

the

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## Four NIH Units Reach UGF Aim; Drive Extended

Three NIH Divisions and one Institute had reached or passed their UGF contribution quotas by the end of the fifth week of the campaign here.

DGMS led with 135 percent, NIDR had 103 percent, DBS had 101 percent, and DRG had just reached 100 percent.

Total contributions for NIH were 79 percent of its \$62,770 quota.

"These Institutes and Divisions which have made their quota are to be commended," said Dr. Roderick Murray, DBS Director and this year's UGF chairman for NIH.

### PHS Totals Cited

Figures for PHS as a whole showed that 92 percent of employees had contributed, but total contributions had reached only 82 percent of the \$125,637 quota.

Due to a lag in campaign giving throughout the Washington metropolitan area, the UGF has extended the campaign to November 21.

"I sincerely hope," said Dr. Murray, "that when the November 21st summary report is issued it will show that the entire roster of organizations within the NIH have

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## 273 Scientists Visit NIH As Speakers in 12 Months

By Mary-Helen Emmons and Pearl E. Giles

Examination of its roster of visiting speakers reveals that NIH, as the principal research center of the Public Health Service, is becoming increasingly a mecca for distinguished medical scientists from all parts of the world.

During the past twelve months, from November 1959 through October of this year, 273 prominent scientists visited NIH and addressed their fellow scientists here on the subjects of their research.

Of this total, 131 came from 30

foreign countries, the remaining 142 from all parts of the U. S.

In addition to scientists who spoke here, hundreds of others visited NIH individually or as members of delegations to observe NIH facilities and the research activities of its staff members.

A comparison of the number of visiting speakers at NIH during the three-month period of August to October 1957 with the corresponding months of this year shows an increase of nearly 100 percent. The totals were 36 and 69, respectively. Of the latter number, 27 were from the U.S. and 42 from foreign countries.

On one recent day alone—October 11—four visiting speakers from as many foreign countries lectured at NIH. They were Prof. Serge Lisitzky, Laboratoire de Chimie Biologique, Faculte de Medecine et de Pharmacie, Marseille, France; Dr. Tikvah Alper, Experimental Radiopathology Research Unit, Hammett Hospital, London, England; Dr. Michael Sela, a Visiting Scientist from the Weizmann Institute of Science, Rehovoth, Israel; and Dr. C. T. Greenwood, Department of Chemistry, University of Edinburgh, Scotland.

### All NIH Phone Numbers Now Have Four Digits

All three-digit phone numbers throughout NIH were changed on October 31 to four-digit numbers, the Communications Section, OAM, reports.

This change was made necessary when a new system, permitting direct dialing, was installed in the Robin and Arts Buildings in Silver Spring.

The new extension numbers are listed in the NIH Telephone and Service Directory issued at the end of October.

## Survey Reveals 2,275 Desire Bus, Car Pool Service

Latest tabulations reveal that 4,614 NIH employees have returned the traffic survey questionnaire distributed October 12 by Plant Safety Branch, and that 2,275, or 49.3 percent, are interested in the possibility of direct bus or car pool transportation between home and work.

Analysis of the returns shows 1,786 expressing a desire for bus service, 158 wanting to join car pools, and 331 interested in using either bus or car pools.

Of those desiring bus transportation, 684 said they would use it regularly, 524 frequently, and 578 occasionally.

This latest report, submitted October 31, while the return of questionnaires continued at a diminishing rate, also revealed 532 employees presently participating in car pools and 1,807 not interested in either bus or car pool transportation.

The questionnaires were distributed as the first step in a program initiated by Management to alleviate parking and traffic congestion here.

Management officials expressed "great satisfaction" over the cooperation of employees in filling out and returning the questionnaire. They were optimistic that the large proportion indicating a desire for bus service or car pool membership would lead to early completion of effective plans for alleviation of the problem.

With the return of questionnaires virtually complete, Plant Safety Branch was preparing to submit a report to D.C. Transit, which the bus company has said it would use as a basis for determining the possibility of establishing commuter bus routes with stops throughout the reservation.

PSB was also working out a plan for enabling prospective car pool members living within relatively small areas to make direct contact with each other.

In this connection a memorandum will be distributed tomorrow to potential car pool members, requesting their office phone extension, home address, and home phone number.

## Surgeon General Appoints Three To New Posts

Surgeon General Leroy E. Burney on October 27 announced appointments to three newly created Public Health Service positions, effective November 1.

Dr. James M. Hundley, formerly NIH Special Assistant on International Affairs and recently Chair-

man and Coordinator of the Study Group on the Public Health Service Mission, became fourth in command in the Service with the rank of an Assistant Surgeon General.



Dr. Hundley directly under Assistant Surgeon General Arnold B. Kurlander

with specific responsibilities for health mobilization, international health, and field relationships with the Regional Medical Directors.

### Two Named to BSS

Harry Hanson has been named to the new post of Associate Chief of the Service's Bureau of State Services, with the rank of Assistant Surgeon General.

He will function in the area of environmental health activities. He also will retain temporarily his present post as Director of the Service's Sanitary Engineering Center in Cincinnati where the environmental health research of the Service is concentrated.

Dr. Aaron W. Christensen has been appointed to the second new Associate Chief position in the Bureau of State Services, with the rank of Assistant Surgeon General. He will be concerned with community health services.

Surgeon General Burney stated that creation of the three new positions is consistent with the recommendations of the Study Group on the Public Health Service Mis-

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# the Record

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## 'PERSONNEL' TO PERSON

### RETIREMENT ACT AMENDMENT

Public Law 86-713, approved September 6 of this year and effective on that date, amends the Civil Service Retirement Act to establish a "day-after" concept for the commencement of all annuities and for the termination of employee annuities, in place of the "first-of-the-month after" concept previously in effect.

This means that if your separation for retirement is effective on November 8, your annuity will start on November 9 rather than December 1 as provided under the previous regulation. You may obtain more detailed information on this amendment from the Employee Relations and Services Section, Bldg. 1, Rm. 21, Ext. 4851.

### X-RAY TECHNICIAN TRAINING

The Director of the Clinical Center has announced the inauguration of a two-year training course to prepare a small group of young men and women for careers in X-ray technology.

Under the instruction and supervision of the Chief of the Diagnostic X-ray Department and his staff, trainees will participate in a comprehensive course embracing all phases of medical radiography.

Those successfully completing the course will be awarded a graduation certificate by NIH and will qualify for the examination administered by the American Registry of X-ray Technicians.

Passing of this examination will enable the technologist to attain membership in the American Society of X-ray Technicians.

