Dr. Kenneth Cole Has Silver and Gold Medal Named in His Honor

Dr. Kenneth S. Cole, internation- tionally known NINDS scientist who is widely considered to be the "father of membrane biophysics," has had a silver and gold medal named in his honor.

The medal will be given annually by the Membrane Section of the Biophysical Society. It will go to scientists making an outstanding contribution to the study of cell membranes.

Gets Honorary Medal

Dr. Cole was presented with a honorary medal at the Biophysics Society meeting held in Columbus, Ohio, by Dr. Walter Woodbury, a University of Washington (Seattle) biophysicist who organized the Society's Section on Membranes 4 years ago.

The first recipient of the Cole award, Dr. David E. Goldman, professor of biophysics at the Medical College of Pennsylvania, received the medal at the same ceremony.

Dr. Goldman is credited with devising an equation which is vital to membrane research.

Honored 3 Times

The Cole award is one of three major honors bestowed on Dr. Cole within a year. In November 1972, he was formally admitted as a Foreign Member of the Royal Society of London at its 312th anniversary meeting. Only a few Americans have received this honor.

In January of this year, a book was dedicated to him entitled

(See COLE MEDAL, Page 11)

Dr. Robert W. Berliner, Deputy Director for Science, recently received honorary doctor of science degree during commencement exercises at Yale University and the Medical College of Wisconsin.

At Yale University, his alma mater, on June 4, Dr. Berliner was praised for developing his own technology "for observing the transport of chemical substances across the membranes of living cells."

The citation also notes his creation of "elegant models, of great precision, which permit us to understand the mechanisms in kidney disease."

For this outstanding contribution and in appreciation of his role as "the Nation's leading statesman in biomedical science," Yale conferred the honorary degree upon Dr. Berliner.

Earlier, on May 27, the Medical College of Wisconsin presented the honorary doctor of science degree to Dr. Berliner for his contributions to renal physiology, his role as teacher and research scientist, and his expert guidance as a research administrator.

In the Oval Office of the White House, President Nixon meets with HEW Secretary Caspar W. Weinberger, the newly-appointed NIH Director.

Dr. Robert W. Berliner, Deputy Director for Science since 1969, announced June 18 he will accept the position of Dean of the Yale University Medical School effective in September.

Dr. Berliner said, "Despite strong ties of institutional loyalty and bonds of personal friendships developed over the 22 years that I have been at NIH, I have come to the difficult conclusion that I should accept the position of Dean of the Yale Medical School."

He added, "I can hardly express my affection for this institution, my pride in its stature and accomplishments, and my hopes for its continuing vigor and health."

He noted that Yale University, from which he received his undergraduate degree in 1936, "shares with NIH an important claim upon my loyalties and affections."

In announcing his decision, Dr. Berliner expressed his "wholehearted support" for Dr. Robert S. Stone, who was sworn in as Director of NIH May 29. "I have confidence in his ability to provide NIH with the leadership and strengths that it requires to emerge from a period of stress with renewed emphasis on quality and undiminished excellence."

Dr. Berliner came to NIH in 1960 as chief of the Laboratory of (See Dr. BERLINER, Page 8)
Helen Lucye is Retiring; With DDH for 21 Years

Dr. Weisskopf to Give Holiday Safety Message On Thursday, June 28

Mrs. Lucye participated in dental research studies in the use of topical fluorides in several states.

Helen Sheary Lucye, a public health advisor in the Preventive Practices Branch, Division of Dental Health, BHME, is retiring after a 21-year career with the division.

Much of Mrs. Lucye's work with the PHS was conducted in the field. Starting in 1959, she played a prominent part in the division's project on the chronically ill and the aged in Kansas City, Mo.

In her spare time, Mrs. Lucye devised ways to make toothbrushes easier to handle by patients with poor hand closure. She also trained dental hygiene students in clinical and home care procedures for the chronically ill and home-bound patient.

Prior to Federal employment, Mrs. Lucye was a dental hygienist in private practice and a dental health educator in the public schools of her home town, Shamokin, Pa.

For 2 years, 1957-58, she was an associate professor at the School of Dental Hygiene, Broome Technical Community College, Binghamton, N.Y.

Mrs. Lucye received a certificate from the School of Oral Hygiene, Temple University, and earned a B.S. from Bloomsburg (Pa.) State College.

Update Form Designating Order of Beneficiaries

"Must I designate a beneficiary to make sure my survivors will receive any benefits to which they are entitled should I die while Federally employed?"

The answer to this question is generally "No," says the Employee Relations and Recognition Branch, OPM.

Usually, the payable order for the regular and optional Federal Employees Group Life Insurance, Civil Service Commission retirement, and unpaid compensation—which includes unused annual leave, salary, unconverted sick leave, travel, awards—is:

Pay Order Explained
1) Widow or widower.
2) If neither of the above, to the child or children, in equal shares, with the share of any deceased child distributed among the descendants of that child.
3) If none of the above, to the parents in equal shares or the entire amount to the surviving parent.
4) If none of the above, to the executor or administrator of the estate.
5) If none of the above, to the next of kin as determined under the laws of the state in which the employee was domiciled.

Forms in Personnel Offices

A beneficiary on retirement fund is for lump-sum benefit purposes only.

Employees who wish to depart from the order of precedence or to change a previous designation should secure a "Designation of Beneficiary" form from their B/L/D personnel office.

Learning without thinking is useless. Thinking without learning is dangerous. —Confucius.
James G. Hill, Man of Many 'Firsts,' Named Mid-Career Fellow at Princeton

The first employee of the National Eye Institute will soon be the first NIH participant in an educational program for mid-career public officials at Princeton University.

James G. Hill, executive officer of the National Eye Institute, has been selected as a Mid-Career Fellow in the Woodrow Wilson School of Public and International Affairs at Princeton for the coming academic year.

The non-degree program at the University is aimed at improving public service through educational development and advancing the professions of public officials at mid-career levels.

Each prospective Fellow first makes a formal application to Princeton, discussing his career, accomplishments, future plans, and how the fellowship could contribute to those plans.

The applicant's agency and department must endorse the application, but final selection is made by Princeton.

For the 1973-74 academic year, 14 Fellows—all in Federal service—have been admitted. In addition to Mr. Hill, two other HEW employees were selected.

The year in residence includes course work, writing, and research as well as seminars and workshops.

Designs Own Program

"With the aid of a senior faculty advisor, each Fellow designs an individualized program that can range from total course work to writing a book," Mr. Hill explained.

