Program Revised, Category Added, Guidelines Set

The NIH intramural program for visiting scientists has been revised and renamed the Visiting Program, following its reappraisal in the light of changing research needs and concepts.

Significant changes embodied in the revision include:
- Establishment of general guidelines limiting the growth of the program.
- Addition of a "Visiting Fellow" category, essentially for the training of recent postgraduates.
- Redefinition of the two previous categories, now termed "Visiting Associate" and "Visiting Scientist.
- Establishment of groups constituting review boards for each of the three categories.

Nominations for appointment will be initiated by the Institute, rather than the individual. The revision was approved by Dr. Shannon on January 26. No announcement of the program is (See PROGRAM, Page 2)

World Flu Specialists To Meet at NIH; 400 Expected

Approximately 400 virologists, epidemiologists, clinicians, and other specialists in influenza will participate in the International Symposium on Asian Influenza, to be held at NIH Wednesday through Friday of this week.

All sessions will be held in the CC auditorium. PHS Surgeon General Burney will be the first speaker at the Friday sessions, dealing with "The Role of Health Organizations in the Future."

The symposium is jointly sponsored by NIAID and the University of Southern California School of Medicine. Dr. Clayton G. Loesch, Dean of the U.S.C. School of Medicine, is Chairman of the Conference Committee.

The symposium will enable scientists of the U.S. and other countries to exchange information about the 1957 Asian flu outbreak and other pandemics.

Countries to be represented at the conference include England, Canada, Switzerland, Japan, Holland, and the U.S.S.R.

Budget Hearings Begin This Week; $400 Million Requested for 1961

Dr. Shannon, Institute Directors, and other immediate staff this week will begin testifying before the House of Representatives Subcommittee of the Committee on Appropriations in support of the NIH budget request for Fiscal Year 1961.

The request is for $400 million, exclusive of $25 million for research facilities construction grants. The NIH total is a part of the Public Health Service request for $765 million, included in the President's request for $3 1/2 billion for the Department of Health, Education, and Welfare.

Retirement Recalls Pioneering Days

The retirement of Harley G. Sargent, research technician at the NIAID Rocky Mountain Laboratory, Hamilton, Mont., serves as a reminder of the rapid growth of the nation and its medical research facilities.

Born 65 years ago in Seward, Neb., Mr. Sargent at the age of two journeyed with his family by wagon train to the Bitterroot Valley of Montana.

Mr. Sargent

Thirty-three years ago, when he joined the RML staff, it was located in an abandoned schoolhouse in the town of Canyon Creek. Within that span of little more than three decades, he has seen the Laboratory expand to its present modern and extensive quarters on the outskirts of Hamilton.

In the days when RML was working to conquer Rocky Mountain spotted fever, its scientists needed millions of infected ticks.

Job Opportunities Open for Stenos, Typists

The NIH Recruitment and Placement Section, Rm. 21, Bldg. 1, is anxious to interview persons who have passed the new Civil Service examination since November, 1959, may take the examination without appointment at 8:45 a.m., Monday through Friday, in Building 15-K. For further information about these positions, call Ext. 2404.
NIH Medical Board Appointed for 1960

The NIH Medical Board for calendar year 1960 was appointed last month by Dr. Shannon.

Representing the medical staff, the Medical Board is responsible for developing policies governing standards of medical care in the Clinical Center. All actions of the Board are advisory to the Director, and when approved by him are made operating policies of the CC.

Under the chairmanship of Dr. Joseph E. Rall, NIAMD, the Board is made up of the following members: Drs. Robert W. Berliner, NHI; Edward J. Driscoll, NIDR; Vernon Knight, NIAMD; William C. Jenkins, NIMH; G. Milton Shy, NINDS; Joseph J. Bunin, NIAMD; Robert R. Smith, Louis B. Thomas, and Charles G. Zubrod, NCI; Gilbert R. Christenson, Robert M. Farrier, Theodore F. Hibblish, Jack Masur, and George Z. Williams, CC.

NIAID Members Attend Seminar at Berkeley

Eight NIAID staff members attended a three-day seminar at the University of California at Berkeley, February 1-3, to discuss in closed session the subject of animal cells and viruses.

Participants from the laboratory of Cell Biology were Drs. Harry Eagle, Chief; Dr. James E. Darnell, Dr. Leon Levintow, Dr. Norman P. Salzman, and Dr. Wolfgang Joklik. Dr. Joklik is a Research Fellow from the John Curtin School of Medical Research, Australian National University, Canberra.

