

## 53 Will Receive Incentive Awards Friday Afternoon

Fifty-three employees will be cited for superior performance, special acts of service, or suggestions for improvement, and will receive cash awards totalling \$5,865 at the annual spring awards ceremony to be held in the Clinical Center auditorium next Friday, April 29, at 2:30 p.m.

One hundred and three employees also will receive length-of-service pins in recognition of 40-, 30-, and 20-year periods of service. Ten-year pins will be distributed at a later date to 342 employees.

NIH Director Shannon is scheduled to speak at the ceremony following welcome and introductory remarks by Dr. Harold P. Morris, Chairman of the NIH Board on Employee Awards.

The awards are to be presented by Dr. Shannon. Dr. Clifton K. Himmelsbach, Associate Director,

(See AWARDS, Page 8)

## Mrs. Luke I. Wilson, NIH Benefactress

The *NIH Record* joins all of NIH in mourning the death of Mrs. Luke I. Wilson and in extending sympathy to the members of her family.

Immediately following her death on April 7, telegrams of notification were sent by Dr. Shannon to the former NIH Directors.

Funeral services, which were private, were held Saturday, April 9, at the Wilson home, north of Center Drive and the Clinical Center. The services were attended by Dr. Shannon and a number of NIH scientists and administrators.

Among the flowers received were large bouquets of spring blossoms from the NIH grounds, presented on behalf of NIH by the Grounds Maintenance and Landscaping Section which had long made a practice of carrying NIH flowers, in season, to Mrs. Wilson at her home on the reservation.

A native of Chelsea, Mass., Helen Woodward Wilson was the daughter of S. W. Woodward, founder of the Washington department store firm of Woodward & Lothrop. Her childhood and early

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## Key Personnel Changes Announced By PHS Surgeon General Burney

Dr. David E. Price, Chief of the Bureau of State Services, was named Deputy Director of NIH in three key personnel shifts announced last week by PHS Surgeon General Burney. The changes will become effective July 1.



Dr. Price

Dr. Bauer



Dr. Endicott

Dr. Heller

Dr. Price will fill the position that has been vacant since the retirement of Dr. C. J. Van Slyke last December.

Dr. Kenneth M. Endicott, NIH Associate Director for Training, will become Director of the National Cancer Institute to succeed Dr. John R. Heller who has been granted leave to accept the presidency of the Memorial Sloan-Kettering Cancer Center in New York City.

Dr. Theodore J. Bauer, Deputy Chief of the Bureau of State Services, will succeed Dr. Price as Chief of BSS. A successor to Dr. Bauer has not yet been named.

### Returning to NIH

Dr. Price, who is returning to NIH after an absence of eight years, will have special staff responsibility for NIH programs for the support of research and research training.

First assigned to NIH in 1946, Dr. Price had a part in the early development of the Research Grants Program. From 1950 to 1952 he was NIH Associate Director of Extramural Affairs. In 1952 he was named Assistant Surgeon General and transferred to the PHS Washington headquarters. In May 1957, he was appointed Deputy Chief of the Bureau of Medical Services, and in October of that year became Chief of the Bureau of State Services.

### Native of San Diego

Dr. Price is a native of San Diego, Calif., and received his M.D. degree at the University of California School of Medicine in 1940. He received his doctorate in Public Health from the Johns Hopkins School of Hygiene and Health in 1946.

Dr. Endicott, a native of Canon City, Colo., graduated from the University of Colorado School of Medicine in 1939. He has devoted

(See KEY CHANGES, Page 7)

## OPEN TRENCHES DUE; PREPARE TO DETOUR!

Beginning next Monday, May 2, and continuing through most of the summer, NIH employees can expect to be inconvenienced by detours around open trenches necessitated for the laying of pipelines.

The trenches will cut cross Center Drive east of the Clinical Center and at the intersection of Center Drive and Service Road South, near Bldg. T-19.

The trenches, about 13 feet wide and five to 20 feet deep, will accommodate steam and chilled-water pipelines between the General Office Building, now under construction, and the Clinical Center; and between the site of the new National Library of Medicine and the Heating and Refrigeration Plant (Bldg. 11).

The Division of Research Service, the Clinical Center, and the Office of Administrative Management are mobilizing all resources to avoid disruption of normal day-to-day activities. The Plant Safety Branch, OAM, is developing plans for temporary parking ar-

rangements to replace spaces that will be unavailable during the construction period. Guards will be stationed at strategic points to control the flow of traffic.

On May 2, Center Drive will be closed to all traffic between Building 4 and the northeast end of the Clinical Center. Traffic to the Clinical Center will be rerouted at temporary points. The parking lot in front of Building 4 will remain open.

All entrances to the Clinical Center will remain open. Taxis, cars, busses, visitors, employees, and patients will continue to use the CC lobby as a point of arrival and departure. Temporary changes can be expected, however, in shuttle routes between NIH buildings and the HEW and Robin Buildings.

## Parking Space Loss Of 200 Forecast

As many as 200 NIH parking spaces may be unavailable from May to August due to the excavation of new pipeline trenches.

The Plant Safety Branch recommends that employees plan to commute by carpool or bus. Those who drive are advised to plan their route in advance, to follow the detour signs, and to keep their cars moving past the barricade points.

Excavation of the Clinical Center trench will necessitate the closing of the Service Tunnel and a portion of the B-2 north corridor in the Clinical Center. The pipelines will extend into this area for connection with a central steam and water system adjacent to the

(See OPEN TRENCHES, Page 7)

# the Record

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## NEWS from PERSONNEL

### Health Benefits Program

All NIH employees who have a Civil Service appointment that is not limited to one year or less will be eligible to enroll in one of the plans offered under the Federal Employees Health Benefits Program. These plans become effective at NIH on July 10, 1960. All eligible employees must register before July 1. Registration is required even though one may elect not to be enrolled.

Eligible employees will receive literature on each of the plans some time in May. There will be ample time for employees to study the plans before making a selection.

The plans offered will be: Government-wide Service Benefit Plan to be administered by Blue Cross and Blue Shield; Government-wide Indemnity Benefit Plan to be administered by Aetna Life Insurance Company; a Comprehensive Group Practice Plan to be offered to eligible employees in the Washington area by Group Health Association of Washington, D. C. Additional Employee Organization Plans are currently being reviewed by the Civil Service Commission. Employees who are eligible for these latter plans will be notified.

### Summer Employment

Several hundred applications have been received this year from college science students who are interested in summer employment in NIH laboratories. These applications are on file in the Recruitment and Placement Section, and are available for the review and selection of candidates in accordance with the Director's Student Employment policy.

Selecting officials and Administrative Officers who are interested in these applications should contact the Recruitment and Placement Section, Bldg. 1, Rm. 21.

