

NIH record



DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

September 22, 1958, Vol. X, No. 19

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

HAMSTERS TO PRODUCE "GUYS AND DOLLS"



"Guys and Dolls," the Hamster show scheduled for late November, gets under way as members of the production staff hold a conference. Left to right are Len Stittleman, co-director; Jack Robinson, business manager; Richard Lee, musical director; Bernie Finifter, co-director; Ruth Stevenson, assistant manager; and Paul Blank, production coordinator.

PHS SURVEY REVEALS U. S. HEALTH PATTERNS

The average woman visits a physician almost one and one-half times as often as does the average man, according to the latest report issued by the U. S. National Health Survey.

Conducted by the PHS under authorization of the 84th Congress, the survey is a continuing study of the extent of illness and disability in the population of the U. S. So far, PHS has issued reports on physician visits, dental care, disability, and injuries. The studies cover varying periods in the last six months of 1957.

The survey further revealed that dentists are visited with greater frequency by women than by men. Urban residents visit both physician and dentist more often than do farm residents.

During the last six months of 1957, about 25 million persons were

(See PHS Survey, Page 4)

DR. FREI HONORED BY BETHESDA GROUP

For the second consecutive year, an NIH physician has been honored by the Bethesda Junior Chamber of Commerce for outstanding community service. In a recent ceremony, Dr. Emil Frei, scientist in the General Medicine Branch, NCI, was presented with the Distinguished Service Award by Mr. Frank Hess, past president of the Bethesda JCC. Last year Dr. Stuart M. Sessions, Assistant Director of NCI, was similarly honored.

The award is presented each year to a man under age 36 who has distinguished himself on the professional and community levels. Dr. Frei was cited for his contributions to the field of cancer chemotherapy, particularly his work in combating leukemia in children. He is active in local PTA and church work, and participates in other community activities in the Bethesda-Chevy Chase area.

LARGE-SCALE ALASKAN NUTRITIONAL STUDY MADE

The first large-scale nutritional study of Alaskan Eskimos was recently completed by a team of food and nutrition experts under the Interdepartmental Committee on Nutrition and National Defense (ICNND). The committee receives administrative assistance from NIAMD and technical assistance from the PHS Arctic Health Research Center in Anchorage.

Approximately 10 percent of the total Alaskan population, including two battalions of the Alaskan National Guard, was surveyed. Studies on the components of the Eskimo diet, initiated two years ago by PHS, were incorporated into the program. Physical examinations and laboratory tests were made to establish relationships between Eskimo health and the native diet.

Relatively good health appears to be the rule among these people even though their systems contain lower levels of vitamins A and C and less hemoglobin than those of the average U. S. citizen.

Nutritionists were somewhat surprised by the absence of scurvy among Eskimos despite the scarcity of known sources of vitamin C in their diet. As might be expected, there was a rather high incidence of

(See Nutrition Study, Page 3)

Graduate School Registration Opens

Registration for the NIH-Dept. of Agriculture Graduate School will be held September 22 through 27 in room 13N-228 in Bldg. 10. From the 22d through the 26th, registration hours are 11:30 a.m. to 4:30 p.m. daily; on the 27th, from 9:00 a.m. to 4:00 p.m. Classes will begin the week of Sept. 30.

New Approaches Sought To Combat Antibiotic-Resistant Staph Infections

No. 214 in a Series



Staphylococcus organisms (magnified 2,000 times above) were named by a Scottish surgeon, Alexander Ogston. Since they appeared in clusters under his microscope, he called them staphylococci, meaning in Greek, "a bunch of grapes."

A growing awareness of the increase in lethal staphylococcus infections is leading to renewed efforts to combat these perplexing organisms, now reaching epidemic proportions in many hospitals.