Also in attendance were Drs. Karl Habel, Chief of the Laboratory of Biology of Viruses, and Dr. Victor H. Haas of his staff.

Dr. Bill H. Hoyt of the Rocky Mountain Laboratory, Hamilton, Mont., also contributed to the sessions.

BUDGET

(Continued from Page 1)

Following is a breakdown of the request for appropriations:

<table>
<thead>
<tr>
<th>Appropriation</th>
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<td>NCI</td>
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* Exclusive of construction

The House Subcommittee is headed by Rep. John E. Fogarty of Rhode Island. Other members of the Subcommittee are Winfield K. Donot, Indiana; Fred Marshall, Minnesota; Melvin R. Laird, Wisconsin; and Elford A. Cederberg, Michigan.

PROGRAM

(Continued from Page 1)

anticipated outside of NIH.

The fundamental purpose and spirit of the program are:
1. To broaden the utility of the physical facilities and the intellectual environment of the NIH as a national research resource;
2. Within limits, to strengthen the mutually productive scientific relationships between similar centers throughout the world with that part of the scientific community represented by the NIH.

Dr. Ronald E. Scantlebury, Chief, Foreign Grants and Awards, is also Chief of the Visiting Program. Both programs are administratively within DRG.

A brochure explaining in detail all essential features of the Visiting Program can be obtained from Dr. Scantlebury's office, Building T-18, Room 112, Ext. 4335.

NIMH to Publish Research Journal

The Journal of Psychiatric Research is being established here, with Dr. Seymour S. Kety, Chief, Laboratory of Clinical Science, NIMH, as editor-in-chief. Associate editors are Drs. Joel Elkis, Chief of the Clinical Neuropharmacology Research Center, NIMH, and David A. Hamburg, Chief of the Adult Psychiatry Branch, NIMH.

The editors hope to obtain contributions relevant to psychiatric problems from a variety of sources in order to meet a need for the publication of research of high quality in the field of mental illness and mental health.

They will welcome original research reports of a theoretical nature, speculative but heuristic contributions, and constructive critical reviews in important areas.

Contributions may include studies of clinical application as well as research in processes basic to an understanding of the nervous system and of behavior.

The Journal will be issued quarterly. Members of the editorial board of 30 persons include scientists from England, Canada, and the United States.

Briton to Speak at Reed

Gen. Leonard D. Heaton, Surgeon General of the Army, has issued an invitation to the NIH staff to attend the third in the 1959-1960 series of medical meetings, to be held at 8 p.m., February 18, in Scantlebury auditorium at the Walter Reed Medical Center.

The principal speaker will be Lt. Gen. Sir Alexander Drummond, Director General of Army Medical Service of Great Britain, who will discuss military medical problems in Great Britain today.

RETIREE

(Continued from Page 1)

for the manufacture of spotted fever vaccine.

Mr. Sargent specialized in the collection of ticks and animals in the field, and in rearing ticks in the laboratory. His knowledge of their habits enabled him to discover several species of ticks and to provide new information about known species.

On a field assignment last summer, Mr. Sargent spent his 65th birthday in the Bitterroot Valley to which he had emigrated in the summer of 1896. His retirement was effective February 1.

Mr. and Mrs. Sargent plan to remain in Hamilton "to enjoy the beauty of the Bitterroot." And he hopes to spend some time hunting and fishing and riding the mountain trails that surround the valley.
Science Section

This four-page section, devoted chiefly to summaries of research findings that have been reported by scientists of the National Institutes of Health, is prepared with the cooperation of the Information Offices of the Institutes and Divisions of the National Institutes of Health.

Studies of Hemoglobin Provide New Data On Oxygenation

Basic research at the National Institute of Arthritis and Metabolic Diseases is leading to a clearer understanding of how heavy metals are bound to human hemoglobin. The research has important implications for understanding of the oxygenation process since the mechanisms governing heavy metal binding are believed to be similar to those governing oxygen binding.

One of the most vital of all physiological processes is the binding of oxygen by hemoglobin, a process which enables red blood cells to transport oxygen throughout the circulatory system. Basic studies of human hemoglobin, by Dr. Makio Murayama of the Laboratory of Pathology and Histochemistry of the National Institute of Arthritis and Metabolic Diseases, have now provided valuable new information about the mechanisms of this complex binding process. The studies were reported in the Journal of Biological Chemistry.