As for his own plans, he said, "Primarily I want to write about how the fellowship could contribute to those plans."

The year in residence includes course work, writing, and research as well as seminars and workshops.

Mr. Hill hopes, after two semesters at Princeton, to return to work at HEW in the health field.

He also hopes to attend a seminar on Delivery and Financing of Health Care and take courses in economics.

Mr. Hill's plans for the future are not definite, but he emphasized, "I would like to assume a position of greater responsibility, one that will make use of my experience plus additional knowledge gained at Princeton."

Mr. Hill said he would like to return to the health field within HEW. He has a strong interest in national health insurance and might like to become involved in that area.

 Asked how he felt about leaving NIH and returning to academic life, Mr. Hill explained, "It is easier for me to leave because NIH is far more like a university than other parts of HEW. But it may be harder to return."

Before coming to NIH, Mr. Hill worked at the National Library of Medicine as budget officer, financial management officer, and assistant executive officer. He also served as a grants and management specialist in the National Cancer Institute after completing the NIH Management Intern Program in 1964.

Previously, he served as a lieutenant in the U.S. Navy.

Mr. Hill graduated from Syracuse University in 1958 with an A.B. in English. He has taken graduate courses in public administration at both American and George Washington Universities.

An exhibit on Medicine of the Civil War is being shown in the main lobby of the National Library of Medicine through Sept. 28. The exhibit includes numerous photographs and drawings providing documentary evidence of the extreme problems faced by military personnel during the Civil War. Also on display are surgeons' reports, bones fractured by musket fire, field surgical kits, and trephining instruments.

Prepubs for Optional FEGLI Life Insurance Reduced for All Ages

Premium rates for employees covered by $10,000 optional life insurance under the Federal Employees' Group Life Insurance Program have been reduced.

This reduction, announced by the Civil Service Commission, will be reflected in July 31 pay checks.

The old and new premium rates for optional life insurance, based on the employee's age group, are:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Present</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under age 35</td>
<td>$1.30</td>
<td>$1.26</td>
</tr>
<tr>
<td>35 to 39</td>
<td>1.70</td>
<td>1.60</td>
</tr>
<tr>
<td>40 to 44</td>
<td>2.40</td>
<td>2.30</td>
</tr>
<tr>
<td>45 to 49</td>
<td>3.60</td>
<td>3.50</td>
</tr>
<tr>
<td>50 to 54</td>
<td>5.60</td>
<td>5.50</td>
</tr>
<tr>
<td>55 to 59</td>
<td>7.60</td>
<td>7.50</td>
</tr>
<tr>
<td>60 and over</td>
<td>10.00</td>
<td>10.00</td>
</tr>
</tbody>
</table>

An employee who declined regular and/or optional life insurance may cancel his waiver and become insured at any time if the waiver has been in force for at least one year, if the employee is under age 50, and if he furnishes satisfactory evidence of good health.

B/D personnel offices will answer questions on regular and optional life insurance.

Mr. Hill hopes, after two semesters at Princeton, to return to work at HEW in the health field.

He also hopes to attend a seminar on Delivery and Financing of Health Care and take courses in economics.

Mr. Hill's plans for the future are not definite, but he emphasized, "I would like to assume a position of greater responsibility, one that will make use of my experience plus additional knowledge gained at Princeton."

Mr. Hill said he would like to return to the health field within HEW. He has a strong interest in national health insurance and might like to become involved in that area.

Asked how he felt about leaving NIH and returning to academic life, Mr. Hill explained, "It is easier for me to leave because NIH is far more like a university than other parts of HEW. But it may be harder to return."

Before coming to NIH, Mr. Hill worked at the National Library of Medicine as budget officer, financial management officer, and assistant executive officer. He also served as a grants and management specialist in the National Cancer Institute after completing the NIH Management Intern Program in 1964.

Previously, he served as a lieutenant in the U.S. Navy.

Mr. Hill graduated from Syracuse University in 1958 with an A.B. in English. He has taken graduate courses in public administration at both American and George Washington Universities.

Mr. Hill hopes, after two semesters at Princeton, to return to work at HEW in the health field.

He also hopes to attend a seminar on Delivery and Financing of Health Care and take courses in economics.

Mr. Hill's plans for the future are not definite, but he emphasized, "I would like to assume a position of greater responsibility, one that will make use of my experience plus additional knowledge gained at Princeton."

Mr. Hill said he would like to return to the health field within HEW. He has a strong interest in national health insurance and might like to become involved in that area.

Asked how he felt about leaving NIH and returning to academic life, Mr. Hill explained, "It is easier for me to leave because NIH is far more like a university than other parts of HEW. But it may be harder to return."

Before coming to NIH, Mr. Hill worked at the National Library of Medicine as budget officer, financial management officer, and assistant executive officer. He also served as a grants and management specialist in the National Cancer Institute after completing the NIH Management Intern Program in 1964.

Previously, he served as a lieutenant in the U.S. Navy.

Mr. Hill graduated from Syracuse University in 1958 with an A.B. in English. He has taken graduate courses in public administration at both American and George Washington Universities.

An exhibit on Medicine of the Civil War is being shown in the main lobby of the National Library of Medicine through Sept. 28. The exhibit includes numerous photographs and drawings providing documentary evidence of the extreme problems faced by military personnel during the Civil War. Also on display are surgeons' reports, bones fractured by musket fire, field surgical kits, and trephining instruments.
Organization Changes of NIAID Reflect Institute’s New Alignment of Duties

Several organizational changes within the National Institute of Allergy and Infectious Diseases have been announced by its Director, Dr. Dorian J. Davis.

Dr. Howard A. Minners has been appointed associate director for Collaborative Research.

He will administer the branches of the Collaborative Research program—Infectious Disease, Research Resources and Transplantation Immunology—formerly the responsibility of Dr. John R. Seal, the institute’s scientific director.

In addition, the Collaborative program will include the Geographic Medicine Branch which Dr. Minners headed since 1968.

Dr. Seal will continue to direct the Institute’s intramural research programs. He will also plan and coordinate joint intramural and collaborative research programs, particularly those related to influenza and hepatitis.

Dr. Minners came to NIH in 1966 as special assistant to the Director, recently elected Director-General Designate of the World Health Organization, made an unexpected appearance at the conference.

His extemporaneous comments emphasized that, given proper organization and utilization, present-day knowledge and technology are sufficient to provide good health care to all the world’s populations.

Several conferences and official observers from 24 countries participated in a conference on The Medical Assistant: Intermediate Levels sponsored by the World Health Organization and the Fogarty International Center at NIH June 5-7.