## NIH Will Participate In Mock-Attack Drill

All NIH employees except those engaged in patient-care will be directed to observe the ALERT and TAKE COVER signals on Tuesday, May 3, in connection with the nation-wide mock-attack exercise ordered by the Office of Civil and Defense Mobilization.

All building and floor wardens will receive instructions at a meeting scheduled for April 27. The floor wardens will be asked to visit offices within their respective areas, to identify themselves to employees and answer questions.

The ALERT—a steady 5-minute blast—will sound at 2 p.m. Internal warning horns will sound the same signal except in the CC, where the PA system will carry a warning announcement.

The TAKE COVER—a 3-minute wailing signal—will sound shortly thereafter. Employees are requested to proceed to their shelter areas and remain until released by their wardens.

Detailed instructions as to procedure may be found on page 81 of the NIH Telephone and Service Directory.

## MRS. WILSON

(Continued from Page 1)

youth were spent largely in the Washington area. She attended Smith College, at Northampton, Mass., and following graduation in 1897 made the "grand tour" of Europe with her family.

For a few years after their marriage, Mr. and Mrs. Wilson lived in Illinois, near Chicago. They came to Bethesda in 1923. Mr. Wilson died in 1937, two years after his gift of 45 acres of his estate to the Federal Government. This was the first of five land donations by the Wilson family that resulted in establishment of NIH on this site.

## FROM '35 TO '38

### How "The Reservation" Came to Be

Part I of Two Parts

THE story of how the National Institutes of Health came to be located on its present ideal site has its beginning in the foresightedness and generosity of one man—the late Luke I. Wilson.

It was his offer of 45 acres of his estate, "Tree Tops," to the Federal Government in 1935 that touched off a chain of events leading to the relocation here in 1938 of the then National Institute of Health, which had been confined to a 4½-acre tract at 25th and E Streets in Northwest Washington.

Although Mr. Wilson died in 1937, a scant two years after the Government's acceptance of his offer, his philanthropic purpose, fully shared by his wife and son, was carried on by them to completion.

They promptly gave to the Government a second portion of the estate, and soon afterward a third, bringing the land donation to a

in August 1938, was faithfully recorded by the one man most intimately associated with their development. This was Dr. L. R. Thompson, who in 1935 was Assistant Surgeon General of the Public Health Service, in charge of the Scientific Research Division. Following a reorganization of the National Institute of Health early in 1937, he was appointed NIH Director and became the first to serve in that capacity at Bethesda.

A copy of Dr. Thompson's narrative account, written May 26, 1938, and of President Franklin D. Roosevelt's letter of thanks to Mr. Wilson, written August 19, 1935, are among the documents that were placed in the cornerstone of Building 1.

Dr. Thompson's narrative reveals that in 1935 the National Institute of Health was seeking about 45 acres of ground on which to house an animal farm.

### Letter Unanswered

"It was about this time," his report states, "that Mr. Luke I. Wilson wrote to the Secretary of the Interior offering part of his estate to the Government, provided a use could be found for it which was of some general benefit to the people of the United States. This first letter to the Secretary of the Interior was never answered."

Dr. Thompson relates that Mr. Wilson then wrote directly to President Roosevelt and that copies of his letter were circulated to various Government officials, including the Surgeon General of the Public Health Service, who recommended that the land donation be accepted for use as an animal farm. This suggestion was approved by the President, who then wrote his letter of thanks to Mr. Wilson.

### Meets Mr. Wilson

Shortly afterward there was a meeting between Dr. Thompson and Mr. Wilson, the first of many to follow. At this point in his narrative Dr. Thompson says of Mr. Wilson:

"He was a very fine gentleman, at heart a philanthropist, but also a keen business man, and he did not accept the proposal of the Service until he thoroughly understood the future implications of his act, and what effect the establishment of an animal farm would have, both on his own residential property and that of his neighbors."

(To be concluded in the next issue.)



Mrs. Wilson waved from the cab of a steamshovel during early ground-breaking ceremonies at NIH.

total of 70 acres. Two subsequent gifts by Mrs. Wilson—in 1940 and 1942—brought the total to 92 acres. This was the nucleus of the present 310-acre reservation. The additional land was ultimately acquired by the Government through a series of purchases.

Strangely enough, as sometimes happens, Mr. Wilson's generous and public-spirited proposal was at first ignored, and later met with considerable opposition. Fortunately, he remained undiscouraged, and a fortuitous combination of circumstances soon paved the way for Government action.

This series of events, culminating in the cornerstone laying of the NIH Administration building

# Science Section

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.

## Infant Brain Damage Studied At Rhesus Monkey Colony

The only free-ranging colony of rhesus monkeys in the New World, located on Santiago Island near the coast of Puerto Rico, is providing unique opportunities for the acquisition of basic knowledge of brain damage and neurological disorders of infancy. Since 1956, the tiny island has been the site of field studies on primate growth and development for controlling experimental work in the Section on Perinatal Physiology in San Juan. The project was established by the National Institute of Neurological Diseases and Blindness, in collaboration with the University of Puerto Rico Medical School. Cooperative studies, under the immediate direction of Dr. William Windle, NINDB, have already resulted in major scientific contributions relating to the developing nervous system and oxygen deficiencies at birth.

### Colony Disease Free

Confined only by natural boundaries, nearly 300 rhesus (*Macaca mulatta*) monkeys inhabit the dense vegetation of the island, living under nutritional and social conditions as nearly natural as possible. The present colony, which is disease-free, is the result of interbreeding between monkeys imported from India by Columbia University in 1938. At present, the colony is unique as a controlled group in which the life histories of individual monkeys and social groups can be investigated. In addition, a caged colony of 100 breeding females is maintained for research studies at laboratories located on the reservation of the U.S. Public Health Service Quarantine Station in San Juan.

### In Fourth Year

Now in its fourth year of operation, the Puerto Rican Project is proving a valuable means of quickly testing hypotheses from human clinical studies, as well as providing essential information on which to base clinical research. The primate studies have been carefully designed to complement the aims of NINDB's vast Collaborative Study, where events of birth and pregnancy in 50,000 mothers are being correlated with infant disorders (see *NIH Record*, March 29, 1960).

The initial phase of the project, based on recommendations of a conference held in September 1956, was to ascertain whether syndromes similar to cerebral palsy, mental retardation, and other neurological disorders could be reproduced and studied in rhesus monkeys. Many investigators have confirmed the choice of the rhesus monkey for such a project, since the physiology and development, including labor and birth processes, are similar to that of man.

