

UGF Drive Lags; Chairman Asks Greater Effort

A tally of returns at the end of the fourth week of NIH's 1960 UGF campaign showed that contributions had reached 73 percent of the \$79,305 goal.

Eighty-two percent of NIH employees had contributed by this time.

"This fourth weekly report of the results of the UGF campaign at NIH indicates that we are faced with a serious threat to the success of our drive," said Dr. Roderick Murray, Director of DBS, who is chairman of the campaign. "Unless we take immediate steps, we may fail to meet our quota. This would be tragic in terms of the many vital services performed by the UGF agencies. We are certain that if every NIH employee is aware of this fact, each one will want to do whatever he can to assure the success of NIH's participation in this worthwhile cause."

Institute and Division keymen will attempt to reach each em-

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3,362 Reply to Traffic Quiz In 3 Days; 46.3% 'Want In'

Within the first three workdays following distribution of the traffic survey questionnaire to NIH employees, 3,362 replies were received, Plant Safety Branch reports, and the returns were continuing at a still-encouraging rate.

Election Day Nears; Hours, Policy Cited

With Election Day, November 8, looming two weeks from today, Personnel Management Branch offers the following information.

Where the polls are not open at least three hours either before or after an employee's regular hours of work, he will be excused for enough time to permit him to report for work three hours after the polls open or leave work three hours before the polls close, whichever requires the lesser time off.

In Virginia the polls will open at 6 a.m. and close at 7 p.m.

In Maryland, with the exception of Baltimore City, the polls will open at 7 a.m. In Baltimore they will open at 6:30 a.m. In Maryland, including Baltimore, the polls will close at 7 p.m.

Speaking for Management, which initiated the survey as a first step in its program to alleviate parking and traffic congestion here, Richard H. Henschel, Assistant Executive Officer of NIH, said:

"Early employee response to the traffic survey is indeed gratifying. It is hoped that those who have not returned their questionnaires will do so at their earliest convenience, so that we can make a final tabulation and formulate plans for alleviation of our parking and traffic problems."

As rapidly as replies are received they are being tabulated by Matthew J. Peters of PSB and his assistants.

An analysis of the returns of the first three days revealed that of the 3,362 who had replied, 1,555, or 46.3 percent, are interested in the possibility of direct bus service

(See TRAFFIC, Page 2)

Equipment Exhibit And Symposium Attract 6,237

Pictures on Page 8

With a total of 6,237 visitors, the 10th Annual Research Equipment Exhibit and Instrument Symposium, held here October 3-7, continued its unbroken record of increasing attendance.

Last year's attendance total was 5,973. Of that number, 4,922 visited the Equipment Exhibit and demonstration sessions, and 1,051 attended the Instrument Symposium sessions.



Dr. Mider

This year's figures showed 5,165 viewing the exhibit and demonstrations, and 1,072 attending the symposium.

The symposium sessions, held in the CC auditorium, featured nationally known scientists who presented papers on subjects of current interest in their specialties.

Welcomes Visitors

In the absence of Dr. Shannon, Dr. G. Burroughs Mider, NIH Director of Laboratories and Clinics, delivered the welcoming address and introductory remarks at the opening session.

The number of equipment exhibitors this year was 121 and the exhibited equipment was valued at \$1,016,255. Last year there were 103 exhibitors of equipment valued at \$800,000.

James B. Davis, Chief, SMB, who is Exhibit Manager and Executive Secretary of the Instrument Symposium Committee, expressed satisfaction over the mounting attendance but pointed out that "It poses a new problem of how to accommodate future expansion."

He called attention to the fact that this year, because of lack of sufficient space in Building 22, the equipment displays of 10 exhibitors were housed in trailers adjacent to the building. Last year, he said, three trailers were used.

'I Was a Baby-Sitter for the UGF'

By Betty Mok

There's no telling what you'll get into when you're on a publicity committee. Running odd errands, going to meetings that last through lunch, holding photographer's flash bulbs, meeting all kinds of people.

This time it was a baby. And she wasn't even on the program.

The program was the UGF rally. The baby belonged to Jim and Jane Henson, creators of the Muppets of TV fame.

While the Muppets, Kermit, Sam, and Yorick, lolled in an old-fashioned market basket backstage, Jim set up the puppet theater. Then Jane Henson appeared, toting Lisa Henson, aged five months, who cooed and gurgled in her canvas carrying basket.

So I was assigned to baby-sitting duty, having had a little previous experience in that line. And it was a pleasure. There's a child who's adjusted to life's demands already.

While her father hammered away at the theater and her mother patted wigs on Kermit and Sam, Lisa played with her rattle.

While distinguished speakers urged 100 percent participation in the UGF campaign, she added her voice in crows and coos.

And while her parents performed with the puppets she dozed in my arms, rousing to the applause.

When the program was over and the Muppets back in their basket, Jane reclaimed Lisa. And reluctantly I relinquished my assignment.

But I'll volunteer for the publicity committee next time—if there's a baby around.