The conference was organized by Dr. Daniel M. Pinhasi of WHO and Dr. Donald M. Piteirn, FIC.

Current developments in the United States were compared with programs in other parts of the world. In addition, the conferences discussed such topics as roles for the medical assistant, training, career status, public and professional acceptance and assurance of competence and accountability.

Conference participants and observers included high-ranking public health officials, educators and administrators from Africa, Southeast Asia, Latin America, the Middle East, Europe, the South Pacific, Canada, and the U.S.


Thirty of the 137 member countries of WHO employ medical assistants in their health care systems.

The conference was organized by Dr. Daniel M. Pinhasi of WHO and Dr. Donald M. Piteirn, FIC.

Current developments in the United States were compared with programs in other parts of the world. In addition, the conferences discussed such topics as roles for the medical assistant, training, career status, public and professional acceptance and assurance of competence and accountability.

Conference participants and observers included high-ranking public health officials, educators and administrators from Africa, South East Asia, Latin America, the Middle East, Europe, the South Pacific, Canada, and the U.S.

Dr. H. Mahler of Denmark, re-

Office of International Research. Prior to his NIH assignment, he had been chief of the Flight Medicine Branch, Medical Research and Operations Directorate, NASA Manned Spacecraft Center, Houston, Tex., and a flight surgeon for the astronauts.

Dr. Robert J. Byrne, who has been with NIH since 1963, has been named assistant associate director for Collaborative Research.

Dr. Early S. Beck, the new chief of the Geographic Medicine Branch, previously headed the U.S.-Japan Cooperative Medical Science Program. He has been at NIH since 1965 and with NIAID since 1966.

The Geographic Medicine Branch administers the U.S.-Japan Program, International Centers for Medical Research Program, and associated international activities.

Dr. George J. Galasso, named chief of the Infectious Disease Branch, was formerly the acting chief. He was an NIH grants associate from 1968 to 1969, when he joined the NIAID staff.

Dr. John E. Nutter came to the Institute as chief of the Research Resources Branch last fall. Before his appointment he was Immunology Project Director at the Armed Forces Radiobiology Research Institute.

Dr. Donald E. Kayhoe has been chief of the Transplantation Immunology Branch since 1966. He originally joined the NIAID in 1955, but since then also served with the Georgetown Univ. Hospital and National Cancer Institute.

Soviet Scientists Visit NIEHS; Environmental Protection Discussed

Cooperation between the United States and the Soviet Union in the area of environmental protection aims at solving the problems that threaten the environment.

Their goals include working out measures to prevent pollution, studying pollution and its effects, and developing a basis to control the impact of human activities on nature.

As part of the U.S.-Soviet Agreement signed in Moscow last year, a delegation of Russian scientists, headed by Academician N. P. Dubinin, came to Research Triangle Park, N.C., to visit the National Institute of Environmental Health Sciences, June 8-11.

Eleven areas of concentration are included in the agreement—Cooperation in the Field of Environmental Protection.

During June 8-17, a working group, co-chaired by Dr. David P. Rall, NIEHS Director, and Dr. Carl M. Shy, Environmental Protection Agency, met to discuss one aspect of this field—Biological and Genetic Effects of Pollutants.
Dental Studies Assist Several Other Fields Of Science, Medicine

NIDR studies have opened other areas of biomedical research and contributed to further knowledge in several fields. Examples are:

- Fluoride has been shown to be essential for life in trace quantities. Studies of fluoride metabolism in humans should improve therapy for osteoporotic (bone-thinning) conditions.
- Methods developed for testing the safety of solid, liquid, or gaseous substances used in dentistry should improve the safety of such substances used elsewhere in the body.
- Knowledge of mechanisms of the disappearance of bone and other connective tissues in periodontal disease may help explain tissue loss in various inflammatory, rheumatic, and collagen diseases.
- Studies of ways to stimulate growth of new bone should help not only patients with periodontal disease, but also orthopedic and trauma cases.
- Research in pain control applies to all branches of medicine. One example: pain from pressure and pain from temperature have different mechanisms and require different therapies.
- Studies of the evolution of bacteria show some of the heritable molecular changes that separate disease-causing forms from harmless relatives, and may well lead to better control of bacterial disease.
- Investigations of genetic factors in such problems as clefting, faulty enamel, saliva, and collagen defects, throw light on other heritable human diseases such as deafness and Marfan's syndrome.
- Research into persistent infectiveness of complex of the herpes simplex virus with antibody have led to better understanding of mechanisms by which slow viruses operate. This research links viral effects with parts of the immune system and possibly with other diseases such as rheumatoid arthritis, diabetes, and cancer.
- Knowledge that the oral mucosa reflects inner disturbances of the body should aid in their diagnosis.
- Saliva is sometimes used as a diagnostic aid in digitalis toxicity, certain adrenal gland tumors, and in the detection of hereditary differences.

Diet Rich in Sucrose Is Pinpointed Factor In Most Tooth Decay

Prevention of tooth decay—probably the most common cause of pain in children—has been a prime goal of NIDR, starting with its historic studies of fluoride. In 1971, a concerted attack on this universal affliction—backed up by years of research by NIDR and grant-supported scientists—was initiated.

An old theory held that all microbes capable of producing acid could cause decay. However, early in the 1950's researchers began studies to identify specific culprits. They were able to reconstitute free of germs and to demonstrate that the animals had no decay even when fed sugary diets. Research with such specially-raised animals showed that relatively few of the bacterial strains which generally live in the mouth can produce decay.

Continued investigations on animals have shown the importance of adhesive bacterial films called plaque and such bacterial products as dextrans which stick to teeth, forming a framework for more bacteria to collect and attack the tooth.

Scientists now think that there are several varieties of decay involving different types of organisms.

For example, NIDR scientists have found that a particular type of organism can produce decay on the roots of hamster teeth but not on the crown. These organisms include Streptococcus mutans, which is a major contributor to dental caries in humans.

Efforts of Many Scientific Disciplines May Help Solve Oral Disease Problems

It has been said that "the mouth is an even tougher environment than outer space." Because of their complexity, oral problems must be attacked through a comprehensive program of laboratory, clinical, field, and epidemiological studies in such areas as developmental biology, genetics, microbiology, virology, materials science, and geographic pathology.

Today the studies of over 30 scientific disciplines are contributing to information on how to treat and prevent disease.

The National Institute of Dental Research is the chief instrument of support for such studies. Major program activities are concerned with dental caries (tooth decay); periodontal (gum) disease; problems of growth and development, especially cleft lip and palate and malocclusion; and a variety of oral lesions affecting the tongue, cheeks, and lips.