### Brain Damage Delineated

Experiments similar to those successfully conducted with guinea pigs were initiated, in which the placenta was separated from the uterus and the baby monkey artificially resuscitated. Resulting data showed conclusively that the asphyxiated monkeys developed symptoms which resembled mental retardation and cerebral palsy. The extent and location of resulting brain damage was then delineated, thus accomplishing the initial objective of the project.

Related investigations have also resulted in noteworthy accomplishments. An outstanding collaborative study has obtained, for the first time, accurate records of the oxygen supply of the fetus which has wide implications for causes of fetal suffocation in the human.

(See *MONKEYS*, Page 4)

## Fibrosarcoma Grafts Found Virus-Negative

A study to obtain knowledge concerning the factors responsible for the tumor-producing properties of tumor viruses has been made by D. Karl Habel of the Laboratory of Biology of Viruses of the National Institute of Allergy and Infectious Diseases.

The results raise the question whether the virus is necessary for maintenance of the tumor. Basic knowledge of this nature may help clarify these properties in other agents and may eventually lead to an understanding of tumor development under natural conditions in man.

### Mice, Hamsters Inoculated

The investigator inoculated newborn mice and hamsters with polyoma virus to produce fibrosarcomas. These were then transplanted into adults of the corresponding species. In the hamster, although virus could be demonstrated in the original tumor, no further evidence for its presence could be found after the first transplant. Attempts to induce these virus-negative tumor transplants to produce virus in tissue culture under X-ray or ultraviolet radiation failed. On the other hand, in one series of mouse tumor transplants the association of virus with tumor has been consistently positive for 10 transplants.

### Tumors Appear

When virus was given to newborn hamsters along with antiviral serum at a different site of inoculation, tumors appeared after a longer incubation period. Certain of these tumors apparently were not producing virus, however, since the animals gave no evidence of harboring virus antibodies.

The findings were reported at the meeting of the Federation of American Societies for Experimental Biology.

## Tissue Cultures Used for Study Of Antibiotics

As a result of the extensive search for new antibiotics during the last decade, man has been provided the means for curing most of the acute infectious diseases caused by bacteria, rickettsiae, and the largest viruses. However, in many of these diseases there continue to occur persistent infections of low grade variety which may be exemplified by the typhoid carrier or by the typhus patient who develops recrudescence disease. In infections of this type it appears that the organisms lodge intercellularly in the tissues of the patient where, by some yet unknown mechanism, they are protected from the action of the drug. The experimental work of many laboratories has indicated that microbes which are highly susceptible to antibiotics when growing in the test tube are appreciably less susceptible when present inside of tissue cells.

### Studies Needed

Studies on the control and eradication of intracellular infections are needed but such investigations are extremely difficult to carry out in the patient or in the infected, intact animal. Results from the use of tissue cultures to investigate the problem were reported by Hope E. Hopps and Jane L. Showacre of the National Institute of Allergy and Infectious Diseases and Dr. Joseph E. Samdel, NIH Associate Director for Intramural Research, at the meeting of the Federation of American Societies for Experimental Biology. With this useful and relatively simple tool one can infect the growing cells and then observe the effect of various antibiotics on the bacteria within the cells. Model systems of this kind can provide information which might, at a future time, be worthy of exploring further in actual carrier patients.

### Observed by Microscopy

In the experiments reported, tissue cultures which had been infected with *Salmonella typhosa* and then treated with various antibiotics were subjected to direct observation by phase microscopy, a technique which permits the observer to see clearly the interior portion of tissue cells. With each of the four antibiotics tested, namely, streptomycin, chloramphenicol, penicillin and synnematin, it was observed that bacteria within the tissue culture cells were

(See *TISSUE CULTURES*, Page 4)



Outside an Island laboratory that was reconstructed and rescued from the termites, an investigator poses with rhesus monkeys.

## Diabetic Mothers Show High Rate of Abnormal Children

A long-term National Institute of Neurological Diseases and Blindness study has demonstrated for the first time that morbidity rates (incidence of abnormality) are significantly higher among children born to diabetic mothers, as compared to a matched group of normal controls. The study also confirms previous findings that perinatal mortality is greater among the offspring of diabetic women.

Maternal diabetes has been further verified as one of the known conditions which may cause mental retardation and cerebral palsy in a small percentage of children. A comparative study by NINDB investigators shows that abnormalities in infants born to diabetic mothers occur about eight times more frequently than in a matched group of normal control mothers. In addition, perinatal mortality rates in diabetic mothers were found to be three times higher than in the control sample.

### Pregnancies Compared

A detailed study, comparing the results of 235 pregnancies in diabetic and prediabetic mothers with 249 normal pregnancies, has been reported by Drs. Anatole Dekaban and Robert Baird, Section on Developmental Neurology, NINDB. The results of the study appear in the *Journal of Pediatrics*.

Forty-eight diabetic mothers were selected for the study from area hospitals. All were under 43 years of age, and had a history of at least two pregnancies after the diagnosis of diabetes. Normal control mothers, selected from the same hospital, were matched with the diabetic patients according to race, age, number of pregnancies, and social status. All mothers were carefully interviewed by the investigators and most of the offspring were personally examined. Children with abnormal findings were hospitalized for examination.

### Perinatal Loss High

Although the absolute number of surviving infants diagnosed as abnormal was relatively small, abnormalities were found to occur eight times as often among infants of diabetic mothers. The abnormalities in these children included mental deficiency, congenital malformation, birth injury, and epilepsy. Total perinatal loss in the sample of diabetic mothers was 49.5 percent—three times higher than the corresponding rate in normal controls. In 78 prediabetic pregnancies (before diabetes was diagnosed), perinatal loss was 26.9 percent, midway between rates for diabetic and normal control mothers.

A statistical analysis of possible responsible factors showed significant correlations between outcome of pregnancy and the control of the diabetes at delivery, type of delivery, and the infant's

condition at birth. The severity of maternal diabetes and the occurrence of complications during pregnancy were not statistically significant.

In the second phase of this study, a detailed analysis was made of the clinical abnormalities and pathological lesions found in the offspring of these diabetic mothers and controls. Autopsies were performed on the 18 still-born infants and on 11 of the 13 neonatal deaths (occurring up to four weeks after birth). Follow-up studies of the six surviving abnormal children were made.

Results of postmortem examinations showed that the commonest cause of neonatal death was hyaline membrane disease, that is, the formation of abnormal membranes in the air passage. With one exception, congenital malformations found among the infants could be attributed to embryonic disturbances prior to the tenth week of gestation.

According to Dr. Dekaban, the increased incidence of birth injuries may be related to the generally oversized babies of diabetic mothers delivered at term. However, the precise etiology of mental deficiency in some children is not entirely clear and requires further study.

