

the Record

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Double Manpower Needed by '70 in Medical Research

A 100 percent rise in the number of trained personnel working in the field of medical research will be needed by the year 1970, according to a recently published NIH report, "Manpower for Medical Research."

The new report, prepared at the request of the Congress, is a balance sheet of estimated biomedical research manpower requirements in 1965 and 1970 and a projection of expected output.

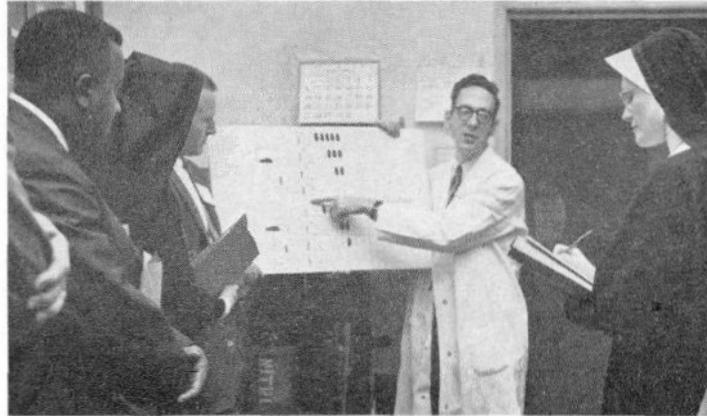
Expansion to \$3 Billion

It reveals that an expansion of national expenditures to a proposed level of \$3 billion for 1970 will require a doubling of competent personnel and greatly accelerated provisions for health research facilities and equipment.

Moreover, the report points out, such increases in essential research manpower — physicians, scientists, and supportive workers—will not be forthcoming unless private and

(See MANPOWER, Page 4)

High School Faculty, Pupils See Cancer Research Here



Dr. Roger J. Berry of the NCI Radiation Branch, explains the effects of ionizing radiation upon tumors to a group of high school science teachers attending the Third Science Demonstration Conference here May 5.

NCI laboratories provided the setting for special activity Saturday, May 5, when nearly 200 high school instructors and students participated in the Third Science Demonstration Conference and a Student Science Congress sponsored by the National Cancer Institute and National Science Teachers Association.

The program of the Conference,

designed to illustrate the concepts and techniques of current cancer research, was planned by the NCI Information Office.

The participants, from New Jersey, Delaware, Virginia, Maryland, and Washington, D.C., witnessed demonstrations in chemotherapy, biometrics, radiation, surgery, virology, biochemistry, and immunology by NCI scientists.

Welcomed at Assembly

Students and teachers were welcomed at an assembly by Dr. Carl G. Baker, NCI Associate Director for Program; Robert H. Carleton, NSTA Executive Secretary; and Dr. Israel Light of the PHS Bureau of Environmental Health, a former member of the NCI Information staff who was responsible for the first Demonstration Conference in 1955.

Following the assembly, each teacher viewed five laboratory demonstrations which continued through the afternoon. Students heard papers by fellow students during the morning and attended three laboratory demonstrations in the afternoon.

(See HIGH SCHOOL, Page 6)

Changes Forecast In Hospital Care Of Mentally Ill

"The mental hospital as we know it will have ceased to exist within 25 years, if the community will take on the role that it and only it can play," Dr. Robert H. Felix, Director of the National Institute of Mental Health, predicted in a speech prepared for delivery yesterday before the Maryland Leadership Conference on Community

Action for Mental Health, meeting at the University of Maryland.



Dr. Felix

"We are coming to realize," Dr. Felix said, "that the therapeutic process does not stop at the hospital gates. Some mental patients who return to a favorable life situation may not need more formal therapy. But for many, continuing community services are strongly indicated."

Not a Defeat

Still other patients will require short periods of rehospitalization, Dr. Felix pointed out. "I do not believe that we should consider rehospitalization a defeat," he said, "but rather a sign that our patients

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Finding a Moosehead Proves Easy, but The Little Pink Pig Presents Problems

By Mary-Helen Emmons

"It's a lot more fun working backstage than being in the audience."

Ozzie Grabiner, producer of this week's R&W Hamster's presentation of "Li'l Abner," was speaking. He had called to ask if I would collect "props" for the musical comedy.

I had only to enlist the aid of a few fellow workers, according to Ozzie, and I'd be in business.

It seemed simple. So was I; I said yes.

And then I saw the Props List.

It wasn't the volume of the items — almost 100 — that floored me; it was their nature and variety.

Examples: one live pig, a moose head with antlers, a tuba, two pairs of men's old high-topped shoes, a horse collar, handcuffs, a beat-up baby carriage, a false arm, a pogo stick, a butterfly net, red flannel underwear. . . .

Surprisingly, the moose head was no problem. Where would one find

(See MOOSEHEAD, Page 7)



Big Moosehead for "Li'l Abner."

—Photo by Bob Pumphrey.

Spickard Checks Health Of U.S. Peace Corps

At the request of the United States Peace Corps, Dr. W. Anderson Spickard of NIAID's Laboratory of Clinical Investigation is at present surveying health needs of Peace Corps personnel.

During a 6-week tour of duty, Dr. Spickard will visit Lebanon, Iran, and Turkey. His headquarters will be Beirut, Teheran, and Istanbul in turn. From these cities he will visit the surrounding area in each of the three countries. He expects to return to Bethesda about June 18.

the Record

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Editor E. K. Stabler

Staff Correspondents

Betty Slattery, NCI; Tony Anastasi, NHI; Kathryn Mains, NIAID; Mary Henley, NIAMD; Marie Norris, NIDR; Lillie Bailey, NIMH; Pat MacPherson, NINDB; Elsie Fahrenthold, CC; Faye Heil, DBS; Corinne Graves, DGMS; Dick Turlington, DRG; Jean Torgerson, DRS.

NEWS from PERSONNEL

MOTOR VEHICLE ACCIDENTS

Employees who are required to operate motor vehicles as part of their officially assigned duties are reminded that the Government is held responsible for any claims which may result because of traffic accidents occurring in the line of duty.

Any NIH employee who becomes involved in a traffic accident under these circumstances should notify his immediate supervisor of the fact, and inform him of any action or proceedings which are being taken by the other party. NIH Policy and Procedure Memorandum—General Administration No. 2, dated April 17, 1962, contains further information regarding the procedure to be followed.

