**Drs. Dorn, Shapiro and Alt Heading New Branches**

A Biometrics Research Branch has been created in the National Heart Institute, under the direction of Dr. Harold F. Dorn, former Chief of the Biometrics Branch, DRS. The latter Branch has been dissolved.

The transfer of Dr. Dorn and his staff to NIH will expand the application of biometrics to cardiovascular research.

Also established this month, in the Division of Research Services, were the Computer and Data Processing Branch and the Instrument Engineering and Development Branch.

Developed from the Statistical Processing Section of the defunct DRS Biometrics Branch and from the Instrument Section of the Laboratory Aids Branch, the two new branches in DRS reflect the increased NIH needs for data processing and instrumentation services.

Dr. Norman Z. Shapiro will direct.

(See NEW BRANCHES, Page 8)

**Library Assistance Available at Night**

A library assistant, Fred D. McLeod, has been assigned to night duty at the circulation desk of the NIH Library, which remains open until 10 p.m., Monday through Fridays.

NIH staff members wishing to use the library during the evening hours may obtain needed assistance from Mr. McLeod.

**April Panel Discussion Sponsored by NIMH**

The fifth in a series of special meetings for NIH information officers, to be held here April 14, will be sponsored by the NIMH Information Office.

Panel members will be Harry Milt, Public Relations Director for the National Association for Mental Health, New York City; Robert L. Robinson, Director of Public Relations for the American Psychiatric Association, Washington, D.C.; and Harold P. Halpert, Chief, Publications and Reports Section, NIMH.

**Programs of Breadth and Stability Stressed at NIH Budget Hearings**

By Ken Stabler

Testifying on the NIH 1961 budget estimate before the Subcommittee of the House Committee on Appropriations, Dr. Shannon observed that NIH programs are "directed to general rather than specific progress in research, to institutional stability, and to development of resources to permit full use of the investigators' talents."

The NIH Director attributed the strengths of current NIH research processes to "the increasing maturation of programs that at their inception were sound in principle."

These programs, he said, "have now become established and essential parts of the Nation's medical research effort."

**Health Campaign Lag Scored by Committee; Participation Urged**

The PHS mid-March report on the current Federal Service Campaign for National Health Agencies and Joint Crusade showed NIH lagging with only 18 percent participation. BSS reported 51 percent and BMS 37 percent participation.

The campaign ends April 16.

In announcing the first two weeks' results the NIH Campaign Committee pointed out that for several years PHS has lagged behind non-health agencies in percentage of participation, despite the fact that the prime aim of the campaign is to provide support for health agencies.

The Committee also reminded NIH employees that they number about 7,000 of the PHS total of approximately 9,900, and urged each NIH keyman to make sure that all employees in his group are aware of these worthy causes and have been encouraged to participate.

The Committee noted two encouraging items: Dewey Shurtleff, keyman for Biometrics Research Section, NIMH, reported 100 percent and DGMS 77 percent participation.

**Cites Research Support**

"Today," Dr. Shannon said, "our programs support more than one-third of all medical research in this country. Thousands of young men and women are being aided while they complete their postgraduate training for research, academic, and service careers. And hundreds of research laboratories are being constructed or renovated, in part with matching grants from our appropriations."

Dr. Shannon said he believed that "these established and accepted activities in support of the individual"—which, he noted, represent more than 85 percent of NIH's 1959 activities—"should con-
Review of Grants Requests
Is a Complex Procedure
By Betty Mok

The three-year NIH Advisory Council meetings, just concluded for the spring session, have reviewed a portion of the 13,004 research grant applications submitted for this fiscal year—the highest number received in any 12-month period. The March sessions complete the allocations of about $200,000,000 in grants funds for FY 1960.

The administration of these funds, which total just under 50 percent of the 1960 NIH budget, involves approximately 700 NIH personnel, from clerks to top administrators, and some 600 leading non-government special consultants serving as members of study sections and advisory councils.

A look behind the mass of statistics which represents the NIH research grants program reveals a well-planned and efficient mechanism for analyzing, recording, reviewing, rating, and awarding research grants to scientists throughout the world. Using a hypothetical applicant, the procedure works like this:

How It Works

Dr. Joseph Augustus Donckes, a professor and research scientist in bio-chemistry at university, plans to conduct a study of amino acid metabolism and needs funds to support it. He submits a grant application, bearing the formal approval of his university, to NIH. The application consists of a detailed description of the project and what he hopes to accomplish, as well as a complete budget setting forth his estimate of costs. Dr. Donckes' application reaches the DRG mail room in a flood of a thousand or so just before the deadline date for the winter Study Section meetings. His application is logged in by the DRG project review officer, a scientist-administrator familiar with all the disciplines, who determines to which study section Dr. Donckes' application will be sent for review, and which Institute will subsequently be responsible for presenting it to one of the eight Advisory Councils.