## TISSUE CULTURES

(Continued from Page 3)

as rapidly inhibited with respect to cell division as bacteria which were extracellular. Thus, these experiments have demonstrated directly and for the first time a fact which has been long apparent from indirect evidence, i.e., the antibiotics in common clinical use penetrate mammalian cells rapidly and once there remain biologically active.

Two of the antibiotics which were tested (penicillin and synnematin) produced marked changes in the appearance of extracellular bacilli in the cultures but not on bacilli lying within the tissue cells. The extracellular organisms began to change their appearance within an hour after either of the antibiotics was added. As a result of antibiotic action, the contents of the bacterium were extruded as a spherical mass through its cell wall. Such structures, which are termed spheroplasts, are consid-

## MONKEYS

(Continued from Page 3)

Other achievements include the standardization of neurological examinations for newborn monkeys, establishment of normal growth and development patterns, descriptions of structural changes in the brains of asphyxiated monkeys, and important observations of behavior and learning activities.



Dr. David L. McCroskey, NINDB, examines a baby monkey showing asphyxial damage.

The establishment of the perinatal project in Puerto Rico has aroused interest throughout the scientific world. At present, the unique facility has been made available to several other scientific groups in this country and abroad, including other NIH Institutes, for collaborative or individual studies. Many other investigators have expressed interest in using these animals or facilities for primate research.

As the primate colony expands, it may be possible to supply needed pregnant animals for use by selected investigators from other research institutions. The availability of the colony may also serve as a valuable source for breeding rhesus monkeys, in the event that other sources are unavailable.

ered to be less stable than the parent organism although they can carry on a number of metabolic activities and under certain conditions will divide. Some bacteria in the spheroplast stage will survive for long periods in an environment rich in antibiotics. Such forms have been considered possible sources of the continued intracellular infections in experimental systems and treated patients. Whether such forms play a role in the harboring of organ-

## Light Energy Destroys Live B-Virus Strains

In studying the effect of light on viruses in the presence of toluidine blue, Division of Biologicals Standards scientists found that while many animal viruses become sensitized for photodynamic inactivation on subsequent exposure to visible light, others—including polio virus—are highly resistant to this treatment.

In a recent study, Dr. C. W. Hiatt and his co-workers discovered that when minute quantities of toluidine blue dye (1 to 10 parts per million) were added to monkey kidney tissue culture fluids containing both polio virus and B-virus, the latter became the target of subsequent bombardment with light energy and was destroyed, while the polio virus showed no significant loss of infectivity.

### Can Produce Encephalitis

B-virus is one of the 40-odd wild viruses that have been encountered in the routine testing of the Salk vaccine. Since these contaminating agents are even more readily inactivated by formaldehyde than the polio virus, they introduce no hazard in the Salk vaccine. Elaborate precautions and tests have had to be devised, however, to make certain that they are not present in live poliovirus vaccine, since no way has been found to inactivate the polio virus. Little is known of the pathogenicity for many of these animal viruses, except for the B-virus which, although it causes only a mild illness in monkeys, is capable of producing fatal encephalitis in human beings. Sixteen such infections, 14 of them fatal, have occurred since 1937, in laboratories in England, Canada, and the United States among personnel engaged in research with monkeys and monkey tissue material.

This selective method of inactivating contaminating agents may be of practical use as an added safeguard in the manufacture of live poliovirus vaccine. The findings were reported at the meeting of the Federation of American Societies for Experimental Biology.

isms by the typhoid carrier is not known. However, the results of the experiments reported here, in which the intracellular typhoid bacilli retained their normal rod-like morphology, suggest that spheroplast formation is not essential to the persistence of *Salmonella typhosa* in infected cells.

Radioactivity in water supplies can be reduced by algae, according to preliminary studies.

## Simple Test Developed By NIAID Scientists For L.E. Diagnosis

A simple and rapid diagnostic test for lupus erythematosus has been developed by scientists of the National Institute of Allergy and Infectious Diseases. Mr. John Bozicevich of the Laboratory of Immunology in cooperation with Drs. John P. Nasou and Donald E. Kayhoe of the Laboratory of Clinical Investigation, describe the procedure as similar to the bentonite flocculation test originally devised against rheumatoid arthritis.

In this case, however, desoxyribonucleic acid (DNA) is substituted for gamma globulin as the sensitizing agent for the bentonite particles. These are added to heat-inactivated serum dilutions to effect the flocculation reaction. The results of the study are reported in the *Proceedings of the Society for Experimental Biology and Medicine*.

In the clinical evaluation of the new diagnostic procedure in eight patients with lupus erythematosus, the investigators compared the results of the new flocculation test with those of the widely used lupus erythematosus cell test and found them comparable.

The scientists indicate that one of the disadvantages inherent in the L.E. cell test is the need for employing fresh whole blood. In the newly developed DNA-bentonite flocculation test only the patient's serum is required.

While it is true that cases in remission are apparently more sensitive to the older test (two out of five patients of this type yielded positive reactions to the L.E. cell test but reacted negatively to the flocculation tests) the new procedure appears to be more specific. This was indicated in tests with serum from six rheumatoid arthritis patients which gave positive reactions with the L.E. cell test and negative reactions with the flocculation procedure.

As controls, the investigators tested sera from 138 individuals, including normal subjects and those with related and unrelated diseases. The new flocculation procedure gave negative readings in each case. Ninety-four of these 138 individuals were evaluated by the L.E. cell method. Six of them reacted positively even though there was no clinical evidence of the disease.

The Metropolitan Life Insurance Company states that fewer women than men are overweight, and that a tendency to overweight among older women has less effect on their mortality rate than overweight among men.

## Q Fever Incidence on Rise Throughout United States

Data now available demonstrate conclusively that Q fever occurs among dairy cattle in all parts of the United States. State or local health and agricultural groups in 26 States participated in recent surveys which confirm and expand earlier findings and prove that there is considerable bovine infection in 19 States not previously surveyed. These data are reported by Dr. Lauri Luoto in *Public Health Reports*. Dr. Luoto is on the staff of the Hamilton, Montana, Rocky Mountain Laboratory of the National Institute of Allergy and Infectious Diseases.

Over 24,000 herds were tested, including dairy cattle along the supposedly infection-free eastern seaboard, where high levels of infection were demonstrated. An unexpectedly high herd infection rate was encountered in most sections of the country, ranging from 1 to 65 percent. A significant spread of infection has been noted among herds in Idaho, Montana, and in other States. The increase of bovine Q fever, even within herds maintained under dispersed rural conditions, suggests its propensity for becoming a greater source of human infection.