Backstage Baby



Young Lisa Henson, held by her mother, admires Kermit the Muppet, held by her father, following the Henson-Muppet show at the recent UGF rally held here.—Photo by Bob Pumphrey.

the Record

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Health Benefits Statistics Released; 4,747 NIH Employees Participate

The total of employee payroll deductions and Government contributions for the Federal Employees Health Benefits Program, which went into effect in July, is estimated at \$300 million a year, the Civil Service Commission has announced. Of this total, enrolled employees will pay about 62 percent, or \$186 million, and employing agencies will pay the remainder, or \$114 million.

The estimate is based on registration figures reported as of August 1 by the carriers of participating health benefits plans. These figures show a total employee enrollment of 1,738,828. The NIH total employee enrollment was 4,747. The breakdown, including NIH enrollment figures reported by Financial Management Branch, is as follows:

Plans	Enrollment		% of Enrollment	
	All	NIH	All	NIH
Service Benefit	943,377	3,297	54%	68%
Indemnity Benefit	465,385	1,163	27%	25%
Employee Organization	229,079	67	13%	2%
Comprehensive Medical	100,987	220	6%	5%
Totals	1,738,828	4,747	100%	100%

TRAFFIC

(Continued from Page 1)

to stops throughout the reservation or in joining car pools that will transport them to and from their home areas.

Of the 1,249 who indicated a preference for bus service, 470 said they would use such service regularly, 385 indicated they would use it frequently, and 394 specified occasional use.

In addition, 112 not presently in car pools expressed an interest in signing up as car pool members, and 194 others said they would be interested in using either bus service or car pools as a means of transportation.

The returns, as of this writing, showed that 418 are currently using car pools and that 1,301 who are now presumably driving or possibly walking to work are not interested in obtaining bus service or joining car pools.

The remainder of the early returns, 88 in number, were not tabulated because of incomplete or conflicting information and are being returned for clarification.

Phyllis Snyder Dies

Phyllis Snyder, Information Specialist, DRG, and staff correspondent of the *NIH Record*, died early Friday morning in Sibley Hospital shortly before she was scheduled to undergo surgery.

"Phyl" came to NIH in June of 1956 as a member of the then Publications & Reports Section, SRB-DRS, and in November 1958 transferred to the Information Office of DRG, where she served as assistant to the Information Officer and Editor of the bi-weekly *DRG Digest*, which she founded.

The *Record* extends sympathy on behalf of her many friends at NIH to her mother and stepfather, Mr. and Mrs. Paul Gregori, of 1723 Irving St., N. W.

The Safety Branch also reported that a considerable number of the returned questionnaires carried constructive suggestions relating to parking and traffic congestion problems. These are being considered with a view to possible recommendation for action, PSB said.

'PERSONNEL' TO PERSON

ONE of the basic NIH personnel management responsibilities is to ensure that all jobs are accurately described and properly graded and titled.

This responsibility is jointly shared by NIH supervisors and the staff of the Personnel Management Branch. The supervisor assigns the work and makes certain that job descriptions are kept up-to-date. The PMB staff assigns titles and grades to positions consistent with standards and guides published by the CSC and the Department.

The primary aim of this joint effort is to assure that all employees receive equitable pay treatment for work performed.

Procedure Outlined

If you believe the grade or title of your position to be incorrect, you should discuss it with your supervisor. If you cannot reach an agreement with him, you have the privilege of consulting your Personnel Representative.

If you fail to reach an agreement with the Personnel Representative, you may request a review by the Classification Officer, NIH. Finally, if you are still not satisfied with the NIH decision, you have the right to appeal within the Department (HEW). This right pertains to GS as well as Wage Board positions.

Alternative Available

If you occupy a GS position you may elect to appeal to the CSC, either directly or through Departmental channels. However, the Commission prefers that every effort be made to adjudicate appeals within the Department before they are submitted to the Commission.

Although the Department exercises final classification authority over Wage Board positions, you may appeal a reduction in rank or compensation to the CSC if you occupy such a position and are entitled to veteran's preference. Also, decisions as to whether a position is properly classified GS or Wage Board may be appealed to the CSC.

Time Limit Cited

A classification appeal may be submitted at any time. However, if a down-grading or loss of compensation is involved, the appeal must be submitted within certain time limitations in order that a favorable decision may be applied retroactively.

Remember, if you have any questions regarding the classification of your position or the appeals procedures, you should first consult with your supervisor. The Person-

Billy J. Sadesky Named FMB Head to Succeed George A. Van Staden

Billy J. Sadesky has been appointed NIH Financial Management Officer, succeeding George A. Van Staden, who recently became NIMH Executive Officer.

In his new position Mr. Sadesky will be chief financial advisor to the NIH Director.



Mr. Sadesky

Mr. Sadesky joined the Financial Management staff at NIH in 1951 as Budget Examiner for the National Heart Institute. He became the NIH Budget Planning Officer in 1955, and in 1956 was named Administrative Officer of the former Division of Business Operations. In 1957 he was reassigned as Chief of the Budget Management Section, FMB, and was appointed Assistant Financial Management Officer in 1959.

Transfers to NIH

During the period 1945-51 he worked with the Bureau of Public Assistance, where after a short time as personnel clerk, he transferred to the budget management program.

At the time of his transfer to NIH his assignment carried the dual responsibility of budget management specialist and organization and methods examiner. Two pre-war years were spent with the Social Security Administration.