Sections in Four Groups

The Study Sections, now numbering 35, are organized into four main groups: clinical research, biochemical and biophysical sciences, biological sciences, and health services. These categories contain the whole range of modern medical and biological scientific investigation.

The 10 to 15 non-government members of each Study Section, appointed for a 4-year term, are authorities in their particular fields of medical and biological sciences. During the two to four days they meet (three times each)

(See GRANTS REQUESTS, Page 2)
Collaborative Studies Seek Brain Damage Source

An understanding of when and how brain damage takes place is essential in the effort to achieve the eventual prevention of cerebral palsy, mental retardation and related disorders of infancy and childhood. The source of the damage is now believed to lie in the period surrounding birth—from conception through labor and delivery and until about one month after birth.

It is estimated that there are approximately four and a half million mentally retarded persons in this country. About one-third of these are children and the disorder affects about 125,000 children each year. In addition, some 560,000 persons are afflicted with cerebral palsy, two to five percent of our school children are reported to have speech disorders, four percent have hearing impairment, and 35,000 school children are legally blind.

In an attempt to find the answers to these large national problems, a collaborative research program related to cerebral palsy, mental retardation and other defects in children was officially begun in January 1969, after two and a half years of intensive preparation. This is the first large-scale effort to collect information on all factors which might conceivably relate to these disorders and the first research program ever undertaken to collect and analyze this information before rather than after such disorders develop. The National Institute of Neurological Diseases and Blindness is serving as coordinator and central laboratory for the project.

Central Services Expanded

The central services for the collaborative perinatal project have been expanding and will continue to expand during 1969. There have been two major objectives: first, to forge a strong and closely knit organization of the collaborators and the central office; and second, to refine the data collection procedure.

To build a well knit organization, small working subcommittees have been established in special areas of the study. These have included obstetrical, pediatric, and neurological examinations; psychological testing; and interviewing.

The members of the subcommittee have worked closely at Bethesda with the central staff, and in some instances, have served as staff members for the development of certain facets of the project. This association has not only increased the actual participation of the collaborators in the central planning, but has aided in coordinating the total program.

In addition to the active working sessions, thirty-five meetings involving principal investigators in various areas of the study have been held this year. Plans have been reviewed, protocols established, and policy decisions made regarding the scientific development of the project.

Protocols Tested

Recognizing the importance to the study of accurate and complete reporting, the reliability and validity of protocols have been further developed and tested during the past year. A carefully refined protocol for listing accurate and detailed family health and socioeconomic data has been worked out. A series of obstetrical examinations has been critically reviewed, and the obstetrical subcommittee has established procedures to achieve accurate recording of these essential data. A detailed protocol for the examination of the concept is included.

![Baby Examine](https://via.placeholder.com/150)

This baby is having an otological examination at John Hopkins Medical Center, one of the 17 institutions participating in the collaborative project.

Concept Challenged On Enamel Protein

While previously published analyses of enamel protein have shown wide variability, they have for the most part been compiled from the presence of large amounts of glycerine, proline, and hydroxyproline. Largely from such data it might be concluded that enamel protein belongs to the collagen class. This concept has now been challenged by a National Institute of Dental Research chemist reporting at the International Association for Dental Research meeting on recent studies of the protein matrix of human enamel.

Analyses Performed

Recognizing the possibility that previous samples may have been contaminated with varying amounts of dentine collagen, Dr. Karl A. Piez, Laboratory of Biochemistry, performed a series of complete amino acid analyses of enamel proteins carefully isolated from the third molars.

Through the use of special apparatus designed to give precise analysis, it was found that the protein was nearly all soluble in the de-calcifying solution. Moreover, the soluble protein contained no hydroxyproline or hydroxylysine and only moderate amounts of glycine indicating that it was not a collagen. While its composition showed several distinctive characteristics, it was unlike any other known protein. The small insoluble residue was similar in composition to the soluble protein if the presence of about one-third collagen is assumed.

Thus it is suggested that results from previous amino acid analyses were influenced by contamination with dentine collagen as well as losses of enamel protein owing to its solubility.

Manifestation of Polyoma Virus Studied by NIAID

The ability of the mouse polyoma virus to produce multiple tumors in mice and other rodents has aroused great interest and stimulated extensive studies of virus by many laboratories. One of the basic questions raised in relation to this virus is, “What manifestations does the polyoma virus produce as it occurs naturally?”

Dr. Wallace P. Rowe, Robert J. Huebner, and Janet W. Hartley of the National Institute of Allergy and Infectious Diseases reported recently on studies of the natural occurrence of polyoma virus in mice (Mus musculus) inhabiting densely populated areas of New York City, particularly Harlem.