In addition to the opportunity to study and work with top-rated medical radiologists, first-year trainees will receive \$116 per month

## NIH Has Big New Flag For Sundays, Holidays

NIH employees who keep a sharp weather-eye on the flagpole in front of Building 1 may have noticed it flying a large new American flag recently—the first 50-star flag to be displayed on the reservation.

A call to Jacob L. Craumer, Captain of the NIH Guard Force, revealed that the new flag, a generous 18 by 24 feet in size, is now the NIH official "garrison flag."

This means, Captain Craumer explained, that it will be flown only on holidays, Sundays, and special occasions.

The new flag was first flown on October 24 and 26—both windy days—to test the flagpole's ability to withstand the greater wind-pull resulting from the flag's large size.

For non-special, every-day use, NIH flies what is known as the "routine daily" flag whose dimensions are 5 x 9 feet. In stormy or extra windy weather the "storm flag" is flown. It is only 3½ x 6 feet.

and second-year trainees \$133 per month. Uniforms will be furnished and laundered without charge.

Applicants must meet certain basic requirements. They must be 18 to 30 years of age, United States citizens, and high school graduates, they must pass an aptitude test and a physical examination. Courses completed in physics, chemistry, biology, algebra, and geometry will prove helpful to the applicant.

Applications for X-ray Technologist Trainee should be made on Standard Form 57, "Application for Federal Employment," and directed to the Employment Officer, NIH, Bldg. 1, Rm. 21.

Applications will be accepted until December 16, 1960, for the course beginning February 1, 1961. If you know a young person who might be interested please pass along this information.

## CC Patients' Fund Enriched By NIH Children's Fair

The NIH Patients' Welfare Fund was enriched by \$11.87 on October 14, when five children of PHS Commissioned Officers living in the officers' quarters on North Drive brought a check for that amount to the Clinical Center.

The check represented proceeds from a fair planned and conducted by the children the preceding month.

Following is an account of the fair as reported in a recent issue of the *Station Tribune*, a four-page monthly paper devoted primarily to news of doings on the reservation, published by Ed Tabor, 13-year-old son of Drs. Herbert and Celia W. Tabor of NIAMD.

### By Ed Tabor

On September 1, the children in the neighborhood put on a fair. There was a Miracle Ride, Balloon Shaving, Fortune Telling, and the Mad House.

One of the interesting side shows had a toy pig that smokes.

When one entered the balloon shaving, you took the risk of the balloon popping, and you ending up with lather all over.

### Food "Of Course"

And, of course, there was food. There were hot dogs, potato chips, pop corn, lemonade, brownies, and watermelon.

Towards the end there was a dog show which was judged by Dr. Andrews, DVM. He really did a good job. Heidi, a dachshund, was "The Longest Dog." Huckleberry, a sweet little dog, was "The Bravest Dog"—for chasing home the judge's fierce boxer. Bonnie was the "Best Combed Dog," and there

were many other 'awards'. Every child was happy.

The fair was from 6-9:00 p.m. The hours of work that those participating put in showed up in the results. It was really a job-well-done. There were printed tickets of several denominations; and when you won a prize, you took a "prize ticket" over to a booth with prizes. There was a large variety of prizes.

The money from the fair was given to charity.

*Ed. Note:* Those who conducted the fair, in addition to Ed Tabor, were Marilyn, Stanley, and Dickie Tabor, Ed's sister and brothers; Mark and Louise Holliday, children of Reynold R. Holliday, DRS; Barbara and Lillian Sober, daughters of Dr. Herbert A. Sober, NCI; and Mary, Susan, and Janet Pratt, daughters of Dr. Arnold W. Pratt, NCI.



NIH children who organized and conducted the benefit fair held recently in the PHS Commissioned Officers' quarters here are pictured here with three of the dogs that were entered in the fair's dog show. Standing, from left: Mark Holliday, 7; Dickie Tabor, 11; Ed Tabor, 13; Barbara Sober, 9; and Mary Pratt, 12. Seated, from left, are Marilyn Tabor, 11; Stanley Tabor, 6; Lillian Sober, 13; Susan Pratt, 10; and Janet Pratt, 7. Louise Holliday, 9, another member of the group, was appearing on the "Bozo the Clown" TV program when this picture was taken.

## John C. Kelly Dies

John C. Kelly, 69, a locksmith in the Carpenter Shop, PEB, died September 13 in Arlington, Va., after a short illness.

A native of Washington, Mr. Kelly had been associated with NIH since 1941. He is survived by a son and three daughters, two sisters and a brother.

# Science Section

## SEATO Cholera Research Program Moves Ahead Rapidly; Chiefs Named

The following review of the SEATO Cholera Research Program was presented by Dr. Joseph E. Smadel, Division of Biologics Standards, National Institutes of Health, at the meeting of the Association of Military Surgeons in Washington, D. C. Dr. Smadel is Chairman of the NIH Cholera Advisory Committee.

The South East Asia Treaty Organization has undertaken support of research on cholera, a disease of importance to several of its member nations, and a potential threat to others. (Ed. note: The SEATO nations are Australia, France, New Zealand, Pakistan, the Philippines, Thailand, the United Kingdom, and the United States.)

The SEATO Cholera Research Program officially began in May of 1959 when the Council voted to allocate \$400,000 for this project from the President's fund for Asian Economic Development, a part of the Mutual Security Program Appropriations.

However, the history of the project goes back to the preceding year when an unusually heavy concentration of cholera cases occurred in East Pakistan and the diseases reappeared in Thailand. In both of these countries, the health facilities were mobilized for the care of patients and the control of the outbreaks. The need for increased knowledge on the treatment and prevention of cholera was recognized, and steps were taken in both areas to foster investigations which might provide such information.

### Disease Physiology Studied

One of the most productive of these collaborative studies was that undertaken by American and Thai investigators on the physiological abnormalities in the acute disease. Members of the staff of the Naval Medical Research Unit No. 2 at Taipei, working with their colleagues of the Chulalongkorn Hospital Medical School in Bangkok, added significantly to an understanding of the water and electrolyte changes which occur in patients with cholera and the means by which these can be corrected.

During the outbreak the following year in Bangkok, it was possible to extend materially the research on this disease in Thailand. The Thais themselves were less occupied with fire fighting measures; hence, were able to participate more extensively in investigations, and additional groups of American investigators came to take part in the effort. Dr. Kenneth Goodner, of Jefferson Medical College, and Captain E. J. Gangarosa, of the Walter Reed Army Institute of Research, are members of organizations which were represented in

Bangkok during the spring of 1959. In addition, the NAMRU-2 group returned in force and were joined by Dr. Robert Gordon of the National Institutes of Health.