### Milk Specimens Tested

Milk specimens and serums were tested for antibody against *Coxiella burnetii*, causative organism of Q fever, using the capillary-tube agglutination test (CAT). This procedure, used in Q fever studies since 1952, has been found to be specific, sensitive and reproducible. A close correlation exists between the presence of the agent in milk and of agglutinating antibody in milk or serum of individual ani-

mals. The test works effectively under field conditions, detecting infection in herds and animals in areas where rates of infection among individual cows are only a fraction of 1 percent.

Not only were herd infections widespread, but a high percentage of infection occurred among animals within herds, ranging above 50 percent within some herds. Even in areas where infections are infrequent, high levels of infection exist within individual herds. For example, in Montana, where only 1 percent of herds are infected, up to 72 percent of cows in herds were positive.

### Human Infections Related

In view of the widespread prevalence of bovine Q fever throughout the United States, Dr. Luoto believes that information on associated human infections is urgently needed. Human infections occur and are diagnosed in areas where Q fever is known to exist in animal reservoirs. Human Q fever is already recognized as a public health problem in some areas. In southern California at least 300 human cases were detected and 350 cases were associated with sheep in northern California during epidemiological studies in 1948-49.

The true incidence of human infection within this county is unknown because many cases may go unrecognized. Even during an acknowledged epidemic in Idaho during 1958, most of 93 laboratory-confirmed cases reported were diagnosed by about 10 percent of the local physicians, many of whom

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## Side Effects Reduced By Selective Action Of Syrosingopine

Syrosingopine (SU 3118), an analog of reserpine recently synthesized by scientists of the Research Department, Ciba Pharmaceutical Products, Inc., has been studied in the National Heart Institute's Laboratory of Chemical Pharmacology.

It had previously been reported that syrosingopine is as effective as reserpine in lowering blood pressure, but does not produce reserpine's sedative effects. The study by the NHI researchers indicates that this is due to syrosingopine's ability to deplete peripheral norepinephrine while having little effect on this amine in the brain.

These findings are in accord with the view that the hypotensive effects of reserpine are not due to a central action, but to its ability to deplete sympathetic peripheral nerve endings of norepinephrine, a vasoconstrictive neurohormone with transmits impulses across their synapses.

However, reserpine also depletes brain amines, causing depression, lethargy, and other sedative effects of parasympathetic dominance. Thus a major problem in treating hypertensives with reserpine has been the maintenance of dosage schedules which would hold blood pressure down without causing these undesirable side effects. Syrosingopine, a semi-synthetic analog of reserpine, provides a greater margin of safety since it retains its selective action on peripheral norepinephrine over a wide dosage range.

In experiments on animals, Drs. Barbara H. Orlans, Kenneth F. Finger, and Bernard B. Brodie compared the effects of repeated doses of reserpine and syrosingopine on brain amine levels and of varied doses of the two drugs on the central nervous system, the cardiovascular system, and brain and heart levels of norepinephrine.

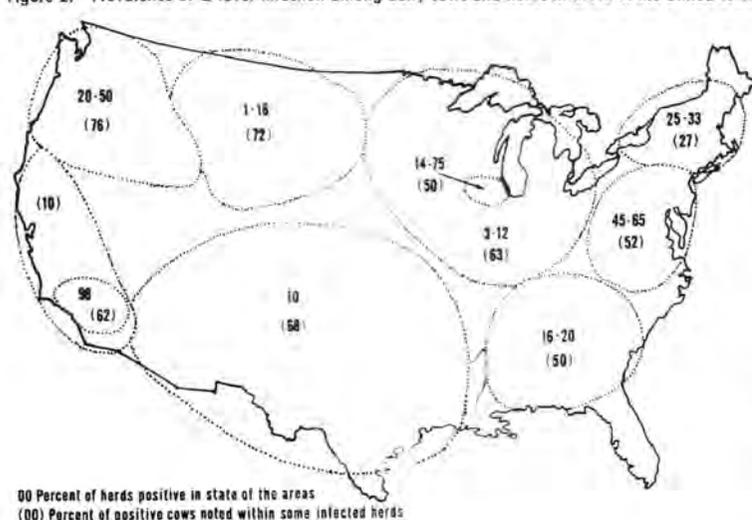
Both depleted heart norepinephrine in doses that did not affect brain amines; however, reserpine exhibited this selectivity only over a small dosage range, whereas syrosingopine did not affect brain amine levels or elicit sedation over a wide range.

Non-sedative doses of syrosingopine also markedly reduced elevations of blood pressure in response to carotid occlusion, vagus stimulation, and electrical stimulation of the celiac ganglion; actually lowered blood pressure in response to the pressor drug tetra-ammonium bromide (TMA); and enhanced cardiac response to administered norepinephrine.

Figure 1. The known distribution of naturally occurring Q fever infections in the United States



Figure 2. Prevalence of Q fever infection among dairy cows and herds in areas of the United States



## Q FEVER

(Continued from Page 5)

had diagnosed cases of Q fever in previous years. In many respects the failure to recognize this disease in man is associated with a disease of cattle. Based on present knowledge concerning Q fever, Dr. Luo thinks it likely that human infections will become increasingly widespread and perhaps even now are occurring unrecognized.

Regardless of future implications, the presence of *C. burnetii* in animals and their products and environment should be of concern to agricultural, industrial and public health groups. Concerted nationwide studies of the occurrence and

epidemiology of the disease are needed to help define the problem, particularly as it relates to the possibility of increasing incidence of human disease.

Bovine Q fever has been reported in California, Wisconsin, Ohio, Iowa, Texas, Arizona, Idaho, Oregon, Washington, Montana, Wyoming, Utah, S. Dakota, Minnesota, Nebraska, Illinois, Michigan, Georgia, N. Carolina, Maryland, Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, Hawaii. More limited data suggests occurrence in Louisiana, Mississippi, Virginia, Colorado, New Mexico, N. Dakota, Kansas, Missouri, Kentucky.

## X-ray Damage Studied In Mammalian Cells

Continuing their studies of the effect of radiation at the cellular level, Dr. Mortimer M. Elkind and Miss Harriet Sutton, of the National Cancer Institute's Radiation Branch, have reported on studies of X-ray damage and recovery in mammalian cells carried in tissue culture.

Other studies reported in the scientific literature have suggested that x-ray damage may be cumulative. It follows, therefore, that surviving cells having accumulated a sublethal amount of damage might be more sensitive to subsequent exposure to x-ray than the parental population.

To investigate the question of the presence of heritable damage, Dr. Elkind and Miss Sutton studied the effect of x-ray on two lines of Chinese hamsters cells propagated in tissue culture. They found that the vast majority of surviving cells did not transmit sublethal damage to their progeny, but completely repaired their accumulated damage before their first division after irradiation. Also, surviving cells could undergo repeated cycles of damage and repair with no apparent weakening of the repair process.