The NIH scientists were aided in the field work by the New York City Health and Sanitation Department. Approximately 1,000 mice were studied. The natural history, the importance of ecto-parasites, the mode of spread of the virus, and the described activity of "wild" polyoma virus strains were studied.

The basic tool for these studies is the hemagglutination-inhibition test, which serves both as the indicator of past infection and the end-point of sensitive virus detection tests in laboratory animals and tissue culture systems.

Frequency Varies

In the Harlem area infection was found in high frequency along certain blocks, while nearby blocks were completely negative. There was marked difference in frequency of infection of mice trapped in different apartment houses within a single block. Virus was recovered from the organs of 14 wild mice, and also twice from floor sweepings in apartments housing infected mice. Virus was isolated from the excreta of three of the mice. Mites recovered from infected mice were found negative for the virus. Cockroaches trapped in the apartments were also negative.

Excretion of virus apparently plays an important role in its transmission in nature. In laboratory experiments, infected newborn mice have been found intense sources of environmental contamination. Eating and drinking contaminated food and water appeared to be possible means of entrance of virus into mice. However, inhalation of virus appears to be a more effective mode of entry.

The important question of the...

(See*PERINTAL*, Page 5)

(See*POLYOMA*, Page 4)
Tumors Associated With EEG Patterns in NINDB Studies

An electroencephalographic (brain wave) pattern occurring in patients with idiopathic petit mal epilepsy, has also been found, with statistically significant frequency, in patients with brain tumors. Detailed findings of two cases in which tumors were associated with this EEG pattern and an extensive review of similar cases indicate that the abnormality which produces the typical "petit mal" pattern may lie within the brain stem. Unlike many other types of epilepsy, seizures which show this pattern usually cannot be correlated with gross or microscopic lesions in the brain.

Among the most striking and typical in clinical EEG, these brain wave recordings are characterized by bilateral, symmetrical 3/second wave-and-spike complexes. Studies relating this pattern with pathological findings were recently reported by Dr. C. Ajemene-Marzan and Dr. W. L. Lewis, National Institute of Neurological Diseases and Blindness Electroencephalography Branch, at the Eastern EEG Association Meeting, Ste. Marguerite, Quebec, Canada.

In the two cases examined by the investigators, both EEGs showed the typical pattern highly suggestive of petit mal epilepsy. In the first subject, a large metastasis of one cerebral hemisphere was found, but the patient had no history of epileptic seizures. In a second case, the patient demonstrated petit mal, as well as temporal lobe epilepsy and generalized convulsion. Here, a large astrocytoma extending into the temporal lobe was removed from the right temporal lobe.

Because cases of brain tumors associated with bilateral 3/second wave-and-spike patterns are so rare, statistical evaluation was devised to assure that a valid relation existed between the two phenomena. The respective incidence of brain tumors and of the "petit mal" pattern were calculated for the general population. Results showed that if chance alone were operating, an association of the two factors would occur in 4 out of a million cases. However, data from three published reports totaling 1,071 brain tumors resulted in an "actual" frequency of 6 cases, as compared to an "expected" frequency of 0.057, indicating a significant association.

Metabolic Role of Glucagon Suggested by NHI Studies

Glucagon, the pancreatic hormone which liberates stored sugar from the liver, has been found by National Heart Institute workers to also liberate fatty acids from storage in fatty tissue. The scientists have been especially interested in the finding that glucagon, and various other hormones that effect the release of stored energy, have a similar enzymatic effect in body tissues, suggesting the possible existence of a common mechanism involved in lipid mobilization.

It is becoming increasingly clear that the release of fatty acids, a major metabolite fuel, from the adipose tissue depot is subject to a variety of hormonal controls. It has been shown previously by Dr. Robert S. Gordon of the National Heart Institute that epinephrine stimulates release of fatty acids but not glucose. Adrenocorticotropic hormone (ACTH) of the pituitary has also been shown by several investigators to stimulate release of fatty acids. Recent studies by NHI investigators have added another hormone glucagon, to the growing list and revealed an interesting mechanism that may help to clarify the way in which hormones exert their stimulating action on fat mobilization.

Dr. Martha Vaughn, Dr. Daniel Steinberg and Dr. Eleazar Sharfrin in the Section on Metabolism of the National Heart Institute have demonstrated a stimulating action of glucagon on the pancreatic hormones, glucagon, on release of fatty acids both in the living animal and in vitro. The effect in the whole animal had been overlooked in previous work because the initial response to glucagon injection is a fall in blood fatty acid levels. This fall coincides with the period during which the blood sugar is elevated due to the action of glucagon on the liver. By following the fatty acid levels over a period of 24 hours the NIH workers observed a late rise in fatty acid levels beginning only after the blood glucose levels returned to normal.