I would like to emphasize the enthusiasm and mutual respect which developed as a result of the highly successful collaborative studies undertaken in Thailand in 1958 and 1959. All of these things, no doubt, influenced the Thai Government to propose that the SEATO Council sponsor a continuing research program on cholera which might lead to improved methods of treatment and control, and perhaps eventually to eradication of this ancient disease. As indicated earlier, the Council did indeed approve the establishment of a Cholera Research Program in May of 1959.

The National Institutes of Health of the U. S. Public Health Service was asked by SEATO to assume responsibility for developing the scientific aspects of the cholera research program, which was to be supported in part by the \$400,000 contribution of the Council and in part by contribution in monies and in kind by member nations of SEATO.

### Three Aspects Cited

Prior to formulating a research program, the National Institutes of Health sent a survey team to the Far East to discuss matters with scientists and public health officials who were confronted with the problem of cholera. This group, consisting of Dr. John H. Dingle, Dr. Kenneth Goodner, Dr. Colin M. MacLeod, Colonel Richard P. Mason, Dr. Theodore E. Woodward and myself, visited Japan, the Philippines, Taipei, Thailand, Pakistan and India. It concluded that the SEATO Cholera Research Program would have three major aspects; namely, research, training, and the establishment of bases for field and laboratory studies.

The team recommended that a

This four-page section, devoted chiefly to summaries of research findings that have been reported by scientists of the National Institutes of Health, is prepared with the cooperation of the Information Offices of the Institutes and Divisions of the National Institutes of Health.

base be established in Bangkok to continue, during the 1959-60 period, the clinical and physiological studies on cholera that had already produced so much important information during the preceding two years. In addition, it considered it desirable that bacteriological and epidemiological studies on acute diarrheal diseases be continued in Bangkok for as long as might be necessary to determine whether cholera has a low endemicity in Thailand during the intervals of approximately a decade between outbreaks.

### Dacca Base Established

The survey team further recommended that a base be established during 1960 in Dacca, for clinical, laboratory, and field studies of cholera and other acute diarrheal diseases in the endemic area of East Pakistan. The Dacca laboratory was conceived as the principal site for future operations since it was anticipated that cholera activities in Bangkok would probably come to an end in 1960. It will be recalled that historically cholera has appeared in Thailand at intervals of about ten years, continued in decreasing amounts for several years and has then disappeared.

Another general recommendation of the survey team was that the \$400,000 made available by the SEATO Council for investigations on cholera, be carefully husbanded and used only for the stimulation and support of research and training activities that could not be financed by other means.

The training activities, conceived as an important function of the Cholera Research Program, visualized a mutual exchange of investigators between those countries which were rich in materials for clinical and field studies of cholera, and the other countries which were strong in basic laboratory disciplines.

Finally, the cholera team recommended that a scientific conference on cholera be held at an early date in order to bring together those working on various aspects of cholera in the SEATO nations as well as their confreres from other countries.

### SEATO Gives Approval

In general, the recommendations and views of the NIH cholera survey team were approved by the SEATO Council, and steps were taken by the governments of the United States, Thailand, and Pakistan to implement their individual aspects of the program. It is indeed a pleasure to be able to report on the rapid and substantial progress which has been made in fulfilling the recommendations and

hopes of the survey team.

The Thailand-SEATO Cholera Research Laboratory was established in Bangkok late in 1959 at the Royal Thai Army Institute of Pathology. Dr. Luang Binbakhya Bidyabhed was designated as the Director General of the Laboratory, and Lt. Col. Oscar Felsenfeld, MC, USAR, as the Executive Director. This Laboratory has flourished with the support of many organizations, including the Royal Thai Army Institute of Pathology and other components of the Army, the Royal Thai Navy, the Royal Thai Air Force, the Thai Ministry of Public Health and the Chulalongkorn Medical School Hospital. Moreover, the Thailand-SEATO Laboratory served as the base for a visiting team of investigators during the early months of 1960. The visitors, who were from the staffs of NAMRU-2, Taipei, and WRAIR in Washington, D. C., continued their earlier investigations on physiological abnormalities in cholera and the pathogenesis of the disease.

### Other Strains Present

I would be remiss if I failed to mention one of the important pieces of work done by the investigators assigned to extended duty at the Thailand-SEATO Laboratory. This group showed that, during the latter part of 1959 and the early part of 1960, when clinically recognizable cases of cholera were absent or occurring in small numbers, *Vibrio comma*, with the usual characteristics of the Inaba and Ogawa strains, was prevalent in the community. These strains were associated with mild diarrheal disease which was not classical cholera, and with apparently healthy carriers; moreover, the organism was found in the environment.

### Environment Monitored

Continuous monitoring of the patients and environment in Bangkok indicated that *V. comma* gradually decreased during mid-1960. In July the organisms were not recovered from clinical material but were still found in the environment. In August and again in September 1960, *V. comma* was not encountered a single time in any of the numerous specimens examined at the Thailand-SEATO Cholera Research Laboratory.

Arrangements have been made to discontinue the Thailand-SEATO Cholera Research Laboratory at the end of this calendar year. However, certain aspects of the work will continue under another aegis. The SEATO Medical Research Laboratory will occupy essentially the same facilities at the

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## CHOLERA

(Continued from Page 3)

Royal Thai Army Institute of Pathology and will study a number of diseases of interest to SEATO nations and will be available for further monitoring on cholera and *Vibrio comma* in Bangkok, if this is indicated.

### Permanent Laboratory Established

Meanwhile, this past year, arrangements were made to establish a permanent laboratory for cholera research in East Pakistan where the disease is endemic. The Government of Pakistan has made available a three-story wing of the Institute of Public Health in Dacca, East Pakistan, for the establishment of the Pakistan-SEATO Cholera Research Laboratory and a cholera ward. This wing, which contains 16,200 square feet of excellent space, has been converted by the Government of Pakistan into suitable laboratory and ward facilities.

Special laboratory equipment, costing approximately \$100,000, has been purchased by the NIH with the SEATO funds. This was shipped in June to Pakistan where Pakistani and American engineers have supervised its installation. It is anticipated that the Laboratory will be ready for occupancy by early November and that it will be dedicated in early December.

### Two Sections Equipped

The ultimate plans for the Laboratory visualize a section of epidemiology, a section of bacteriology, and one of physiology and biochemistry. The first two sections have been fully equipped for immediate functioning, and scientific and technical staffs are being brought together.

The section of physiology and biochemistry is sufficiently well equipped to be used by teams of visiting investigators. The original plan anticipated a delay of a year or so before this section would be fully equipped and staffed as a permanent group. However, the recent generous offer of the United Kingdom to supply a substantial amount of equipment for the Dacca Laboratory may permit an early activation of this section.

