

# the Record

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

Vol. XII, No. 19  
September 13, 1960

PUBLIC HEALTH SERVICE  
NATIONAL INSTITUTES OF HEALTH

## President Opens Fifth Congress On Nutrition

Over 2,000 scientists from 65 nations attended the week-long Fifth International Congress on Nutrition opened by President Eisenhower on September 1.

NIH personnel figured prominently in the congress, the first held in the United States. The congress was sponsored by the International Union of Nutritional Sciences, the American Institute of Nutrition, and the National Academy of Sciences-National Research Council.

### 3,500 Attending

"Our age," Mr. Eisenhower told the opening session, "is the first to be deeply concerned about the quality as well as the quantity of the food supply. For the first time in history, man's ancient enemies—hunger and malnutrition—are on the defensive."

The President told the 3,500 delegates and visitors in the opening session at the Sheraton-Park Hotel that 1,200 U. S. agricultural technicians are now working overseas, translating agricultural science into better living for the world's millions. He said that in the last six years the U. S. has sent more than four thousand shiploads of food from our surplus to countries

(See NUTRITION, Page 7)



President Eisenhower addresses the opening session of the Fifth International Congress on Nutrition.

## American Hospital Ass'n Names Dr. Jack Masur As President-elect

Dr. Jack Masur, Associate Director for NIH Clinical Care Administration and Director of the Clinical Center, became President-elect of the American Hospital Association at its annual convention in San Francisco last week. He is the first government physician to attain this honor.



Dr. Masur

The American Hospital Association, founded in 1899, is primarily an organization of organizations. Membership at the present time includes more than 5,500 hospitals in the United States and Canada, about 1,400 hospital auxiliary groups, some 83 Blue Cross Plans, and more than 200 governmental and related health agencies. In addition, approximately 5,000 individuals affiliated with hospitals or related health groups hold personal memberships in the Association.

Dr. Masur has been active in the AHA for many years. He has (See DR. MASUR, Page 8)

## Classes Offered Here By U. S. D. A. School

The Department of Agriculture Graduate School is offering a total of 31 evening classes at NIH this year, eight more than last year.

The several areas of study include chemistry and physics, medicine and biology, mathematics and statistics, foreign languages, and public speaking.

Registration will be held September 19-24 in Bldg. 10, Rm. 2B 50, from 11 a.m. to 4:30 p.m. daily.

Classes will begin on Monday, September 26.

Information on all courses is available in the executive and administrative offices of the Institutes and divisions, the library, CC information desk, and the personnel office in Bldg. 1, or through Carol Long, Ext. 2427.

## Eisenhower Signs HEW Budget Bill; NIH Share Will Be \$590 Million

The 1961 Labor-HEW appropriations bill was signed by President Eisenhower on September 2. The total allotted to NIH amounts to \$590 million.

Of the above figure, \$106,722,000 is designated for direct operations, \$483,278,000 for grants, including \$30,000,000 for research facilities construction.

Last year's total was \$430 million.

Funds were appropriated to NIH under nine major appropriations: for each of the seven Institutes; for research construction grants; and for general research and services.

Among the Institutes the allocations were in the following amounts: (figures in millions) Cancer, \$111.0; Mental Health, \$100.9; Heart, \$86.9; Dental, \$15.5; Arthritis, \$61.2; Allergy, \$44.0; Neurology, \$56.6. The general research and services appropriations, in which DGMS and DBS are included, amounted to \$83.9.

### \$453 Million Grants

The \$453 million appropriated for grants is distributed as follows: (figures in millions) research projects, \$306.8; fellowships, \$22.0; training, \$110.0; state disease control, \$13.0; and community demonstrations, \$1.5.

Included in the research projects figure is \$12,139,000 for the planning and construction of a joint NIMH-NINDB basic science laboratory building at Bethesda, and \$700,000 for planning a cancer research building.

Also included in the research projects appropriation is \$20 million, to be provided from appropriations of all the Institutes except NIDR, to continue support to multicategorical clinical research (See BUDGET, Page 2)

## 34 Scientific Awards Offered for Research

A quarterly listing of scientific and technical awards available to NIH professional personnel is being circulated to all Institutes and Divisions by the NIH Board of Employee Awards.

The awards, 34 in number, are offered by professional societies and scientific foundations for achievement in, and contribution to, the advancement of medical research. They range in scope from medals to a cash award of \$10,000. Included is the WHO Darling Medal and Prize for outstanding achievements in the pathology, etiology, epidemiology, therapy, prophylaxis, or control of malaria.

The Criss Award of Mutual of Omaha in the amount of \$10,000 and a gold medal, is offered for (See AWARDS, Page 7)



Irmagarde L. McCaffrey, a chemist in NHI's Laboratory of Technical Development, recently became the 10,000th member to join the NIH Credit Union. O. J. Wood, Credit Union manager, looks on as she signs her application.

### New Equipment on View

DRG will hold open house from 9 a. m. to 4:30 p. m. on Wednesday, September 14, in the NIH Duplicating Plant located in the Third Wing of Bldg. T-6. New automatic reproduction equipment installed there will eliminate much hand labor and provide faster service.

# the NIH Record

Published bi-weekly at Bethesda, Md., by the Public Information Branch, Office of Research Information, for the information of employees of the National Institutes of Health, principal research center of the Public Health Service, U. S. Department of Health, Education, and Welfare.

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## NEWS from PERSONNEL

### A MESSAGE FROM:

John M. Sangster  
Chief, PMB

You've undoubtedly learned to overlook some things that do not exactly please you. You have your "off days" and you know that everyone else, including your supervisor, has his "off days," and that it doesn't pay to be too sensitive. This is an important first lesson in getting along with people and especially with those with whom you work.

If, however, you feel that something is wrong and needs to be corrected, or if you believe that an injustice has been done you, then it is to everyone's advantage to reach a fair adjustment as promptly as possible.

### Discussion Recommended

We suggest that you first discuss with your supervisor, any problem or complaint that you may have. He has the first responsibility to correct anything that is wrong and it is only fair to give him a chance. Most problems are settled this way. Discussions with your supervisor about your complaints and problems tend to lead the way to a better understanding and more harmonious work relationships.