Since the advent of penicillin and other potent antibiotics, the mortality rate due to infectious diseases has steadily decreased. As a result, basic research has almost ceased in many areas that must still be explored if science is to gain against antibiotic-resistant pathogens, such as staphylococcus. Extremely infectious, the organism causes impetigo and pyoderma in infants, mastitis and breast abscesses, surgical wound infections, osteomyelitis, and other infections superimposed on patients weakened by disease.

Reports from hospitals all over the country indicate that Staphylococcus aureus, the strain of staph significant in human disease, is a leading cause of death among hospital patients, especially infants and the very old.

At NIH, clinical studies of staphylococcus superimposed on other diseases, particularly cystic fibrosis, have been under way for the past four years. Related laboratory projects, first initiated in NIAID's Labo-

ratory of Clinical Investigations last January, are already producing significant results. Under the direction of Dr. Norman B. McCullough, Chief of the Laboratory of Bacterial Diseases, investigators are conducting basic research to determine staph's mechanism of disease production and development of resistance to antibiotics, as well as the organism's growth process and nutritional requirements.

In metabolic studies on cell nutrition, Dr. H. G. Steinman has successfully determined which of the amino acids produced by the staph are necessary for production of penicillinase, an enzyme that antagonizes the antimicrobial action of penicillin.

Other studies on the virulence of staphylococcus are being conducted by Dr. Elizabeth Verder of NIAID's Laboratory of Bacterial Diseases, in order to characterize different strains and to stabilize them for research purposes.

Additionally, many other investigators have been awarded grants by NIAID to study the therapeutic value of a number of known antibiotics against common strains of staph. Results of tests conducted recently by Dr. Maxwell Finland at the Boston City Hospital indicate that of four well-known antibiotics tested, erythromycin was the most successful. He also reported that a combination of erythromycin and tetracycline produced better results than either of the other two antimicrobials combined with tetracycline.

Investigators in this field feel that the increased interest in staphylococcus has basic and important implications for the entire field of medicine and public health.

In response to this national problem, Congress this year appropriated over a million dollars to PHS for the attack on staphylococcus. Most of these funds will be used to expand NIAID's grants program in this area. A portion of the appropriation was allotted to the PHS Communicable Disease Center in Atlanta, which will initiate research and control measures in State hospitals. Meetings of experts in many different fields have been held recently at NIH and in Atlanta to explore new approaches and develop recommendations for combating staph.

Publication Preview

The following manuscripts were received by the SRB Editorial Section between June 19 and June 25.

NCI

Banfield, W. G. Dense granule in elementary bodies of molluscum contagiosum.

Barrett, M. K. Some observations on the nature of the "antigen" in "tumor immunity."

Dalton, A. J. Golgi apparatus and secretion granules.

Fand, S. B.; Levine, H. J.; and Erwin, H. L. A reappraisal of the histochemical method for carbonic anhydrase.

Frei, E., III. The treatment of leukemia.

Gilliam, A. G. Geographic distribution and trends of leukemia in the United States.

Goldin, A.; Venditti, J. M.; Humphreys, S. R.; Shuster, L.; Darrow, R. A.; and Mantel, N. Advanced leukemia as a tool for chemotherapeutic studies.

Love, R. Interchange of ribonucleic acid between the nucleus and cytoplasm during mitosis of tumor cells.

Lundin, F. E., Jr., and Ross, H. Electrolyte studies in leprosy.

Nathan, D. G., and Berlin, N. I. Studies of the rate of production and life span of erythrocytes in acute leukemia.

Nathan, D. G.; Davidson, J. D.; and Berlin, N. I. The counting of barium carbonate in a liquid scintillation spectrometer.

Rall, D. P.; Stabenau, J. R.; and Zubrod, C. G. Distribution of drugs between blood and cerebrospinal fluid: Methods and basic considerations.

Show, R. K., and Gold, G. L. Jaundice associated with norethandrolone (Nilevar (R)) therapy.

Smith, F. Failure of homologous bone-marrow to induce specific immune reaction in lethally irradiated C₃H mice.