### Senior Staff Appointed

Two of the senior members of the staff of the Dacca Laboratory have already been appointed. One of these, Dr. Joe Stockard of the U. S. Public Health Service, will head the epidemiology section and serve as Deputy Director of the Laboratory. He arrived in East Pakistan to assume his duties in early September. The other, Dr. Kazi Abul Monsur of the Government of East Pakistan, who will head the bacteriology section, is presently in the United States un-

dertaking special studies on *Vibrio comma* in the laboratories of Dr. K. Goodner of Jefferson Medical College and of Dr. M. Pittman of the NIH.

### Staff Being Recruited

Dr. Fred L. Soper, the retired Director of the Pan American Sanitary Bureau, is expected to assume the Directorship of the Dacca Laboratory. In the meantime, the medical and technical personnel who will complete the staff of the Laboratory are being recruited by the Government of Pakistan.

The Dacca Laboratory will be the focal point for the training of investigators and health officers in various aspects of field and laboratory work. The training function of the SEATO Cholera Program will be further emphasized through the exchange of investigators between countries. Two features of this are recognized to be of equal importance: the training in clinical and epidemiological aspects of the disease for those who do not have opportunities for such work in their own countries, and the training in basic scientific approaches for those whose experience has been largely in the field.

### International Talks Planned

The value of exchange of information as part of the continuing education of even senior scientists has long been recognized. One means of accomplishing this kind of postgraduate education is through the gathering together of the acknowledged leaders working in the field. This was what the survey team had in mind when it suggested the holding of international conferences on cholera. Accordingly, the first of the Conferences on Cholera will be held in Dacca during the week of December 5, 1960, under the sponsorship of SEATO and the NIH. The scientific program, as it now stands, is a superior one involving scientists and health officers from most of the SEATO nations, as well as from India and Japan.

### Program Developed Rapidly

Thus, in the short period since May 1959, the SEATO Cholera Research Program, which has received the enthusiastic support of so many people and so many groups, has developed rapidly. A laboratory has been established in Thailand and has functioned for almost a year; a larger and more permanent establishment has been created in Dacca and will be ready to function with an excellent staff before the end of this year.

These things could only have been accomplished if many people, professional and lay, were convinced that the eradication of cholera is a worthy objective and one which is not beyond the reach of man.

## DRS-Designed Table Top Projector Magnifies Slide Mounts 94 Times

A device for projecting enlargements of slide mounts of microscopic tissue section at 94X magnification onto a table or desk top has been designed by the Division of Research Services.

The device is a variable projection system, designed for neuro-anatomical reconstruction of the human brain following degeneration from natural or therapeutic lesions. It was produced in collaboration with the National Institute of Neurological Diseases and Blindness and reported in the March 1960 issue of *The Anatomical Record*.

### Heat Damage Avoided

The design permits a large viewing field, eliminates image distortion, and avoids heat damage in spite of the strong light source (1000-watt prefocused light bulb) needed for high magnification.

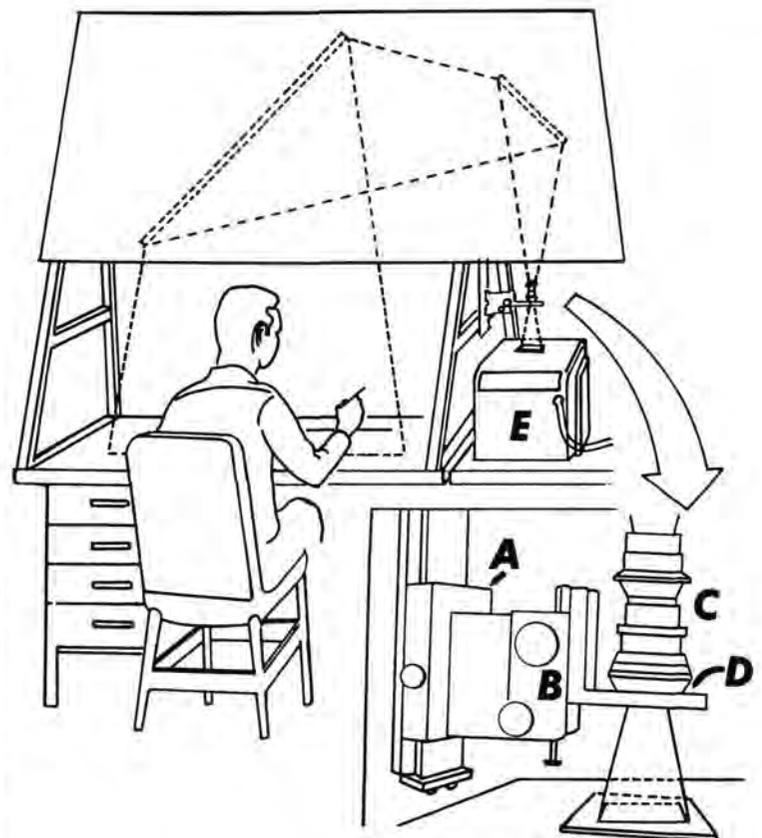
Magnification is achieved with a modified commercial projector, multiple optical lenses of varying focal lengths, and double-reflecting mirrors. The glass in the larger of

the two mirrors has been specially ground to prevent warping and thus to keep the image true in all portions of the viewing field. A modified cooling and masking system reduces light diffusion and diminishes the heat intensity of the light beam. The apparatus is constructed for mounting onto a 6'x30" flat horizontal surface.

### Two Models Produced

Two models have been produced so far; one has a magnification range of 5X to 40X, and the other extends the range from 4X to 94X. The addition of an effective cooling system and the substitution of more powerful camera and condenser lenses made the higher magnification possible.

No major modification is required to use the system in other research areas or for medical illustrations, training demonstrations, and other educational purposes. A completely darkened room is unnecessary because the projected image provides sufficient illumination.—J. T. T.



The sketch above is of the first model of the tissue slide projector, showing it mounted on an office desk with the light source (E) on an adjacent table and the mirrors supported and covered with an aluminum hood. A sliding block for gross vertical adjustment (A), a microscope mount for fine adjustment (B), camera lens (C), and common adapter ring (D) are shown at the lower right.

## Selective Action of New Hypotensive Drug Reduces Side Effects

Guanethidine, a new hypotensive compound now available to the practicing physician, offers him still another therapeutic that is effective in lowering blood pressure and is also specific enough in its mode of action to minimize undesirable side effects.

Guanethidine (SU-5864) is synthesized and marketed by CIBA.