Phosphorylase Level Raised

Both epinephrine and glucagon were known, from the work of Dr. E. W. Sutherland and colleagues at Western Reserve University, to increase the levels of the enzyme phosphorylase in the liver. It was therefore to be expected that they would thus lead to more rapid release of glucose from the liver. This suggested examination of the adipose tissue to determine whether the two hormones do indeed increase the levels of active phosphorylase in the adipose tissue, and might be related to the demonstrated mechanism of action in the liver. It has now been shown that these two hormones do indeed increase the levels of active phosphorylase in the adipose tissue. The pituitary hormone, ACTH, had been shown by Dr. Robert Haynes, to do in the adrenal cortex what epinephrine does in the liver, namely, increase the amount of the enzyme phosphorylase. The report shows that ACTH also increases the amount of phosphorylase in the adipose tissue. This mechanism by which the hormones affect the different tissues has been termed the "adipose tissue effect".

The NIH investigators published their findings in the Journal of Clinical Investigation.

Procedures Revised On Sterility Tests

Amendments have been adopted to revise sterility test procedures for biological products. The revision of one of the basic tests is designed to ensure the purity of all licensed biological products and reflects recent advances in manufacturing procedures as well as in scientific achievement.

As of April 15, 1960, manufacturers of biological products subject to control under the Public Health Service Act will be required to follow the revised procedures for sterility testing. Redesigned as Section 73.73 of the Public Health Service Regulations, these requirements are designed to ensure the freedom from extraneous microorganisms of all licensed biological products. The revision represents a composite scientific opinion based on years of research and, in the judgment of the agency, experience with the practical aspects of production, is essential to the rapid progress made in this field in recent years.

The time-lapse of the adoption of sterility test standard is emphasized by the recent recommendations of the World Health Organization. The participation of Dr. Margaret Pitman and Dr. Howard W. Hechtman, Division of Biological Safety, in the WHO Study Group which formulated these recommendations at the Geneva Conference last year, facilitated the efforts of DBS in drafting comparable requirements. Although the U.S. standards are more detailed and specific, they are consistent with those recommended by WHO. This is expected to be of considerable benefit not only to U.S. producers of biologicals engaged in foreign commerce but also to foreign manufacturers who export biologicals to this country, as the latter must also be licensed to comply with U.S. standards.

POLYOMA

(Continued from Page 2)

relation of polyoma virus to the occurrence of spontaneous mouse neoplasms was also discussed at the Gustav Stern Symposium by Dr. Rove. He described studies undertaken with the collaboration of the Roscoe B. Jackson Laboratories, Bar Harbor, Maine, where large numbers of mice of various inbred strains and hybrid combinations are observed for life and morphology. The Collaborative Study is the latter must also be licensed to comply with U.S. standards.

Among the inbred strains there was essentially the same occurrence of spontaneous mouse neoplasms among tumorous mice compared to non-tumorous mice. In the hybrids the situation was essentially the same.
PERINATAL

(Continued from Page 2)

placenta has been developed, and a manual for placental examination is now available. The manual is accompanied by kodachrome slides depicting the characteristic changes to be reported.

Procedures Changed

A protocol for the neurological examination of the newborn infant has been developed and has been subjected to a test-retest analysis. On the basis of these findings, important changes in the procedure have been recommended. A training film demonstrating the technique of the examination of the newborn has now been completed. Also, a rigorous pretest of the development examination for the eight-month old infant has resulted in various procedural changes.

A procedure has been established for the collection of blood specimens from the pregnant woman for virus studies. A coldroom is now equipped at NIH and blood specimens from patients studied this year are being carefully filed for future virus studies. Under contract, antigens of some 40 known viruses are being prepared. More than three-quarters of these are now available and it is anticipated that within the next six months, antigens for all these agents will be on hand. The team of scientists responsible for conducting the serological studies is now in training.

Statistical Base Broadened

In addition to the 5500 mothers and 4200 babies studied in the pretest phase of the project, 3300 mothers and 1800 babies had been studied in 1959 in the final study series as of October 1. The project also envisages the study of other groups of women and their offspring not involved in the collaborating institutions. This will aid in determining the representativeness of the pregnancy experience in the collaborating institutions and will broaden the statistical base of the project by bringing into it additional numbers of damaged cases.