Mr. Sadesky served with the U.S. Air Force from 1942 to 1945, primarily in the field of personnel administration. He received a degree of Associate in Administration from American University in 1952.

nel Representative serving your organization will, upon request, assist in the preparation and submission of appeals.

* * * * *

All Institutes and Divisions have been invited to submit nominations for the 13th Annual Arthur S. Flemming Awards and for the 7th Annual National Civil Service League Awards Program. Many NIH and DHEW employees have been successful candidates since the establishment of these awards, and it is hoped that one or more of our outstanding employees will be selected this year.

Detailed information regarding the procedures to be followed for the selection and submission of nominations may be obtained from the Employee Relations and Services Section, Bldg. 1, Rm. 21, Ext. 4851. Nominations must be submitted before November 1.

Science Section

Population Growth in Next Decade Presents Public Health Challenge

Excerpts from Chesley Memorial Lecture delivered by Dr. David E. Price, Deputy Director, National Institutes of Health, before the Minnesota Public Health Association meeting in St. Paul, Minn.

In speaking about "Public Health in 1970," I wish to share a few thoughts about some of the major forces operating in our society to shape the status and practice of public health a decade from now. My crystal ball does not have resolving power to permit any precise description of the year 1970, but perhaps it can foretell with some accuracy the kinds of problems public health must surmount in the years immediately ahead. An analysis of these may suggest priorities that should guide our public health efforts.

Let us look first at population. You are all familiar with the fact that it is increasing rapidly, that its geographic distribution is shifting, and that its age composition is also changing. Based on reasonable assumptions, we may expect that in 1970 our total population will be about 33,000,000 larger than it is today. This increase would fill 22 cities the size of the Minneapolis-St. Paul metropolitan area as it is today. There will need to be a growth of all kinds of health services throughout the country, in order to maintain the present per capita volume of services to say nothing of any improvement in quality of services that are now available. . . .

Age Composition Changing

Projected changes in the age composition of the population suggest that certain kinds of health services may be particularly in demand. For example, the proportion of the population under 20 years of age will have risen about 10 percent, and represent about 40 percent of the total population. The need, therefore, for services designed especially for youth will grow. There will certainly be a particular demand to do more in meeting the mental health needs of the adolescent years. Under the age of 10, we may expect that there will be 7,000,000 more children than there are today. What this means in terms of effective school health services and pre-school programs, you may imagine. But it is to the needs of our older citizens that most attention is turned. Their requirements are particularly important for they tend to have more illness, require more prolonged care, and more complex services, than individuals in other age groups. Their numbers are increasing so that while we have some fifteen and three-quarters millions over the age of 65 today, we may expect nineteen and one-half millions by 1970

—an increase of almost four million. If this increase were gathered together in one place, it would outnumber the present population of Minnesota.

These individuals require many more community services, because their economic status makes it impossible to provide personally for many of their needs, and because a great many of their needs can effectively be met only by marshalling the resources of the community in some special way. I think in this regard of rehabilitation during and after illness. I think of homemaker services, of community nursing, of a prepared hot meal delivered to the place of residence, and other services designed to tide them over periods of distress. I think, too, of hospital based home care, and of high quality nursing home services. . . .

And now I have come to the third important stimulus to change in public health. I have chosen to call this the "state of the art," deliberately using the word "art" rather than "science," although I do not exclude scientific progress as one of the most important determinants of the state of the art. What I am talking about is more than science, however, because it involves such things as the basic organization by which health services are provided, and the generally accepted idea of what problems are the legitimate concerns of public health. We will continue, I am sure, to witness progressive changes here as the years go by.

Research Effort Expands

The greatly expanded health research effort in the last decade has brought many innovations in health practices. There is not time tonight to recount the details of new knowledge about virus diseases and their prevention, new surgical techniques which make possible lifesaving reconstructive surgery on the heart and great blood vessels, surgical procedures on the central nervous system which quiet the palsy of Parkinson's disease and pain killing drugs of remarkable potency. Effective methods to protect against

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.

Tartar Formation Findings Confirmed

In experiments by Dr. R. J. Fitzgerald, Laboratory of Microbiology, National Institute of Dental Research, and E. G. McDaniel, National Institute of Arthritis and Metabolic Diseases, six rats of the Lobund strain were maintained in a germfree environment for 90 days. Periodic bacteriological checks on the food and excreta of the animals confirmed the absence of viable microorganisms during the test period.

At termination of the experiment the animals were sacrificed and tartar-like material from first

molars was collected and pooled for X-ray diffraction studies. The presence of crystalline calculus was the same as that in calculus from conventional animals and from humans.

In demonstrating that the formation of typical calculus does not depend on the presence of living or dead microorganisms, these studies have further explained earlier findings by NIDR scientists that calculus will develop in conventional rats whose oral flora was depressed by antibiotics. The study was reported in the *Archives of Oral Biology*.



First maxillary molar tooth of germfree rat showing alizarin stained calculus deposits on the mesial and buccal surfaces of the first two cusps. Part of the mesial deposit has been chipped off with an explorer.

the serious sequela of rheumatic fever have become commonplace. Newly synthesized chemicals have improved the condition of some cancer victims. There are improved methods for the early diagnosis of serious diseases such as cancer of the cervix, glaucoma, and galactosemia, which are amenable to treatment if discovered early.