EMPLOYEE INVENTIONS

Employees are required to report to their immediate supervisors any invention conceived by them which—

- bears any relation to their official duties;
- was made in whole or in part during working hours;
- was made with the use of Government facilities, equipment, materials, funds, or information; or,
- included time or services of other Government employees on official duty.

In this connection, the following definition of an invention appears in the PHS General Administration Manual Part 6—Patents and Inventions:

"Any process, art or method, machine, manufacture, or improvement thereof may constitute an invention if it is new and useful, and would not have been obvious to a person having skill in the art to which it relates. A 'process'

You and Your Mail

In order to maintain an efficient and even flow of mail, it is essential that the Mail Room know the address of every individual connected with NIH, both on the reservation and in the field.

The main Mail Room in Building 31 should be notified, in advance if possible, of any change affecting the delivery of mail. Otherwise, delays in mail delivery are inevitable.

One other important suggestion:

Never, under any circumstances, send cash by mail. This applies both to outgoing and inter-office mail.

FORECAST

(Continued from Page 1)

now have a new concept of mental hospitals—seeing them today as places of haven for the period of acute illness—a period which is becoming shorter all the time."

Held under the auspices of the Maryland Association for Mental Health, the Conference included participants from more than 20 community and professional organizations in Maryland.

Others Participate

Other NIMH staff members participating in the Conference included Dr. William G. Hollister, Chief, Demonstration Section, Community Services Branch, who presented a sociodrama on "Building Interaction Between Community Attitudes and Social Action."

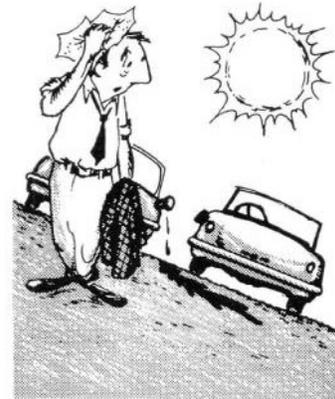
Former Governor Theodore R. McKeldin, 1962 Maryland Mental Health Campaign Chairman, addressed the afternoon session of the Conference, explaining the aims of the current campaign in behalf of better mental health for the State of Maryland.

may be either a connected series of steps or a new use of a process, machine, manufacture, or composition of matter."

Filled Gas Tanks Plus Angled Parking Create Fire Hazard in Hot Weather

The unwary NIH motorist who in hot weather parks his car on a slope, no matter how slight, may be endangering his own life and that of others, according to the Plant Safety Branch. And he may lose money besides.

The hot weather culprit is the



If this motorist had backed his car into the parking space, his gas tank cap would be on the high side, preventing loss of gasoline and creation of a fire hazard. The gas in the tank of the car on the right slopes away from the cap.

filled gas tank. Since gasoline expands in heat, a car parked on a slope—especially a lateral one—with the gas tank cap on the down side, will inevitably become a hazard.

If the tank is filled to the top, the expanding gasoline will begin to leak around the cap. As it leaks, capillary action will continue to draw off gas, forming puddles on the ground. A carelessly tossed cigarette is all that is needed to touch off a serious fire.

Alert to Danger

The Guard Office and the NIH Fire Department are constantly on the alert to this hazard. When a leaking tank is spotted by the guards, the owner is requested to move his car. In the meantime, the Fire Department is notified and firemen come to the area to flush away the offending gas.

Last year the number of cars that were washed down was 130. So far this year the total is 28.

To avert danger, PSB advises that cars be parked with the gas tank cap on the high side. A further tip from PSB—when buying gas, ask the attendant for a few gallons less than the tank will hold.

Teen-Age Patients at St. Elizabeth's Present Play for Mental Health Week

"The Fantastic World of Teenagers," a play written, produced and performed by young patients at St. Elizabeths Hospital, featured that organization's observance of National Mental Health Week.

Ranging in age from 15 years to the early twenties, members of the Saint Elizabeths Players Group performed before capacity audiences of more than 1,000 nightly at Hitchcock Hall. They presented one performance for the patients on May 2 and performances on May 4 and 8 for the public.

The cast started to work on the three-act play last January under the guidance of Marion Chace, a hospital therapist, and Marion Gibbons, music instructor. "The purpose was to let the participants decide what they wanted to say and how they wanted to say it," Mr. Gibbons said.

And the young patients did. They

decided upon the scenes and situations and recorded their ad-libbed dialogue as the theme of the play took form. They also wrote the script, assigned parts for rehearsals, and designed scenery.

The play was an exaggerated take-off on some of the problems involving violence and juvenile delinquency that confronts today's teenagers. It touched upon wild parties, dislike of school, conflicts with parents, and physical injury, and was spoken in pool room lingo against a background theme of continuous twist music.

In the final scene the expressions of violence and rebellion were softened and the teen agers returned to their homes with an admitted need for parental love and authority.

At the last curtain call a young member of the cast told the audience, "We've worked every day for two months except for weekends. That applause sure sounded great."

NIH Orchestra Presents CC Concert May 29

The NIH Orchestra under the baton of Mark Ellsworth will present its final concert of the 1961-62 season next Tuesday at 8:30 p.m. in the Clinical Center auditorium.

The program of concert and symphonic music will include "Gavotte

and Musette," by Bach; "Symphony in C," by Bizet; Mendelssohn's "Overture to a Midsummer Night's Dream," and Haydn's "Symphony No. 104 in D Major."

There is no admission charge and no tickets are required.

Dr. Kuvin Visits Ghana, Conducts Pilot Survey Of Malaria Problem

Dr. Sanford F. Kuvin of the Laboratory of Clinical Investigation, NIAID, left on May 11 for a 3-week stay at the NIH West Africa Research Unit (WARU), recently established in Accra, Ghana.



Dr. Kuvin

At the request of Dr. John H. Edgcomb, Director of WARU, Dr. Kuvin will visit Accra to carry out a pilot epidemiological survey of one aspect of the malaria problem in

West Africa.

Dr. Kuvin and his associates recently demonstrated that malaria antibody production can be followed by the fluorescent antibody technique. The survey in West Africa is an extension of that finding.

Based on specimens Dr. Kuvin will collect, he and his associates will correlate malaria antibody levels with previously known prevalence rates for malaria as determined by the older methods of parasitic and splenic indices.

In addition to Drs. Kuvin and Edgcomb, Dr. John E. Tobie, Acting Chief, Laboratory of Immunology, and Dr. G. Robert Coatney, Chief of the Laboratory of Parasite Chemotherapy, both of NIAID, are collaborating on these studies.