Methodologies Developed

In December 1958, arrangements were made with the Columbia University School of Public Health and Administrative Medicine to explore the needs and methods of this "extensive phase" of the collaborative project. In January, a conference of some twenty outstanding investigators was held to outline the needs and methods of this phase of the study. Since then, a small working committee has been formed which is concerned with the further development of these methodologies. To date, two ongoing pretests have evolved. The Columbia University group is now studying the methodology for case finding in the New York area. Their objective is to determine methods of detecting cases of cerebral palsy, mental retardation, blindness, deafness and other neurological disabilities, and relating the findings in these patients to the prior recorded events of pregnancy and labor. This study will also aid in collecting accurate figures of prevalence and incidence, and in evaluating the sample being collected at the New York Medical College and Columbia University School of Medicine.

Larger Sample Taken

In another study, with the Kaiser Foundation and the University of California at Berkeley, women receiving prepaid medical care are participating in a study similar to the collaborative project but with less detailed observation. This will make possible a larger sample, approximately 8,000 women a year. As a result of these activities, the Columbia University group is co-authoring a monograph on this subject, to be published by the National Cancer Institute in 1960.

CANCER STUDIES CONTROL DIET

Cultures' Resistance

To Light Damage

Effected by Dye

During studies of poliovirus by plaque assay technique, Division of Biologies Standards virologists observed that the top layer of monkey kidney culture would frequently degenerate within 48 hours after application of overlay medium. Since this problem in interpretation of viral assays, a study was undertaken to determine the cause of this degeneration.

Experiments were conducted to determine the variables of temperature, dye, and light. The results indicated that the combination of neutral red dye and light was the damaging factor. However, when cells stained with neutral red were incubated in the dark overnight, cell degeneration did not occur following exposure to light. Although other workers have described the occurrence of photodynamic action on cells, development of resistances to photodynamic action has not been reported previously.

Eliminates Cell Degeneration

From a practical point of view, the discovery makes possible the elimination of unexpected cell degeneration during virus assay by shielding the infected cell cultures from light during the initial 12-16 hours of the 6-day incubation period.

Of academic interest is the mechanism by which cell resistance developed. There were two possibilities: the resistance could be due to a change in the cells, or to alteration of the dye. Cultures which had developed resistance to light after incubation with neutral red for 48 hours were also found to be resistant to sensitizing action on the addition of fresh dye. This indicated that loss of sensitization was probably due to a change in the cells rather than alteration of the absorbed neutral red. Furthermore, when neutral red was extracted from resistant cell cultures and applied to fresh cells, the cell cultures died after exposure to light, indicating that there was no alteration in the dye.

A complete report of this work, co-authored by Alice M. Gochenour and Samuel Baron, Division of Biologies Standards, was published in a recent issue of the Proceedings of the Society for Experimental Biology and Medicine.
Cataract Studies Show Enzyme Side Effects

Alpha chymotrypsin, an enzyme which facilitates cataract surgery by fragmentation of the fibrils in the suspensory ligament of the lens (zonula fibers), is found to induce the lens and then damage it. The damage is usually temporary. This injury does not seem to be of a specific nature. Related studies showed that either direct division or indirect division by fragmentation of the fibrils in which facilitates cataract surgery or indirect division.

The report of a National Institute of Neurological Diseases and Blindness committee investigating the use of alpha chymotrypsin was presented by Dr. Ludwig von Saltmann, Chief, Ophthalmology Branch, NINDB, at the annual meeting of the American Academy of Ophthalmology and Otolaryngology. The report summarized the findings of a cooperative study suggested by the Academy to investigate the effects of the enzyme on eye pain following cataract extraction.

In studies by Dr. von Saltmann, alpha chymotrypsin was infused into the anterior chamber of the eye of young rabbits, and removed after three weeks. With washings of 0.9 percent saline solution, subsequent examinations showed that the corneal endothelium was frequently injured. In some of the experiments, varying degrees of corneal clearing were found to occur. In these instances, large defects of the endothelium could be detected microscopically. Damage confined to a small area usually disappeared after 24 hours, although extensive corneal clouding sometimes persisted for more than five weeks. Control animals infused solely with 0.9 percent saline solution also exhibited endothelial damage.

Because of the difficulty of examining the endothelium, a new technique was devised in which the entire cell population of this tissue could be studied. Flat mounts of the whole endothelium were prepared by dissecting layers of the excised corneas under a stereomicroscope. A significant result of this technique was the demonstration that cells in the endothelium of adult animals multiply by mitosis, contrary to previous assumption that division was unitotic or by direct cleavage. In animals with extensive injuries, cell regeneration by mitotic activity was greatly increased.