If talking with your supervisor or supervisors up the line doesn't satisfy you, or if for any reason you feel that you cannot take your problem up with them, we suggest you discuss it with your Personnel Generalist. However, if you are still not satisfied, the Department of Health, Education, and Welfare has a grievance procedure which you may use without fear of reprisal.

The DHEW Personnel Manual,

## MIT 'Summer Institute' Sponsored by DRG

College undergraduates from 16 universities throughout the nation were participants in a Summer Institute in Biophysical Science, held at the Massachusetts Institute of Technology, August 28 through September 9. The program was held under the sponsorship of the Biophysics and Chemistry Study Section, DRG.

The two-week program, planned to stimulate and encourage interest in the broad field of biophysics, included lectures, laboratory tours, and a trip to the Marine Biological Laboratory at Woods Hole.

Members of the institute staff from NIH were Drs. Irvin Fuhr, Executive Secretary, Biophysics and Biophysical Chemistry Section, DRG; Urner Liddel, Chief, Section on Bionucleonics, Laboratory of Physical Biology, NIAMD; and DeWitt Stetten, Jr., Associate Director in Charge of Research, NIAMD.

## NINDB Information Staff Moves to New Quarters

The NINDB Information Office moved recently from Rm. 105 to Rm. 123 of Building 8. The telephone extension remains 2207.

Chapter E-2, Guide 3, gives detailed information on how you may request a hearing or review of your complaints. The DHEW Personnel Manual is available for review in the Administrative Office of your Institute or Division or in the Personnel Management Branch. Copies of Chapter E-2, Guide 3 of the DHEW Personnel Manual are also available in the Employee Relations & Services Section, Bldg. 1, Rm. 21, and are posted on all bulletin boards.

The DHEW grievance procedure may be used for any complaint relating to working conditions, unfair treatment, interpretation or application of regulations, or other administrative actions.

## Dr. Luther L. Terry At Adriatic Meetings

Dr. Luther L. Terry, Assistant Director, NHI, is among a group of American physicians attending medical conferences in Bucharest, Rumania, and Sofia, Bulgaria, this week. The physicians are accompanying Dr. Paul D. White, Boston heart specialist invited to attend the meetings by the Rumanian and Bulgarian Ministers of Health.

Other members of the group include Drs. Michael E. DeBaakey of Baylor University, Ancel Keys from the University of Minnesota, and John Turner of Massachusetts General Hospital.

Dr. Terry will also attend the Third European Congress of Cardiology, September 18-25, in Rome, Italy. While there he will meet with members of the Russian heart delegation who visited NIH in May.

"Since the May meeting," Dr. Terry explained before he left, "we and the Soviet group have separately prepared material on the classification and nomenclature of certain cardiovascular diseases . . . We are hopeful that the coming discussions will form the basis for the exchange of information and for the planning of any cooperative studies in the field of cardiovascular disease."

## BUDGET

(Continued from Page 1)

units and to establish clinical research centers for cancer and heart research.

An additional \$7 million from NHI research project grant money will be used for the development of primate research centers. This program, started during fiscal year 1960, will provide centers where several species of primates in adequate numbers and with appropriate facilities will meet the requirements of research scientists.

Approximately \$3 million of the research project grant funds will be used at NIH to absorb the 7½ percent pay increase.

The \$106,722,000 for direct operations is as follows: direct research, \$58,470,000; biologics standards, \$2,970,000; review and approval, \$8,634,000; training, \$339,000; professional and technical assistance, \$11,697,000; chemotherapy contracts, \$21,538,000; dental resources, \$793,000; administration, \$2,281,000.

Listed under a consolidated account for PHS construction is an item which recommends an addition to the CC cafeteria. As noted in the Senate report on the appropriations bill, "The cafeteria facilities for serving the employees of NIH have not been added to since the completion of the Clinical Center in 1953. In that period of

## New Position in NINDB Filled by Appointment Of Dr. Milton Shy

Dr. G. Milton Shy, NINDB Clinical Director, has been appointed to the newly-created position of NINDB Associate Director in Charge of Intramural Research.

In his new post, Dr. Shy will be responsible for developing the Institute's clinical and basic research program. He will serve in a major advisory role to the NINDB Director, Dr. Richard Masland, on the Institute's total program and will represent the Institute on the NIH Scientific Directors' staff.

Before coming to NIH in 1953, Dr. Shy was associate professor of neurology at the University of Colorado. He has been a lecturer in neurology and neurosurgery at McGill University, and house officer and first assistant to the Medical Research Council, National Hospital, Queen Square, London. He holds an M. D. degree from the University of Oregon Medical School, and an M. Sc. degree from McGill University.

Dr. Shy is the author of articles and books on various phases of neurology. Among his writings are six chapters in *The Practice of Medicine*. He is also coauthor of *An Atlas of Muscle Pathology in Neuromuscular Diseases*.

One of his outstanding recent contributions to the neurological field has been the development of a device for the detection of tumors and lesions of the brain, permitting high accuracy in determining their existence and location before the surgeon operates. In connection with this work, he is senior author of the book, *External Collimation of Intracranial Neoplasia With Unstable Nuclides*.

## Top Cottage to Close

Top Cottage will not be available for meetings after September 23, according to the Office Services Branch, OAM.

On October 1 the cottage will be turned over to the contractor who is constructing the new office building, in accordance with the terms of the contract signed last year.

time the number of people employed on the grounds at NIH has increased from 2,800 to 7,100, or more than 150 percent. . . . This inadequacy is seriously impeding employee work schedules."

The total PHS appropriation for fiscal year 1960 is \$1,031,414,000,



Dr. Shy

# 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.

## Association Patterns Between Nutrition, Oral Disease Studied

Surveys to identify patterns of association between nutrition and oral disease have been completed in Alaska, Ethiopia, Peru, Ecuador, and Vietnam. Results of these studies, conducted in cooperation with the Interdepartmental Committee on Nutrition for National Defense, are now summarized in *Public Health Reports*.

Epidemiological studies of foreign and domestic population groups have failed to establish a consistent association of dental caries with a deficiency of any known nutrients. For example, both high and low levels of caries experience in Alaskan Eskimos were associated with high intake of protein, moderate intake of fat, low consumption of carbohydrate, and low plasma level of Vitamin A.