12,890 Grants Awarded In 10 Months of FY '62

A recent NIH survey shows that a total of 12,890 research grants and 2,801 fellowship awards (including research career awards) amounting to \$314,588,104 were made by the Public Health Service during the first 10 months of Fiscal Year 1962. The total includes new grants, fellowships and research career awards in addition to continuations of previously approved awards.

April awards were made as follows: 986 research grants and 2,643 fellowships (including research career awards) totaling \$24,945,581.

The awards, from the National Institutes of Health and the Bureau of State Services, both operating bureaus of the PHS, were coordinated by NIH's Division of Research Grants.

Concurrently, NIH announced that 59 new research contracts, totaling \$2,809,782, were let during the first quarter of this year. In addition, supplementary agreements amounting to \$927,740 were executed during the same period on

First of NHI Regional Primate Centers Situated on 200-Acre Site in Oregon



This aerial photo, courtesy of the Portland Oregonian, shows the Oregon Primate Research Center nearing completion. A feature of the Center's indoor-outdoor monkey colony building is its eight elliptical outdoor runs, providing both sun and shade at all hours of the day.

The first in a series of regional primate research centers to be established by National Heart Institute grants was dedicated Sunday, May 6 near Beaverton, Ore., about 10 miles west of Portland.

Dr. Ralph E. Knutti, NHI Director, addressed the dedication audience on "The Role of the Federal Government in the Support of Medical Research." Also participating in the dedication ceremonies were Arthur S. Flemming, President of the University of Oregon and former Secretary of DHEW, and Mark O. Hatfield, Governor of Oregon.

The Center will house approximately 800 rhesus monkeys. They will be used for the study of those vital processes involved in heredity, specialization and functional mechanisms of living cells, and organ systems of the primate in health and disease.

Situated on a 200-acre site, the Center is virtually self-sufficient. All essential laboratory facilities, technical equipment, libraries and data processing equipment are accessible to the scientists on campus. Dining accommodations,

another 20 research contracts already in effect.

NIH officials pointed out that the research contract mechanism is used for research and development activities with limited, highly specific objectives which can best be performed outside the laboratories of NIH. The contracts also frequently permit utilization of highly specialized technical skills, equipment, or data not otherwise available.

study and conference rooms, secretarial services, printing and photographic facilities are also available.

The Center offers an opportunity to investigate primates in depth throughout the life cycle and to correlate the efforts of the many scientific disciplines involved.

The grant is administered through the Medical Research Foundation of Oregon. Through affiliation with the University of Oregon Medical School and other academic institutions in the region, the Center serves as a laboratory in which credit for research in the biological sciences is given toward graduate degrees.

NIH has awarded grants for the establishment of three other regional primate research centers in Washington, Wisconsin, and Georgia.

NIH to Participate in H.S. Science Program

NIH will participate again this year in the Summer Science Training Program for High-Ability Secondary School Students which is supported by the National Science Foundation.

This nationwide program is designed to provide opportunities for intensive experience in science and mathematics for approximately 7,500 high school students by 151 colleges, universities, and research organizations.

Participation by NIH will involve an 8-week program in cooperation with the Joint Board on Science Education at American University, beginning June 20 and

Dr. H. Trendley Dean, Former NIDR Director, Dies in Chicago at 68

Dr. H. Trendley Dean, former Director of the National Institute of Dental Research, died on May 13 at the Public Health Service Hospital in Chicago. He was 68 years old.

Dr. Dean was in charge of dental research here from its inception in 1931 and served as Director of the NIDR from the time of its establishment in 1948 until his retirement in 1953.



Dr. Dean

A pioneer in dental research, Dr. Dean was internationally known as an authority on the relation of fluoride and fluoride-bearing waters to dental health.

He pioneered and developed a method for quantitatively measuring dental fluorosis (mottled enamel), and his investigations were the first to demonstrate by epidemiological techniques a significant difference in the prevalence of dental decay in fluoride and non-fluoride areas in this country.

Discovery Widely Used

This important discovery led directly to the current widespread public health measure of controlled water fluoridation both in this country and abroad.

In a long and distinguished career as an officer in the Public Health Service, scientist, and veteran of two world wars, Dr. Dean was the recipient of numerous honors and awards from many national and international scientific bodies in recognition of his outstanding contributions to the field of dental health.

Survivors include his widow, Mrs. Ruth McEvoy Dean, of 2006 Cleveland St., Evanston, Ill.; his mother, Mrs. Rosalie H. Dean, of Denver, Colo.; and three daughters, Ruth, Dorothea, and Mary.

ending August 17.

A group of six or seven outstanding students in the Washington area has been assigned to NIH. They will work a full 8-hour day without cost to NIH.

Scientists here who are interested in the program are urged to make their selections as soon as possible. The students' background folders are available for review now in the CC Clinical and Professional Education Branch, Clinical Center, Rm. 2-B-51.

More detailed information about this student program may be obtained from Joseph Staton or Leah Ringel, Ext. 3381.

NCI Scientists Report Promising Results from Vincristine Therapy

Scientists of the National Cancer Institute have reported that vincristine, a new periwinkle plant extract, induces remissions in patients with acute lymphocytic leukemia and tumor regressions in patients with Hodgkin's disease and lymphosarcoma.

Two reports on trials of vincristine by the NCI's Medicine Branch were given at the 53rd Annual Meeting of the American Association for Cancer Research. One was presented by Dr. Myron Karon, the other by Drs. Paul Carbone and Clyde O. Brindley.

The meeting also heard reports on vincristine from three other institutions.

Given to 13 Children

At the NCI, vincristine was given to 13 children with acute lymphocytic leukemia. Eight, including two who also received steroids, had complete remissions. Two others had partial remissions. A similar remission rate is usually achieved with amethopterin or 6-mercaptopurine, standard drugs for acute leukemia, but the children in this group had become resistant to them.

Five months after vincristine therapy was begun, 60 percent of the children were still alive. This experience is too limited to indicate how long vincristine-induced remissions may last, but quantitative studies are being conducted under the aegis of the Cancer Chemotherapy National Service Center.

Tumors Regress

Among other patients given vincristine, tumors regressed in all of ten patients with Hodgkin's disease and in four of seven with lymphosarcoma. The regressions had a median duration of one and three months, respectively. Only one of five patients with acute myelocytic leukemia had a remission.