Animal studies by Drs. Rosemary Case, Ronald Kuntsman, and Bernard B. Brodie, of the National Heart Institute Laboratory of Chemical Pharmacology, indicate that guanethidine acts by depleting the peripheral sympathetic nerve endings of norepinephrine, thereby blocking the transmission of impulses that trigger blood vessel constriction. Their findings are reported in preliminary form in *Proceedings of the Society for Experimental Biology and Medicine*.

Drugs that lower blood pressure by peripheral sympathetic blockade are not new; some have been in use for years. Most of these work by inhibiting the action of norepinephrine, an amine that is released from the nerve terminals to transmit their impulses to the muscles of the arterial wall.

Reserpine was the first drug found to lower blood pressure by depleting this amine at sympathetic terminals; but only slightly larger doses may also produce undesired sedation and parasympathetic effects by depleting brain amines, and diarrhea by releasing serotonin in the intestines.

### Action More Specific

Guanethidine, a synthetic drug structurally different from reserpine, also depletes the peripheral sympathetic nerves of norepinephrine, but its action is far more specific.

The drug does not affect brain amine levels (due in part to its limited ability to penetrate the blood-brain barrier) and therefore does not produce sedation.

It does not release serotonin from peripheral body tissues, thus does not cause diarrhea.

The drug is also well suited to oral administration because it is stable in the gut and is more readily absorbed than are the ganglionic blocking agents.

The present experiment did not disclose the precise mechanism by which guanethidine depletes peripheral norepinephrine, even though the results indicate that it does so by a mechanism different from that of reserpine. There are two possibilities, both presently under study; the drug may impair storage of the amine or block its synthesis.

## Drugs From Plant Bulbs Promising In Treatment of Myasthenia Gravis

Pharmacological studies to evaluate galanthamine, a drug reported by Russians to relieve some neuromuscular disorders, have resulted in the identification of a promising new series of drugs, which are chemically similar but more potent than galanthamine.

Studies in animals strongly suggest that the newly-synthesized compounds may be effective in treating myasthenia gravis, and some are more potent than drugs now used for this disorder. Preliminary clinical trials of one of the compounds have recently been initiated.

### Activity Evaluated

The activity of galanthamine, its derivatives, and other chemically-similar compounds in increasing muscle contraction and inhibiting cholinesterase has been evaluated by Dr. R. L. Irwin, Medical Neurology Branch, National Institute of Neurological Diseases and Blindness.

These compounds were also compared with drugs now in use to treat myasthenia gravis. Although the cause of myasthenia gravis is not known, drugs which inhibit cholinesterase at the nerve-muscle junction usually produce striking relief of symptoms.

### Early Form Less Potent

Initial studies showed that the drug reported by Russian scientists, galanthamine hydrobromide, was significantly less potent than the quaternary form of the compound, galanthamine methiodide. However, the latter drug was still not as effective in inhibiting cholinesterase as drugs now in clinical use, such as neostigmin.

Subsequently, the derivatives of lycoramine, which are structurally similar to galanthamine, were tested on muscle for the first time. Two of these derivatives were found to be more potent than neostigmin, although their toxicity was greater.

### Third Compound Promising

A third compound was less toxic than neostigmin, yet was more active than physostigmine. It also had a slower onset of action than the other derivatives and was absorbed after oral administration. At present, the third derivative seems to be the most promising for clinical trial.

Both the galanthamine and lycoramine compounds are particularly interesting because they differ chemically from drugs currently used to treat myasthenia gravis. In addition, they can be obtained from the bulbs of plants in the Amaryllis group, such as the daffodil, which are readily available throughout the world.

### Compounds Isolated Here

The specific compounds tested by Dr. Irwin include: galanthamine hydrobromide, galanthamine methyl iodide, lycoramine methyl iodide, deoxylycoramine methyl iodide, deoxymethyllycoramine methyl iodide, dycoramine acetate methyl iodide, neopine, and neopine methyl iodide. The compounds were isolated by chemists in the Laboratory of Chemistry of Natural Products, National Heart Institute.

The results of the studies were presented at the meeting of the American Society of Pharmacology and Experimental Therapeutics, Seattle.



Daffodils, familiar spring flowers, are used in scientific research.

## NIDR Scientists Seek Chemotherapy Agents To Inhibit Tooth Decay

Studies with germfree animals at National Institute of Dental Research have clearly established a causal relationship between certain oral bacteria and dental caries. While antibiotics are effective in depressing the oral flora, certain undesirable features such as development of sensitivity and antibiotic resistance limit their practical use.

On the other hand, chemical agents which interrupt or alter the metabolism of oral bacteria may provide a national approach to the problem. Investigators in the Laboratory of Microbiology have now reported on experimental studies with carbonyl-binding compounds as examples of potentially useful agents.

Sodium metabisulfite, a carbonyl-binding agent, has been shown to inhibit experimental caries in rats. Two other carbonyl-binding agents, CMA (carboxymethoxylamine hemihydrochloride) and dimedone have also been tested and found active.

In studies conducted by Drs. H. V. Jordan, R. J. Fitzgerald, and Miss N. D. Berger, these three compounds were tested separately in laboratory rats maintained on a cariogenic diet. Results showed that an 82 percent reduction in caries score was obtained when rats were fed in their diet CMA at a level of 0.004 molar for the first week and 0.002 molar for the remainder of the 90-day test period. Feeding of 0.016 molar sodium metabisulfite resulted in an inhibition of 86 percent, while animals fed the aldehyde-binding agent dimedone at a level of 0.029 molar showed a 55 percent reduction in caries score.

*In vitro* experiments showed that the relative cariostatic effects of

(See *CARIES*, Page 6)



First step in extracting galanthamine and lycoramine compounds in the Laboratory of Chemistry of Natural Products, NHI, is chopping the bulbs before grinding. This bulb is *Hymenocallis occidentalis*, of the same family as the daffodil.

## Drug Addicts Found Concentrated In Metropolitan 'Problem Areas'

By Lucile Furman  
NIMH Information Office

The total number of opiate addicts in the United States, as estimated by the Bureau of Narcotics, is between 50,000 and 60,000. The number of known addicts reported by the Bureau is 45,391 as of December 1959. Most of these are concentrated in certain slum areas in certain large cities—New York, Chicago, Washington, D. C., Los Angeles and Detroit. In general the sections with high incidence of addiction are "problem areas" with high incidence of all kinds of social problems—delinquency, crime, venereal disease, unstable family structures, etc. Most of the addicts are young males between the ages of 20 and 30, and most of them begin drug use at an early age, usually about 16 years.