### Caries Levels Vary

On the other hand equally low, as well as lower caries prevalence levels were seen in Ethiopians subsisting on a comparatively low-protein, high carbohydrate cereal diet, high in thiamine; and Vietnamese on a highly milled rice diet yielding only marginal amounts of thiamine and riboflavin. Also unexplained were the large proportions of individuals in each of the groups that were totally free of dental decay.

Where caries levels in these populations were generally low by U. S. standards, the prevalence and severity of periodontal disease were correspondingly high. For example, in Ethiopia, Ecuador, and Vietnam, the levels of periodontal disease were much above any so far recorded for the continental United States.

Deviations from this pattern of prevalence were noticed among primitive groups of Alaskan Eskimos and the Ecuadorian Indians, where a reduction in periodontal disease was related to higher thiamine excretions and lower levels of plasma Vitamin A.

Elsewhere in Alaska, and generally in Peru, periodontal disease levels were comparable with those seen in the U. S. among people of low socioeconomic status.

Dental investigators participating in studies to date include Drs. A. L. Russell, N. W. Littleton, and E. C. Leatherwood of the National Institute of Dental Research, Dr. G. E. Sydow of the Division of Dental Public Health, and Dr. J. C. Greene, Assistant to the Chief Dental Officer.

## Suboptimal Nutrition Intake Target of ICNND Teams

*The following description of the work of the Interdepartmental Committee on Nutrition for National Defense was given by Dr. Arnold E. Schaefer, Executive Director, at the Fifth International Congress on Nutrition meeting in Washington, D. C.*

"The repeated experience of discovering a child recently blinded in the arms of the mother, having to tell her that I now could do nothing more to save the eyesight, remembering that I could have done so with a few spoonfuls of cod-liver oil some days ago, these things still enter my nightmares. . ."

These are the words of an Indonesian physician and they portray the tragedy of poor nutrition far better than any statistics.

But the xerophthalmia he described, a result of too little vitamin A, is only one of the many nutrition problems affecting two-thirds of the world's population. In the developing countries of the world these people are still subsisting on marginal or frankly inadequate amounts of proper food, and their borderline nutrition is one of the main reasons why disease rates are high and life spans short.

To solve these basic food problems it is first necessary to know exactly what they are, to determine how well the native diets are meeting the needs of the people and how the diets can be made more adequate.

### U. S. Agency Helps

This important job is now being done by a little-known agency of the U. S. government, the Interdepartmental Committee on Nutrition for National Defense (ICNND), which sends teams of nutrition experts upon request to define major nutrition problems within a country and assist it in making better use of its own food resources.

The nutrition survey teams consist of nutritionists, physicians, food technologists, biochemists, dentists, statisticians and agricultural experts who spend approximately two months traveling through all parts of the country. They conduct physical examinations and biochemical studies on thousands of persons and determine the type and amount of food the people eat.

Agricultural practices are also studied, as well as methods of food processing and distribution. The U. S. scientists are assisted by counterpart personnel supplied by the host country who are then able to help establish nutrition services within their countries after the teams leave.

The ICNND has completed surveys in 14 countries to date: Iran, Pakistan, Korea, the Philippines, Taiwan, Spain, Libya, Turkey, Ethiopia, Peru, Ecuador, Chile, Colombia, Vietnam, and the state of Alaska. Although the teams have found many similarities in nutrition problems throughout the world, it has become evident that each country, and more often areas within the country, must be considered separately.

### Riboflavin Inadequate

The most prevalent general nutrition finding was inadequate riboflavin in seven countries, and an additional four countries had special area or group problems. Riboflavin, one of the B vitamins, is found mainly in organ meats, milk, cheese and eggs. Suboptimal intakes of vitamin A, C, and thiamine and protein malnutrition were also found in special areas in many of the countries.

As a result of the ICNND nutrition surveys and the recommendations based on their findings, many important nutrition advances have been made. For example, in Iran a modern food and nutrition laboratory has been completed and a food canning plant modernized and reopened.

In Pakistan, food processing has expanded rapidly and analyses of local foods have been made to determine their value in supplementing the diet. Studies of the practicability of enriching bread with riboflavin are underway in Turkey, and new plants for the enrichment of rice are in operation in Taiwan.

The ICNND was established in 1955 and operates administratively through the National Institute of Arthritis and Metabolic Diseases, Bethesda, Md. It is composed of representatives from the U. S. Departments of State, Defense, Agriculture, and Health, Education and Welfare, as well as the International Cooperation Administration.

(See ICNND, Page 5)

## Diet Seen to Influence Effect of Treatment Of Schistosomiasis

Schistosomiasis, a parasitic disease found in over 100 million people throughout the tropics and subtropics, is one of the most important public health problems today. The disease is transmitted by certain fresh water snails commonly found in slow running or impounded waters such as irrigation systems. The snails become infected when, due to poor sanitation, human excrement containing schistosome eggs enters the water.

### Incidence May Increase

The incidence of the disease will probably increase due to expansion of irrigation schemes associated with programs to increase food production. The areas in which schistosomiasis is common are also the areas in which malnutrition is prevalent.

The treatment of schistosomiasis is unsatisfactory in spite of the many years spent in searching for a better drug. A study of the influence of nutrition on the treatment of schistosomiasis was reported at the Fifth International Congress of Nutrition meeting in Washington, D. C., by Drs. William B. DeWitt and George W. Luter Moser of the National Institute of Allergy and Infectious Diseases.

The scientists report that the results of the present study clearly indicate that the diet of experimentally infected animals can be improved sufficiently to enhance greatly the activity of a drug in common use (Stibophen).

### Activity Increased

In animals maintained on the improved diet an average of 74 percent of the worms were eliminated, while in animals on the control diet an average of only 11 percent were killed. The increased activity is of special interest since improved treatment, along with adequate snail control and better sanitation, should lead to the eradication of the disease.

According to the authors, the finding that diet can strongly influence the effect of a chemotherapeutic agent on schistosomiasis suggests that this same phenomenon should be fully explored in relation to treatment of other diseases. The improvement of nutrition of peoples in underdeveloped countries thus will probably have many indirect benefits unrecognized at this time.

## Basic Research Approaches Increase In Demyelinating Disorder Studies

Multiple sclerosis, one of the major neurological ailments under study by the National Institute of Neurological Diseases and Blindness, is estimated to affect a quarter million Americans. Another quarter million may be affected by related ailments.