## Gamma Globulin Studies Show Antibody Activity

Dr. John L. Fahey, of the National Cancer Institute's General Medicine Branch, has reported further results in his study of the nature of gamma globulins from human blood. In an earlier report, he described their isolation from the rest of the normal blood serum proteins and their fractionation by the technique of anion-exchange cellulose chromatography. Ninety to 95 percent of the gamma globulins comprised a heterogeneous group of protein molecules of about the same molecular size; these were separated into four fractions, which differed in electrical charges and carbohydrate content. A fifth fraction contained five to ten percent of the gamma globulins and although comprised largely of protein macromolecules, also included a small amount of the smaller molecules.

In the present study, the distribution of normal and abnormal physiologic activities among the five gamma globulin fractions was investigated. Antibodies to mumps virus, *Histoplasma capsulatum*, thyroglobulin, and typhoid H antigen were found in fraction 1.

# Hemoglobin Studies Show Mutation May Control Protein Synthesis

Within recent years it has become apparent that various metabolic disorders in man are associated with the inherited absence or decrease of a particular enzymatic activity. Phenylketonuria, galactosemia and alcaptonuria are all examples of hereditary disorders in which specific enzymes are either lacking or deficient. One possible mechanism for this apparent inhibition of activity is that a mutant gene has caused the production of a structurally abnormal enzyme. This concept of structural abnormality, however, is difficult to test directly, since it is rarely possible to obtain enzymes, especially human enzymes, in adequate purity and quantity for chemical and physical characterization.

## Other Proteins Studied

One approach to this problem is to study other human proteins, even though they are not classified as enzymes, since the concepts concerning genetic control of protein synthesis apply to these other proteins as well as to enzymes. This is the approach that is being utilized by Dr. Harvey Itano and Elizabeth Robinson, of the Laboratory of Pathology and Histochemistry, National Institute of Arthritis and Metabolic Diseases, in studies of the various types of human hemoglobin. These proteins (the hemoglobins) can be obtained in large quantity and in numerous genetically abnormal forms—hemoglobin S, C, etc.—and provide an extremely useful system for studying protein synthesis and structure.

## Composed of Two Chains

The NIAMD study has shown that when hemoglobin molecules are placed in an acid medium they

will dissociate into two unlike subunits. The molecules are composed of two pairs of amino acid chains, designated alpha chains and beta chains, and in an acid medium the molecules will split asymmetrically, that is, into two alpha chains and two beta chains. When the medium is neutralized, the two unlike "halves" of the molecule recombine to form the complete molecule.

(Normal hemoglobin has two identical alpha chains and two identical beta chains. This is also true of the abnormal hemoglobins, but in them there is an alteration in the amino acid sequence, either of both alpha chains or of both beta chains. As yet no hemoglobins have been found that have alterations in their alpha chains and their beta chains, except in a rare situation in which a person has inherited both a hemoglobin abnormal in the alpha chain and a hemoglobin abnormal in the beta chain.)

## Molecules Will Recombine

The NIAMD scientists have found that all the various types of hemoglobin will undergo dissociation into half molecules and will then recombine not only with their own complementary halves but also with the complementary halves of other types. This phenomenon thus makes it possible to determine where the alteration exists in a hemoglobin of unknown structure. The "unknown" hemoglobin is mixed with one whose structure is known, and by analyzing the resultant combinations it is possible to determine in what chains, alpha or beta, the unknown is defective. This technique of "asymmetric recombination" has now been used to study many of the abnormal hemoglobins and has clarified the nature of their defects. Recently, the investigators reported in *Nature* that the phenomenon will take place in an alkaline medium as well as an acid one.

## Information Provided

One of the most significant aspects of the NIAMD research is its demonstration that the synthesis of the entire hemoglobin molecule is not controlled by a single gene. Evidently, a separate gene controls the synthesis of each pair of chains, and after the two pairs are synthesized separately they join together to form the complete protein molecule. The hemoglobin studies are thus providing important information on protein synthesis and on the effect of mutations on protein structure.

Antibodies to the rheumatoid arthritis factor and typhoid O antigen were found in fraction 5. Several activities were found in both fractions 1 and 5—anti-A and B isohemagglutinins, the Rh antibodies, and the anti-liver-nucleoprotein extract activity, when present in the serum of patients with lupus erythematosus. The finding of the same activity in two fractions indicated that the antibody activity was associated with distinctly different gamma globulin molecules.

Fractions 2, 3, and 4, comprising about 20 percent of the total gamma globulins, could not be demonstrated to contain the major component of any physiologic activity.

The work is summarized in a recent issue of *Science*.

## Surgeon General Lauds Dr. Heller

Following his announcement of Dr. John R. Heller's acceptance of appointment as President and Chief Executive Officer of the Memorial Sloan-Kettering Cancer Center, to become effective July 1, PHS Surgeon General Burney issued the following statement:

"In nearly 30 years of service in the public health field, Dr. Heller has made a great contribution to this country's efforts to wipe out disease.

"He has held numerous positions in the Public Health Service, and I am happy that it is possible to make his services available in a new field as President of Memorial Sloan-Kettering Cancer Center. I know that Dr. Heller will continue to take a leading role in the national effort to conquer cancer. In his new capacity, he will direct the activities of one of the world's leading cancer research institutions."

## KEY CHANGES

(Continued from Page 1)

his entire professional career to the Public Health Service. From 1939 to 1942 he served as a medical officer in various PHS hospitals. He became Assistant Chief of the Division of Pathology in 1942, and Chief of the Section on Metabolic Degenerative Diseases in 1943.

In 1951, Dr. Endicott was appointed Scientific Director of the Division of Research Grants, NIH, and in 1955 became Chief of the Cancer Chemotherapy National Service Center, NCI. He has held his present position as NIH Associate Director since 1958.

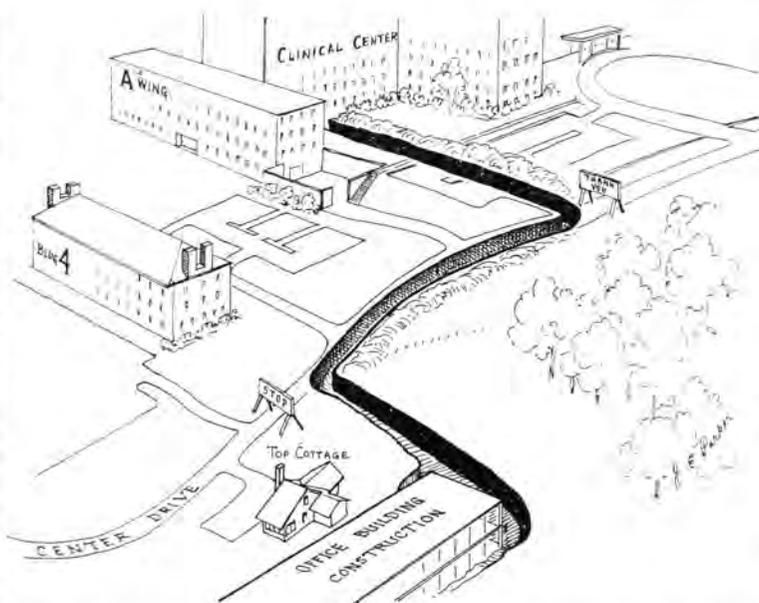
### Was CDC Chief

Dr. Bauer is a veteran of many years in the disease control program, centered in the Bureau of State Services. From 1948 to 1953 he was Chief of the PHS Communicable Disease Center in Atlanta, Ga. He was appointed Deputy Chief of BSS in 1956. He is a native of Iowa and a graduate of the University of Iowa Medical School.