As a result of vincristine therapy, virtually all patients suffered some hair loss and gastrointestinal disturbances (which could usually be controlled), and many had symptoms of weakness or malaise. Nervous system disturbances also occurred but usually abated after treatment was stopped.

Only in leukemia patients did the drug cause a serious depression in the number of white cells in the blood. This is a therapeutic effect in leukemia, but would have been undesirable in other forms of cancer.

Vincristine is available for research purposes from Eli Lilly and Company, Indianapolis, Ind., where it was first isolated.

REP. FOGARTY PREVIEW TV TAPE



Representative John E. Fogarty of Rhode Island (left), chief advocate in the House of Representatives for use of Federal funds in medical research, and Dr. Murray C. Brown, Chief of the CC Clinical and Professional Education Branch, preview the video tape prerecording of Congressman Fogarty's keynote address, prepared for delivery at the Fourth Annual Meeting of the Council on Medical Television at the Clinical Center May 15 and 16. Other distinguished speakers included Robert E. Lee, Federal Communications Commissioner; Ivan A. Nestingen, Under Secretary of DHEW; and Boisfeuillet Jones, Special Assistant to the DHEW Secretary for Health and Medical Affairs. Because of conflicts in schedules, the remarks of both Congressman Fogarty and Mr. Jones were presented on video tape.—Photo by Jerry Hecht.

200 Physicians Attend Cardiac Symposium

Discussions among staff members and grantees of the National Heart Institute featured the Annual Montgomery County Tuberculosis and Heart Association Cardiac Symposium at the NIH Clinical Center May 9, attended by approximately 200 persons.

MANPOWER

(Continued from Page 1)

governmental activities aimed at enlarging the total pool of scientific and professional manpower are greatly expanded.

The 182-page report, containing tables, charts, and graphs, shows that in 1954 there were about 19,000 professional workers in medical research. In 1960 there were about 40,000, and by 1970 about 80,000 will be required to maintain a \$3 billion research program in the nation. This indicates a necessity, the report says, for adding, in the present decade, about 45,000 professional medical research investigators to provide for the increase and to allow for deaths, retirements, and other forms of attrition.

This report has been published in a separate volume as part of a complete report on the appropriations hearings held before the Subcommittee on Departments of Labor and Health, Education, and Welfare, and Related Agencies of the Committee on Appropriations, House of Representatives, of which Rep. John E. Fogarty of Rhode Island is Chairman.

Copies of the report are available from the Office of Research Information, Bldg. 31, Rm. 5B31, Ext. 2535.

Dr. James O. Davis, Head of the NHI Section on Experimental Cardiovascular Disease, spoke on "Mechanics of Congestive Heart Disease." Dr. W. Proctor Harvey, Professor of Medicine and Director of Cardiology, Georgetown University Hospital, and Dr. Abraham Genecin, Associate Professor of Medicine, Johns Hopkins University School of Medicine, discussed three cases of complications in coronary disease.

Dr. Michael E. DeBakey, Professor and Chairman, Department of Surgery, Baylor University, College of Medicine, was guest speaker and presented a movie and slides depicting the work of his group in the surgical management of cerebrovascular disease.

Dr. Joseph Fazekas of Tufts University, Dr. Harold W. Schnaper of the Veterans Administration, and Dr. Josephine J. Buchanan formerly with D.C. General Hospital, participated in discussion of the neurological, medical and rehabilitation aspects of heart stroke.

Dr. William J. Peeples, Montgomery County Health Officer, outlined an epidemiological study of cerebrovascular disease which will be jointly sponsored by the Heart Disease Control Program, the U.S. Public Health Service, the Montgomery County Government, and the Montgomery County Tuberculosis and Heart Association.

Dr. Wm. I. Gay, DRS, Is Program Chairman for ACP Annual Meeting

Dr. William I. Gay, Chief of the Animal Hospital Section, Laboratory Aids Branch, DRS, is Program Chairman of the 13th Annual Meeting of the Animal Care Panel, to be held October 2-5 at the Conrad Hilton Hotel in Chicago. Dr. N. R. Brewer of the University of Chicago is General Chairman.

Dr. Gay has announced that scientific papers will be given on germ-free and specific pathogen free (SPF) animals, the training of laboratory animal caretakers, laboratory animal diseases, dog diseases and facilities, the use of farm animals in laboratory work, laboratory animal facilities, and on primates.

He said there will also be a continuous showing of movies relating to laboratory animal care, continuous live demonstration sessions, and closed circuit TV sessions.

Dr. John B. Youmans, Director of the Division of Scientific Activities of the American Medical Association, will be the main speaker at the Griffin Award banquet on October 4.

The Griffin Award, named in honor of the late Dr. Charles A. Griffin, a pioneer in the field of laboratory animal care, is presented annually to the scientist who has made an outstanding contribution to the laboratory animal care field.

Last year's recipient of the award was Dr. Karl Frederick Meyer of the University of California Medical Center in San Francisco.

NHI Grants Summarized In New PHS Booklet

A recently published booklet, titled Public Health Service Support of Cardiovascular Research, Training, Fellowships, and Community Programs—FY 1961, presents summary tables for the total extramural program of the National Heart Institute.

The 228-page publication contains a complete listing of NHI's research project grants, training grants, fellowship awards and community programs with a summary of the totals. Added features include maps showing distribution of grantees, an alphabetical index of grantees, and an index of NHI's staff in charge of the extramural program.

Single copies of the booklet may be obtained without charge from the Heart Information Center, Bldg. 31, Rm. 5A31, Ext. 4236.

Multiple copies are available from the Superintendent of Documents, Government Printing Office, at \$1.25 per copy.

New Compound Shows Promise in Treatment Of Acute Leukemia

Trials of a new drug by the National Cancer Institute's Medicine Branch have indicated that a new type of compound may prove useful in treating the most common form of acute leukemia in adults. Methylglyoxal-bis-guanyldrazone, or Methyl GAG, induces remissions in a higher percentage of patients with acute myelocytic leukemia than does any compound hitherto available, but it also causes major side effects.

An effort is now under way, partly with support from the Cancer Chemotherapy National Service Center, to synthesize chemically related compounds that, hopefully, will be at least as active but less toxic.

Tested in Animals

Methyl GAG was originally synthesized and tested in animals by Dr. Frederic A. French, Mt. Zion Hospital, San Francisco, who reported his work jointly with the late Dr. Benjamin Friedlander in 1957. The first clinical studies were conducted at Roswell Park Memorial Institute, Buffalo. The drug is now available from the CCNSC for research purposes only.