Heavy Metals Significant

The objective of the NIAMD research was to study the way in which hemoglobin binds heavy metals, such as mercury, arsenic, and copper. The binding takes place at eight heavy metal-binding sites on each of the hemoglobin molecules, and the mechanisms of this type of binding are believed to be analogous to those of oxygen binding, which takes place at four other binding sites on the hemoglobin molecule. Thus, a full understanding of heavy metal binding can help to explain the oxygenation process.

Heavy metal binding and oxygen binding can be looked upon as two sides of the same coin, since the binding sites are all close together in the molecule and influence one another.

Dr. Murayama's study of the eight heavy metal-binding sites has revealed that a cooperative interaction takes place among them. That is, once the first heavy metal ion attaches to a binding site, it becomes progressively easier for succeeding metal ions to attach to the remaining sites. The binding sites are inside the molecule rather than on its surface, and the process can be visualized as a "wedging apart" of the hemoglobin molecule.

As the wedging increases it becomes easier for additional metal ions to get inside the hemoglobin molecule, attach to its binding sites, and increase the wedging effect. This type of cooperative interaction is also known to exist at the four oxygen-binding sites. At the heavy metal sites the interactions are known as mercapto-mercapto interactions (mercury-sulfur interactions), and at the oxygen sites they are known as home-heme interactions.

The NIAMD scientist has been able to determine the physical "constants" that govern the mercapto-mercapto interactions and, for the first time, measure the degree of interaction. Such measurements provide a most useful adjunct to studies of oxygenation mechanisms.

The present study also suggests an interesting approach to the treatment of sickle cell disease, a disease caused by an abnormal type of hemoglobin known as S hemoglobin.

Molecules of S hemoglobin have an abnormal shape; when they are not carrying oxygen they appear to "stack up" inside the red blood cell, and the cell becomes twisted into its characteristic sickle shape. Such sickle shaped cells seriously impede blood flow in the capillary network and account for the pathology of the disease.

Unfortunately, the heavy metals are too toxic for this purpose. What is needed, therefore, is some innocuous material that would attach to the heavy metal-binding sites and keep the S hemoglobin molecule wedged apart.

Studies are being continued in an attempt to find a material that might accomplish this purpose.
Progress Shown in Research On Cell Culture Biosynthesis

Dr. Harry Eagle, Chief, Laboratory of Cell Biology, National Institute of Arthritis and Metabolic Diseases, last week delivered the National Institutes of Health Lecture on Biosynthesis in Human Cell Cultures. He recently summarized progress in research on the metabolism of amino acids in mammalian cell culture in an article in Science. Most of the extensive data presented in the publication, and only partially represented here, is derived from NIAID studies.

A number of cell lines from normal and malignant tissues have now been serially propagated. Cells and medium can be separately analyzed, balance experiments set up, metabolic processes examined, and corresponding enzymatic activities explored in cell-free extracts.

While eight amino acids suffice for nitrogen balance in man (Rose), every cell culture so far examined has required at least thirteen or more amino acids. Several possible explanations may be advanced. Experiments with fresh first culture passage monkey kidney cells have shown that this additional requirement is not due to loss of biosynthesis mechanisms in the course of prolonged growth; but Dr. Eagle points out that these experiments do not exclude the possibility that keto-amino enoids are lost from the cells within the first few hours after their removal from the animal. Cells in culture have a rapid growth characteristic which exceeds the capacity for biosynthesis of the additionally needed nutrients.

Synthesis Capacity Limited

Although glutamic acid at physiological levels usually does not substitute for glutamine in these cell cultures, cells do have a limited capacity to synthesize glutamine. As shown by Dr. Eagle, the amount of glutamine-synthesizing enzyme is greatly enhanced by adaptation to high levels of glutamic acid, after which the cells may grow at low levels of glutamic acid for long periods and perhaps indefinitely. As an exception to the general rule, monkey kidney cells in primary passage can use glutamic acid as the nitrogen source and grow efficiently.

Along with glutamine, arginine, histidine, and tyrosine, cultured cells rigorously require cyst(e)ine. The report in Science draws data from a paper in preparation (Eagle, Oyama, Fies, Fleischman) in which Dr. Eagle and his colleagues in the Laboratory of Cell Biology have demonstrated that human cells have several sources for the provision of cyst(e)ine. One of these is de novo synthesis. Cystine is one of 3 compounds (inorganic sulfate is another) which are required by certain cells despite the fact that they can be synthesized in amounts which should suffice for growth.