Research has also begun to accumulate information about the composition of the environment and some of its components which may have an important effect on human health. I refer to such things as the relationship between air pollutants and development of emphysema, cancer of the lung, and chronic irritation of the respiratory tract and eyes. Studies of radiation in the environment have proceeded to the point where practical guides for the public health control of this hazard have been established.

One could prolong such a listing, but my purpose is served by these few examples which illustrate how extensively modern science is contributing to advance the state of the art.

But the art is being advanced by

progress in other fields. Political organization is being modified to give the modern community the ability to plan and carry out complex programs. For example, earlier this month a committee representing the principal localities in the Hampton Roads area of Virginia began working toward a possible single government for the entire port area. Among the proposals to be considered is a borough government under which each locality would contribute to the maintenance of a common government for handling mutual problems.

Just as small communities are finding it impossible to provide independently for all of their own needs, so are individuals being thwarted in attempting to provide by their own effort and resources the full range of needed preventive services and medical care procedures. There is more and more need to supplement what one may provide personally with services which can only be provided by community effort, in order to assure a quality of health service acceptable in our modern society. Community experi-

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Change in Host Cell Inhibits Growth Of Poliovirus in CNS of Monkey

During Division of Biologic Standards studies in which rhesus monkeys were inoculated intracerebrally and intraspinally with attenuated poliovirus—an established neurovirulence testing procedure—an unexpectedly low rate of virus isolation from the central nervous system (CNS) of the infected monkeys was observed. Moreover, when infected CNS tissue was plaque-assayed on monkey kidney cell cultures, more virus plaques appeared at higher dilutions of CNS tissue than at lower dilutions, strongly indicating virus inhibition.

In a study undertaken to determine the nature of this phenomenon, investigators Richard Low and Dr. Samuel Baron, DBS, found that the inhibition was not directed against the virus but affected viral multiplication by altering the host cell. The study was reported in a recent issue of *Science*.

When suspensions of lumbar or cervical cord tissue were assayed for poliovirus content, virus was recovered from only 30 percent of the infected monkeys, whereas in previous studies, recovery of virus from CNS tissues of infected monkeys was readily obtained.

New Committee Studies Polio Control Problems; Urges Salk Vaccine Use

Extended study of the technical and administrative problems associated with the control of poliomyelitis in the United States will be undertaken during the next 60-90 days by committees of scientists, physicians, and public health administrators, the Public Health Service has announced.

While the Surgeon General has indicated that an orally administered live polio virus vaccine would be suitable for use in the United States, it is doubtful that an oral vaccine will become available during the polio season of 1961, according to the announcement.

It was pointed out that an intensive effort in the meantime should be made to promote wider use of the Salk vaccine which has brought about dramatic reductions in the incidence of poliomyelitis during the past five years.

These conclusions were reached during a two-day meeting of the Agenda Committee of the Committee on Poliomyelitis Control at the Service's Communicable Disease Center in Atlanta.

The findings of the Agenda Committee will be presented to the full committee which was recently set up by Surgeon General Leroy E.

Further tests revealed that suspensions of CNS tissue could inhibit, in cell culture, up to 900 plaque-forming units of poliovirus. Furthermore, the inhibitor was also found in the CNS suspensions of normal as well as infected monkeys.

While the inhibitory effect of monkey tissue was demonstrated against each of the three types of poliovirus, no significant inhibition of Cocksackie A9 and ECHO 12 viruses could be demonstrated. This indicates some degree of specificity of the inhibition.

Moreover, when the CNS tissue suspensions were combined with large amounts of poliovirus and then diluted for plaque assay, no inhibition was demonstrated, indicating that the inhibition did not irreversibly neutralize the virus, but in some way affected viral multiplication by acting on the host cells.



At the ICNND base laboratory in Saigon, trucks are ready to be loaded with field equipment.

Burney. No date has been set for the initial meeting of this committee which is made up of representatives of the medical and public health professions and of the general public.

In summarizing the present status of poliomyelitis control in the United States, Dr. E. Russell Alexander, Chief of the Surveillance Section of the Communicable Disease Center's Epidemiology Branch, said that an analysis of the vaccination status had been made of two-thirds of the paralytic cases reported so far this year. The study shows that over 56 percent had had no vaccine and 77 percent had not been vaccinated with three or more shots.

The number of cases of paralytic polio reported for the first nine months of this year totalled 1,553, compared with 4,050 for the same period of 1959. Major outbreaks have occurred this year in Providence, R.I., and Puerto Rico.

Vietnamese Survey by ICNND Team Reveals Serious Diet Deficiencies

An Interdepartmental Committee on Nutrition for National Defense survey of the Republic of Vietnam, where malnutrition has economic and political as well as health implications, has revealed suboptimal intakes of some vitamins and evidence of associated diseases.

Results of the 12th ICNND nutritional survey of civilian and military populations throughout the free world were reported at the Fifth International Congress on Nutrition held in Washington, D. C., recently.

The ICNND, operating administratively through the National Institute of Arthritis and Metabolic Diseases, conducts surveys to help participating countries assess the nutritional status of their peoples and aids in the establishment of local nutrition services.