The above facts were presented in a lecture entitled "Perspectives in Research on Opiate Addiction" which Dr. Harris Isbell, Director of the National Institute of Mental Health Addiction Research Center delivered before the British Society for the Study of Addiction and which is to be published in the *British Journal of Addiction*. In it, he reviewed the physiological, psychological and sociological research on opiate addiction in addition to a survey of drug research in this area.

### Problem Is Complex

"Opiate addiction is not a simple matter that involves only drugs," Dr. Isbell pointed out. "It is complex with socioeconomic, psychological, pharmacological and physiological factors all playing important roles. In attempting to deal with the problem, we cannot neglect any of these areas."

In discussing the sociological aspects of opiate addiction Dr. Isbell said that identification with a subculture of other addicts is an important factor in the development of addiction in individual and also in its maintenance and relapse. Association with addicts is the chief reason for beginning the addictive use of drugs. Participation in the activities of juvenile gangs is one common pattern. Deliberate proselyting by drug peddlers is relatively unimportant in spreading addiction.

"Obviously, the socioeconomic patterns are not specific for addiction since they are associated with many other problems," Dr. Isbell points out. "Also many youngsters exposed to the same social pressures do not become addicts . . . Obviously, a complex interplay of factors is at work in which individual characteristics may be as important as the general characteristics of the environment. The manner and degree in which the socioeconomic and personal factors interact to lead to addiction remain problems for further research . . ."

In the United States all addicts

excepting the small minority who require drugs for the relief of disease-caused pain show evidence of psychiatric disorders. The neuroses, particularly anxiety neurosis, and the character disorders are most common, and usually seem to precede the addiction, Dr. Isbell said.

Two psychiatric formulations of addiction are most commonly used in research on addiction. The symptomatic, or psychobiological school holds that addicts are persons suffering from physical or psychical discomfort. The drug relieves their distress and the relief leads to repetitions of drug taking, with consequent development of tolerance or physical dependence. Psychoanalysts hold that addicts are persons who have been arrested at or regressed to the oral stage of psychosexual development. Conflicts develop because the infantile needs of the individual cannot be gratified and drugs are taken because of the conflict.

The difficulty with both these theories is that they cannot be tested experimentally, Dr. Isbell pointed out. He predicted that the new field of experimental psychopharmacology would throw much light on drug action in terms of psychological correlates. Studies in this area can be expected to yield a steadily increasing volume of quantitative data, derived from rigidly designed experiments, he said, and eventually such data should lead to more meaningful psychological theories of addiction.

### CNS Is Involved

In the physiological area the most positive findings resulted from research in neurophysiology conducted with the use of animals in the Lexington Center. Dr. Isbell summarized these findings as follows: The central nervous system is involved in the development of tolerance and dependence on morphine; the cerebral cortex is not necessary for these changes to occur at lower levels; tolerance and dependence are associated with the development of hyperirritability in multineurone arcs, which is masked by the continued presence of morphine and unmasked when the drug is withdrawn. Since these changes occur in the segments below the level of section of the cord and since they occur in chronically de-

## CARIES

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these three compounds generally paralleled their growth-inhibiting properties for a variety of microorganisms including lactobacilli, streptococci, staphylococci and diphtheroids.

These continuing studies of inhibiting agents, coupled with recent contributions defining the production and transmission of caries, and the identification of specific oral pathogens, are providing valuable new information necessary for a practical approach to the prevention and control of tooth decay.

corticated animals, they are not due to psychological causes.

"While the neurophysiological findings just described are a great achievement, they tell us what happened but not how," Dr. Isbell commented. "We must go further. We need to understand the changes in or on the individual neurones and in the chemical processes which must underlie the physiological changes associated with abstinence. Thus we can look for the next great advances to come from electrophysiological investigations of electrical events within and without nerve cells during cycles of addiction, and in biochemical investigations of chemical changes within these cells."

### Nonaddicting Drugs Sought

In the pharmacological research, the approach has been an attempt to develop a compound with the pain relieving power of morphine but without its addictive properties. So far, only one drug, nalorphine, has been found that could be classed as a nonaddicting analgesic. Unfortunately, nalorphine induces very disturbing mental effects in the majority of patients and is therefore not practical for therapeutic use. However, its discovery has given new direction to the search for a nonaddicting analgesic. In this compound, the methyl group on the nitrogen of morphine has been replaced by an allyl group. The development of nalorphine has led to the examination of the effects of other substitutions on the nitrogen.

Dr. Isbell suggests that the chemical research effort needs to take a new direction. "There seems to be little point in synthesizing more molecules that are like other molecules, or preparing hundreds of variations in a single molecule family. We should put more effort into fundamental studies of the relationship between chemical structure and action . . . On the biological side, . . . what we need to be looking for is an analgesic that differs markedly from morphine in its biological spectrum, and not for compounds which are like morphine."

## Role of Biostatisticians In Medical Research Increasingly Important

Excerpts from speech delivered by Emmarie C. Hemphill, Executive Secretary, Advisory Committee on Epidemiology and Biometry, Division of General Medical Sciences, at a Joint Session of the American Association of Vital Records and Public Health Statistics, and the Epidemiology, Public Health Education, and Statistics Sections of the American Public Health Association in San Francisco, Nov. 3.

The intellectual demands (including technical skills and comprehension) placed upon biostatisticians are becoming greater each year. Furthermore, it is imperative that the acquisition of fundamental mathematical and statistical skills be accompanied by training in considerable depth in several of the biological sciences. Without such preparation, the contributions that an individual might possibly make in the advancement of scientific knowledge will definitely be limited. Young predoctoral candidates so trained will be able in their later careers to range widely across such fields as biophysical science, epidemiology, human genetics, public health methods and practice. . . .

### Need Is Acute

The need for biostatisticians is acute and is national in scope. A biostatistician is a national asset and can be defended as such. With the advent of computers in biology and medicine, the role of the biostatistician has become even more powerful than it was previously. Biostatisticians should no longer be considered service personnel only contributing valuable aid on biological problems initiated by other scientists. They should be full partners in every sense of the word, and indeed, they should have research programs going on of their own initiation which serve to bridge the gap of biostatistics on one hand and biomathematics on the other. . . .

### Challenge Provided

I can think of no disciplinary group that has a better chance to seize the inside track in this new world of "automata" than the statistician or biometrician. The question is—will the profession carry through with the challenge of providing leadership in the creation of a suitable climate for the future?

It takes more than dollars for stipends and a well-staffed training program: it takes vision, hard work, and planning. A spirit of optimism is also essential. Achievement of this goal must not be left to chance.

## Advisory Councils Meeting Here Oct. 24-Nov. 30

The third and last of the 1960 series of NIH National Advisory Council meetings was scheduled to begin here yesterday and to continue through November 30.