Another major source for the provision of cystine in cell cultures is the release from the serum protein of the medium of half-cystine residues which are bound to -SH groups, and which can be dissociated by a number of reducing sulfur compounds.

The biosynthesis of the "non-essential" amino acids is also under investigation by the NIAID Laboratory of Cell Biology. The specific source of the alpha-amino nitrogen of the 8 nutritionally non-essential amino acids is one of the facets now under study, as well as their metabolic interrelationships.

Serine Loss Major Factor

Small cell populations have been found to have special nutritional requirements. The major factor involved in the anomalous requirement for a non-essential amino acid, serine, by small cell populations is the loss of serine from the cell pool into the medium at a rate which exceeds the biosynthetic capacity of the cell. Dr. Eagle further discusses the amino acid pool. All cultured human cells thus far examined concentrate amino acids from the medium. The composition of the pool in culture is essentially similar to that in animal tissues. Glutathione, taurine, glutamine, and alanine are present in largest amounts and together constitute approximately 60 percent of the total pool amino acids. It has been possible to determine for a number of specific amino acids the average intracellular concentrations necessary for the initiation of protein synthesis and cell growth.

Serum Protein Provides Compound

The serum protein which is necessary for the growth of most human and animal cells, over and above the 28 defined growth factors, is not itself used as an important source of amino acids. Studies now in press have shown that the protein can actually be used by cells, with the primary function being the provision of small molecular weight compounds either bound to the protein or formed by its degradation.

Although the bulk of the medium has been employed successfully for the cultivation of cells directly from the animal host, there is no information as to the proportion of cells which grow out, or as to the additional growth factors which would be required for maximal efficiency of cloning. Until such cloning can be achieved with essentially 100 percent efficiency, the identification of cell cultures, as for example, "liver," "lung," or "bone marrow" is suspect. Dr. Eagle further notes that specialized organ functions are conspicuously absent in almost all seri­ally propagated dispersed cell cultures. It remains to be determined whether this reflects incorrect identification of the cells, or an irreversible loss of their biosynthetic capacities, absence from the environment of necessary precursors or cofactors, or the fact that cellular organization and interaction are essential to those specialized functions.

Amino Acids Important

An understanding of metabolism of essential amino acids and of protein turnover in the cultured cell, outlined in the Science report, has permitted studies of the role of amino acids in the biosynthesis of poliovirus. Dr. Eagle relates data from several papers in press or recently published by his colleagues in the Laboratory of Cell Biology which describe progress in this area.

An early study left open the question as to whether the viral protein was formed from the amino acid pool of the cell, whether the cells utilized their own protein for viral synthesis, or whether these two possibilities were the same, in the sense that cell protein turnover could supply the free amino acids. Recent observations indicate that the synthesis of poliovirus by the HeLa cell requires the presence of a full complement of amino acids in the pool.

In contrast to the results obtained in large cell populations, when a relatively small number of cells were placed in a large volume of medium containing only glucose, glutamine, and salts, the amount of virus formed per cell was strikingly reduced. In this situation there is rapid loss of amino acids from the cell pool; and the capacity of the cell to form virus was restored by the addition of a full complement of amino acids to the medium.

It is clear that optimal poliovirus synthesis by the HeLa cell requires the presence of free amino acids in the pool, and recent experiments with labeled amino acids and purified virus (Darnel and Levintow) have unequivocally shown that these amino acids are used in the synthesis of viral protein, rather than host protein.
Parainfluenza 3 Relationship to Human Virus Indicated

Parainfluenza 3, a virus closely related to a common human viral agent, has been isolated from cattle with the respiratory disease known as shipping fever, adding weight to the thesis that viruses may be an important cause of this infection.

From 1957 through 1959 in seven separate outbreaks of respiratory disease in calves and older cattle, thirteen isolations of this agent were made from nasal secretions and diseased lungs of the sick animals and from the nasal secretions of three apparently normal calves. The viruses were isolated on tissue culture of bovine embryonic kidney and were identified by the hemadsorption-inhibition technique. Although serological neutralization tests were done, hemagglutination-inhibition was found to be essentially sensitive and was therefore used extensively throughout the study.