Such ailments are grouped as demyelinating disorders because the myelin or normal fatty covering of the nerve fibers is lost in spots, resulting in jangled nerve messages. Multiple sclerosis affects victims who are typically in their youthful prime between 20 and 40 years, and causes chronic, incurable disability.

The problems to be solved are basic: What causes the loss of myelin in multiple sclerosis? Can loss of myelin be prevented? Once lost, can myelin be restored?

To these problems is added another, which may hold the seeds of at least partial solution: Why is multiple sclerosis strangely and dramatically more prevalent in colder than in warmer climates? Since the discovery of geographical differences in rates was made, a logical additional problem is obvious: Would transfer to a warmer climate help the person already afflicted with multiple sclerosis?

### Attack Many-pronged

The research attack on multiple sclerosis is many-pronged.

Repeatedly, some infective agent has been held responsible for multiple sclerosis, one of the latest implications being that a spirochete was the cause. But recent investigations have proven that this was almost certainly an error of technique.

The much-mentioned vaccine of the Russians, which would presuppose discovery of a specific cause, proved to be only a vaccine from a well-known rabies virus. Evidence has not proven the value of rabies treatment for multiple sclerosis.

Occupying research attention today is the possibility that multiple sclerosis could be an unusual inflammatory reaction of the brain to some commonly-experienced virus. An experimental disease in animals, "allergic encephalomyelitis," resembles multiple sclerosis sufficiently to add to the research information.

### Findings Reported

During the past year, Dr. Marian W. Kies of National Institute of Mental Health and Dr. Ellsworth C. Alvord, Jr., an NINDB grantee at Baylor University College of Medicine, Houston, Texas, have reported significant findings on the suppression of allergic encephalomyelitis in guinea pigs by the same chemical component which most effectively produces the disease. Clinical manifestations were completely suppressed by intracutaneous injections of a purified brain protein, after the dis-

ease had been initiated by injection of whole brain or cord in complete adjuvant (oil and killed mycobacteria). Histological evidence of disease was milder in the treated animals and in some cases was absent. In addition, brain proteins which did not induce the disease were found to be incapable of suppressing it.

From the chemist's viewpoint, the study of the myelin insulation itself involves research accomplishments which open the door to possible future cure. An earlier Institute report detailed the mechanism of formation of a basic fat in myelin, called sphingosine, in the body, and its creation in the test tube.

This year, the discovery of an intermediate and essential chemical compound between the carbon atoms obtained from sugars or proteins and the carbon atoms incorporated in fatty acids takes the

chemist a step further.

It must be emphasized that no means of replacing lost myelin has been discovered, nor of preventing this loss. But each detailed discovery about this fatty insulating material carries inspiration for further progress.

Studies of related enzyme systems and of metabolism in brain and central nervous system are adding facts which apply to problems of multiple sclerosis.

Studies in the epidemiology of multiple sclerosis have demonstrated the higher rates in the colder climates, higher in northern United States and Canada, lower in the southern part of the United States.

### Communities Compared

Recently, an epidemiological survey conducted in two comparable, but widely separated, communities showed that the prevalence of M. S. is 2.4 times greater in Halifax County, Nova Scotia, than in Charleston County, South Carolina.

The survey was conducted by a single team of investigators who used uniform screening, classification, and diagnostic procedures.

The two communities were selected for the survey because they are similar in population, size, area, medical facilities, and are Atlantic seaports. They differ, however, in racial composition, geographic latitude, and climate.

Identical pre-determined criteria were used to screen provisional cases, which were then classified

(See MYELIN, Page 6)



Section of the pons stained black with myelin sheath stain shows large irregular plaques of demyelination (light areas) scattered throughout the section involving the periventricular tegmentum as well as the basis pontis.

## Blood Test Developed To Aid Diet Control In Galactosemia Victims

A new blood test for monitoring how completely milk and milk-containing foods have been eliminated from the prescribed diet of children with galactosemia has been developed by Drs. Henry Kirkman and Elizabeth Maxwell, of the National Institute of Arthritis and Metabolic Diseases. Dr. Kirkman is now at the University of Oklahoma Medical School.) The test measures the amount of galactose-1-phosphate present in red blood cells, and since this substance is thought to be the most important toxic agent in the disease the test will be valuable in managing galactosemic patients.

### Enzyme Deficiency Inherited

Infants afflicted with galactosemia are unable to tolerate galactose; if the sugar is present in their diet it causes gastro-intestinal symptoms, liver damage, cataracts and progressive irreversible brain damage. The exact biochemical defect in the disease was first demonstrated by Dr. Herman Kalckar and associates at NIAMD in 1956, who found that galactosemic individuals lacked a single enzyme necessary to completely metabolize galactose. Because of this inherited enzyme deficiency, galactose-1-phosphate accumulates in the blood and tissues and produces the characteristic symptoms.

Although diagnosis now presents little difficulty (Dr. Kalckar's work provided a specific biochemical test for the disease) keeping galactosemic children under strict dietary control is a continuing problem. It is difficult to find processed foods which contain no milk or milk products and the clandestine ways children have of getting food often result in unsuspected breaks in their prescribed diet.

### Test Is Sensitive

The new test now provides a way to determine how much galactose, if any, the child is getting and is sensitive enough to indicate a break in the diet as short as one day. It can be performed in several hours with equipment usually found in a medium-sized hospital or Public Health center and uses the same reagents as the diagnostic test developed by Dr. Kalckar. These reagents are presently available commercially from the Sigma Biochemical Supply Company in the form of a diagnostic kit.

The NIAMD scientists reported on the development of the new test in the *Journal of Laboratory and Clinical Medicine*.

## Caloric Value of Diet Influences Effects of Amino Acid Deficiency

A National Cancer Institute scientist has reported that adequate caloric intake is necessary for young rats fed an amino acid deficient diet to develop a disease resembling kwashiorkor. Rats do not develop the disease if their caloric intake is sharply restricted.

Kwashiorkor, a nutritional disease occurring primarily in underdeveloped countries, affects young children whose diet lacks adequate quantities of high quality proteins. It causes severe liver damage, often leading to death. Liver cancer in adults is also seen in most areas where kwashiorkor is rampant. Scientists have considered that there might be an association between these two diseases.