Stabenau, J. R.; Rall, D. P.; and Zubrod, C. G. Distribution of drugs between blood and cerebrospinal fluid: The effect of pH gradient.

Van Scott, E. J., and Ekel, T. M. Geometric relationships between the matrix of the hair bulb and its dermal papilla in normal and alopecia scalp.

Wellman, S. H., and Reed, F. E. Transport of radioiodide between the thyroid gland and blood in mice and rats.

Zubrod, C. G., and Rall, D. P. Distribution of drugs between blood and cerebrospinal fluid in the various vertebrate classes.

NHI

Cooperstein, I. L., and Hogben, C. A. M. Ionic transfer across the isolated frog large intestine.

Goodman, D. S., and Shafrit, E. The interaction of human low density lipoproteins with long-chain fatty acid anions.

Herman, E. C., Jr., and Wright, B. E. A 5' nucleotidase activated by ferrous-iron.

Orloff, J., and Davidson, D. G. The mechanism of potassium excretion in the chicken.

Sanders, R. J., and Morrow, A. G. The identification and quantification of left-to-right circulatory shunts: A new diagnostic method utilizing the inhalation of a radioactive gas, Kr⁸⁵.

Stadtman, E. R. The biosynthesis and degradation of riboflavin.

Vaughan, M., and Steinberg, D. Incorporation of amino acid analogues into crystalline proteins.

NIAID

Burch, T. A., and Reardon, L. Diagnosis of Trichomonas vaginalis vaginitis.

Burgdorfer, W. The possible role of ticks as vectors of leptospirae. II. Infection of the ixodid ticks, Dermacentor andersoni and Amblyomma maculatum, with Leptospira pomona.

Eagle, H., and Foley, G. E. Susceptibility of cultured human cells in anti-tumor agents.

Feder, N., and Sidman, R. L. Methods and principles of fixation by freeze-substitution.

Habel, K. Current status of immunoprophylaxis of rabies in man.

Jellison, W. L. Fleas and disease.

Rowe, W. P.; Hartley, J. W.; Brodsky, I.; and Huebner, R. J. Complement fixation with a mouse tumor virus (S.E.polyoma).

Rowe, W. P.; Hartley, J. W.; Roizman, B.; and Levy, H. B. Studies of a factor in adenovirus suspensions causing decreased adherence to glass of HeLa cells in tissue culture.

Utz, J. P., and Shelokov, A. I. Coxsackie B virus infection; presence of virus in blood, urine, and cerebrospinal fluid.

von Brand, T., and Tobie, E. J. Observation on the metabolism of the culture form of Trypanosoma congoense.

NIAMD

Fox, M. R. S., and Mickelsen, O. Salts mixtures for purified-type diets. I. Effect of salts in accelerating oxidative rancidity.

Friedman, S. Sustained flight in phormia (by a new method) and its effect on blood pH.

Holland, G. F.; Durant, R. C.; Friess, S. L.; and Witkop, B. Labilization of ester bonds in aminocyclitol derivatives. I. Derivatives of myo and scyllo inositol and of streptamine.

Lillie, R. D.; Weissbach, H. H.; and Glenner, G. G. On the experimental discharge of the gastric and intestinal argentaffin cells.

Rall, J. E.; Robbins, J.; and Federman, D. D. Methyl testosterone and the thyroid.

Stetten, D., Jr., and Mortimore, G. E. Carbohydrate metabolism.

Strominger, J. L.; Heppel, L. A.; and Maxwell, E. S. Nucleoside monophosphate kinases. I. Transphosphorylation between adenosine triphosphate and nucleoside monophosphates.

NIDR

Pugh, M. H., and Savchuck, W. B. Suggestions on the preparation of undecalcified bone for microradiography.

Zipkin, I.; Likins, R. C., and McClure, F. J. Deposition of fluoride, calcium and phosphorus in experimental low phosphorus rickets.

NIMH

Dittmann, A. T. Problems of reliability in observing and coding social interactions.