Dr. Heller will be no stranger to his future associates in New York. Since 1954 he has been a member of the Scientific Advisory Board of the Sloan-Kettering Institute for Cancer Research, which recently was incorporated with the Memorial Center for Cancer and Allied Diseases to form the Memorial Sloan-Kettering Cancer Center.

Born in Fair Play, S.C., Dr. Heller received his medical degree from Emory University, Atlanta, Ga., in 1929. He became a mem-

## THIS IS THE WAY IT WILL LOOK



This diagram shows the route of the open trench to be excavated for the long pipeline tunnel that will cut under Center Drive east of the Clinical Center. The location of traffic barriers is also indicated.

## OPEN TRENCHES

(Continued from Page 1)

tunnel. Dustproof partitions shutting off the east and west ends of the north corridor will be installed.

Plans have been developed to provide for overland vehicles to carry laundry and supplies that normally are conveyed through the tunnel. A temporary service depot will be set up on the B-1 level near the west bank of freight elevators. The B-1 corridor will be open to foot traffic.

The trench from the National Library of Medicine will cross the southern end of Center Drive and will lead into Service Road South, then across the parking lot serving the Grounds and Maintenance Building (Bldg. 22). A temporary road will be constructed at the intersection of Center Drive and Service Road South to keep Stone House Road open for through traffic. Another temporary road will lead from Stone House Road to the south end of the T-19 parking lot.

Special arrangements will be made to provide limited access to T-18, T-19, and the service buildings at the south end of the reservation. A temporary bridge at the intersection of Service Road South and Center Drive will per-

mit single-lane traffic into this area before 7:30 a.m., after 4:00 p.m., and intermittently during working hours, depending on construction activity.

ber of the PHS Commissioned Officers Corps in 1934. After serving the Public Health Service in various capacities, he was appointed Director of NCI in 1948. In 1957 he was named an Assistant Surgeon General of the PHS.



A crew from the Grounds Maintenance and Landscaping Section, PEB-DRS, plants a 30-foot red oak tree in its new location at the west side of the CC entrance. The tree, weighing six tons, was formerly located astride the route of a ditch soon to be dug for pipeline tunnels between the CC and the new office building under construction on Center Drive. A three-ton winch-truck and trailer were required to move the tree. During 1959 about 500 shrubs and 32 trees were transplanted from construction sites on the NIH grounds.

mit single-lane traffic into this area before 7:30 a.m., after 4:00 p.m., and intermittently during working hours, depending on construction activity.

## It's a Dire Estimate!

The Better Vision Institute estimates that there are one million Americans who suffer from glaucoma without knowing it.

## Mental Health Week Set for May 1 to 7

The week of May 1-7 will be National Mental Health Week, featuring for the second year the theme "Operation Friendship." For the 12th consecutive year NIMH is cooperating with the National Association for Mental Health in this observance.

Estimates of the results of last year's activities indicate that over a million Americans gained a first-hand acquaintance with the mentally ill and mental hospitals, helping to promote a better understanding of them and their needs, to reduce stigma, and to demonstrate the hopeful outlook in the treatment of mental illness. The goal this year is to double the results of 1959.

NIMH provides a kit of substantive material on mental health and illness which can be used during Mental Health Week and throughout the year for many educational and informational activities. It contains 22 pieces of material and a letter to recipients from Dr. Robert H. Felix, Director, NIMH.

On the basis of standing requests for these kits, 1,365 were mailed out the week of March 23. Requests for additional kits brought the total to 1,601.

Professional and voluntary organizations, State and local agencies, women's organizations, churches, educational groups and trade unions are among those receiving the NIMH kit.

## London Professor Here For Studies

Prof. Eric G. L. Bywaters, international authority in the field of rheumatic diseases, is on leave from his post as Professor of Rheumatology at the University of London, England, to work with Dr. Joseph J. Bunim, NIAMD Clinical Director, and the staff of NIAMD's Arthritis and Rheumatism Branch for a three-month period ending May 31.

Dr. Bywaters has made a number of significant contributions involving the clinical and laboratory aspects of various types of arthritis, particularly in the area of juvenile and adult rheumatoid arthritis.

While with NIAMD, in addition to his research activities, Dr. Bywaters will give a series of informal lectures on the results of his research work and clinical observations.

Prior to his return to England, Dr. Bywaters will present two papers at the annual meeting of the American Rheumatism Association, to be held in Miami, Fla., in June.

Dr. Bywaters is accompanied by his wife and daughter Elizabeth.

## AWARDS

(Continued from Page 1)

CC, will participate in the presentations.

Music will be provided by "The Kilties," of the 2nd U. S. Army Pipe and Drum Corps, Ft. George Meade, Md.

Individual awards for superior performance or special acts of service will be presented to:

Ruby H. Peters, Supervisor, Appropriation Accounting Unit, FMB-ODA, "for signal initiative in the development of a system of consolidated payment of grants, effecting substantial savings to the Government."

Preston Grantham, Chemist, LB-NCI, "for work of originality and vision, performed with initiative and dispatch."

Margurite Ray, Mail and File Supervisor, DIR-NIMH, "for the development of a comprehensive 'model' Central Mail and Records Operation."

E. Kenneth Stabler, Editor, and Elizabeth D. Mok, Associate Editor of the *NIH Record*, PIB-ORI, "for the successful development and publication of a 'new look' *Record*, expanded in scope and depth."

Milford D. Myers, Chief, Grounds Maintenance and Landscaping Section, PEB-DRS, "for a distinguished record of performance in the maintenance and development of the NIH grounds."

Charles H. Dove, Engineering Equipment Operator, PEB-DRS, "for an excellent example of loyal and unselfish service, both within and beyond assigned duties."

George B. McGuire, Electrical Engineer, PEB-DRS, "for outstanding perseverance in solving a complex problem on electrical energy costs."