Each of the nine Advisory Council meetings—one for each of the Institutes and for two of the Divisions—is scheduled to meet for three consecutive days in Stone House, with the exception of the DGMS National Advisory Health Council which will meet at DHEW on November 28 and at Stone House November 29 and 30.

The National Advisory Councils, composed of prominent scientists, educators, and leaders in public affairs, review grant applications for NIH research aid, and advise and make recommendations to the Surgeon General on extramural programs.

New members of the Councils appointed for four-year terms commencing October 1 are:

**National Advisory Arthritis and Metabolic Diseases Council**—Fredrick Matthew Lange, Dallas, Texas; Dr. Clifford M. Hardin, Chancellor of the University of Nebraska; and Dr. Vincent du Vigneaud, Professor of Biochemistry, Cornell University Medical School.

**National Advisory Cancer Council**—Dr. Bernard Randall Baker, Stanford Research Institute, Menlo Park, Calif.; and Prof. J. Walter Wilson, Department of Biology, Brown University.

**National Advisory Dental Research Council**—Dr. Stephen P. Forrest, Dean of the St. Louis University School of Dentistry; Peter I. B. Lavan, New York City; and Dr. David Weisberger, Professor of Dental Medicine, Harvard School of Dental Medicine.

**National Advisory Heart Council**—Dr. A. Baird Hastings, Scripps Clinic and Research Foundation, La Jolla, Calif.; Dr. Eugene Anson Stead, Jr., Professor of Medicine and Chairman of the Department, Duke University School of Medicine; and William F. Poorman, President of the Central Life Assurance Co., Des Moines, Iowa.

**National Advisory Mental Health Council**—Dr. Dael Woffle, Executive Officer, American Association for the Advancement of Science, Washington, D.C.; Dr. George Tarjan, Superintendent and Medical Director, Pacific State Hospital, Pomona, Calif.; and Dr. Russell J. Humbert, President of DePauw University.

**National Advisory Neurological Diseases and Blindness Council**—Dr. H. Houston Merritt, Dean of the College of Physicians and Surgeons, Columbia University; Dr.

## Dr. Robert Page, NRL, To Lecture Nov. 28 On Research Motivation

Dr. Robert M. Page, Director of Research at the Naval Research Laboratory, will deliver a lecture on "Motivation for Research" on Monday, November 28, at 8 p.m. in the Diamond Ordnance Fuze Laboratory conference room at the Bureau of Standards. The public is invited.

Dr. Page's lecture, sponsored jointly by the Professional Groups on Engineering Management and Military Electronics of the Institute of Radio Engineers, will deal with the emotional drives and psychological characteristics of men and women that lead them into careers in the research field.

Dr. Page will also discuss the research potential of the average population and some of the problems of administration of research.

The Diamond Ordnance Fuze Laboratory is located on Van Ness St., N.W., between Connecticut Ave. and Reno Road.

## UGF DRIVE

(Continued from Page 1)

fulfilled their obligations to their community by meeting or exceeding their quotas. Let's wind up this campaign with a feeling of unity for a job well done."

This week the contribution figures and percentages as of November 9 will be posted in each building.



Walter C. Clark, Medical Arts Section, DRS, brings the UGF chart up to date to show the percentage of quota contributed to the UGF campaign by each NIH Institute and Division. Standing at the entrance to the CC cafeteria, the chart with its multicolored rockets was designed and constructed by Mr. Clark.

John E. Bordley, Professor of Laryngology, Johns Hopkins University School of Medicine; and Leonard Mayo, Executive Director, Association for the Aid of Crippled Children, New York City.

**National Advisory Health Council**—Dr. James P. Dixon, Jr., Presi-

## LePrince Award Won By Dr. J. M. Andrews For Malaria Studies

The Joseph Augustin LePrince Award for outstanding accomplishments in the field of malaria was presented to Dr. Justin M. Andrews, Director of NIAID, on November 4 at the joint dinner meeting of the American Society of Tropical Medicine and Hygiene and the American Society of Parasitologists.



Dr. Andrews

Dr. Andrews, a Past President of ASTMH and President of the American Society of Parasitologists for the coming year, is the fourth recipient of this award, consisting of a bronze medal, certificate, and \$500.

The LePrince Award has been given triennially since 1950 when it first honored Mr. LePrince.

Eleven papers from NIAID, representing work of seven of the intramural laboratories of that Institute, were presented during the four-day meeting, November 2-5, at the Biltmore Hotel in Los Angeles.

NIAID scientists discussed the influence of nutrition on the chemotherapy of schistosomiasis, as well as a study of the prevalence of parasitism among U. S. State Department employees, and work on human and other malarias.

## British Scientist Is Dyer Lecturer Here on Nov. 15

Prof. George Macdonald, Director of the Ross Institute of the London School of Hygiene and Tropical Medicine, London, England, and one of the world's outstanding malariologists, will give the Tenth Annual R. E. Dyer Lecture on Tuesday, November 15, at 8:15 p.m., in the Clinical Center auditorium.



Dr. Macdonald

Dr. Macdonald has chosen to speak on "Epidemiological Methods in Vector-borne Disease Studies."

He will discuss the creation and retranslation of mathematical models as they can significantly increase understanding of epidemiology; and especially in relation to complicated cycles of transmission, will talk about the pertinence and deficiencies of biological knowledge, as demonstrable mathematically.

Dr. Macdonald spent many years in Africa and India studying malaria and tropical diseases. During World War II he was with the Malaria Field Laboratory in the Middle East and was Malaria Consultant, Middle East Forces and Central Mediterranean Forces. He is a member of the WHO Expert Panel on Malaria and was in charge of the WHO Mission to Korea.

Dr. Macdonald is Honorary Consultant in Malariology to the British War Office and a Fellow of the Royal College of Physicians. Since 1953 he has been a Companion of the Order of St. Michael and St. George. He received the Darling Foundation Award in 1954.

He has written extensively on tropical medicine and hygiene and is the author of *Epidemiology and Control of Malaria*.

**Council on Health Research Facilities** for four-year terms that began Sept. 1 are Dr. W. T. S. Thorp, Dean of the College of Veterinary Medicine, University of Minnesota; and Dr. George Anthony Wolf, Dean of the College of Medicine, University of Vermont and State Agricultural College.

Appointed to the **National Advisory Allergy and Infectious Diseases Council** for four-year terms that began February 1 are Dr. Francis S. Cheever, Dean of the School of Medicine, University of Pittsburgh; Dr. Harry F. Dowling, Head of the Department of Medicine, College of Medicine, University of Illinois; and Mrs. Irene McCabe, Richmond Heights, Mo.

dent of Antioch College; Dr. Alvin Du Bridge, President of the California Institute of Technology; and Dr. Lewis Thomas, Professor and Chairman of the Department of Medicine, New York University School of Medicine.