Other areas of emphasis include the development of improved restorative materials, including successful teeth implants, and the control of oral pain.

Congress Authorizes NIDR

NIDR was authorized by the 89th Congress through Public Law 755, which was approved June 24, 1948. However, at first, a lack of trained investigators handicapped the Institute.

The development of necessary manpower was spurred by the establishment in 1958 of a grant program for graduate research training in disciplines fundamental to dental research. Through this program, hundreds of dental scientists have been trained in dental, medical, graduate schools, and in other research institutions throughout the country.

Dentistry Deficit Persists

The fellowship program, dating back to when the Institute was founded, was also greatly strengthened.

Even so, the early gaps have not been bridged entirely. Dentistry's late start in training and research has contributed to a deficit which persists to this day.

In the United States, there is only one dental researcher behind every 44 dentists, as compared with one investigator in biomedical research to back every 7 physicians.

A notably successful effort in attracting outstanding scientists in fields not previously involved in dental research has been the special grant program, established in 1967, to support a limited number of dental research centers in universities.

The participation of biological, physical, and social science specialists in the study of oral health problems comes from the interaction of the centers with the research and educational programs of the parent universities, and from collaboration with other institutions.

Five such centers are now in operation at the Universities of Alabama, Michigan, North Carolina, Pennsylvania, and Washington.

Although about 80 percent of the Institute's total appropriations are spent for extramural research and training activities, the intramural staff has played a crucial role in advancing dental knowledge.

The Institute's productivity over the years, much of it in fundamental disciplines, such as biochemistry and microbiology, has...
Combination of Dentistry And Computers Produces 1st Reliable Skull Pattern

Computer-assisted orthodontics is one promising approach to meet the problems of malocclusion—the improper way upper and lower teeth meet.

An NIDR grantee at the University of Michigan Dental School has a series of some 15,000 skull profile X-rays taken over a period of years of growth.

He and his research team have developed a combination of statistics, mathematical models, and electronic technology to convert these X-rays to X-Y coordinate maps of the skull and jaws.

The models or maps are automatically converted into punch cards or transferred via telephone lines into the memory bank of a computer.

This combination of dental science and computer technology has produced the first statistically reliable pattern of human skull and jaw growth.

From the data bank, the researcher or clinician can quickly extract many thousands of measurements and growth changes. They form the basis for diagnosing, monitoring, and treating dental and facial problems.

With this method, an orthodontist or a dental student can see the changing growth pattern of normal and abnormal cases in minutes instead of waiting years for the same events to unfold in his practice.

Other NIDR-supported orthodontic advances include a better understanding of forces from lips and tongue that tend to push teeth or control the position of teeth naturally, improved materials for fabricated appliances and better elements for attaching appliances to teeth.

Studies in general anesthesiology on ambulatory dental patients include extensive physiological monitoring.

The intense interest in acupuncture is a reminder that pain and its relief are a major concern of the American people.

Pain associated with the face and oral cavity is particularly distressing and may have a marked influence on the behavior of these seeking dental care.

Fear and anxiety associated with painful dental procedures are among the reasons that less than half of the U.S. population visits a dentist each year.

Oral pain control has recently been highlighted by NIDR for special research. The Institute's interest in the problem is not new, extending back over a 17-year period during which NIDR intramural investigators identified, for the first time, the full range of physiological response to a variety of general anesthetic agents.

A local anesthetic is given with the drugs to block out the painful stimuli which would cause adverse physiological reactions and side effects.

Other pain control studies supported by NIDR have shown that the sensation of pain from heat seems to be produced by a different mechanism than that from pressure or from electrical stimulation of a tooth.

Therefore, heat tests alone are not suitable for evaluating drugs for dental pain.

Difficult Dental Problem

NIDR investigators have analyzed a very difficult diagnostic dental problem involving tooth sensitivity—the invisible crack syndrome. These cracks may occur around fillings, which may open under chewing pressure.

Fine cracks can also appear on the surface of a tooth when cold or iced foods contact the outer shell of enamel while the warmer dentin beneath remains expanded.

Research continues on ways to overcome extremely irrational fears which prevent so many people from ever consulting a dentist.

According to one theory, it is impossible to be anxious and physically relaxed.

A behavioral therapist reported that frightened people can be taught to relax and can then be led to visualize threatening situations such as those involved in traumatic dental treatments.

FEAR AND ANXIETY RELATED TO DENTAL VISITS PROBED; PAIN CONTROL VITAL STUDY AREA

NIDR STRESSES STUDIES ON PERIODONTAL DISEASE, MAJOR U.S. AFFLICTION

Today, largely as a result of periodontal (gum) disease, nearly 23 million Americans have lost all their teeth, and another 75 million are afflicted with the disease.

In the past year NIDR has appointed a standing advisory committee to help guide a program against this problem.

Earlier, a group of consultants had identified areas of research where the greatest impact could be made. The resultant "blueprint" calls for both long- and short-term studies, with particular attention to dental plaque formation; inflammation and host/parasite relationships, and bone resorption.

Several Types Exist

Periodontal disease is a collective term since more than one type of the disease is believed to exist. The crucial factor in most cases of the disease appears to be the adhesive, mat-like collection of microbes and debris around the gum line called dental plaque—a consequence of poor oral hygiene.

Other contributing factors include malocclusion (faulty bite) and systemic influences as nutritional deficiency, diabetes or other conditions.

Periodontal disease generally begins with inflamed gingival tissue which bleeds easily. In time, the gums become detached so that pockets in which harmful bacteria thrive form between the teeth and the soft gum tissue.

TOXIC PRODUCTS RESPONSIBLE

Eventually, the fibrous tissues connecting teeth to their bony sockets and some of the jawbone itself are destroyed; perfectly sound teeth may be lost.

Toxic bacterial products are now believed to be chiefly responsible for the damage caused by plaque.

Such products as hydrogen sulfide and ammonia can alter the barrier cells at the junction where the tooth emerges from the gum. Other products, including enzymes, may help cause damage.

Laboratory and chemical studies have produced evidence that the inflammation of gums is basically allergic in character.

In one such study investigations were made of actinomycetes, a group of suspect organisms found in the human periodontal pockets and known to cause the disease in experimental animals.

Several years ago, scientists found that, according to skin tests, periodontal patients are twice as likely to be sensitive to these organisms as people without the disease.