Report Published

A report on this research appears in the current issue of the "American Journal of Hygiene." Co-authors are Drs. F. R. Abbamonte and R. J. Heubner, Laboratory of Infectious Diseases, National Institutes of Allergy and Infectious Diseases; Drs. J. L. Byrne, L. J. Poleo, and F. R. Lucas, University of Maryland Department of Veterinary Science and the Maryland Livestock Sanitary Service at College Park; and Dr. R. L. Watson, Communicable Disease Center, Atlanta.

Prior to recovery of this virus from cattle, a closely related virus, which is apparently common in humans, was shown to be responsible for respiratory illnesses in infants and young children. In a study published last year, parainfluenza 3 virus was shown to have caused 50 percent more acute respiratory disease in hospitalized children than the virus of Asian influenza.

Useful as Models

The authors point out that the study of respiratory disease in cattle is of great importance not only to the livestock industry, which must cope with the economic aspects of animal disease and death due to such outbreaks as shipping fever, but to those interested in human viral disease.

The investigators believe that respiratory diseases in cattle can serve as useful models of respiratory disease in humans. Rates of infection and the influence of the immunological and physiological state on these rates may be studied, as may the relationship of clinical infection to clinically apparent infection, seasonal prevalence of disease, and physical factors concerned with the spread of respiratory infections. With a bovine population it is also possible to do detailed studies on the use of vaccines, assessing their usefulness in the control of respiratory disease.

With regard to the isolation of virus from apparently normal calves, the investigators note that their current studies do not establish whether these animals became infected by exposure to cattle or to humans. Parainfluenza 3 spreads readily from person to person so that bovine or other animal sources are unnecessary to explain frequent human infections. However, the possibility that domestic animals may serve as reservoirs of common human viruses requires careful study.

Antibiotics Tested For Oral Effects

One of the continuing research programs of the National Institute of Dental Research is concerned with the testing of antibiotics and other agents which may be used for the control of calculus formation, caries and other oral conditions.

Scientists at this Institute recently completed studies in which chloramphenicol and chlortetracycline, both broad spectrum antibiotics, were tested for their effect on the development of dental calculus and caries in rats. The drugs were added at a level of 0.0005 percent to one diet known to promote caries development and to another diet known to accelerate calculus deposition. Calculus severity ratings were then compared with control groups receiving the same diets without antibiotics.

The results indicated that neither antibiotic influenced calculus formation. Both, however, demonstrated significant caries reduction in the test animals, with chlortetracycline showing the more marked effect.

These results complement earlier NIDR findings with germfree animals where it was demonstrated that calculus-like deposits may occur in the absence of oral bacteria while dental decay does not.

In the current study further significant findings were made when samples of the crude and ashed calcium deposits from the animals were analyzed and subjected to electron and x-ray diffraction. The mineral phase was identified as hydroxyapatite; thus the dental deposits in the rat may be considered analogous to oral calculus of humans.

Data from this cooperative study by Drs. R. J. Fitzgerald, H. V. Jordan, D. B. Scott and Mr. H. G. McCann, representing three Laboratories of NIDR, will provide research workers with a useful tool for the study of deposition and control of dental calculus under experimental conditions. This work will be published in the Archives of Oral Biology.
New Technique Speeds Nerve Impulses

A new technique that speeds nerve impulses by short-circuiting internal resistance has been devised by National Institute of Neurological Diseases and Blindness investigators.

The normal velocity of transmission of nerve impulses in the squid axon has been enormously increased through the use of low surface-resistance wires threaded along the interior of nerve fibers. By this technique, the nerve's longitudinal electrical resistance is short-circuited and conduction rates may become almost infinite over the short region occupied by the wire.

The technique also provides an example of an almost perfect "space clamp." An ideally space-clamped response recorded from one microelectrode tip and from a second, larger potential change may occur, where the potential is the same at every point at any instant.

The important new finding was reported by Dr. J. L. del Castillo, formerly of the NINDS Electroencephalography Branch, and Dr. J. W. Moore of the NINDS Laboratory of Biophysics, in the Journal of Physiology.

Expectations Confirmed

Previous experiments have shown that small changes in the speed of nerve impulse transmission are observed when the external longitudinal resistance is varied. However, much greater impulse transmission velocity was expected and found when the internal resistance of the nerve was reduced by the insertion of a wire.

Giant motor-nerve fibers dissected from the squid were placed in a horizontal cell, and microelectrodes for measuring action potentials were inserted into the membrane. The transmission speed between these microelectrodes agreed with speeds reported by other studies.