Survey team members, from both the U. S. and Vietnam, included

clinicians, biochemists, nutritionists, food technologists, statisticians and dental researchers. They examined approximately 7,400 Vietnamese selected from three major population groups (general civilian, school-age children, and military) in seven general areas throughout the country. Local methods of agriculture and food processing were also studied.

Goiter and Anemia Found

Two general areas of goiter were found among civilians, where the incidence in some communities reached as high as 64 percent in pregnant and lactating women, and as high as 27 percent in the population as a whole. Anemia was common in most areas, and classic beriberi was observed in three hospitals. Comparatively few specific lesions due to nutritional deficiencies were found among the military. Vitamin B₁ and B₂ intakes were low in most areas, and the incidence of angular lesions in the corners of the mouth was correspondingly significant. Vitamin A intakes varied widely, with some communities in the deficient range, while iron intakes were usually satisfactory due to the standard practice of cooking in iron vessels. Although Vietnam has few milk products, calcium intakes were satisfactory. This was due, in part, to eating small shellfish and shrimp whole, to the use of "nuoc man," a sauce made from fermented fish which is high in calcium, and to the chewing of betel nut (which, in practice, is mixed with

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Dr. Ernest C. Leatherwood (center), Epidemiology and Biometry Branch, NIDR, a member of the ICNND team in Vietnam, performs a dental examination. Assisting him is Dr. Le Van Hien, a Vietnamese dental surgeon and team member.

Lower Caries Level Seen In Adventist Children

Previously reported epidemiologic studies of dental disease in Seventh Day Adventist children have indicated a significantly lower evidence of dental caries than noted in other population groups. National Institute of Dental Research investigators have recently completed studies which assess the caries experience of Adventist and non-Adventist children under more comparable environmental conditions.

Lifelong Area Residents

In studies conducted by Dr. C. J. Donnelly, Epidemiology and Biometry Branch, a total of 290 Adventist children and 1,438 non-Adventist children, all lifetime residents of Prince Georges and Montgomery Counties, were examined for dental caries.

The children were 6 through 14 years of age and all had received fluoride adjusted drinking water since 1952. Sex and age distribution in the two groups, as well as general environmental conditions, were quite comparable.

Further Studies Planned

Results, based on examination for decayed, missing, and filled teeth (DMF score), showed that there was little difference between the 6 to 9 year old children in the two groups. These age categories benefited most from the 7 years of fluoridation. In the 10 through 14 year categories, there was a 40% discrepancy in the mean number of DMF teeth in favor of the Adventist children.

Data gathered from this study suggest further investigation of a possible caries inhibitory factor in the Adventist way of life. Recognizing that fluoridation may have rendered imperceptible such an inhibitory factor particularly in the younger children, it is planned to continue with parallel studies in areas where caries attack is not influenced by the ingestion of water-borne fluoride.

ICNND

(Continued from Page 4)

ground chalk before chewing). Total caloric, protein and niacin intakes were also satisfactory.

As a result of the survey, recommendations were made on ways of improving the food supply and nutritional health of the Vietnamese. Plans are already underway to implement some of these recommendations by the Vietnamese government. The work was reported to the Nutrition Congress by Dr. Allen L. Forbes, Veterans Administration Hospital, Richmond, Va.

Protein Part of Lipoproteins Found Synthesized by Liver

Experiments conducted by Drs. Charles Radding and Daniel Steinberg, of the National Heart Institute Laboratory of Cellular Physiology and Metabolism, have demonstrated that rat liver slices, incubated *in vitro*, synthesize and secrete high-density lipoproteins identical with those found in normal rat serum.

In these experiments the liver slices were incubated in rat serum to which had been added a complete mixture of amino acids labeled with carbon-14. After incubation periods ranging up to four hours, the slices were removed and samples of the media ultracentrifuged to separate the lipoprotein fractions. These were then analyzed by the "fingerprint" technique.

Identification Distinctive

When broken down by the proteolytic enzymes trypsin or chymotrypsin, each protein yields its own characteristic peptide degradation products. These can be spotted on filter paper and separated on the vertical axis by descending paper chromatography, then on the horizontal axis by electrophoresis to form a characteristic peptide pattern. When this pattern is developed by ninhydrin staining, the result is a distinctive "fingerprint"

which identifies the protein.

The ninhydrin fingerprints of high-density lipoproteins from the incubation medium were compared with fingerprints of lipoproteins of the same density class from normal rat serum and found to be identical. Autoradiograms (made by placing the media fingerprint strips in contact with X-ray film for 1-2 months, then developing the film) showed the presence of radioactivity in all of the ninhydrin spots of the fingerprint.

Comparisons Significant

These comparisons showed that the lipoproteins synthesized by the liver slices were identical to those of normal serum; and, since labeled amino acids had been incorporated into all of the newly synthesized lipoproteins, that the liver was the source of the protein as well as the lipid portions of those lipoproteins.

Other experiments showed that liver slices from nephrotic rats synthesized both lipoproteins and other serum proteins more rapidly than did those from normal rats. This suggests that overproduction of lipoproteins may be an important factor in the hyperlipemia of nephrosis.

