitivity has occurred.

Another group of 14 subjects was hypnotized and given the suggestion that they would not feel pain. The tooth test showed an average 85 percent increase in pain threshold for these individuals.

During the period of increased pain thresholds, half of the hypothesis group and half of the 20 acupuncture responders were given an injection of naloxone while the remainder of each group received a saline injection. These solutions were given on a double blind basis, neither patient nor doctor knowing what was given at the time.

Thresholds Elevated

Those subjects in the acupuncture group who received saline had the same elevations of pain thresholds as before.

In contrast, when naloxone was given to the other acupuncture subjects, their pain thresholds returned to pre-acupuncture levels. When applied to the hypothesis group, naloxone did not reverse the elevated pain thresholds of any hypnotized subject.

This research shows that at least part of the pain control of acupuncture is attributable to an effect on neural pathways that are also activated by narcotics such as morphine because one chemical antagonist, naloxone, inhibits both.

May Release Enkephalin

Acupuncture may release the newly discovered "enkephalin" a pain-killing, morphine-like substance produced by the brain itself.

These findings also convinced the investigators that hypnosis has a different mechanism than acupuncture, and is a more powerful and predictable method of pain relief.

Drs. David J. Mayer, Joseph Barber, and Amir Rafii, of the Medical College of Virginia, Richmond, and Dr. Donald D. Price, NIDR, report their findings in the Proceedings of the International Association for the Study of Pain, 1976.
been obtained from 8,666 normal Bengali children of known age.

The nutritional status of all patients was poor by international standards, though half the children ranged above and half below the Bengali norm. Seventy-eight percent of the children ranged above and half below the standards, though half the children affected 69 and 26 percent of the adults respectively.

Affects Duration

Depending on its severity, malnutrition was found to be associated with a 30 to 70 percent increase in duration of diarrhea in all age groups. The effect on volume of stool loss was less pronounced than on duration. Both duration and volume were significantly decreased with tetracycline therapy.

The investigators examined various factors other than malnutrition as causes for the prolonged diarrhea, but found no support for any of these.

Toxin Persists

Intestinal mucosal cells, which usually have very brief lives, are known to be replaced slowly in diseases of severe malnutrition. The effect of cholera toxin is believed to persist for the life-span of the mucosal cell to which it binds, and this slowed replacement rate could prolong the toxin’s effect.

The protracted course of cholera in the malnourished is of great significance, since it increases the demand on the hospital for fluids, medical supplies, and nursing care, and adds to the cycle of malnutrition-leading-to-diarrhea-leading-to-malnutrition so prevalent in underdeveloped countries, say the investigators, who published a report of the study in the July 1976 issue of the Journal of Infectious Diseases.

**CHOLERA**

(Continued from Page 3)

NICHHD Scientists Explore Muscle-Nerve Synapse Formation in Tumor Cell Clones

Anyone who has looked into the electronic circuitry of a computer, in all its numbing complexity, has some appreciation of the problems scientists face in attempting to understand the delicate molecular, biochemical, and electrical changes that occur during transmission of a neural impulse to a muscle cell.

The manner in which nerve cells form functional connections—synapses—from one to another, and by means of these connections assemble into complex, specifically organized circuits, is a central problem for neurobiology. Understanding this process is essential for progress in analysis of normal and pathologic development of the brain.

**Complexity Poses Problems**

The complexity and heterogeneity of the intact central nervous system pose enormous problems for studies of the molecular and cellular basis of synapse formation.

Cloned lines (derived from a single cell) of neuronal tumor cells overcome some of these problems and have been widely used in neurobiologic studies.

During the past year, Dr. Phillip Nelson and Clifford Christian, neurobiologists in the National Institute of Child Health and Human Development, in collaboration with Dr. Marshall Nirenberg of the National Heart, Lung and Blood Institute have demonstrated that cloned neuroblastoma hybrid cells are capable of forming synapses with normal muscle cells.

Hybridization and cloning techniques allow the experimenter to generate a large number of cell lines, each homogeneous, but each line carrying in its genetic machinery a different combination of characteristics.

Comparison of cells which form synapses and cells with various synapse deficiencies in the genetic program permits delineation of the steps in synapse formation.

Neuronal tumor cells are also extremely sensitive to a variety of neurotransmitters—chemical substances, produced by the neuron, that flow across a synapse and change the membrane potential of the adjoining cell, allowing transmission of the message.

The sensitivity of these neuronal cells allows studies of such cell properties as synthesis, storage and release mechanisms for neurotransmitters, and membrane receptors.

The investigators found that early stages of synapse formation are not characterized by an extremely high degree of specificity. Normal, mature neuronal networks, are however, organized with precision.

**Modulate Selectivity**

It appears that patterns of electrical and neurochemical activation imposed upon the developing network somehow selectively modulate synaptic connections so that highly precise functional networks result.

The cloned lines of nerve cells have proved to be a most effective model system for investigation of synapse development and modulation.

**MedLARS Management Section.**

*MEDLEARN* is available exclusively from the NLM computer in Bethesda, Md., Monday through Friday. It may be used prior to 9 a.m., from 11 a.m. to 2 p.m., and after 6 p.m. Hours of use on Saturdays are not restricted; however, availability is not guaranteed when MEDLINE is not operating.

To be astonished at anything is the first movement of the mind towards discovery.—Louis Pasteur.
PHS Employees Commemorate Martin Luther King Day

February 8, 1977

Photos by Tom Joy
And Carl Guenveur

Seated at the podium and listening to the Blair Concert Ensemble and the PHS Choir (1 to r) are: Raymond Jackson, EEO Director; Sherry Salway, Indian Health Service, HSA; Storm Whaley, NIH Associate Director for Communications, who welcomed the participants on behalf of the NIH Director Dr. Donald S. Fredrickson; Dr. Dickson; Congressman Dellums; Robert H. Smith, OASH, general chairperson; and Harriette Hunter, Affirmative Action Officer, FDA, and chairperson, program committee.

Exhibit of Modern Art

DR. SHOCK
(Continued from Page 1)

"... In your 35 years of leadership in gerontology at the National Institutes of Health you have exerted a powerful influence and strengthened the commitment of the scientific community to the importance of studies on aging.

Dedication Cited

"The programs you have championed and nurtured have become the scientific core of the new National Institute on Aging. Few of us have expectations of a larger or more tangible monument to a..."

Employees Sign Pledge

More than 600 PHS employees pledged to work for the betterment of the human condition, especially for those persons who have been neglected in past generations or who have been unable to share in the economic benefits that the Nation has successfully afforded to the majority of its citizens.

The pledge offers the employees' "individual efforts, not only as employees in governmental positions, but as individuals with an involvement in humanhood, to work for the betterment of the human condition, especially for those persons who have been neglected in past generations or who have been unable to share in the economic benefits that the Nation has successfully afforded to the majority of its citizens."

The document also requested that HEW officials "note formally to the Administration which is about to assume power our desire to see the Nation marshal all the resources it can reasonably afford to see that these (King's) ideals are achieved."

He is an active champion of the International Association of Gerontology, dating back to its birth in the early fifties. He presided over the 8th International Congress of Gerontology held in Washington, D.C. in 1969, and was IAG president from 1969 to 1972.

Velma M. Strade, Director, EEO, Department of Labor, delivered the featured address in morning ceremonies here at NIH.