FOODS CAUSE DENTAL PROBLEMS

Common foods and beverages which may contribute to periodontal problems include carbohydrates, sticky products, and sweets which contribute to the plaque formation that causes irritation.

Fried and greasy foods, and other products containing fats which may cause irritation, may contribute to periodontal problems.

Fruit and vegetables should be encouraged as they can be helpful in removing deposits from the teeth and gums.

Tooth decay is another problem which can easily be avoided by avoiding foods which promote the formation of plaque.

Eating fruit and vegetables can help to prevent dental problems.
Researchers Continue Studies on Dental Adhesives for Preventing Tooth Decay

Repair of decayed teeth presents problems that research hopes to overcome through the development and use of dental adhesives.

Now the process includes grinding away the decay and removing some of the healthy tooth tissue for the fillings to be mechanically locked into the cavity.

Today, fillings in common use sometimes leak around the edges because their expansion and contraction with temperature changes are different from those of teeth. Fillings may also develop fractures which might result in new decay.

A search has been undertaken for many years for a material which would adhere to the tooth and protect susceptible areas from decay.

The chemistry of polymers has introduced candidates which may serve the desired adhesive purpose. For a long time it was hoped that molecular bonding might be induced between the tooth material and polymers.

This type of bonding would produce the tightest of seals, and have an adhesive strength which could resist oral stresses. Then, it would not be necessary to carve the remaining undercuts—the filling could be held in a simple cavity preparation.

Another lead, pursued by NIDR-supported research, but now giving way to new approaches, is the cement produced by marine animals such as the barnacle.

Cement Serves Purpose

Researchers felt that this cement which allows marine animals to adhere to hard submarine objects, may serve the same purpose for dental fillings.

However, these insoluble natural cements have proved extremely difficult to analyze, let alone synthesize with biochemical methods.

While the search for adhesive bonds continues, emphasis is turning toward developing better mechanical bonding at the microscopic level.

This is done by flowing a highly fluid monomer of low molecular weight over surfaces that have been altered by acid etching to produce tiny voids.

Helps Prevent Decay

When the monomer is hardened to form a high molecular weight plastic polymer, a mechanical lock results. The material holds tightly to the surfaces of the repaired tooth.

This method is also being used to help prevent tooth decay in healthy teeth. Applying a thin layer of the adhesive material to the chewing surface of teeth prevents food and bacteria from filling the deep pits and fissures. These sealants are protection as long as they remain attached.

Many years of testing are required before definite conclusions are made as to the effectiveness of adhesive materials.

ORAL PROBLEMS

(Continued from Page 1)

A major contribution of the NIDR intramural staff has been to help establish a base on which to build a program of research and development in dental caries.

In FY 1971, President Nixon declared dental caries a special health concern.

As a result, the National Caries Program was born. NIDR received an additional $5 million to start this program.

Budget Helps Program

In 1978, strengthened by a budget of $8,697,000—mostly for contracts and grants—the program has gained momentum toward its goal of reducing the incidence of caries and extending the capability of the dentist, the hygienist, and others on the dental team.

With a special focus on prevention, NIDR scientists and their extramural colleagues are working to bring Americans greater freedom from the tyranny of oral diseases.

Dr. Francis A. Arnold, Jr., pioneered in the study of fluorides and their epidemiological effects. He served as Director of NIDR from 1953 to 1966.
SUROSE

(Continued from Page 1)

on the enamel crowns.
Still other bacteria probably ac-
count for decay in the pits and
fissures. There, too, the teeth are
nec-
ised because the small cracks shelter
the bacteria from the cleansing
actions of saliva, drinks, and the
tooth brush.
Now it is also generally accepted
that a trial of factors is necessary
for the development of caries: a
susceptible tooth, the presence of
caries-causing bacteria, and a
decay-producing diet rich in carbo-
hydrates, notably sucrose—table
sugar.
These factors must interact at
one and the same time. Since it is
unlikely that a “magic bullet” will
be developed against tooth decay,
attacks are being made to depress
all these factors to a minimum.
The primary function of fluoride
is to strengthen the enamel of the
tooth against dissolution by acid
produced when the bacteria fer-
mament carbohydrates. Investigators
are seeking other trace elements
that inhibit caries production.
In addition, dental scientists are
looking for sugar substitutes, as
well as food additives that may
counteract the cariogenic effect of
sugar.
Other studies seek to develop
and test new antibacterial agents
which suppress the growth of car-
bies-causing bacteria, reduce their
products, or prevent their adhesion
to the tooth.

PLASTIC SEALANTS

An outstanding accomplishment,
under further research, is the de-
velopment of an adhesive plastic
which seals pits and fissures of
the chewing surfaces of the teeth.
The avoidance of sweet snacks,
mucilaginous home care, including
brushing and daily plaque removal
with interdental floss or tape, and
periodic visits to the dentist can help
prevent tooth decay.
However, many people do not
have the motivation to follow
the necessary regimen. For this reason,
a major research aim is the de-
velopment of simpler, less damaging
means of keeping the mouth free
of oral disease.

CAUSES OF GUM DISEASE EXPLAINED

(Continued from Page 4)

Studies of enzymes have focused
particularly on collagenase and hy-
aluronidase, both demonstrated for
the first time in human gingival
tissue by NIDR scientists.
One degrades collagen, the chief
protein in connective tissue, while
the other breaks down hyaluronic
acid, the gel-like ground substance
present between collagen fibers in
connective tissues.
NIDR grantee have recently
shown that levels of prostaglandins
—hormones or hormonelike sub-
stances—in human periodontal tis-
sues are increased in periodontal
disease.
Several antibiotic pastes will
prevent plaque accumulations and
alleviate this.
A mouthrinse containing chloro-
hexidine is being tested in Europe.
It can reduce plaque and infam-
ation, but has shortcomings.
These deficiencies must be sur-
mounted before the rinse can be
recommended for wide-scale use.

SUCROSE

(Continued from Page 1)

on the enamel crowns.
Still other bacteria probably ac-
count for decay in the pits and
fissures. There, too, the teeth are
nec-
ised because the small cracks shelter
the bacteria from the cleansing
actions of saliva, drinks, and the
tooth brush.
Now it is also generally accepted
that a trial of factors is necessary
for the development of caries: a
susceptible tooth, the presence of
caries-causing bacteria, and a
decay-producing diet rich in carbo-
hydrates, notably sucrose—table
sugar.
These factors must interact at
one and the same time. Since it is
unlikely that a “magic bullet” will
be developed against tooth decay,
attacks are being made to depress
all these factors to a minimum.
The primary function of fluoride
is to strengthen the enamel of the
tooth against dissolution by acid
produced when the bacteria fer-
mament carbohydrates. Investigators
are seeking other trace elements
that inhibit caries production.
In addition, dental scientists are
looking for sugar substitutes, as
well as food additives that may
counteract the cariogenic effect of
sugar.
Other studies seek to develop
and test new antibacterial agents
which suppress the growth of car-
bies-causing bacteria, reduce their
products, or prevent their adhesion
to the tooth.