Results of preliminary tests of the alternate technique, conducted by Dr. G. van Alphen of the Ophthalmology Branch, NINDB, were included in the report. Here, guinea pigs were sensitized by repeated injections of the enzyme. Challenge doses a month after sensitization did not produce noticeable allergic

NIAID Studies Indicate Environment No Factor in Parasite Transmittal

The high incidence of intestinal parasitism in patients in mental institutions has been attributed variously to crowded conditions and to inherent untidiness among these patients. A unique study designed to determine the relationship between housing facilities and parasitism in mental patients reveals that transmission of intestinal protozoa continued despite greatly improved housing and sanitation. The report of a National Institute of Allergy and Infectious Diseases Laboratory of Parasite Chemotherapy field station in Columbia, S.C., reports the findings in the American Journal of Hygiene. Prior to removal to modern quarters from an extremely outdated building, a core group of 110 white female patients ranging in age from 35 to 76 years were examined for intestinal parasites. Nine series of examinations were conducted, 4 during the first year (1954), 3 the second, and 2 the third year. This group was studied for the entire 3-year period and were examined on all 9 occasions. In addition, 199 patients had 1 to 8 examinations, depending on the length of time they remained at the South Carolina State Hospital, site of the study.

The physical environment of the patients was also checked regularly, including gross inspection for fecal contamination of the buildings and exercise yards, plussurveillance of the environment and the use of cellulose tape. Twenty-six sites within the building were sampled for examination each time.

The incidence of 7 protozoan species from infected inmates was tabulated. Of these species (E. histolytica, E. coli, I. butschlii, E. nana, C. meleagridis, T. hominis, and G. lamblia) only C. meleagridis and T. hominis showed a net decrease in incidence over the 3-year period and were examined on all 9 occasions. Of these, Strongyloides stercoralis showed the most pronounced reduction.

A single striking increase in incidence was observed in the protozoan E. nana. With this organism, an initial 19.1 percent incidence rose to 62.7 percent on final examination.

Dr. Jeffery believes his data justify the assumption that transmission of protozoa continued steadily throughout the study. The rate of acquisition of protozoa appeared to lessen, however, during the last year or more of residence in the new quarters. The cell injuries present a different picture. After the patients were transferred to a modern building there was no evidence of hookworm transmission, and only 3 cases of T. trichiura were observed which could be attributed to residence in the building.

The question of persistence of parasitic protozoa, according to Dr. Jeffery, is clouded by the distinct possibility that prolonged occurrence of a given parasite in an individual might represent a number of infections of short duration rather than prolonged infection. In extrapolating probable percentages of infections within periods of 5, 10 and 20 years, based on average percent of infection per year, in general the parasite species which apparently persist for the longest periods are those with the highest prevalence at any time. The persistence of hookworm and T. trichiura infections for the full three-year period in almost all cases is indicative of the normally long persistence of these parasites in untreated populations. It is work subsequent to that described in this report, it has been shown in this same group that these parasites continue to persist in the majority of cases for at least 5 years.

Skin Collagen Changes May Relate to Age

Dr. William G. Banfield, National Cancer Institute's Laboratory of Pathology, has reported that the amount of acetic acid-soluble collagen present in human abdominal skin varies in an orderly fashion throughout life. The results of the present study show that until age 20 soluble collagen gradually decreases, from age 20 to 40 it decreases more rapidly in women in whom collagen then rises again. After 60 to 80 years of age, 80 percent of individuals whose skin was tested showed soluble collagen. After age 80, soluble collagen declines sharply.

The paper was published in a recent issue of the AMA Archives of Pathology.

Methotrexate Studies Confirm Prior Findings

Dr. Abraham Goldin and Stewart R. Humphreys in the National Cancer Institute's Laboratory of Chemical Pharmacology have reported further results in their continuing studies of the effectiveness of dihydrogen derivatives of methotrexate in prolonging the life of mice with transplanted leukemia L1210. (Journal of NCI)

The current study of immunity in mice surviving the systemic disease confirms preliminary findings that many of the long-term survivors are immune to recombination of leukemia cells, the new inoculum showing no or very slow growth. Other data suggest that the leukemia must be sufficiently far advanced, possibly systemic, for eradication of the disease by treatment with the drugs to be accompanied by the development of immunity.

The authors conclude that the drug may act in part by influencing the host-tumor relationship so that the mice become immune. Thus, the importance of understanding the interrelationships of the host, tumor, and drug in the chemotherapy of cancer is again emphasized.

Grafted Pituitaries Function Partially

Dr. Roy Hertz, Chief of the National Cancer Institute's Endocrinology Branch, has reported detailed studies on the growth pattern in young rats which were hypophysectomized (pituitary gland removed). Then multiple pituitary grafts were implanted into the same kidney bed in the same rats from which pituitary was removed. The grafts supported substantial somatic growth—about two-thirds the normal rate—but failed to maintain normal thyroid, adrenal, and gonadal function.