Edith Maeda, Occupational Therapist, Rehabilitation Department, CC, "for unique skills in the adaption of the occupational therapy role in a complex research design in the Child Research Branch, NIMH."

Awards for suggestions "for scientific, technical, safety and economy devices which have improved operations at the NIH" will be presented to Isabelle D. DeBella, Clinical Center, NHL; Mary F. Garzoni, Clinical Center, NINDB; Woodrow W. Steverson, Office of Administrative Management; William Bowman, Jr., Division of Research Grants; and Moir B. Oldham, National Cancer Institute.

A group award "for the economical design and production of germ-free tanks, thus making an important research tool readily available," will be presented to the following employees of the Shops Section; PEB-DRS:

John W. Conover, Archie A. Davis, Jr., Ralph DeSimone, Elvin F. Marshall, Elbert S. McGarvey, Jr.,

## Institute of Forensic Medicine Bids Fair to Serve a Need

Establishment of an Institute of Forensic Medicine under the sponsorship of George Washington University's National Law Center and School of Medicine was announced recently by Dean Charles B. Nutting of the Law Center and Dean John Parks of the School of Medicine.

### First I.F.M. Symposium Scheduled for May 3

The first in a series of symposia to be conducted by George Washington University's newly created Institute for Forensic Medicine will be held next Tuesday, May 3, in the University's Lisner Auditorium, 21st and H Streets, N.W.

Title of the initial one-day symposium is "The Hospital and the Law," which Dr. Murdock Head, Chairman of the Institute, points out will include discussions and presentations of interest to NIH staff.

#### Purpose Explained

"This symposium," Dr. Head explained, "is for the purpose of considering the various aspects of the law as it relates to the hospital, its patients, and its staff."

Topics include "Analysis of the Legal Responsibility of the Governmental and Civilian Hospital," "Recent Trends in Medical Legislation," "The Hospital and Negligence—a Survey," and "Malpractice and Liability Insurance—a Present Evaluation."

The symposium begins at 9:30 and adjourns at 4:15, with luncheon intermission from 12 to 1:30. The registration fee is \$10 per person.

Checks for advance registration should be made payable to: I.F.M., The George Washington University, and mailed to John J. Bordelon, Chairman of Arrangements, Administrative Assistant, The George Washington University Hospital, 901 23rd St., N.W., Washington 7, D.C. The announcement requests those making reservations to name their position and organization.

Garnett H. Mills, and Samuel W. Stewart, Sr.

Group awards will be presented to employees of the Clinical Center as follows:

"For an outstanding demonstration of competence, skill and dedication in the course of a complex research and nursing project, concluded at a high level of success," to the following members of the Nursing Staff, Unit Two West, Psychiatric Nursing Service:

Nurses Helen Stone, Mary T. Gardner, Dolores E. Eby, Beryl V. Ervin, Cassandra J. Fitzkee, Judith M. Fleck, Anna Mae Fowler, Olive M. Graham, Catherine Z. Hunt, Avis Y. Howe, Virginia

"The Institute," the announcement said, "will serve as a forum for the disciplines of law and medicine in areas where these professions are interrelated and where they vitally affect the public. Medico-legal problems of the individual and the community at the national and international level will fall within the scope of the Institute."

#### Plans Outlined

Present plans contemplate the holding of institutes of several days duration, in addition to classroom instruction and symposia, to meet the needs of lawyers and physicians in practice as well as students enrolled in degree programs at the University.

Commenting on the program of the Institute, Dean Nutting said, "The opportunities for public service arising from the cooperation of these two great professions are almost limitless. One of the most significant results of our working together will be increased respect and understanding between lawyers and physicians."

#### Dr. Head Is Chairman

Dr. Murdock Head, Assistant Clinical Professor of Surgery and Professional Lecturer in Forensic Medicine at the University, has been named Chairman of the Institute.

In setting forth objectives of the Institute, Dr. Head emphasized that, "On the international level, one of our most effective means of aiding people and influencing world opinion exists in our international program of Public Health. Our Department of State, National Institutes of Health, and the United States Public Health Service annually spend millions of dollars to further these efforts."

H. Sinclair, Ella C. Sturdivant, and Virginia E. Zakotnik.

Also, Nursing Assistants Maurice S. Baytop, William H. E. Brown, Lester Carroll, Alexander K. Garrison, Calvin Green, William L. Moss, Theoloman A. Ricks, Clarence A. Robinson, and Augustine F. Williams, and Secretary Rotha H. Erwin.

Employees of units of the NIH Laundry and Dry Cleaning Section, Administrative Branch, who will receive awards are Mary C. Jackson, Dorothy E. Wood, and Isabell R. Conley, "for skill and versatility in the production of surgical linens and protective clothing in the Fabrication Unit;

## Information Officers Air Mutual Problems in the Mental Health Field

Publications and Reports, NIMH, recently brought together, for the first time, information officers from State mental health agencies for a discussion of mutual interests and problems.

The three-day conference, planned by P & R with cooperation from NIMH's Community Services Branch, was held March 22-24 at the Woodner Hotel, Washington, D. C. and was attended by 55 information officers and leading program personnel from Mental Health Agencies in 34 States, the District of Columbia, and Puerto Rico.

#### Gives Keynote Address

Dr. Harold L. McPheeters, Commissioner, Kentucky State Department of Mental Health, opened the conference with a keynote address on "The State Mental Health Agency and the Public," following brief welcoming addresses by Dr. Joseph M. Bobbitt, Assistant Director of NIMH, and Lealon E. Martin, Deputy Chief, NIH Office of Research Information.

The conference was chaired by Harold P. Halpert, Chief, P & R, NIMH, and the conference summary was delivered by Robert Robinson, Public Information Officer, American Psychiatric Association, and Dale Kloak, P & R.

Discussions centered on the special problems and activities of public relations and public information offices in a State mental health or mental hospital agency.

## NINDB to Sponsor Meeting in Miami

An international conference on vascular disease of the brain, supported by NINDB, will be held in Miami, Fla., on April 30 and May 1. The conference follows the twelfth annual meeting of the American Academy of Neurology.

Authorities from this country and abroad will discuss experimental studies, diagnostic procedures, and therapy for cerebrovascular diseases. Included on the agenda are discussions of NINDB's cooperative programs to evaluate anticoagulant drugs as preventives for cerebral strokes, and to determine the exact nature and causes of strokes.

and Ellen Balls, Ida M. Flack, Coretta Lewis, Rebecca W. Mitchell, H. Bernease Thompson, and Jemina Thompson, "for superior work records, morale of the highest calibre, faithfulness, courtesy and cheerfulness in the NIH Laundry Section."