However, when an axial platinum wire electrode was inserted, a marked increase in conduction velocity resulted. In some cases, the time difference between action potentials recorded by two microelectrode tips was reduced from a thousandth of a second to a few milliseconds of a second.

As was expected, the increase in conduction velocity was inversely related to the internal resistance of the electrodes, so that wires of resistances as low as 20 ohm centimeters, the conduction velocity was 250 times greater than normal over short lengths (1.5 cm.) of axon.

The investigators also concluded that the space clamp achieved by using electrodes of this resistance approaches the ideal.

Studies Show Mechanism of MER-29 in Lowering of Blood Cholesterol

Because the body synthesizes large amounts of cholesterol, actually more than is provided by the diet, the possibility of lowering serum cholesterol levels by inhibiting the body's own production of cholesterol through drug treatment has attracted increasing attention over the past few years.

A number of pharmaceutical companies are conducting large-scale screening programs in a search for non-toxic inhibitors of cholesterol synthesis. One of the most promising compounds in this area, MER-29, was shown by investigators at the William S. Merrell Company (Thomas Blohm and Robert MacKenzie) to be effective in experimental animals, and preliminary studies in several clinics for the control of hypercholesterolemia have shown it to be effective in man without any major toxic effects.

Reaction Pinpointed

Recent findings by investigators at National Heart Institute and National Institute of Arthritis and Metabolic Diseases have pinpointed the reaction blocked by the drug. This appears to be the very last step in the complex pattern of reactions by which the cholesterol molecule is formed.

The NIH investigators observed that the sterol material in the livers of rats treated with MER-29 had properties that differed subtly, but definitely, from those of cholesterol, which constitutes the major lipid in normal mammals. These properties led to the isolation of large amounts of desmosterol, a compound resembling cholesterol in almost every detail of structure but lacking two hydrogen atoms in one position in the molecule.

The investigators injected radioactive acetate into animals treated with MER-29 and found that most of the radioactivity accumulated in desmosterol rather than in cholesterol. Clinical studies showed that desmosterol accumulates in high concentrations in the serum of treated patients.

Conversion Blocked

Published in a 1960 issue of the Journal of Research Communications, these and other findings permitted the conclusion that MER-29 exerts its effects on the cholesterol levels in man by blocking conversion of desmosterol to cholesterol. The findings also help to elucidate the process of normal cholesterol biosynthesis in man by providing factual evidence to support the assumption that desmosterol is a necessary intermediate in this process.

The biologic role of desmosterol with respect to its metabolic function and conduction through the reaction, the investigators suggest. Information thus gained might be pertinent to the safe long-term use of drugs, such as MER-29, which may lead to the pile-up of compounds normally present in only very low concentrations.

Synthesis of MER-29 was announced by Frank Palopoli and his co-workers at the William S. Merrell Company in Cincinnati in 1958. Its effect in lowering serum cholesterol in rats was announced by Thomas Blohm and Robert MacKenzie of the same pharmaceutical concern in 1969. MER-29, also called "triparanol," was judged available for clinical research by the William S. Merrell Company.

The NIH studies were conducted by Drs. Joel Avigan and Daniel Steinberg of the National Heart Institute and Mr. Malcolm J. Parkinson and Dr. Ruth S. Taylor, Benjamin E. Carroll, and J. William Lloyd, of the National Cancer Institute's Field Investigations and Demonstrations Branch, and Dr. Ruth S. Taylor, Benjamin E. Carroll, and J. William Lloyd, of the National Institute of Arthritis and Metabolic Diseases.

Gas Chromatography Detecting System Developed in NHI

For maximum usefulness as an analytical tool in the biologic sciences, the principle of gas chromatography as introduced from England has required the design and incorporation of more sensitive equipment and versatile systems for detecting the constituents of complex samples once the chromatograph had separated them.

Investigators in the National Heart Institute Laboratory of Technical Development have attacked this problem on several fronts with notable success, designing and developing detecting systems which permit extension of gas chromatography to many new research areas.

Equipment Described

New detecting equipment utilizing variations or measured sound velocity was described by Frank Nobile at a conference of the North American Electrical Techniques in Medicine and Biology recently held in Philadelphia under sponsorship of the Institute of Radio Engineers, the Instrument Society of America, and the American Institute of Electrical Engineers.