These results contribute to clarification of the relationship between hypothalamic and pituitary, and show that in the rat, production and secretion of growth hormone are not completely dependent upon an intact hypothalamic-pituitary system. Furthermore, the data suggest that such pituitary grafts, which are known to increase the incidence of breast cancer in mice, may be exerting their tumor-enhancing effect at least in part by producing growth hormone. Moreover, these data indicate that the demonstrated beneficial effects of pituitary stalk section in breast cancer patients may not be mediated by the suppression of growth hormone.

The paper appears in a recent issue of Endocrinology.
WHO Cancer Officer Visits NIH on U. S. Tour

Dr. Helen E. Pogosianz, Chief Officer, Cancer Section, World Health Organization, Geneva, arrived at NIH March 14, beginning a monthly visit in this country to consult with leading cancer investigators and research directors.

Prior to her two-year appointment to WHO in June 1959, Dr. Pogosianz had served since 1945 as Laboratory Chief, Institute of Experimental and Clinical Oncology, Academy of Medical Science, Moscow.

Arrangements were made by the Cancer Institute for Dr. Pogosianz to visit staff members of cancer research institutions in Baltimore, Philadelphia, New York, Boston, Bar Harbor, Buffalo, Chicago, San Francisco, and Palo Alto.

While in New York she will attend the Symposium on Phenomena of Tumor Viruses, and in Chicago, the meeting of the American Association for Cancer Research.

New Post for Dr. Syme

Dr. S. Leonard Syme, who joined DRG on January 4, has been appointed Executive Secretary of the Division's Public Health Research Study Section.

Prior to his recent appointment, Dr. Syme assisted Glenn G. Lamson in administration of the PHR Study Section and the Hospital Facilities Research Study Section.

Mr. Lamson continues as Executive Secretary of the latter Section.

Dr. Berry to Attend WHO Symposium

Dr. Elmer G. Berry, NIAID Laboratory of Parasitic Diseases, will attend the WHO Symposium on Bilharziasis March 30 through April 8 in Lausanne, Switzerland. At the request of WHO, Dr. Berry has prepared a working document, "Snail Control by Chemical Means," for consideration at the meeting.

Mongolism Research Outlined in Pamphlet Prepared by NINDB

NINDB scientists are currently engaged in a broad program of basic research to find the causes and prevention of mental retardation.

One phase of the research effort is described in the pamphlet, "Mongolism — Hope Through Research," prepared by NINDB and published this month as FHS Publication No. 720 and Health Information Series No. 94.

Mongolism, so-called because its victims tend toward Oriental facial characteristics, is a severe form of congenital mental retardation which affects more than 20,000 infants born in the U.S. every year.

Mentality Limited

The typical Mongoloid seldom achieves a mental capacity beyond that of the three- to seven-year old child and rarely lives a normal life span. Mongolism occurs in all races and in children born to parents from all walks of life.

A great many theories have been advanced as to the cause of this condition. One, widely held, has been that in pregnant women, some unknown factor interferes with the normal development of the embryo.

New Theory Reported

A more recent theory, reported in the pamphlet, is that the disorder may be caused by an irregular chromosome, or extra chromosome, in the body cells. The discovery of this extra chromosome may be a significant and fundamental clue to the mystery of why Mongolism occurs.

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Dr. Willey, DGMS, To Resign in April

Dr. Richard R. Willey, Chief of the Research Grants Branch, DGMS, will leave his post early in April. He expects to devote the ensuing eight to 16 months to travel and study prior to making future plans. His successor has not yet been named.

Dr. Willey has been at NIH since 1934, when he was appointed Executive Secretary of the Mental Health Study Section, then a unit of NIMH and later made a Study Section of DBG. He became the first Grants Branch Chief of DGMS when the Division was organized in 1958.

Born in Cincinnati, Ohio, Dr. Willey received his Ph.B., B.S., and Ph.D. degrees in psychology from the University of Chicago, from where he received his Ph.D. degree in psychology. Since 1951, he has held the position of research associate in psychiatry and psychology and department advisor to the Department of Psychology at the University of Chicago; research associate with the Council of State Governments; executive assistant of the American Psychological Association; and consultant to the Southern Regional Education Board. He served in the U.S. Army Air Corps from 1943 to 1946.

A party will be held in his honor at Top Cottage, April 1, at 4 p.m. All of Dr. Willey's NIH friends are invited.

GRANTS REQUESTS

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year, several weeks prior to council meetings, it is their job to review the applications and select those which seem most likely to make significant research contributions. Members reach a collective judgment on each application, and on those which they feel are worthy of NIH support, they assign a priority number.

The priority ratings, along with a summary of the various opinions of each application, are submitted by the Study Section executive secretary (a scientist appointed to the DRG staff) to the proper Institutes for further staff work and presentation to the appropriate advisory councils.