A report on trials of Methyl GAG at the NIH Clinical Center was given at the 53rd Annual Meeting of the American Association for Cancer Research in Atlantic City by Drs. Emil J. Friedreich and Emil Frei III, Chief of the Medicine Branch.

The drug was given by daily intravenous injection to 20 patients with acute myelocytic leukemia. Eleven had complete remissions and two others had partial remissions. The complete remissions had lasted from one to more than eight months; some patients were still in remission at the time the report was presented.

Ineffective Orally

Since Methyl GAG is ineffective orally, and prolonged intravenous treatment would not have been feasible, patients in remission received maintenance therapy with 6-mercaptopurine (which had been used previously in treating 12 of the patients). Patients in remission were sensitive to 6-mercaptopurine, which affected the bone marrow when only 20 percent of the conventional dose was given.

Methyl GAG caused significant side effects in all the patients who had previously been treated with 6-mercaptopurine, but in only three of eight who had not. The major side effect was inflammation of the gastrointestinal tract, but this was usually not progressive, and treatment could be continued at reduced dosage.

FAMOUS TREE SLIP PLANTED HERE



Morris C. Leikind, Scientist Administrator in the Office of Research Accomplishments, DRG (left), turns the first spadeful of earth at a tree planting ceremony on the grounds of the National Library of Medicine, Friday, May 11. Looking on are Herbert Smith, the Library's senior employee in point of service (center), and Dr. Frank B. Rogers, NLM Director. The tree was grown from a slip of a famous Oriental plane tree on the Greek Island of Cos. According to legend, it was under this tree that Hippocrates instructed his pupils in the Fifth Century B. C.—Photo by Bob Pumphrey.

Study Links Smokers' Frequent Moving To the Development of Lung Cancer

Smokers who move frequently from one community to another are more likely to develop lung cancer than their less mobile brothers. The risk is greatest for heavy smokers moving from rural areas to metropolitan centers and the foreign-born settling in large cities.

These findings were obtained in a study of lung cancer mortality reported by William Haenszel of the Biometry Branch, National Cancer Institute, and two other PHS scientists in a recent issue of the *Journal of the National Cancer Institute*. The investigators were attempting to provide a basis for a better understanding of the causes of lung cancer which annually takes over 39,000 lives in this country.

In the study, they collected residence and smoking histories from relatives of a representative sample of the white males who died of lung cancer in the United States during 1958.

On the basis of their analysis of the data, the authors suggest that smokers moving from farm to city or emigrating from their native lands to U.S. metropolitan centers may run a greater risk of lung cancer because their lungs have not had time to adapt to the polluted atmosphere of the new environment.

Supports Earlier Studies

In general, results of this survey support many earlier studies showing that excessive cigarette smoking is the major factor in the cause of lung cancer. For non-smokers, residence makes very little difference. On the other hand, the combined effect of excessive smoking and urban residence is even greater than the sum of the two separate risks.

Coauthors of the report were Donald B. Loveland, National Health Survey Division; and Monroe G. Sirken, National Office of Vital Statistics Division.

New Evidence Indicates Family Factors Involved In Schizophrenic Illness

New evidence implicating family factors in schizophrenia has resulted from a series of studies at the National Institute of Mental Health.

Recent studies reported by Drs. Lyman Wynne and Margaret Thaler Singer to the American Psychiatric Association meeting in Toronto, Canada, May 8, have revealed that in certain forms of schizophrenic illness, some degree of schizophrenic thought disorder is evident in one or both parents of the patient.

The research is based upon the concept that schizophrenia is primarily an impairment in thought processes, and that other symptoms, such as withdrawal and depression, are secondary.

Although the findings could be interpreted as supporting a genetic theory of schizophrenia, the scientists have discovered that the types of thought disorders vary with the nature of the parent-child relationships. This suggests that the kind of thought disorder in the child may result from interaction between the innate characteristics of the parents.

Begins in Childhood

In the case of some young adult schizophrenics, the schizophrenic forms of thinking seem to have become established in the early formative years of childhood through processes of unconscious imitation.

The present study was intended to differentiate the parents of schizophrenic children from parents of patients suffering from schizophrenia of later onset and other types of mental illness. The parents of 20 schizophrenic children, parents of 19 schizophrenic young adults, and parents of 20 children with milder forms of mental illness were studied by means of various psychological tests, especially the Rorschach and TAT.

It was found possible to differentiate the parents of the schizophrenic children from the parents of non-schizophrenic children on the basis of blind predictions and ratings.

Evidence suggested that parents who had childhood schizophrenic offspring had personality features that would rebuff, impair and interfere with early and fundamental relationships with their children. These included massive distrust, sadism, distancing, superficiality, apathy and helplessness.

Parents of persons who did not become schizophrenic until young adulthood appeared to permit positive relationships to begin, although these relationships become more blurred, fragmented and confused later on.

Hurt Accepts Position With Philadelphia Firm

Robert R. Hurt, Information Officer of the National Institute of Dental Research since 1958, has accepted an appointment as Chief of News Relations with Smith, Kline and French Laboratories in Philadelphia, effective June 1. In his new position, Mr. Hurt will be closely associated with the firm's research and development activities.

A native of Charlottesville, Va., and a veteran of World War II and Korea, Mr. Hurt received a B.S. degree from the University of Virginia in 1951 and served as instructor in chemistry while attending graduate school there.

Serves in Army

During 1952-54 he was a commissioned officer with the U.S. Army and active in the research and development program of the Army Chemical Corps.

In 1954 he became Assistant Chief of the Technical Information Division of the Biological Warfare Laboratories at Fort Detrick, Md., a position he held until joining NIDR in 1958.

Mr. Hurt and his family will reside in Paoli, a suburb of Philadelphia.

PHS Reprints Articles From the N.Y. Times

"Because they constitute an intelligent layman's objective appraisal of one of the nation's largest medical research centers," a series of six articles written by Harold M. Schmeck for the New York Times has been reprinted and published in picture magazine format by the Public Health Service under the title, "Research at the National Institutes of Health."

Although the original articles appeared in the newspaper without illustrations, the PHS publication presents them in magazine form with NIH photographs to enhance their informational value.

Mr. Schmeck's articles provide the reader with a comprehensive grasp of the size, scope, and content of the NIH intramural research programs, as well as of the organization and nature of the government's large medical research complex.