These findings have been accepted for publication in the *Journal of Clinical Investigation*.

Regenerated Rhodopsin Is Seen as Key Factor In Adaptation to Dark

A study which shows how human eyes adjust to the dark after exposure to light, conducted by a National Institute of Neurological Diseases and Blindness ophthalmologist, has proven that dark adaptation is directly related to the regeneration of a photosensitive pigment in the retina known as rhodopsin or "visual purple."

Further conclusions substantiate findings from animal studies indicating a linear relationship between recovery of night vision and regeneration of rhodopsin, regardless of differences in light exposure (bleaching) or subsequent time in the dark.

Measuring Method Ingenious

An ingenious method for measuring both dark adaptation threshold (point of minimum vision) and rhodopsin levels in the same eye has been developed by Dr. W. A. H. Rushton, former Visiting Scientist, Ophthalmology Branch, NINDB, who reported the results of this work at the meeting of the Association for Research in Ophthalmology. (Dr. Rushton has now returned to the Physiological Laboratory, Trinity College, Cambridge University.)

By this method, predetermined fractions of rhodopsin in specified retinal regions can be bleached with lights of varying intensities, and the extent of bleaching and rhodopsin recovery can be measured by retinal densitometry, which determines pigment density.

Colored Filters Used

In typical experiments, different intensities of rhodopsin bleaching, ranging from total to 25 percent, were produced and studied. The subject alternated between the densitometer and an apparatus for measuring dark adaptation, which employed yellow and green filters to indicate the point of transition from cones (day vision) to rods (twilight vision). In all cases, the point of transition and the return of minimum vision occurred when rhodopsin was about 90 percent regenerated.

Dr. Rushton concludes that the dark adaptation threshold is probably dependent on the fraction of "opsin," a chemical component of rhodopsin, which has not at a given time combined with "retinin," a yellow pigment, to form rhodopsin.

This theory is supported by electroretinographic studies in animals which indicate that the amount of rhodopsin remaining after bleaching or vitamin A deficiency has a linear relation to the level of the visual threshold.



An ICNND nutrition team sets up the procedure for examining natives of the village of Duc My, near Nhatrang, Vietnam.



Clinical examinations in the field are performed by doctors and nurses.

Clues Found to Cause Of Periodic Paralysis By NINDB Scientists

By correlating the results of multidisciplinary investigations, National Institute of Neurological Diseases and Blindness scientists have clarified the nature and possible cause of a baffling neurological disorder known as familial periodic paralysis.

New evidence indicates that muscle action may be disrupted by increased accumulation of fluid within the endoplasmic reticulum of muscle cells. The fluid increase may be caused by defective glycogen metabolism in muscle, resulting in an altered ionic balance.

Intensive Studies Made

Intensive clinical, biochemical, electron microscopic, and electrophysical studies of familial periodic paralysis have been conducted by Drs. G. Milton Shy, Theodor Wanko, Peter T. Rowley, and A. G. Engel, Clinical Investigations Unit, NINDB.

A significant result is the demonstration that muscle potassium and sodium are not significantly elevated during attacks and that muscle becomes electrically unexcitable.

Recording of the membrane potential by microelectrodes within the muscle cell also refutes the theory that paralysis in this disease is due to hyperpolarization by potassium accumulation.

Samples of muscle tissue obtained during attacks indicated that increased fluid was contained in large vacuoles within a specific conductive network of the muscle cell, the endoplasmic reticulum.

Granules Found

Inside the vacuoles, granules which took up certain stains were found. This and other evidence suggests that the granules may represent the accumulation of abnormal glycogen breakdown products, which cause an influx of electrolytes and water into muscle cells to maintain ion balance.

The investigators reconfirmed that the administration of glucose, glucose and insulin, and epinephrine predisposed to attacks of weakness or paralysis.

Administration and measurement of aldosterone, a potassium diuretic and sodium retention steroid, indicated that abnormal metabolism of this hormone is probably not a cause of the disease, as has been suggested. For unknown reasons, however, an excess sodium intake precipitated attacks.

The studies were presented at the scientific session of the Centenary of the National Hospital, Queen Square, London.

VLB Found Effective Against Uterine Tumor

In previous studies in the Endocrinology Branch, National Cancer Institute, Vincalokoblastine (VLB) was found to inhibit human choriocarcinoma, a rare, highly malignant tumor of the uterus arising during or after pregnancy, transplanted into the cheek pouch of hamsters.

On the basis of this observation, eight women with the disease were treated with VLB by scientists of NCI's Endocrinology Branch. All of the patients had developed resistance to methotrexate and to several other antitumor agents.

Vincalokoblastine is an alkaloid originally derived from the periwinkle plant in 1957 by Cutts, Beer, and Noble, of the Collip Research Laboratories, University of Western Ontario, London, Ontario, Canada.

The anti-cancer activity of VLB in mice was also investigated by Dr. Irving S. Johnson of the Eli Lilly Company. The first clinical trials were carried out simultaneously at Indiana University Medical Center, at Ontario Cancer Institute, and at NCI. The drug was provided for research purposes by Eli Lilly Company.