Isbell, H. Addiction to hypnotic and sedative drugs.

Kies, M. W., and Alvord, E. C. Jr. Encephalitogenic activity in guinea pigs of water-soluble protein fractions of nervous tissue.

McDonald, R. K. Problems in biological research.

NINDB

Agranoff, B. W.; Bradley, R. M.; and Brady, R. O. The enzymatic synthesis of inositol phosphatide.

Fuortes, M. G. F. Electrical activity of cells in the eye of limulus.

Gajdusek, D. C., and Zigas, V. Kuru.

Guth, L., and Frank, K. Restoration of diaphragmatic function following vagophrenic anastomosis.

Tower, D. B. The effects of 2-deoxyglucose on metabolism of slices of cerebral cortex incubated *in vitro*.

NIH RECORD

Published by

Scientific Reports Branch

Division of Research Services

National Institutes of Health

Room 212, Building 8

Bethesda 14, Maryland

OLiver 6-4000

Ext. 2125

NJH Spotlight



Alfred L. Bisnett

If you know any "figure filberts," as students of averages and other statistics are often called, then you have a pretty good insight into one-half of Larry Bisnett's personality. The other half is that of a warm, friendly, quietly enthusiastic individual and devoted father.

Recently promoted to Chief of the Records Processing Section of DRG, Larry has played a major part in the section's outstanding progress in processing NIH grants information. His responsibilities bring him into almost daily contact with every Institute.

Larry helped develop improved methods of handling the thousands of punched cards recording amounts and natures of all grants. For periodic reports, automatic IBM machines "read" the cards, then print out such items as total funds according to institution, codes showing where work is being done, and the grand total of all grant funds.

Only a few years ago, it took ten to twelve months to prepare the annual summary. Larry's knowledge of IBM tabulating and accounting machinery and statistical analysis helped to pare working time down to less than three months. His group's use of the IBM 407 unit accomplished this despite a 100-percent increase in grants in the last two years.

As far back as he can remember, Larry has had a passion for mathematics, science and statistics. When he came to DRG in February of 1957, he brought a background from a

NUTRITION STUDY Contd.

infections, including some active cases of tuberculosis, the leading cause of death among Eskimos.

Investigators from NIAMD who participated in the study were Dr. M. Silverman, who conducted folic acid deficiency tests, and Dr. E. M. Scott, who contributed a number of metabolic studies.

Dental researchers on the team found that Eskimos living closer to civilization have more tooth decay than those in isolated areas. In studying more than 700 members of the Alaskan National Guard, Dr. Albert L. Russell and Carl L. White of NIDR Epidemiology and Biometry Branch observed that dental caries is virtually nonexistent in individuals from primitive villages.

The committee under which this program operates was organized in 1954 to review and coordinate nutrition projects of U. S. military and technical missions, and to give technical assistance in countries receiving U. S. aid. Such assistance has included establishing nutrition programs in Korea, the Philippines, Iran, Pakistan, Turkey, and Libya. Presently serving on an ICNND survey team which is conducting epidemiological and biometric studies in Ethiopia are Drs. A. L. Russell and N. W. Littleton of NIDR.

wide range of occupations, including shipping clerk, mechanic, university instructor, and Air Force officer. This, added to his B.S. Degree from Sienna College and his Master's Degree in Economics from Catholic University, gives him a solid foundation for his statistical work.

Larry is a perfect example of a man whose hobby is closely related to his work. He likes nothing better than spending a few evenings a week studying economics or science. In addition to earning many of his credits toward his Ph.D. degree, he's taken several dozen Air University correspondence courses.

At home, Larry successfully blends his hobby into family life. He applies his planning ability to scheduling household chores and his studies so that he can spend as much time as possible with his wife, Ann Marie, and their four young daughters. Not long ago they moved into a new home in Hungerford Towne, in nearby Rockville. Now that the moving job is over, Larry looks forward to some extra time to spend with his family.