PLASTIC SEALANTS

An outstanding accomplishment,
under further research, is the de-
velopment of an adhesive plastic
which seals pits and fissures of
the chewing surfaces of the teeth.
The avoidance of sweet snacks,
mucilaginous home care, including
brushing and daily plaque removal
with interdental floss or tape, and
periodic visits to the dentist can help
prevent tooth decay.
However, many people do not
have the motivation to follow
the necessary regimen. For this reason,
a major research aim is the de-
velopment of simpler, less damaging
means of keeping the mouth free
of oral disease.

CAUSES OF GUM DISEASE EXPLAINED

(Continued from Page 4)

Studies of enzymes have focused
particularly on collagenase and hy-
aluronidase, both demonstrated for
the first time in human gingival
tissue by NIDR scientists.
One degrades collagen, the chief
protein in connective tissue, while
the other breaks down hyaluronic
acid, the gel-like ground substance
present between collagen fibers in
connective tissues.
NIDR grantee have recently
shown that levels of prostaglandins
—hormones or hormonelike sub-
stances—in human periodontal tis-
sues are increased in periodontal
disease.
Several antibiotic pastes will
prevent plaque accumulations and
alleviate this.
A mouthrinse containing chloro-
hexidine is being tested in Europe.
It can reduce plaque and infam-
ation, but has shortcomings.
These deficiencies must be sur-
mounted before the rinse can be
recommended for wide-scale use.

SUCROSE

(Continued from Page 1)

on the enamel crowns.
Still other bacteria probably ac-
count for decay in the pits and
fissures. There, too, the teeth are
nec-
ised because the small cracks shelter
the bacteria from the cleansing
actions of saliva, drinks, and the
tooth brush.
Now it is also generally accepted
that a trial of factors is necessary
for the development of caries: a
susceptible tooth, the presence of
caries-causing bacteria, and a
decay-producing diet rich in carbo-
hydrates, notably sucrose—table
sugar.
These factors must interact at
one and the same time. Since it is
unlikely that a “magic bullet” will
be developed against tooth decay,
attacks are being made to depress
all these factors to a minimum.
The primary function of fluoride
is to strengthen the enamel of the
tooth against dissolution by acid
produced when the bacteria fer-
mament carbohydrates. Investigators
are seeking other trace elements
that inhibit caries production.
In addition, dental scientists are
looking for sugar substitutes, as
well as food additives that may
counteract the cariogenic effect of
sugar.
Other studies seek to develop
and test new antibacterial agents
which suppress the growth of car-
bies-causing bacteria, reduce their
products, or prevent their adhesion
to the tooth.

PLASTIC SEALANTS

An outstanding accomplishment,
under further research, is the de-
velopment of an adhesive plastic
which seals pits and fissures of
the chewing surfaces of the teeth.
The avoidance of sweet snacks,
mucilaginous home care, including
brushing and daily plaque removal
with interdental floss or tape, and
periodic visits to the dentist can help
prevent tooth decay.
However, many people do not
have the motivation to follow
the necessary regimen. For this reason,
a major research aim is the de-
velopment of simpler, less damaging
means of keeping the mouth free
of oral disease.

CAUSES OF GUM DISEASE EXPLAINED

(Continued from Page 4)

Studies of enzymes have focused
particularly on collagenase and hy-
aluronidase, both demonstrated for
the first time in human gingival
tissue by NIDR scientists.
One degrades collagen, the chief
protein in connective tissue, while
the other breaks down hyaluronic
acid, the gel-like ground substance
present between collagen fibers in
connective tissues.
NIDR grantee have recently
shown that levels of prostaglandins
—hormones or hormonelike sub-
stances—in human periodontal tis-
sues are increased in periodontal
disease.
Several antibiotic pastes will
prevent plaque accumulations and
alleviate this.
A mouthrinse containing chloro-
hexidine is being tested in Europe.
It can reduce plaque and infam-
ation, but has shortcomings.
These deficiencies must be sur-
mounted before the rinse can be
recommended for wide-scale use.
Chinese Journalists Visit NIH, Tour Clinical Center

A delegation of 21 newspaper executives and journalists from the People’s Republic of China, on a six-city tour of the United States, visited NIH May 30. Their trip is being sponsored by the American Society of Newspaper Editors.

The group was greeted by Dr. Charles C. Edwards, HSW Assistant Secretary for Health, and Dr. Robert S. Stone, NIH Director.

Much of their visit was spent touring the Clinical Center, where they watched an open-heart operation by Dr. Andrew G. Morrow, chief of the Surgery Branch, National Heart and Lung Institute. Later the delegates visited the CC Blood Bank and the Nuclear Medicine Department.

Dental School Deans Laud Special Research Award

The Special Dental Research Award Program, initiated by NIDR in 1972, helps newly-trained investigators to engage in dental research.

Several dental school deans have stated that, “Of all the programs that NIDR has, this is one we would hate most to lose.”

The program is limited to dental schools, and helps young investigators lacking other research support to compete against each other; they do not compete with established scientists.

Doctorate Required

Requirements for program candidates are a doctoral degree or the completion of research training no more than 4 years prior to the date NIH receives an application.

Awards are for up to 3 years, with renewals only under exceptional circumstances.

The sum usually cannot exceed $7,500 a year, and is paid from NIDR research grants program funds set aside specifically for that purpose.

Soviet Science Writers Briefed on Health Topics During Exchange Visit

Five Soviet science writers—among the most influential journalists in the USSR—were briefed by Dr. Robert S. Stone, NIH Director, and other NIH scientists on a visit to NIH on June 1.

The journalists’ visit here was part of a 5-week swing across the country arranged by the Council for the Advancement of Science Writing.

Their trip was the second part of a two-way exchange of journalists which began last winter when six U.S. writers visited the USSR.

Joining Dr. Stone in greeting the writers and explaining health-related problems and progress were: Dr. Milo D. Leadbetter, Jr., FIC; Dr. Anthony M. Bruno, NCI, and Dr. Ruth J. Hegyeli, NHLI.