The publication features both interior and exterior photographs of NIH, ranging from an aerial view of the reservation and its 42 buildings, to an electron microphoto portrait of a virus.

Copies of the publication (PHS Publication No. 920) are available to NIH employees from the Institute and Division Information offices. Others may obtain them from the Office of Research Information, Bldg. 31, Rm. 5B33.

HIGH SCHOOL

(Continued from Page 1)

Although the Science Demonstration Conference for teachers had been held at NIH twice previously, this year marks the initiation of the Student Science Congress. The Conference was originally planned to give teachers new ideas and source material for illustrating their science instruction and stimulating interest of their students in medical research.

Because the Conference was received so well by the teachers, a similar program was arranged this year, for students.



Hilda Wexler, a biologist of the NCI Surgery Branch, shows high school science teachers a mouse she has inoculated intramuscularly with cancer cells for tumor harvesting.—Photos by Bob Pumfrey.

7 DBS Employees Win Performance Awards

Seven members of the Tissue Culture Section, Laboratory of Viral Immunology, Division of Biologics Standards, received superior accomplishment awards recently.

The group was specifically commended for its sustained high level of work performance in testing poliomyelitis vaccine for SV-40, a new simian virus found early last year to be present in some lots of the killed poliomyelitis vaccine. The Section, which is headed by Dr. Paul Gerber, played an important role in the development of

Report at ISFP Shows Food Parasites Will Be Continual Problem for Years

A report on animal parasites—some ancient health problems, others recently recognized—presented recently at the International Symposium on Food Protection at Iowa State University, makes clear that "diseases produced by parasites in food will be continual problems for years to come."

The reporting scientist, Dr. Leon Jacobs, Chief of the Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, said that such "disease from food is not inevitable," and made a strong plea for improved public health standards, especially in the inspection and control of processed meats.

Dr. Jacobs said that *Trichinella spiralis*, the causative agent of trichinosis, is one of the most important parasites in food.

Causes High Fevers

Trichinosis, causing high fevers and a variety of debilitating symptoms, including extreme muscle pain, is responsible for considerable death and illness annually and is especially common in Europe and the United States. Hosts for the parasite include man, household animals, and wild animals.

Man's most important source of the painful disease is swine which

have eaten infected pork scraps in garbage. Though this feeding of uncooked garbage is now outlawed in most of the United States, Dr. Jacobs warned that since swine can be infected by other animal hosts, vigilance in meat inspection and processing is of the utmost importance.

Such rigid measures have reduced the incidence of trichinosis, but, Dr. Jacobs pointed out, at least 30 percent of ready-to-eat pork products consumed in the United States come from plants that are not federally inspected. The processing requirements in these plants, he noted, "may neither be as rigid nor as rigidly enforced" as federal requirements.

Inspection Not Enough

Even rigid inspection is not enough to protect against the danger of another food-borne parasite discussed by Dr. Jacobs. This is *Toxoplasma gondii* which, in the last 25 years, has been found to cause a variety of human diseases, such as encephalitis and blindness of new-born due to intrauterine infection.

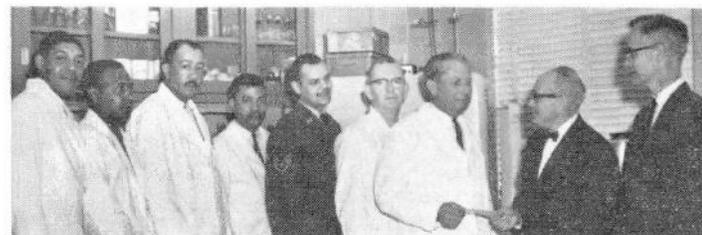
Pork and mutton have been demonstrated by Dr. Jacobs and others to be potential sources of human infection, but these do not provide an adequate explanation of disease reservoirs, Dr. Jacobs stressed. Vegetarians who have been tested, for example, show antibodies to toxoplasmosis. High antibody rates have been shown in Tahiti where the consumption of meat is very low.

The many possible food sources for the infection, and the fact that present techniques for detecting the parasite do not lend themselves to meat-inspecting procedures, emphasize the complexities and dangers of food-borne parasites.

Advises Freezing Meat

"At the present time, the best advice for those who like raw or rare meats," Dr. Jacobs commented, "is that they freeze and thaw the meat before processing it further. This will take care of toxoplasmosis, but of course it will not protect against all other agents."

In summarizing a number of parasites in food, including tapeworms and flukes, Dr. Jacobs noted that despite a growing knowledge about them, marketing factors and eating customs delay their eradication. Nevertheless, he concluded, "we can and should continue to work to remove these threats to our well being, by health education, improvement in sanitation, and improvements in inspection and control of processed meats. Disease from food is not inevitable."



Staff members of the Tissue Culture Section, Laboratory of Viral Immunology, DBS, receive superior accomplishment awards. They are (from left): Charles Poindexter, James Baker, Joseph Davis, Joseph P. Jackson, Joseph Proctor, Jr.; Joseph Rogers, Jr.; and Robert Grubbs. Dr. Paul Gerber, Section Chief, presents the awards, with Dr. George A. Hottle, LVI Chief, presiding.—Photo by Ed Hubbard.

DBS Lab Establishes Continuous Cell Line For Study of SV-40

The extensive use of rhesus and cynomolgus monkey kidney cell cultures for the isolation, growth, and study of viruses has brought to light many hitherto unknown simian viruses. These viruses appear during incubation of cell cultures prepared from apparently healthy monkeys and make their presence known by their destructive (cytopathogenic) effect on the cells.

One of these simian agents is the vacuolating virus or simian virus 40 (SV-40), first isolated by Sweet and Hilleman in 1960 from rhesus monkey kidney cultures. SV-40 produces no obvious cytopathogenic change in rhesus or cynomolgus cultures, but regularly does so, with formation of characteristic cytoplasmic vacuoles, in tissue culture cells prepared from the kidneys of the African green monkey, *Cercopithecus aethiops*.

For Lab Use

Since primary cercopithecus kidney cultures are used for diagnostic detection of SV-40, and since such cultures are occasionally contaminated with SV-40, an effort has been made to establish a virus-free continuous tissue culture cell line which could be used as a laboratory tool in studies with SV-40.

Such a cell line has now been established in the Division of Biological Standards' Laboratory of Virology and Rickettsiology, by Hope E. Hopps and coworkers. Mrs. Hopps presented their findings at the Federation of American Societies for Experimental Biology Meetings in Atlantic City.