NIH DELEGATES ATTEND AFGE CONVENTION

Thomas J. Balzer, Laboratory of Infectious Diseases, NIAID, and Thomas Schrader, Plant Engineering Branch, DRS, attended the biennial convention of the American Federation of Government Employees, held in San Diego August 25 through 28. They were delegates from Lodge 1690, which represents AFGE members at NIH.

Four resolutions were presented from Lodge 1690, all of which were accepted by the convention.

PHS SURVEY Contd.

injured -- 9.8 percent in motor-vehicle accidents, and 40.3 in home accidents. In August 1957, approximately 17 million persons, or 10 percent of the population, had some type of chronic activity limitation.

The major device used in the survey is the nationwide health household interview. Skilled researchers, provided with carefully planned questions, collect data from individuals in the home, using established methods of population sampling.

Special surveys will collect information by means of direct examination of individuals to obtain information on heart disease, hypertension, arthritis and rheumatism, diabetes, visual defects, impaired hearing, dental conditions, pulmonary tuberculosis, and physical malformations and impairments.

The broad aim of the survey is to provide tools for improving health by supplying statistics to health agency directors, who today require information encompassing the detection and prevention of all diseases. Further aims extend to health education and the techniques of the behavioral sciences.

Statistics gathered in the survey will be utilized in many ways. Social security and vocational rehabilitation agencies can better predict the volume of total benefit payments for unemployment and disability; manpower resources may be estimated; voluntary hospital and medical insurance plans may predict their own development; and even commercial market analysis and production scheduling for drugs and appliances may be based on these findings.

NINDB BRAIN SCANNER TEXTBOOK PUBLISHED

A new book, describing the recently developed brain scanner and its use, has been authored by Drs. G. M. Shy, R. B. Bradley, and W. B. Matthews of the Medical Neurology Branch, NINDB. Entitled "External Collimation Detection of Intracranial Neoplasia with Unstable Nuclides," the book contains instructions for operating the device as well as for interpreting spectrometer readings. It was published by E. & S. Livingstone, Ltd., Edinburgh and London.

Beginning with a brief history of the field, the authors describe components of their equipment. Normal and abnormal patterns obtained with these techniques and various lesions that have been detected are discussed in detail.

These methods are based upon differential concentration of certain radioactive materials that can be detected by scanning the brain with large crystal detectors and high density collimators. Radioactivity patterns superimposed upon X-ray skull outlines relate tumor locations to bone structure reference points.

Rufus C. Brown Retires

Rufus C. Brown, Buildings Management Branch, DRS, will retire September 30. A mason and general mechanic, Mr. Brown has worked on the grounds and in the shops at NIH for 15 years. He is a native of Montgomery County and currently a resident of Bethesda.

NIH Scientists Speak At International Meeting On Germ-Free Research

Drs. Floyd S. Daft, NIAMD, and Willard H. Wright, NIAID, were among six internationally known scientists who presented papers at a symposium on germ-free animal research last month in Stockholm, Sweden. The symposium was presented at the VIIth International Congress for Microbiology - 1958.

Also participating in the symposium was Dr. Robert J. Fitzgerald, NIDR, who served on a guest panel that led discussions on germ-free studies in medical and dental research. Five other experts from the U. S., England, Sweden, and Japan also served on the panel.

Irving M. Matney Dies

Irving M. Matney, Plant Engineering Branch, DRS, died suddenly August 30 of a heart attack. He had been a tractor operator and truck driver with the Grounds Maintenance Section since 1955.

Information Offices Move

Two of NIH's information offices recently moved to new locations. The NHI staff, formerly in the Progress Bldg. on Wisconsin Ave., is now in Bg. 3, rooms 114, 116, 118, and 120, ext. 4236, and Bg. 10, room 7N-202, ext. 3607.

The NINDB Information Office now occupies rooms 100-108 in Bg. 8. Its phone numbers remain unchanged.