Serving on the **National Advisory**

## New Award Announced For Outstanding Work By Federal Women

Federal agencies have been invited to submit nominations by December 9 for the first annual Federal Woman's Award, a new award announced recently by U.S. Civil Service Commissioner Barbara Bates Gunderson.

Six outstanding career women will be honored at public ceremonies late in February in this first Government program to spotlight top-caliber career women in the Federal service. The program is being launched by the Federal Woman's Award Board of Trustees, of which Commissioner Gunderson is chairman.

Each Government agency has been invited to nominate not more than three women for the award. Each nominee must have had not less than three years of continuous, full-time service in the Federal competitive or excepted service, and must have reached at least grade GS-9 or its equivalent. She must also have demonstrated outstanding ability and achievement in an executive, professional, scientific, or technical position.

## Dr. Huebner to Deliver Harvey Lecture Nov. 17

Dr. Robert J. Huebner, Chief of the Laboratory of Infectious Diseases, NIAID, will give the Harvey Lecture in New York City on November 17. His subject is "Cancer as an Infectious Disease Problem."

In conjunction with the New York Academy of Medicine, the Harvey Society publishes its lectures annually as the *Harvey Lectures*. The lectureship confers honorary membership in the Society, which was founded in 1905.

## APPOINTMENTS

(Continued from Page 1)

sion which urged a strengthening of the Service's top administrative structure, together with greater emphasis in leadership and coordination of the Service's increased activities in environmental health and comprehensive health services in States and communities.

The changes, the Surgeon General said, are in accord with similar appointments at NIH and elsewhere throughout the Service.

All three new appointees are career officers of the Public Health Service Commissioned Corps.

Dr. Hundley has been a Public Health Service Officer since 1940. From 1943 to January 2, 1960, when he was named Chairman of the Study Group, Dr. Hundley was at NIH, largely in nutrition research and research administration.

## Robert Handy, George Marsden, DRS, Win Outstanding Performance Awards

Robert H. Handy, recently designated Administrative Officer of the Division of Research Services, and George P. Marsden, Chief of the Medical Arts Section, DRS, were honored October 19 at an informal incentive awards ceremony in the office of Chris A. Hansen, DRS Chief.

They received cash awards of \$200 and \$270, respectively.

Mr. Handy's award was for sustained superior performance in initiating an outstanding employee training program in DRS. He was cited for the development and operation of a supervisory training course that has since been acclaimed a "phenomenal first course for a man entering the training field."

The training manual that he developed for the course was also cited as a model of its kind. According to the citation, the manual has been selected for use by PHS training consultants in their work with State health departments.

Mr. Marsden was commended for his unusual ability to communicate

complex concepts clearly in words, pictures, and diagrams, and especially for the high artistic competence he revealed in guiding the production of "Psychopharmacology," a 90-foot exhibit portraying two clinical drug trials in the William Alanson White Service of Saint Elizabeths Hospital.

Mr. Marsden's citation noted that the exhibit "occasioned much interest in regard to its design and contents" when shown in May at the 116th annual meeting of the American Psychiatric Association in Atlantic City, and again in July when its contents were duplicated in a booklet prepared by Mr. Marsden for the Third International Psychopharmacology Congress in Basel, Switzerland.

The exhibit was displayed in the Clinical Center last spring and in the DHEW North Building during the past two weeks. It will be on view again, November 28 to December 1, at the National Guard Armory during the clinical meeting of the American Medical Association.



Following an informal ceremony in the office of Chris A. Hansen, Chief, DRS, George P. Marsden, Chief, Medical Arts Section, DRS (center, left), and Robert H. Handy, Administrative Officer, DRS, are pictured with the incentive award checks presented to them by Dr. John G. Lofft of the Clinical Neuropharmacology Research Center, NIMH (left), and James A. King, DRS Executive Officer.

## NIAID Counselor Group To Meet Nov. 9-10

A joint meeting of scientists from NIAID and the Epidemic Intelligence Service, CDC, will be held in Wilson Hall November 17 and 18.

The meeting will consist of morning, afternoon, and evening sessions on November 17 and a morning session on November 18.

Prof. George Macdonald, Director of the Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, London, England, will be guest speaker at the evening session following a dinner at the Naval Medical Center Officers' Club.

## CDC Audio-Visual Chief Speaks at I. O. Meeting

Dr. James Lieberman, Chief of the Audio-visual Section, Communicable Disease Center, PHS, spoke at the latest of the series of special programs conducted by the NIH Information Officers Committee on October 13.

Using films and slides, Dr. Lieberman demonstrated the facilities of his Section in the areas of films, stills, graphics, and exhibits.

The Section, which has acquired modern equipment in its new building in Atlanta, is prepared to arrange a complete production or give assistance to any Government agency that desires to demonstrate

## Grants for Training and Fellowships Reported In PHS Publication

The Public Health Service awarded \$91,636,694 in training grants, research fellowships, and traineeships through NIH, its principal research center, during the fiscal year ending June 30, 1960.

A detailed accounting, by State and Institution, of these awards for advanced training in the medical and biological sciences is contained in a 175-page publication just issued—*Public Health Service Grants and Awards by the National Institutes of Health, Fiscal Year 1960, Part II*.

This publication is the second in a series of three. Part I, released earlier this fall, included a complete listing of grants made by NIH in support of research projects and for the construction of health research facilities.

A third part, to be published later this year, will present supplementary statistical summaries of all grant and award programs by type, amount, State and recipient institution.

Single copies of the new booklet may be obtained from the Information Office, DRG, Bldg. T-6, Rm. 2411, Ext. 4987.

## SPSE Group to Tour NIH Photo Section

Members of the Washington Chapter of the Society of Photographic Scientists and Engineers will visit the Clinical Center November 14 for a tour of the laboratories of the Photographic Section.

A special program planned by Roy Perry, Chief of the Section, will include demonstrations by NIH photographers of the photomicrography, color processing, gross pathology, and allied medical photographic services.

The program will open with introductory remarks by Chris A. Hansen, DRS Chief, and will also include an inspection of closed-circuit TV systems in the CC.

The Society's Washington Chapter represents many government and industrial research organizations. About 40 members are expected to join the tour.

Calvin S. McCamy, Chief of the Photographic Research Section of the National Bureau of Standards, worked with Mr. Perry in making the arrangements.

work of a medical nature.

At the November meeting of the NIH Information Officers' series Louis Freed, magazine feature writer, will speak on "Feature Treatment of Science News."