Lesion Size Reduced

In the present study, the eight women received intravenously one to six three-day courses of VLB in varying amounts of 9 to 36 mg. per course. Therapeutic effect was determined by reduction in the size of metastatic lesions and in the level of urinary gonadotropin, a hormone produced by the tumor.

Of the eight women treated, one showed complete remission, which at the time the report was prepared had lasted six months. In two others the urinary gonadotropin excretion reached normal levels. Two patients showed regression of pulmonary metastases, and three had no response following administration of VLB.

Some of the side-effects observed in all patients were suppression of the bone marrow when total VLB dosage reached 30 mg., hair loss, and severe mental depression. Inhibition of the deep tendon reflexes occurred in five patients and fever in six. All toxic effects proved reversible following each course of therapy.

The investigators conclude that VLB has antitumor activity in choriocarcinoma which has become resistant to methotrexate.

This work was presented in part to the meeting of the American Association for Cancer Research, and is now published in a recent issue of *Cancer Research* by Drs. Roy Hertz, M. B. Lipsett, and R. H. Moy.

Action of Hormone Influences Enzyme Molecule Structure

Studies at the National Institute of Arthritis and Metabolic Diseases by Drs. K. Lemone Yielding and Gordon M. Tomkins have shown that certain female sex hormones can alter the molecular structure of a key catalyst in mammalian cell metabolism, by fragmenting it into four smaller, catalytically altered molecules.

This is the first time that a hormone has been found to affect directly the physical structure of an enzyme; previous studies by other investigators have suggested that hormones exert their biochemical influences by participating chemically in metabolic reactions, undergoing an oxidative or reductive change.

As indicated by the NIAMD studies, the reversible physical inactivation of a strategically placed cell enzyme determines the direction which the cell's metabolic processes will take—toward energy-yielding chemical breakdown, or toward cell-building protein synthesis.

This finding of molecular alteration is the first concrete illumination of a basic regulatory mechanism which determines protein synthesis and, indirectly, reflects on associated cell growth or cell proliferation.

The studies reported describe the effect of four steroid hormones on

crystalline glutamic dehydrogenase (GDH), an important enzyme which facilitates the energy-yielding chemical degradation of glutamic acid. The absence or inactivation of this enzyme tips the scales toward the diversion of glutamic acid to protein synthesis by the cell.

In *in vitro* experiments Drs. Yielding and Tomkins found that diethylstilbesterol, estradiol, and progesterone, all belonging to the group of female sex hormones, inhibited the normal GDH reaction.

GDH Dissociation Promoted

Further investigation demonstrated that the hormones promoted dissociation of the large GDH enzyme molecule, which has a molecular weight of 1,000,000, into four subunits of molecular weight of 250,000. These smaller molecules were enzymatically inactive with respect to GDH activity. Inactivation of the enzyme was reversed in the presence of adenosine diphosphate, a normal cell metabolite.

Cortisone, another steroid hormone tested, did not affect the molecular architecture of GDH and correspondingly did not interfere with chemical degradation of glutamic acid. This selective inhibition by female sex hormones was demonstrated with GDH from beef, chicken, and rat liver, and rat testis, kidney and heart.

A report on these studies by Drs. Yielding and Tomkins is scheduled to appear in the forthcoming issue of the *Proceedings of the National Academy of Sciences*.

PUBLIC HEALTH

(Continued from Page 3)

mentation during the past decade offers many patterns of successful supplementation of private resources, and good public health practice should result in wider coverage as the art advances.

Public health has a preventive tradition. We believe in attempting to foresee and apply a prophylactic. The decade ahead with all of the changes we may anticipate will surely test our ability to keep ahead of the problems.

I would, therefore, appeal for more interest in research about public health practice.

As a nation, we are spending vast sums on research in the biological and medical sciences, but I believe altogether too little attention is being paid to the critical investigation of public health services. This is a field for pioneering. We have not yet developed methods to measure some of the things we should study. We have not defined our public health problems clearly enough and in quantitative terms. Objectives are not always clearly in mind. Sometimes we do not know what the people we serve want. Much of the time we cannot tell them clearly

what they can expect. We have not developed methods for measuring the sharpness of our public health tools, their efficiency, the ratio between the effect produced and the amount of effort expended. We have done too little cost accounting both from the standpoint of cost in dollars and from the standpoint of cost in manpower.

And last, but not least, public health programs of many kinds have been in effect for a great many years. We badly need to evaluate their results and re-evaluate them from time to time. Unfortunately, we have had to be preoccupied with so much action in so many program areas that we have not even developed the methods for evaluating the results of our work.

This is a serious indictment, but it is also a challenging opportunity, and I believe that evaluation and re-evaluation are an absolute necessity in the face of the changes which will surely come between now and 1970.

NIH Spotlight

By Mary-Helen Emmons

The time-honored masculine theory that all women leap with fright onto the nearest chair at the sight of a mouse is knocked into a cocked hat by Miss Damara Bolte and the 19 animal caretakers she supervises, all women but one.

This tall and handsome young woman is a Supervisory Animal Husbandman, the only woman of this title in the Animal Production Section, Laboratory Aids Branch, DRS, where she oversees the breeding and weaning of 70 to 80 thousand mice a month.