Dr. Herschel Sidransky, of the Cancer Institute's Laboratory of Pathology, presented his findings to the Fifth International Congress on Nutrition meeting in Washington D. C.

### Synthetic Diets Used

In previous studies, Dr. Sidransky has found that young rats tube-fed synthetic diets lacking certain single essential amino acids (protein building blocks) developed symptoms resembling kwashiorkor within three to seven days. The major changes included an enlarged, fatty liver and damage to the pancreas and salivary glands.

Other rats that received an identical diet *ad libitum* (they were free to eat as much or as little as they chose) did not show these changes. However, they ate far less than the amount being tube-fed to the test animals and, hence, consumed fewer calories.

In following up this observation, Dr. Sidransky tube-fed groups of rats diets that differed only in caloric content (in the form of carbohydrate). One group of animals received 28 calories per day and another group received 16 calories per day. Pathologic changes resembling kwashiorkor appeared only in the animals receiving 28 calories a day.

The results indicate that the caloric value of diets influences the pathologic effects induced by an essential amino acid deficiency.

Dr. Sidransky suggested that his work may provide a model test system for study of kwashiorkor in the laboratory. Further research making use of such a test system may lead to a better understanding of the mechanism by which protein malnutrition causes the disease in children. It also may show whether the liver damage in children with kwashiorkor is in some way associated with the subsequent development of cancer of the liver in adults.

## Importance of Mycology in Public Health Emphasized

The National Institute of Allergy and Infectious Diseases' Dr. Chester W. Emmons indicated in his Presidential Address before the Mycological Society of America meeting in Stillwater, Oklahoma, that "mycologists must continue to take increasing responsibility in the study of the fungi" which cause systemic mycoses.

In one recent year mycotic deaths in the United States equalled the number of poliomyelitis deaths and exceeded by one the total number of deaths reported for whooping cough, diphtheria, scarlet fever, typhoid, malaria, and brucellosis.

### Causative Agents Present

The Head of NIAID's Medical Mycology Section pointed out that although mild or fatal systemic mycoses of man are not contagious, their causative agents are present in widespread areas of man's environment.

The fungi responsible for systemic mycoses may grow and reproduce indefinitely in soil and humus as saprophytes, yet retain the ability to produce lethal disease in man. They possess characteristics which enable them under proper circumstances to turn immediately from a saprophytic existence to parasitism of animal tissues.

Their adaptability and prevalence, Dr. Emmons noted, indicates that medical mycology does not deal with "a bizarre group of rare fungi but with molds and yeasts with which man may be in daily contact."

He also pointed out that the systemic mycoses remain difficult to treat while morbidity and mortality from bacterial disease have been reduced greatly by antibiotic therapy.

Causative agents referred to by Dr. Emmons included *Coccidioides*



Spores of histoplasmosis, positive agents of a pulmonary fungus disease often mistaken for tuberculosis.



Dr. Chester W. Emmons prepares cultures of fungi which grow in the soil and frequently infect man.

*immitis, Nocardia asteroides, Histoplasma capsulatum, Cryptococcus neoformans, Aspergillus fumigatus, Absidia corymbifera* and species of *Rhizopus*. Any of these can cause fatal mycoses and can be isolated easily and regularly from soil habitats.

### Carry Fatality Potential

Other fungi which cause potentially fatal diseases are assumed on good evidence to have saprophytic existence and several fungi which cause chronic but rarely fatal diseases have been isolated from man's environment.

The NIAID mycologist discussed in detail several of the more familiar saprophytes which sometimes play a lethal role, including *Cryptococcus neoformans*, the causative agent of cryptococcosis. *C. neoformans* is readily isolated in pigeon droppings on window ledges of office buildings and beneath roosting sites in open attics of old buildings in cities, as well as in barns and haymows on farms.

"These are virulent strains of the fungus, indistinguishable from those found in fatal cases of cryptococcal meningitis," Dr. Emmons said, stressing that "the public health implications of the common occurrence in man's environment of a fungus capable of causing fatal meningitis need careful evaluation."

### ICCND

(Continued from Page 3)

tion and the Atomic Energy Commission.

As a result of the Committee's experience in conducting a large number of nutrition surveys, it has published a "Manual for Nutrition Surveys" which establishes uni-

## Hereditary Factor May Influence Sarcoidosis

A complex hereditary factor may be operative in the pathogenesis of sarcoidosis, according to Drs. Richard K. Merchant and John P. Utz of the National Institute of Allergy and Infectious Diseases, reporting in the Archives of Internal Medicine.

While much has been learned about this disease during the half century since its initial description, its etiology and pathogenesis have remained obscure.

### Mother, Daughter Studied

The significance of genetic factors is suggested from the authors' observations of the disease in a mother and daughter, together with reports in the literature of 73 other cases of sarcoidosis diagnosed in more than one member of 32 families.

In support of their postulate, the authors contend that the occurrence of sarcoidosis in parent and offspring, as in the present example, might naturally be expected in a few cases. Furthermore, although the total number of instances of this disease in more than one member of the same family is small (non-twin siblings, 21; identical twins, 6; and parent-offspring, 6) examples in identical twins appear with unexpected frequency.

### Found in Twins

If chance alone determined the development of sarcoidosis in the six pairs of identical twins reported, one would expect twice this number in non-identical twins. Yet no such reports have been found in the literature. One might also expect many more cases than have been described among non-twin siblings. However, ideal diagnostic criteria have not been fulfilled in many instances in the reported cases of sarcoidosis in more than one member of a family. Moreover, the occurrence of the disease in identical twins is more apt to be reported than its occurrence in other members of a family.

It is concluded that while these findings do not minimize the importance of recent epidemiological and laboratory studies, they do suggest that genetically determined individual constitutional factors may play a role in determining the type or frequency of response that results from exposure to some environmental factor.

formity in method, techniques and procedures for assessing the nutritional status of a population. This has made possible reliable comparisons of the findings within and among countries.

## MYELIN

(Continued from Page 4)

by category. The same team of investigators personally examined most patients in both communities.