Also, Dr. William Payne, NIH-HS; Dr. Jack H. Brown, HMS-HA, and Dr. Lloyd Tepper, FDA.

The writers and their affiliations were: Yaroslav K. Golovanov, Young Communist League Truth; Mikhail Robrov, Red Star; Bronislav Koltovoi, Inostat; Oleg Kuprin, Knowledge-Strength; Lev Koleshev, Internationl Commission, Union of Journalists of the USSR, and Nikolai G. Shurtsa, Tass News Agency.

Pronove, Fisher Retire From Federal Service

Drs. Pacita Pronove and Wilton Fisher retired from Federal service in May.

Dr. Pronove has been a scientist administrator with the Division of Research Grants since 1961. She joined DRG as executive secretary of the Nutrition A Study Section until 1964 when she became executive secretary of the Child Health and Human Development Program Project Committee, Research Grants Review Branch in DRG.

Later Dr. Pronove became executive secretary of the General Medicine B Study Section where she remained until early this year when she joined the Division’s Institutional Relations Branch.

Dr. Fisher, a PHS Commissioned Officer, began his Federal career with the U.S. Public Health Service in 1948.

He joined NIH as assistant to the chief of DRG in 1962, and the following year was appointed executive secretary of the General Medicine Study Section.

When General Medicine was split into two sections, Dr. Fisher became executive secretary of the General Medicine A Study Section.

In 1968 he was awarded the PHS Commendation Medal.
Research on Acupuncture Technique to Determine Extent of Pain Relief

Federal funding for research to assess the pain-relieving capabilities of acupuncture has begun with a 3-year grant to the Missouri Institute of Psychiatry in St. Louis.

The project, recently announced by the National Institute of General Medical Sciences, will be supported at a rate of $45,511 for the first year, with future support to be determined at the end of each fiscal year.

Acupuncture is an ancient form of Chinese medicine in which fine needles are inserted in the body at strategic points to treat disease, relieve pain, or serve as an anesthetic during surgery.

NIGMS is coordinating acupuncture research activity for NIH and the Federal Government.

Volunteers Recruited

Physicians and scientists at the St. Louis facility, an affiliate of the University of Missouri School of Medicine, will compare the analgesic qualities of acupuncture anesthesis with those of standard pain-relieving drugs and hypnosis.

The research team under Dr. George A. Ulett, professor of psychiatry, has recruited two small groups of volunteers for their studies. The first consists of healthy students from the St. Louis area between 18 and 35.

The second group is made up of patients suffering chronic and continuing pain from osteoarthritis, migraine headaches, "phantom limb" pain, and pain from spinal cord damage or injuries to peripheral nerves.

The healthy volunteers will be subjected to a series of unjured experimental pain stimuli and will be given acupuncture anesthesia and pain-relieving drugs. The patients already in pain also will be given acupuncture anesthesia and analgesic drugs.

In both groups of volunteers, degrees of pain will be assessed by measuring changes in brain waves, heart rate and pulse, and by observing other discernible responses to pain. Each volunteer will also be asked to evaluate the degree of his pain by assigning it a number on a low-to-high numerical scale.

For the second year in a row, the "Invisibles" have won the R&W Basketball League championship. Over this period, the team won 38 games while losing only one. Seated (l to r) are: Rodney Fitzgerald, CC; Ray Denner, DCRT; Elmer Dysob, DR; Stanley Binyj, ODA; and Elliott Altsman, DCRT. Standing (l to r) are: Ed Raddan, DR; player-coach; Gerald Winston, DR; Thomas Allen, CC; Robert Shields, ODA; Melvin Hubbard, ODA; James Lange, CC, and Leonard Williams, ODA.

Dr. Richard C. Greulich, National Institute of Dental Research, has been elected secretary-treasurer of the American Institute of Biological Sciences. Dr. Greulich has been director of intramural Research, NIDR, since 1966. He has held academic positions in institutions here and abroad, including UCLA Schools of Medicine and Dentistry; Karolinska Institute in Stockholm; University of London, Royal Veterinary College, and McGill University. Presently, he is visiting professor of anatomy, University of Virginia School of Medicine.

$2.9 Million Grant Awarded by NIEHS To Establish 7th Environmental Center

The Mount Sinai School of Medicine has been awarded a grant of approximately $2.9 million to establish the seventh Environmental Health Sciences Research Center.

Awarded by the National Institute of Environmental Health Sciences, the Mount Sinai center will be headquartered at the Research Triangle Park, N.C., the funds will be distributed over the next 5 years.

The new Center will be headed by Dr. Irving J. Sellkoff, professor of community medicine, who has been an NIEHS grantee and has done research on asbestos as a disease-causing agent for several years.

"The Mount Sinai group has already developed much fundamental knowledge needed to protect man against hazardous substances in the environment," Dr. David P. Rall, NIEHS Director, commented.

Plan Many Studies

"We expect much new valuable research from them, and it is for this reason that Mount Sinai has been chosen as the seventh Center supported by the NIEHS for research on multifaceted environmental health problems."

Center personnel will study a wide spectrum of environmental agents and combinations of agents that contribute to the development of heart and lung diseases and cancer. Research on asbestos-related disease will be given high priority.

According to Dr. Rall, asbestos is now a general urban environmental problem, not merely an occupational hazard for certain industrial groups.

The air of large cities is almost always contaminated with asbestos fibers and these fibers are present in the lungs of all persons who grow up in large cities.

Asbestos-related diseases take several decades to develop, often 30 to 35 years, which heightens the concern about present asbestos exposure of large populations from fibers continually released into the air as a result of brake lining wear and installation and use of insulation in industrial buildings, among other urban sources.

Effects Discussed

Little is known of the effects of such prolonged low-level exposure, Dr. Rall said.

However, it is known that some 40 percent of workers heavily exposed to asbestos eventually die of diseases related to the exposure. Lungs of the victims develop fine scars—a condition called asbestosis.

As the disease develops, scar tissue restricts air passages and limits oxygen absorption and carbon dioxide removal.

In addition, about 7 percent of workers directly exposed to asbestos develop a rare, lethal form of cancer on the surface of the lungs or abdominal cavity called mesothelioma.

Another 5 percent die of otherwise unexpected gastrointestinal cancer.

Fact Sheets Published By Nat’l Eye Institute

Several fact sheets, each describing a common visual condition or cause of blindness, are now available from the National Eye Institute.

The fact sheets are:

Glaucoma—a disease characterized by loss of visual function associated with increased pressure within the eye and subsequent damage to the optic nerve.