Each of the seven Institutes and the Division of General Medical Sciences has its own Council, composed of distinguished leaders in science and public affairs, who study, discuss, approve, or reject each application. Their final opinions occasionally differ from those of the Study Sections. Their recommendation goes to the Surgeon General. The members have the additional responsibility of considering policy and over-all program objectives of the Institute concerned.

Dr. Dookes' application has now been approved by both the Study Section and the Advisory Council, and he is duly notified. He knows that he is free to conduct his research as he sees fit, to publish his findings at any time, and that he may apply for a further grant if his studies are not completed at the termination of this one.

The Dookes grant is only a tiny portion of a program that has been expanding steadily each year since its inception in 1946. In that year, the first in which money was appropriated to NIH for the purpose, there were between 100 and 150 grant applications and a total grants appropriation of $780,000.

By 1956 the applications had risen to 4,636 and the appropriation to $38,000,000. In the next five years the applications increased 200 percent more, and appropriations reached the $200 million mark.

Over the years the program has become a major force in strengthening medical research and stimulating new studies in previously neglected fields.

ANALYZER IS PRECISE, TIME-SAVING

An automatic amino acid analyzer is operated by Dr. Karl A. Piez of NIDR. This instrument, based on principles developed at the Rockefeller Institute, was designed in its present form by Dr. Piez and was built in the Instrument Section, Lab Aids Branch, DRS. It employs a gradient device ("Variograd"), and the cylindrical assembly of plastic tubes at left-center, designed by Drs. Albert A. Peterson and Herbert A. Soder of NCI. The analyzer not only saves a great deal of manual labor but provides a high degree of precision in performing amino acid analyses. It operates by means of chromatographic separation and chromatographic analysis of the separated components. For a description of the analyzer's use in enamel studies, see page 3.

NEW BRANCHES

(Continued from Page 1)

rect the Computation and Data Processing Branch, with headquarters in Rm. 632, Bldg. 12. Benjamin H. Baker will be Administrative Officer.

The Branch will have responsibility for the centralized operation of automatic data processing machines and equipment at NIH.

The group will also conduct studies designed to make maximum use of data processing equipment in meeting the research needs of NIH.

The Instrument Engineering and Development Branch, located in Rm. 3512, Bldg. 13, will be under the direction of Dr. Fred Alt, with Marion Carr as Administrative Assistant. In addition to the design and fabrication of specialized equipment, and the maintenance and repair of instruments, the Branch will provide consultation in laboratory instrumentation to Institute scientists and investigators.

Transferring to NIH with Dr. Dorn are Jacob Lieberman, Beulah

Berlin Scientists Here For Dental Research

On Enamel Structure

Prof. Johann-Gerhard Helmcke and Miss Liselotte Schulz have arrived here from Berlin under the Visiting Program for four months work on dental enamel structure in the NIDR Laboratory of Histology and Pathology.

Well known in Europe as a biologist and outstanding electron microscopist, Prof. Helmcke is Chief of the Research Group in Micromorphology at the Fritz-Haber Institute of the Max Planck Society and is also professor of biology and anthropology at Berlin Technical University.

The Micromorphology Laboratory has been active both in research and training, and has published extensively in the field of electron microscopy. Miss Schulz is an electron microscopist who has assisted Prof. Helmcke since 1944.

Prof. Helmcke is a member of many biological societies and is editor of the Zeitschrift der Zoologischen Gesellschaft. He worked closely with the pioneers who were instrumental in the early development and exploitation of the electron microscope, later devoting his efforts to the study of tooth structures. He has placed special emphasis on stereoscopic electron microscopy, and micro-electron diffraction.

Sunrise Service At Walter Reed

The annual Easter Sunrise Service at Walter Reed Army Medical Center, which is open to the public, is invited to attend, will be held at 6:30 a.m., April 17, in the Center's formal gardens.

The U.S. Army Band and the 40-voice choir of the First Presbyterian Church, Arlington, Va., will participate in the service.

Guest speaker will be Dr. Frederick W. Helfer, pastor of the Christian Temple, Baltimore, Md.

Dulany, Doyl Scruggs, Betty Mills, and Lorraine McDonald. Added to the staff are Dewey Shurtlett, Dean Krueger, Dorsey Offutt, Audrey Hairston, and Margaret King, all members of the old NIH Biometrics Section.

Dr. Dorn, who has specialized in biometrics at NIH for the past 13 years, will continue to head the survey relating smoking habits to health in 200,000 veterans.

This study received national headlines several years ago when it established a relationship between heavy smoking and lung cancer. Similar statistical links are being explored between smoking and other diseases.