The continuous cell line, designated BS-C-1, was derived from cultures of healthy primary cercopithecus cells and has now been successfully carried through 74 serial passages. BS-C-1 cells grow readily in appropriate media when thawed after storage at -70°C .

Shipping Not Difficult

No difficulty has been encountered in shipping the cell line, and cultures have been established in more than a dozen laboratories, including two in England and one in Australia.

Sensitivity of the BS-C-1 line to infection with SV-40 has remained unchanged throughout 14 months of continuous cultivation. This is of particular interest since the chromosome number of the cells altered between the 20th and 40th passage, decreasing from a normal 60 to 58-59.

BS-C-1 cells also permit growth of several other viruses, including attenuated measles virus, attenuated polioviruses, 1, 2, and 3, res-

123 Young Doctors to Begin Clinical And Research Training Here July 1

A new group of 123 physicians will report to NIH July 1 to begin training in research as Clinical Fellows, Clinical Associates, and Research Associates. Over 1,200 inquiries were received concerning these appointments, which were made 18 months ago, and 250 applications were processed.

Clinical Fellows (Residents) are appointed to those Institutes and professional departments where residency training, approved by an American Specialty Board, has been developed. All U.S. Public Health Service residency appointments are made on an annual basis.

Become Team Members

The several Institutes at NIH also appoint young physicians to clinical responsibilities equivalent to those of residents. In each instance the appointee, known as a Clinical Associate, is the junior member of a clinical research team. Considerable time is devoted to research in the laboratories and on the ward, and excellent opportunities to advance in clinical knowledge are also made available.

Medical graduates with one or more years of specialty training beyond internship and demonstrated research ability, training, or interest, are minimally eligible. Appointees are not formally enrolled as fellows or residents, and the programs have not been formu-

lated to meet the requirements of specialty boards. In many instances clinical associates have received a year of credit toward admission to specialty board examinations upon certification of the Institute Clinical Director after completing their appointments.

Research Associates are selected from among young physicians who have finished internship or one year of residency training. They are carefully matched, after a series of conferences, with a preceptor who is a leading investigator in a field of their interest. Their immediate instruction and supervision is supplemented with 268 hours of planned basic science courses and seminars. Selection is based upon demonstrated potential and interest in basic research.

Deadline Is Sept. 21

The deadline for July 1964 and 1965 appointments is September 21. Successful candidates on the next selection list will be deferred from service in the Armed Forces as of July 1963 and their deferment will be renewed annually as long as they hold commissions in the Public Health Service. Detailed information about these programs and application forms may be obtained from Dr. Murray C. Brown, Chief of the Clinical and Professional Education Branch, Clinical Center, Rm. 2B48, Ext. 2427.

Marie Purdy, NCI, Wins Business Scholarship

Marie E. Purdy, a program analyst in the Virology Research Resources Branch, NCI, has been chosen as one of 16 winners in Southeastern University's Eighth Annual Government Career Scholarship Program. She receives a 2-year scholarship for evening courses at the Washington, D.C., business school, and will continue her work at NIH.

Miss Purdy said she will use her scholarship to begin a 5-year course of studies leading to a B.S. degree in Business Administration. She has been with the Federal Government since 1943 and is now in her sixth year at NIH.

From March 1956 until last September she was in the Virology and Rickettsiology Section, Internal Operations Branch, DRG.

piratory syncytial virus, Rift Valley fever, and O'Malley's hepatitis isolate, A-1.

The ease with which the BS-C-1 cells can be grown, as well as their susceptibility to viruses other than SV-40, suggest that the line can be employed for laboratory use with a variety of viral agents.

MOOSEHEAD

(Continued from Page 1)

a moose head if not at the Loyal Order of Moose? When I explained its intended use, the members of L.O.O.M. Lodge 1540, Rockville, willingly agreed to the loan of their prized, goateed specimen.

Finding the pig was not so easy. (NIH wasn't doing any research requiring swine.) In turn I called the Agriculture Research Center at Beltsville, the Naval Medical Center, the Army Medical Center. No luck.

But the Animal Husbandry Division, University of Maryland, had some 45-lb. porkers and would lend us one. Eureka!

"Too heavy," said Ozzie. "That pig has to be carried by Moonbeam McSwine who is just a frail girl!" The next call paid off. George Lechlinder, a Gaithersburg farmer, had a suckling pig that would be the right size and weight this week—about 10 pounds.

Assured that it would be bottled and otherwise coddled in the Animal Hospital here, Mr. Lechlinder said the Hamsters could have the potential ham for about 10 days.

Hoping to protect Mr. Lechlinder's investment, I queried Lloyds of

Blood Pressure Increase With Angiotensin Use Found Unsustained

Drs. Edmund Sonnenblick and S. Evans Downing of the National Heart Institute report from cat experiments that angiotensin II increases blood pressure but produces no sustained increase in the muscular strength of the heart.

The hope that angiotensin might have medically useful cardiotoxic effects was raised by earlier reports that single large doses may increase ventricular contractility. However, this was found to be only transitory when Sonnenblick and Downing administered it continuously to cats in solutions strong enough to greatly increase blood pressure.

The effect of angiotensin II on electrical activity in the cardiac sympathetic nerve, which strengthens the heartbeat, was also recorded in the cat experiments of Sonnenblick and Downing. Their electroneurographic tracings from the cats showed that the activity of this nerve was depressed as angiotensin elevated the blood pressure.

Comparing angiotensin II with norepinephrine in cats, it seems that their like effects on blood pressure are accompanied by unlike and possibly opposing effects on heart performance.

Cole Is Guest Lecturer

Dr. Kenneth S. Cole, Chief of the Laboratory of Biophysics, NINDB, was guest lecturer during a 2-week graduate course on theoretical and mathematical biology at Yale University, May 7-19.

Dr. Cole, who was the only participating Government scientist, presented lectures on axon and membrane physics, and was active in conference and discussion groups.

Supported by the National Science Foundation, the course was held to stimulate the education of biologists in quantitative and theoretical approaches to their fields.

London (Washington Branch). They said they'd insure it—but not for less than a year.

The piglet will make his theatrical debut uninsured. But he'll be tranquilized.

The other members of the Props Committee — Carol Schneider, Karen Shirley and Ann Hughes—telephoned and deployed throughout NIH and the nearby countryside, borrowing from friends, relatives, and local business firms.

The attitude of the lenders varied from surprise to disbelief to hilarity. But we found them most cooperative. The props are now on stage.