The velocity of sound passing through a gas varies according to the physical characteristics of the gas, such as its molecular weight. Mr. Nobile pointed out. With the equipment described, voltage is applied to a sound transmitting crystal at one end of a tube containing the sample and recorded from a receiving crystal at the other end of the tube. Phase differences, induced by particular samples, between the two voltages are sufficiently definitive to identify analytically useful characteristics for the principle.

The actual value of the sound velocity principle as utilized in the equipment Mr. Nobile described remains to be demonstrated in applied research.

Cancer Studies in Nuns, Married Women, Reveal Differences

Previous studies have suggested that women in religious orders have a higher risk of developing cancer of the breast and a lower risk of cancer of the uterus than their married counterparts. Dr. Ruth S. Taylor, Benjamin E. Carroll, and J. William Lloyd, of the National Cancer Institute's Field Investigations and Demonstrations Branch, have reported results of a study comparing mortality among three orders of Roman Catholic nuns with that of a group of women in the general population of similar age and background, with particular reference to cancer.

The study was designed to detect any differences that might be attributed to the single as contrasted to the married state, and to obtain definitive information concerning total cancer and some of the major causes of death other than cancer.

The findings of the present study with respect to breast cancer are in general agreement with the findings of previous studies, all of which indicate that single women have a lower risk of mortality from breast cancer early in life, then increasingly higher rates, with a lifetime rate that is much higher than that of married women. The evidence indicates that the difference is due to a deficiency in the rate of cancer of the uterine cervix among single women.

The Sisters showed lower total cancer mortality than did the controls between the ages of 20 and 59, higher rates above that age, and total experience about the same. They showed a much higher mortality from cancer of the cervix than did the controls, the highest risk occurring between the ages of 20 and 29. In mortality from cardiovascular-renal disease, the Sisters showed more stable experience than did the controls, particularly after age 50.

These results were summarized in a recent issue of Cancer.
Radiation Belt Expert
To Speak at Luncheon

Dr. James A. Van Allen, dis­

coverer of the radiation belts in

space that now bear his name, will

be the luncheon speaker at the

Fifth Annual Engineers, Scientists

and Architects Day program, to

be held at the President's Hotel in

Washington, February 25. Dr. Van

Allen will speak on "The Radia­

tion Environment of the Earth."

The five-hour program will begin

at 9:30 a.m. with an open discus­

sion among four leaders in the

fields of science, engineering, and

architecture.

Tickets, which include the lun­

cheon, are $5.00, and may be ob­

tained by calling J. C. Kinsey at

Vitro Laboratories, Silver Spring,

Md. 2-7200, Ext. 371-2.

Research Grants Makes
Two Appointments

Two new appointments were

recently announced in DRG.

Steve Remias has been appointed

Chief, Statistical Processing Sec­

tion, and Analysis Branch, DRG. He

joined DRG on February 1.

Mr. Remias transferred from

the Office of the Surgeon General

of the Air Force, where he was De­

puty Chief of the Biotronics Di­

vision. Prior to that assignment

he was a Public Health analyst

with the Bureau of Medical Ser­

vices, PHS.

Dr. Joseph V. Michalski will join

DRG March 1 as Assistant Chief

for the Biological Sciences Re­

search Group, Research Grants Re­

view Branch. He will be Project

Review Officer and Coordinator for

the eight study sections in the

group.

Dr. Michalski is presently a

Public Health Research Program

analyst for the Extramural Pro­

grams Branch of NIAID. Before

coming to NIH in 1958 he served

for two years as Chief of the Med­

ical Museum Laboratory, Armed

Forces Institute of Pathology.

Dr. Curreri Appointed
To Cancer Council

Dr. Anthony R. Curreri, Profes­

sor of Surgery at the University of

Wisconsin Medical School and

Director of the University's Can­

cer Research Hospital, has been

appointed a member of the Na­

tional Advisory Cancer Council.

Dr. Curreri's term of office, which

began on January 1, 1962, will

extend to September 30, 1963.

This appointment fills the vac­

ancy created by the resignation of

Dr. Charles A. Evans, Professor

of Microbiology, University of

Washington School of Medicine, Seattle.

RESEARCH CONDUCTED IN VIETNAM

Dr. Albert L. Russell, NIDR epidemiologist, conducts a dental examination under the curious eye of a South Vietnam soldier in a mountain village near Dalat. Dr. Russell, Chief of the Epidemiology and Biometry Branch, and Dr. Ernest C. Leatherwood, also of NIDR, recently returned from two months in Vietnam where they served as members of a special survey team sponsored by the Interdepartmental Committee on Nutrition for National Defense. They examined approximately 3,700 Vietnamese to record the status of oral disease in that country. Data collected on the incidence and severity of dental caries and periodontal disease in Vietnam will appear in an ICNND report late in 1960, and will complement similar epidemiological data collected during surveys in India, Alaska, Ethiopia, Peru, and Ecuador.

