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 governmental support increase.

High School Faculty, Pupils See Cancer Research Here

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

"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."
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
filled gas tank. Since gasoline ex-
spands 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
leak is spotted by the guards, the
owner is requested to move his car.
In the meantime, the Fire Depart-
ment is notified and firemen come
to the area to flush away the leak-
ing gasoline.

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 can be parked with the
gas tank cap on the high side. Au-
other 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 Teen-
agers,” a play written, produced
and performed by young patients
at St. Elizabeth’s 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 perfor-
mancess 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 Chase, 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 situ-
ations and recorded their ad-libbed
dialogue as the theme of the play.
They also wrote the script, assigned parts for rehe-
sals, and designed scenery.

The play was an exaggerated
take-off on some of the problems
involved in the dynamics of juve-

nile delinquency that confronts today’s
teenagers. It touched upon wild
conspiracies, school conflicts
with parents, and physical injury,
and was spoken in pool room lingo
given the background theme of
continuous twist music.

In the final scene the expressions
of violence and rebellion were
softened and the teenagers re-
turned to their homes with an ad-
mitted need for parental love and
authority.

At the last curtain a young
member of the cast told the audi-
de "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 pre-
sent 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 sym-
phonic music will include “Gavotte
and Musette,” by Bach; “Sym-
phony in C,” by Bizet; Mendels-
sohn’s “Overture to a Midsum-
mmer 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.

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 are collaborating on the malaria antibody production can be followed by fluorescent antibody methods that will correlate malaria antibody prevalence rates for malaria as a parasitic and splenic indices.

In addition to Drs. Kuvin and Edgcomb, Dr. John E. Tokie, Acting Chief, Laboratory of Immunology, and Dr. C. Robert Coates, 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 awar ds, from the National Institutes of Health, 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 another 30 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.

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.

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

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

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.

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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 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 in the Office of Clinical and Preprofessional Education Branch.

NIH Record, May 22, 1962
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 extract, induces remissions in patients with Hodgkin's disease and patients with acute lymphocytic leukemia.

Two others had partial remissions. One was presented by Dr. Myron Karon, of the University of Chicago, who received 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 itself, but it 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.

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

Dr. William I. Gay, Chief of the Animal Aids Branch, Laboratory Animal Care, has been elected 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. Brown, 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 demonstrations, 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 Moyer 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 expenditures, 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, Room 5A31, Ext. 4298. 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(4-hydroxyhydrazone, 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 and 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.

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 NHI 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 90,000 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 nonsmokers, residence makes very little difference. On the other hand, the combined effect of excessive smoking and urban residence is seven greater than the sum of the two separate risks.

Counthors of the report were Donald B. Loveland, National Health Survey Division, and Mont sier G. Stixen, 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. Lynnmae Wyne and Margareo Tren­cker, Singer to the American Psychiatric Association meeting in Toronto, Canada, May 8, have revealed that in certain forms of schizophrenia, a 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 relations. 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 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, 10 of whom were 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 bases 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, superfeciality, apathy and helplessness.

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

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

A report on animal parasites—some ancient health problems, others recently rerecognized—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 Disease, 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 occasionally 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 inspection and processing is of the utmost importance.

Such rigid measures have reduced the incidence of trichinosis, but, Dr. Jacobs pointed out, at least 50 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 rigorously enforced" as federal requirements.

Inspection Not Enough

Even rigid inspection is not enough to protect against the danger of another food-borne parasitic discussed by Dr. Jacobs. This is Tocoplasma gondii which, in the last 35 years, has been found to cause a variety of human diseases, such as encephalitis and blindness of newborns due to intrauterine infection.

Pork or 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 it do not lend themselves to meat-inspecting procedures, emphasize the complexities and dangers of food-borne parasites.

Advise 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, food, including tape-worms and flukes, Dr. Jacobs noted that despite a growing knowledge about them, marketing factors and eating customs delay their eradication. Nevertheless, he concluded, "we must 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."
CBS 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 cytopathic effect in tissue culture cells derived 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 each culture is occasionally contaminated with SV-40, an effort has been made to establish a continuous 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 Biologic Standards' Laboratory of Virology and Ricketsiology, by Hope E. Hoppa and coworkers. Mrs. Hoppa 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 culture. 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 48 in the 10th passage. BS-C-1 cells also permit growth of several other viruses, including attenuated measles virus, attenuated polioviruses, 1, 2, and 3, and a reovirus.

MOOSEHEAD

(Moosehead (Continued from Page 1))

a moose head if not at the Royal Order of Moose? When I explained its intended use, the members of the Lodge agreed to the loan of their prized, goateed specimen.

Finding the pig was not so easy. (NIH wasn't doing any research on pigs.) In tum I called Dr. Kenneth S. Cole, Chief of the Clinical and Professional Education Branch, Clinical Center, 2848, Ext. 2427.

COLE IS GUEST LECTURER

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

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

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

Blood Pressure Increase With Angiotensin Use Found Unsustained

Dr. 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 effectiveness of the drug might be expected to produce a sustained increase of the heart rate, and Downing found that the activity of this nerve was depressed as angiotensin elevated the blood pressure.

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

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

Testing the use of this drug in the treatment of muscular hypertension is still in the experimental stage. Sonnenblick and Downing have concluded that, although angiotensin II may be useful in the treatment of hypertension, the procedure is not yet established.

Cure Is Guest Lecturer

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Supported by the National Science Foundation, the course was designed 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 tranquillized.

The other members of the Pops 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

Dr. 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 the atheroma 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 NIH’s Experimental Surgery Laboratory. They are, left to right: Dr. Alvaro Toso Mejia of the University of Antioquia in Medellin, Colombia; Dr. Cesar Broa, University of Buenos Aires, Argentina; and Dr. J. Marcos Duque, also from the University of Antioquia. NIH 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 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-3H) 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 endoderm, 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 circumserated 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.

Copies of both publications are available upon request from the NINDB Information Office, Ext. 8120.