Pterygia (Eye Lashes)—stemming from diabetes, this disturbance in the blood vessels of the retina, the light-sensitive tissue at the back of the eye, can cause blindness.

Corneal Disease—often very painful disorders which affect the transparent membrane at the front of the eye.

Macular Degeneration—a common cause of visual disability among the elderly that affects a small part of the retina called the macula which is responsible for fine or reading vision.

Retinitis Pigmentosa—asbestos-related disease, often leading to early blindness unless treated.

Retinal Detachment—a separation of the layers of the retina that can cause permanent impairment of vision.

Cataract—lenses becoming cloudy that results in loss of peripheral vision beginning in childhood or adolescence.

Each fact sheet is written for the general public and describes the condition, its cause (if known), its treatment (if available), and current research.

Single copies of any or all of the fact sheets are available free from the Office of Information, National Eye Institute, NIH, Bethesda, Md. 20014.

The pamphlets may also be purchased in quantity from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for 15 cents each postpaid, or five cents at the GPO bookstore.

Another 5 percent die of otherwise unexpected gastrointestinal cancer.
Richard Seggel Joins NAS Inst. of Medicine

Richard L. Seggel, HEW Deputy Assistant Secretary for Program Operations, will leave Federal service at the end of June to join the Institute of Medicine of the National Academy of Sciences.

Mr. Seggel will assist in the development of the Institute’s new program of fellowships in health policy established under a grant from the Robert Wood Johnson Foundation, and will also participate in Institute studies of health policy.

Began Career in 1940

Beginning his Federal career in 1940, Mr. Seggel served with several agencies before joining NIH in 1957 as Executive Officer.

After 12 years in this position, he was named NIH Associate Director for Administration. In 1971 he was appointed to the HEW post.

Citing Mr. Seggel’s work, Dr. Charles C. Edwards, HEW Assistant Secretary for Health, said his “contributions to the Federal Government, to the NIH, and most recently to this office in our efforts to create a single voice for health in HEW, have been many and significant. We shall miss him deeply.”

Dr. Chanock Receives H.T. Ricketts Award

Dr. Robert M. Chanock, National Institute of Allergy and Infectious Diseases, was recently given the Howard Taylor Ricketts Award by the University of Chicago.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.

Dr. Chanock, who is chief of the Laboratory of Infectious Diseases, was given the prize “in recognition of outstanding accomplishment in the field of medical sciences.”

After the presentation, he delivered the Ricketts Lecture on Genetic Manipulation of Viruses and Mycoplasma with the Aim of Preventing Acute Respiratory Tract Disease.

The Ricketts Award was established in memory of the scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. Later, he found the related organism that causes typhus fever. In 1910 he died of that disease.
OUTPATIENT RESEARCH

Subjects Remain in 'Natural Environment' While Under Study at Vanderbilt Center

By Jerry Gordon

At 5:30 a.m., the new Ambulatory Patient Research Center at the Vanderbilt University Hospital in Nashville, Tenn., begins to stir.

Two doctors are busyly engaged in turning on recording machines and sensors, preparing IV's (intravenous lines), and loading syringes in preparation for a research patient scheduled for 5:30 a.m.

Mark Taylor, a 25-year-old "study" session lasts approximately 1½ hours.

During this time a vein in his right arm is infused with a fluid containing a certain new drug, and then blood is drawn from a vein in his left arm.

After the session is concluded, band-aids are applied to his arm, he puts his shirt and coat on, walks into the division kitchen, is served a hot breakfast, and by 7:30 a.m., he's off and on his way to work.

This is an example of a new technique in biomedical research being evolved at Vanderbilt with subjects who continue daily activities in "their natural environment."

The APRC in Nashville is the first full-fledged outpatient center launched by the General Clinical Research Center Branch of the Division of Research Resources.

Concept Is Important

It is considered an important concept, and it is the intention of the branch chief, Dr. William R. DeCesare, and his NIH advisory committee, to broaden the scope of research with ambulatory cases in 84 clinical centers operating throughout the country.

Approximately 45 centers now conduct a limited amount of outpatient research. A second outpatient facility has been initiated at the Johns Hopkins GCRC in Baltimore.

"The advent of an outpatient facility to the ongoing General Clinical Research Center makes a more efficient and viable clinical research resource," Dr. DeCesare maintains.

"There are certain types of research—chronic diseases, genetics, mental health, clinical pharmacology—that cannot be carried out on a scale commensurate with their importance unless ambulatory patients are studied."

Operated since September 1972 in conjunction with the existing 21-bed inpatient CRS, the combined facility has taken on new dimensions, according to Dr. William W. Lahey, program director.

"I think the trend is towards taking the research out of the wards and into the population environment to find out what causes certain physiological mechanisms to malfunction," he says.

Researchers at Vanderbilt say that the combined status of the center has brought new elements to old studies. The four outpatient procedure rooms on the Medical Center's third floor are constantly used from 5 a.m. until 5:30 p.m.

Another bright plus for ambulatory patient research operation is the reaction of people involved and their willingness to continue, the Vanderbilt investigators report.

"People are much more likely to be volunteers if we can get them in and out quickly with a minimum loss of time," the scientists say.

By scheduling the outpatient either before or after work, they found that the rate of patient compliance has jumped considerably.

In addition to their pharmacology projects, the researchers are working on studies in obesity, post-surgical follow-ups, pediatric diseases, epidemiological group analysis, genetic abnormalities, and chronic diseases. The majority of these projects are NIH supported.

Harriet Cooper, a hypertensive patient, undergoes study and treatment lasting one-half hour. Dr. John W. Hollifield, staff physician and investigator, is researching adrenal overactivity affecting the renin plasma level in hypertensives.

He is nearing completion of the project in which non-specific diuretics are used to affect blood pressure. In 19 of 23 cases, he reports, he has successfully administered on agent which reduces plasma volume almost as effectively as a specific adrenal blocker.

Dr. Garrington, Dr. Green Presented With Medals For Meritorious Service

Drs. George E. Garrington and Jerome G. Green were awarded Meritorious Service Medals at the Fifth Annual Honor Awards Ceremony held at NIH on June 11.

The two Commissioned Officers—not listed in the last issue of the NIH Record—received the following citations:

Dr. George E. Garrington, Deputy Director, Intramural Research, National Institute of Dental Research, "...sustained outstanding leadership in public health and research administration."

Dr. Jerome G. Green, Director, Division of Extramural Affairs, National Heart and Lung Institute, "...outstanding contributions in the administration of the Division of Extramural Affairs, NHLI during a period of transition..."