Training Committee
For Microbiology
Established Here

A Microbiology Training
Committee has been established in
DGMS following approval by Sur­
geon General Leroy E. Burney.

The committee, composed of ex­

perts representing the different

specialties of microbiology, held
its first meeting at NIH on Janu­
ary 11.

Under the chairmanship of Dr. Morris F. Shafer, Chairman, Depart­
ment of Microbiology, Tulane University School of Medicine, the

committee will serve to review training grant applications in

microbiology and related fields. It

will function under Dr. G. Halsey
Hunt, Chief, DGMS, and Dr.
Frederick L. Stone, Assistant Di­
vision Chief and Chief of the Re­

search Training Branch. Dr. Mar­

garet Carlson will be Executive

Secretary.

The microbiology program is de­

signed to support training at pre­
doctoral and postdoctoral levels in

medical schools, schools of public

health, veterinary schools, other

recognized graduate schools, re­

search institutions, and hospitals,
in the basic aspects of microbiol­

ogy, bacteriology and virology.

Included will be such areas as

microbial genetics, cellular physi­

ology, and cellular metabolism.

The program seeks to provide

a basis for the development of

senior members of departments in

various fields of academic medi­
cine who will teach or carry out

research work in health-oriented

fields.

Members of the Committee in­
clude: Dr. George W. Kidder, Am­
herst College; Dr. Charles L. Wiss­
emann, Jr., University of Mary­
lund; Dr. Orville Wyse, University

of Texas; Dr. Alan W. Bernheimer,

New York University College of

Medicine; Dr. S. Edward Sulkin,

Southwestern Medical School, Uni­

versity of Texas; Dr. Ralph Emer­
son, University of California; Dr.
A. F. Rasmussen, Jr., University
of California Medical Center; and

Dr. P. W. Wilson, College of Agri­
dulture, University of Wisconsin.

Following its review of training

applications, the Committee will

make appropriate recommendations
to the National Advisory Health

Council.

Local AFGE Members
Attend Banquet

Twelve members of NIH Lodge
1690, American Federation of

Government Employees, attended

the Annual Civil Service Anniver­
sary banquet January 16, in the

main ballroom of the Willard Ho­
tel. The banquet is sponsored by

the AFGE each year by the AFGE.

Barbara Bates Gunderson, Civil

Service Commissioner, acted as

master of ceremonies. Speakers

included Senate Majority Leader

Lyndon Johnson and Veterans Ad­

ministrator Sumner Whittier, a

member of the AFGE.

Dr. Archie Thompson Retires

Archie R. Thompson, a labora­
tory animal caretaker in the Labo­

ratory of Biology, NCI, retired at

the end of December. He came
to NIH in 1947, and twice during

his Government career received an

Outstanding efficiency rating. Mr.
Thompson is a native and resident

of Gathersburg, Md.

Bank Hours Extended

The NIH Branch of the Bank of
Bethesda, in the CC, will extend its banking hours on Civil Service paydays, starting February 16.

Payday hours will be 9 a.m.
to 4 p.m. Banking hours on Wed­

day following each payday will

be 11 a.m. to 2 p.m. Otherwise, the bank is open from 9 a.m. to 2 p.m., Mon­
day through Friday.

Miss Pilgren Dies

Elizabeth Pilgren, research tech­

nician with the Laboratory of Bac­
terial Diseases, NIAID, died on
January 22 following surgery.

Miss Pilgren came to NIH in
1943 and had worked in infectious

diseases research from that time

until her death. She was a native
of Washington, D. C., and lived in
Bethesda.
Though the office lights go out at 5 p.m. and most of the staff leaves the reservation, NIH is active throughout the night. From left to right, starting at the top: Cars bring visitors to CC patients, and window lights mean cleaners are busy, while in one of the laboratory buildings a scientist continues an experiment. A nurse on night duty brings medication to patients on her ward, and in the CC gymnasium a group of employees learns how to stay slim. The housecleaning crew cleans the floors at night, and the guards patrol the grounds at hourly intervals until morning.

All photos, except that of the nurse, by Jerry Hecht, NIH.