Results showed that prevalence rates per 100,000 inhabitants based on clinically acceptable cases, were 13.8 in Charleston and 32.3 in Halifax. For the white population alone, the prevalence was 1.7 times greater in Halifax, and no preponderance of cases was found to be characteristic of an ethnic group.

### Age Distribution Similar

Further investigations revealed no factors which accounted for the prevalence differences. Age distribution of patients was similar in each community, as were clinical and genetic manifestations of the disease. The age-specific prevalence rates were higher in Halifax in almost every age group.

Drs. Milton Alter and Leonard T. Kurland, Epidemiology Branch, NINDB; Dr. R. S. Allison, Royal Victoria Hospital, Belfast, Northern Ireland; and Dr. O. Rhett Talbert, Medical College of South Carolina, Charleston, reported their findings in the first issue of *World Neurology*. This new journal also contains a report of a related NINDB-supported study, co-authored by Dr. Kurland, which indicates that the prevalence of multiple sclerosis may be less in Japan than in North America or Western Europe.

To date, no proof exists that improvement could be anticipated by moving to a warmer climate once the ailment is diagnosed.

### Cosmic Connection Studied

A possible connection between an increase of cosmic particles and an increase in the prevalence of MS is being tested.

Careful studies of proposed treatments, such as isoniazid or fever therapy, have ruled out their possible usefulness. The patient must rely upon physiotherapy and muscle reeducation to maintain maximum usefulness for as long as the disease permits.

The prediction is logical that the cause of multiple sclerosis will be found, either through epidemiological methods or through the finding of infective or allergic mechanisms. When the cause is known, a preventive should follow. Equally logical is the hope that eventually biochemists and neuropharmacologists will be the source of ways to restore lost myelin. No small part of this hopeful outlook is the increasing numbers of investigators coming from the Institute-sponsored training programs to relieve the scarcity of knowledgeable scientists.

## Enzyme Catalase in Living Animals Studied by Newly Devised Method

In starvation and in the cachexia of the tumor-bearing host there is a marked reduction in many of the proteins which make up the various organs and tissues of the body.

Biochemists have been intrigued by this observation but have lacked specific tools with which to pursue the question of the mechanism by which such reduction takes place, i. e., whether it results from an increased rate of breakdown or a decreased rate of synthesis of the respective proteins.

A method for determining the rates of synthesis and destruction of a single protein, the enzyme catalase, in the living animal, was presented at the Fifth International Congress on Nutrition meeting in Washington, D. C., by Dr. M. Recheigl, Jr., with V. E. Price and M. L. Head of the National Cancer Institute.

### Two Drugs Used

In order to carry out these studies, use was made of two drugs, i. e., 3-amino-1, 2, 4-triazole and allylisopropylacetamide. Aminotriazole acts by destroying catalase without interfering with the previously formed catalase.

The basic technique consists of injecting intraperitoneally aminotriazole, in a single dose, or allylisopropylacetamide, given twice daily, into several groups of rats. At various periods thereafter the livers or kidneys are removed and catalase assays are performed using a Cary Recording Spectrophotometer.

From such data it was calculated that 25 micrograms of catalase were being synthesized each hour per gram of liver, and that 2.2% of the catalase molecules present were being destroyed. In the kidney 6.6 micrograms of catalase were synthesized, and 2.1% of the molecules were being destroyed.

### Catalase Fraction Constant

This means that the rate of synthesis per gram of tissue was 4 times as high in the liver as in the kidney, but that the same constant fraction of catalase was being destroyed per unit of time in both tissues.

These studies indicate that the newly formed catalase molecule does not have a finite life span, but instead has the same risk of destruction in each unit of time as an older molecule.

The technique described above was used to determine the rates of catalase synthesis and destruction in the starving animal. Starved rats, which were injected with aminotriazole to destroy the catalase,

exhibited almost identical rates of catalase synthesis and destruction per gram of liver as did animals on the normal diet. However, the weight of the liver decreased by 50% during the first 5 days of starvation, so that there was less catalase being synthesized and destroyed.

### Second Phase Entered

Since there is also a marked loss from the liver of the ribonucleic acids which are essential for protein synthesis, it is suggested that in the early stages of starvation the animal may control the rate of catalase synthesis by progressively decreasing the number of synthesizing units in proportion to the liver size, but that those synthesizing units which remain operate at full activity.

After 5 days, the starving animal enters a second phase in which the rate of catalase synthesis per gram of liver starts to fall and this continues progressively until the death of the animal. It remains to be determined whether this fall in the catalase activity results from a deficiency of certain nutrients or whether it represents a death of cells.

These studies are being extended to animals on protein-free diets to determine the extent to which the results observed in the starving animal are due to a deficiency of amino acids and the extent to which they result from lack of the energy required for synthetic processes.

## Further Studies Made On SE Polyoma Virus

Drs. Sarah S. Stewart, National Cancer Institute, and Bernice E. Eddy, Division of Biologics Standards, have reported that the resistance of mice to tumor induction by the SE polyoma virus has been traced to the presence of antibodies in serum and milk of the mothers.

Serum from female mice used as breeders and housed in the same room with mice that had received polyoma virus contained antibodies specific for the virus. Pooled sera from a group of breeders completely inhibited tumor induction in mice inoculated with the virus.

Milk taken from nursing mothers that had been exposed to the virus and from those not exposed showed pronounced differences in antibody titers. The range of antibody titers of pooled milk from exposed mice, as shown by tests on the inhibition of hemagglutina-

## Intervascular Tissue Discovered in CNS Of Normal Animals

Strands of connective tissue fibers attached to adjacent blood vessels of the brain and spinal cord have been found in normal animals of 12 species, although many investigators have associated the fibers only with pathologic conditions.

The recognition of the normal and widespread distribution of intervascular fibers will prevent erroneous diagnoses of such disorders as capillary fibrosis (where vessels are occluded by hyperplastic connective tissue fibers). In cerebral edema, however, stretching of these fibers may be a cause of impeded blood flow in small vessels.

Stained sections of brain and spinal cord tissue from normal animals were compared microscopically by Dr. J. Cammermeyer, Laboratory of Neuroanatomical Sciences, National Institute of Neurological Diseases and Blindness. Findings were reported in the *Journal of Comparative Neurology*.