Desmosterol Presence In Serum Seen Related To Atheroma Formation

Drs. Joel Avigan and Daniel Steinberg of the National Heart Institute Metabolism Section report in the *Lancet* a rabbit experiment in which desmosterol present in the serum during atheroma formation was found to deposit in the atheroma. The percentage of desmosterol in total atheroma sterols was similar to that in the serum. No experimental evidence had previously been published that desmosterol contributes to atherogenesis.

In the rabbit experiment, an atherogenic diet was fed for 112 days which contained an equal proportion of desmosterol and cholesterol (0.05 percent), plus enough Triparanol (0.1 percent) to block reduction of the desmosterol to cholesterol. This brought enough serum desmosterol into existence (37 percent of all circulating sterols) so that its deposition in the atheroma could be compared with that of the serum cholesterol.

Precursor of Cholesterol

Desmosterol is a cholesterol precursor normally absent from the serum. However, desmosterol is usually present in significant quantities in the serum of patients receiving Triparanol (MER-29), a drug that lowers serum cholesterol levels by inhibiting its formation from desmosterol.

In Triparanol-treated patients, the decline in serum cholesterol is usually accompanied by a rise in serum desmosterol. In patients receiving 250 mg. of Triparanol daily, desmosterol may account for about one-fourth of their total serum sterols.

Suggest Measurement Levels

Avigan and Steinberg suggest that total serum sterol levels be used instead of serum cholesterol only, as a measure of the anti-atherogenic effects of Triparanol—at least until the atherogenicity of desmosterol can be determined quantitatively in further experiments.

Although Triparanol has just been withdrawn from general drug commerce pending further study of its effects in animals, its peculiar ability to alter pathways of sterol biosynthesis assures its continued use in research, both for information on the biology of sterol metabolism and for medically useful clues to the causes of atherosclerosis.

Less than 40 cents of every \$100 of taxes collected is spent to administer the Federal Government.

LATIN AMERICAN SURGEONS VISIT NIH



Three South American heart surgeons (right) observe the installation of an artificial heart valve in a dog at the NHI's Experimental Surgery Laboratory. They are, left to right: Dr. Alvaro Toro Mejia of the University of Antioquia in Medellin, Colombia; Dr. Caesar Brea, University of Buenos Aires, Argentina; and Dr. J. Marcos Duque, also from the University of Antioquia. NHI surgeon making critical adjustments in the artificial valve is Dr. Louis A. DuPlessis, assisted by Operative Technician Samuel E. Fountain (partially obscured).—Photo by Lou Cook.

Two New Publications On Headaches Issued

Headache is a major economic and medical problem in the United States, ranking with the common cold as a cause of time lost by workers. It is one of the most common of the symptoms which bring patients into the offices of neurologists and other physicians.

In recognition of the importance of headache and in the interest of increased knowledge concerning it, the National Institutes of Health has just issued two publications, one for physicians and medical students, and one for the lay public.

For the professional audience a reprint in pamphlet form of the paper, "Classification of Headache" is available.

Provides Uniform Standards

This report, originally published in March 1962, in the *Journal of the American Medical Association and Archives of Neurology*, is a carefully defined classification by specific diagnosis. By providing standards of uniformity for diagnostic terms it makes possible uniform comparison of specific types of headache, an essential first step toward valid comparisons of research findings on headache. It was prepared by a subcommittee of the Committee to Evaluate Drug Therapy appointed by the National Advisory Neurological Diseases

Dr. King Engel Receives Essay Award from AAN

Dr. W. King Engel, Associate Neurologist, Medical Neurology Branch, NINDB, received the G. Weir Mitchell Essay Award at the meeting of the American Academy of Neurology, April 25.

Dr. Engel's award-winning essay was entitled "The Essentiality of Histo- and Cytochemical Studies of Skeletal Muscle in the Investigation of Neuromuscular Disease."

Dr. Engel joined the NINDB staff in 1956 as a clinical associate. In 1959 he completed a traineeship at National Hospital, London, and returned to NIH to conduct research in clinical and experimental neurology. A graduate of Johns Hopkins University, Dr. Engel received his M.D. degree from McGill University, Canada, in 1955.

and Blindness Council.

The publication for lay audiences, "Headache—Hope Through Research," was prepared by the National Institute of Neurological Diseases and Blindness. It explains some of the causes and types of headaches and reviews the latest forms of treatment, advising headache sufferers that "Research in headache is making such strides today that you need to keep in touch with your doctor to gain the advantage of improved treatments." It also holds out hope for two of the most common types of chronic, repeated headaches—the migraine and the "tension" head-

Autoradiograms Indicate 3 Development Patterns In CNS of Mice

National Institute of Neurological Diseases and Blindness investigators have reported on a continuing study of the development of the nervous system in mice which extends previous work to include studies not only with embryonic mice but also with young postnatal mice. The usefulness of autoradiography in tracing the development of tissue of the brain over a long as well as a short period of time was also demonstrated in the study.

To trace cell growth and development in the brain, tritiated thymidine (thymidine- H^3) was injected intravenously into pregnant mice at certain stages of the 19-day gestation period, and also into offspring of the mice at various postnatal stages.

Migrate Toward Surface

Autoradiograms showed the following three patterns of development: 1) Most cells of the cerebellum from the first to the 15th day of gestation formed in the ependymal zone and migrated directly outward toward the external surface. 2) In the cerebellar ependyma, lateral caudal portion, the cells began to divide on the 13th day of gestation, then migrated over the external surface of the cerebellar anlage and continued to divide until about the third postnatal week. 3) From the 15th day of gestation onward the cells divided and dispersed freely throughout the cerebellum.

Lead to Hypothesis

These studies led to the hypothesis that when two cell bodies and their sites of synapsis are within a circumscribed region of the central nervous system, the synaptic contact is established by cell migration during histogenesis. An example cited to support this hypothesis is the relationship between the Purkinje cells and roof neurons, which can be explained and predicted from known adult synaptic anatomy. Also, knowledge of the migration patterns should make possible predictions on synapsis in other areas.

Dr. Irene L. Miale, now in Cairo, Egypt, and Dr. Richard L. Sidman, now at Harvard Medical School, performed this continuing study in the Laboratory of Neuroanatomical Sciences, NINDB, and reported this part in *Experimental Neurology*.

aches.

Copies of both publications are available upon request from the NINDB Information Office, Ext. 8426.