### Fiber Size Varies

Intervascular fibers were found to vary in size, number, and distribution in different species and locations. Strands were innumerable in the pigeon; they were numerous and prominent in the dog, raccoon, monkey, and cat; and less numerous in the rabbit, guinea pig, chinchilla, rat, hamster, squirrel, and mouse. No strands were found in the opossum, which has no capillary network.

Evidence that these fibers are derived from blood vessels is based on their staining qualities, intimate connections with vessels, and arrangement. Modification of the blood flow with normal maturation may result in regression and atrophy of scattered blood vessels, leaving connective tissue fibers bare.

The function of these fibers is not yet clear, except that they act as a support for the brain's vascular system. However, they should be considered in such pathological conditions as edema, where stretched fibers may constrict blood vessels. The high prevalence of intervascular strands in the spinal cord may also influence studies of the etiology of diseases of the cord.

tion of guinea pig red blood cells, was similar to that observed in the sera of exposed mice.

The paper was coauthored with Marjean Irwin, NCI's Laboratory of Biology, and Stephanie Lee, now of NCI's Laboratory of Pathologic Anatomy, and published in a recent issue of *Nature*.

## Armed Forces Bulletins Available for NIH Use

Representatives of the Armed Services Technical Information Agency (ASTIA) visited NIH September 13 to show a film on the *Technical Abstracts Bulletin* (TAB). This is a valuable source of information to NIH investigators.

The biweekly *Bulletin* contains abstracts or annotated references on all technical reports prepared by and for the U. S. armed forces. It is available to qualified institutions such as NIH. Photocopies and bibliographies of the reports are delivered on request.

Over 700,000 such reports, including some in the medical and biological sciences, are stored at Arlington Hall, Va., headquarters of ASTIA. Only unclassified reports are available to NIH, but these are in the majority.

### Library Gets Copies

The NIH Library receives two copies of the *Bulletin* and stocks data-processing cards by which the reports and bibliographies can be ordered. In addition, the unclassified reports may be seen by visiting Arlington Hall.

Franklin E. Jordan, who showed the 20-minute colored film at NIH, pointed out that the reports represented in the *Bulletin* are seldom published. Photocopies may be obtained within three days to three weeks. Since the *Bulletin* is up-to-date, this is a much more rapid system than the scientific literature affords.

Additional copies of the *Bulletin* will be sent to NIH Scientific Directors who wish to circulate them in their Institutes. Then the NIH Library, upon phoned request, will order copies of the reports, or bibliographies if the subject is sharply defined.

## Dr. Goldberg Appointed As DRG Specialist

Dr. Solomon C. Goldberg has been appointed a Grants Program Specialist in the Research Grants and Fellowship Branch, NIMH. In his new position he will have special responsibility for the evaluation and review of grants in the social sciences field.

Since 1958, Dr. Goldberg has been chairman of a research team studying the sociopsychological factors of guerilla warfare for the Special Operations Research Office attached to the American University.

Prior to his assignment at SORO, he served as a psychologist with the Human Resources Research Laboratories, Department of the Air Force, at George Washington University. He was also

## SUGGESTIONS SOUGHT BY LIBRARY



Dr. Heinz Specht, left, and Dr. Ralph R. Shaw, at ease in Dr. Specht's laboratory, discuss their mutual interest in the NIH Library survey. As Chairman of the Library Advisory Committee, Dr. Specht, Chief, Laboratory of Physical Biology, NIAMD, would like to see the Library broaden its usefulness by increasing its collections of books and periodicals. Dr. Shaw, Dean of Rutgers University Graduate School of Library Service and director of the survey, is seeking practical suggestions from working scientists and others for improving the Library's services. He invites suggestions, inquiries, and requests for personal appointment by memo or phone call to the NIH Librarian's Office, Ext. 2447, Rm. 5N-118, Bldg. 10.

## NUTRITION

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abroad in exchange for foreign currencies. Nearly \$4 million in these foreign funds will be made available for medical research by NIH in eight countries in fiscal year 1961.

Eighteen papers were presented by NIH scientists at the congress with the largest number, four, in the area of germfree studies.

Dr. Floyd S. Daft, Director of NIAMD, and this year's president of the American Institute of Nutrition, served as a member of the congress' executive committee. He was also chairman of the hospital-ity committee and served as co-chairman of the second section on germfree animal studies of the panel on proteins and amino acids in nutrition.

Dr. Arnold E. Schaefer, ICNND-NIAMD, served on the panel devoted to the evaluation of nutritional status in man. Drs. Daft, James M. Hundley, OD, and Robert R. Williams, NIAID, were members of the organization committee. Dr. W. Henry Sebrell, Jr., a former Director of NIH, was a member of the executive committee

with the Department of Clinical and Social Psychology, Walter Reed Army Institute of Research; and the Personnel Research Branch, Army Adjutant General's Office.

and chairman of the program committee.

Other NIH personnel on various committees of the congress included Dr. Olaf Mickelsen, NIAMD; Dr. Harold P. Morris, NCI; William T. Carrigan, OD; Dr. Mattie Rea Spivey Fox, NIAMD; and John W. Robinson, NIAMD. The role of the PHS in nutrition research from the days of Dr. Goldberger and the Hygienic Laboratory to the present "germfree" studies was depicted in a large exhibit prepared by NIAMD under the direction of Dr. Benjamin T. Burton, NIAMD.

### Support Cited

NIH was one of the four federal agencies supporting the congress. Some \$56,500 in grant funds were given the congress by NCI, NIAMD and NIDR. Other support came from the American Medical Association, industry, and various foundations.

Highlights of the congress included a symposium on world food needs and food resources opened by Secretary Flemming, panels on the nutritional status in man, proteins and amino acids in nutrition, lipids in health and disease, nutrition in maternal and infant feeding, the effect of processing and additives on foods, animal nutrition and food production, and new possibilities in nutrition research.

## Schizophrenia Etiology Discussed in Handbook Recently Published

Articles by four NIMH investigators have been included in a book, *The Etiology of Schizophrenia*, recently published by Basic Books, Inc., of New York. The volume is a collection of current scientific knowledge on the causes of schizophrenia.

Dr. Seymour S. Kety, Chief of NIMH's Laboratory of Clinical Science, has written of attempts to link schizophrenia to disordered biochemistry, and describes the schizophrenia program of his laboratory in his article on "Recent Biochemical Theories of Schizophrenia."

### Hagerstown Study Reported

A second article, "Social Relations and Schizophrenia: A Research Report and a Perspective," by Drs. John A. Clausen and Melvin L. Kohn, of the Laboratory of Socio-Environmental Studies, is a report on their Hagerstown study and on recent research on family patterns. Dr. Clausen is Chief of the laboratory; Dr. Kohn heads the section on Community and Population Studies.

The role of the family in producing schizophrenia, and psycho-dynamic studies of schizophrenic patients and their families carried out while he was chief of the Family Study Section, Adult Psychiatry Branch, are described in Dr. Murray Bowen's article, "A Family Concept of Schizophrenia."

The major points of view in schizophrenia research, including the genetic, biochemical, dynamic, physiological, psychological, psycho-analytic, and sociocultural, are represented by the remaining articles in the book.

## AWARDS

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outstanding contribution to public health and/or safety, and the Pas-sano Foundation Award of \$5,000 and a medal is offered for outstanding contribution to medical science.

Also included are the Fred Conrad Koch Award of \$3,500, two E. Meade Johnson Awards of \$3,000, the Ciba and Torald Sollmann Awards of \$2,500, and the Edward N. Gibbs Prize of \$2,000. There are six awards of \$1,000.

Information concerning criteria, format, submission procedures, and other details may be obtained from Margaret C. Eurich, Executive Secretary of the Awards Board, Bldg. 1, Rm. 21, Ext. 707.

During the past year, more than 30 NIH scientists have been awarded significant honors from professional societies.

# New Buildings Are Taking Shape Rapidly



The four buildings under construction on the NIH reservation are shown as they appeared recently. Upper left: the high-level crane raises materials for



the 11-floor south wing of the office building. Simplified construction and good weather have put the building ahead of schedule.

Right: the porcelain enamel curtain wall of the CC surgical wing is being put in place, and interior finishing has started. Lower left: the Dental Research Building, to contain 42,000 square feet of laboratory space, is expected to be completed early next year. Mechanical equipment is now being installed. Right: an infrared photo shows the first floor of the National Library of Medicine rising above the three basement levels. A hyperbolic paraboloid roof will top the 5-story building.

Photos by Norman MacVicar, NIH



## R&W Concert Season Opens September 22

A concert by the Capitol Woodwind Quintet will open the 1960-61 R&W Concert Series in the CC auditorium, September 22 at 8:30 p.m.

The program will consist of the "Divertimento in B Flat Major" by Haydn, the "Quintet in D Major" by Riecha, "Two Sketches for Woodwind Quintet" by Milhaud, and "Trois Pièces Brev" by Ibert.

Other concerts planned for this season will include a program by pianist Dr. Kenneth Wolfe, formerly of NIH; "An Evening of Classical Music" by guitarist Charlie Byrd; and a performance by the NIH Orchestra.

An admission price of 50 cents will be charged for all concerts this year in an effort to provide the best available talent. CC patients will continue to be admitted without charge.

Another R&W activity, the Hamsters, also have announced plans for the coming season.

They are presently considering the musical "Annie Get Your Gun" for their fall production, and are looking for talent.

Anyone interested in acting, singing, designing sets, or directing music may call Oscar L. Grabner, Ext. 3544, or Dr. Arnold W. Pratt, Ext. 2256.

## DR. MASUR

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served with distinction as a member of the Board of Trustees, and as chairman or member of several of its committees since 1950. Presently he is Chairman of the Joint Committee with the American Institute of Architects on Research in Hospital Planning and is an active member of three other committees—Research Activities, Listings, and the Liaison Committee with the American Psychiatric Association.

Well known at NIH and in the fields of hospital administration and hospital planning and construction, Dr. Masur has held a variety of responsible posts in PHS. He served as Director of the Clinical Center Project from 1948 to 1951, and returned to NIH in 1956 to direct the research hospital he had helped to plan. As Chief of the Bureau of Medical Services from 1951-1956, Dr. Masur directed the broad medical care program of PHS by administering its hospitals and hospital facilities, including Freedmen's Hospital in Washington, D. C.

Dr. Masur has been in the Commissioned Corps of the USPHS since 1943 and was commissioned Assistant Surgeon General in 1951.

## Dr. Cunningham Named To DGMS Committee

Dr. Raymond Wesley Cunningham has been named Executive Secretary of the Pharmacology Training Committee, DGMS. He succeeds Dr. George M. Briggs, who has accepted a professorship with the University of California at Berkeley.

In his new position, Dr. Cunningham will supervise the review of applications for research training grants in the specialties basic to pharmacology and the related fields of toxicology, drug metabolism, experimental therapeutics, antimetabolites, analgesics, and others.

Dr. Cunningham was formerly assistant to the Director of Clinical Investigations in the Lederle Laboratories Division of the American Cyanamid Co., Pearl River, N. Y. He also has held teaching posts at several universities.

A native of Oakdale, Neb., he received his B. S. and M. S. degrees from the University of Nebraska in 1929 and 1931, respectively, and his Ph.D. degree in pharmacology from the University of Minnesota in 1936.

Dr. Cunningham was a Shevlin fellow at the University of Minnesota from 1934 to 1936, and in 1929 was the recipient of the Lehn and Fink scholarship award in pharmacy.

## NFFE Representative To Hold Meetings Here

Velma W. Smith, Special Representative of the National Federation of Federal Employees (NFFE), will speak at brief union orientation meetings here September 19 through 30.

Miss Smith, a former Government employee who retired July 31 from the Adjutant General's Office, Department of the Army, after 41 years service, will present the aims and purposes of the NFFE, and will explain the functions of the NIH unit, Local 1297. She will also list the employee legislation that has been passed by Congress since 1917 with the backing of the union.

The meetings, to which all NIH employees are invited, will be held at 11:30, 12, and 12:30 on the following dates:

September 19 and 20, Wilson Hall, Bldg. 1.

September 21, Rm. 104, Bldg. T-18.

September 22 and 23, CC auditorium.

September 26, Wilson Hall, Bldg. 1.

September 27, Conference Room A, Robin Bldg.

September 28, Rm. 1005, Bldg. T-6.

September 29 and 30, CC auditorium.