At the present time she handles 19 different strains of mice which she and her co-workers have devel-



Damara Bolte and friend.

oped for use in NIH experimental laboratories. Each strain, whether healthy or disease-producing, has its specific use. For instance, one strain has been bred to develop spontaneous mammary tumors; another strain, a kidney disorder.

Asked why women are preferable to men in caring for the mice, Damara replied, "They are so much more dexterous in handling the skittery little animals."

Likes All Animals

Damara's interest in her unusual occupation stems from a life-long love of animals. Even though as an Army "brat" she traveled all over the world, there were always pets of one kind or another traveling with her and her family.

Dogs are her special love, although horses rank high in her affection too. She says ruefully that the only thing that keeps her from owning horses as well as dogs is lack of room at her home.

Since her graduation from Purdue University in 1953 with a B.S. degree in Agriculture, she has been having a wonderful time in the animal world. Her specialty in dogdom is the basenji, an ancient barkless breed from Egypt which is

ACS Sponsors Campaign to Interest College Students in Advanced Work

The American Cancer Society is sponsoring a new venture designed to stimulate interest among college students in advanced work in the medical, biological, and related physical sciences.

Participating with professors from Harvard, Columbia, and Yale Universities is Dr. Harry Eagle, Chief of the Laboratory of Cell Biology, NIAID, who will deliver a series of lectures on the general topic of metabolism of normal and malignant cells in culture.

The speakers chosen by the ACS to launch this experiment have agreed to give four or five lectures each in the coming year at univer-

sities of their choice.

Dr. Eagle has chosen to talk at Purdue in November and Northwestern in December of this year, at Baylor in January and at the University of Oregon in February 1961.

The scientists who will be speaking at other centers are Dr. Bernard D. Davis, Professor of Bacteriology and Immunology, Harvard University; Dr. Alfred Gellhorn, Professor of Medicine, Columbia University College of Physicians and Surgeons; and Dr. Arnold D. Welch, Eugene Higgins Professor of Pharmacology and Chairman of the Department, Yale University.

Guy W. Moore Named To DGMS Position

The Division of General Medical Sciences has announced the appointment of Guy W. Moore as Deputy Information Officer.

Prior to coming to NIH, Mr. Moore was Information Officer, U.S. Army Medical Research and Development Command. He has also served with the State Department, both in Washington and Uruguay.

Born in Retta, Okla., Mr. Moore received a B.A. degree in journalism and an M.A. degree in history from the University of Oklahoma.

He is the author of the book, *The Case of Mrs. Surratt: Her Controversial Trial and Execution for Conspiracy in the Lincoln Assassination*, the first objective account of the role of Mary Surratt in the assassination of Abraham Lincoln.

comparatively rare in the United States.

From 1955 to 1958 she managed the Bettina Belmont Ward Basenji Kennels in Middleburg, Va., where she became devoted to these attractive little animals. She owns six basenjies, along with a mastiff and two basset hounds, and her basenji, Champion Reveille Recruit, recently was judged best of winners at the Westchester Kennel Club's Specialty Show in New York.

In addition to breeding and showing her own animals, she shows dogs for other breeders. Among the many types she has shown is the Irish wolfhound, which she "adores."

Is Tennis Champion

Damara's hobbies, however, are not confined exclusively to animals. She is an accomplished swimmer and rider, and in 1958 and 1959 was co-winner of the women's doubles in tennis at the Army Navy Country Club.

She also has a great interest in

U.S. Scientists Leave For Soviet Survey

A NINIB-sponsored delegation of six American scientists departed for Russia on October 12 to survey Soviet progress in the field of maternal and child care.

The 30-day tour is part of a scientific-cultural exchange program between the U.S. and the Soviet Union. A group of Russian specialists will make a similar study of maternal and child care in this country at a later date.

Members Listed

Members of the U.S. delegation are Drs. Stewart H. Clifford, Boston Lying-In Hospital; Allan C. Barnes, Johns Hopkins Medical School; Katherine Bain, Children's Bureau, DHEW; B. G. Greenberg, University of North Carolina; Edith Potter, Chicago Lying-In Hospital; and Fred S. Rosen, Children's Hospital, Boston.

A report which details the findings of a previous NINDB-sponsored medical exchange mission to the Soviet Union has recently been published. It contains observations on Soviet research activities in the physiology and pharmacology of the nervous system by six scientists, including Dr. Karl Frank of NINDB, who toured Russian research institutions in 1958. Copies of the extensive report (PHS publication No. 800) are available on request from the NINDB Information Office.

art. After her graduation from Purdue, she spent a winter in Paris studying painting and sculpture—animal subjects of course!

Damara lives in Alexandria with her mother and father, Gen. Charles L. Bolte (Ret.), former Army Vice Chief of Staff. Fortunately, her family shares her enthusiasm for animals and has encouraged her in her interesting work and hobbies.

Dr. Kahler, Perfector Of Glass Electrode, Retires from NIH

Dr. Herbert Kahler, Head of the Physical Biology Section, Laboratory of Physiology, NCI, retired October 11 after 32 years in the Public Health Service.

Dr. Kahler considers his most important work to have been increasing the accuracy and durability of the glass electrode, which is used in measuring the acidity of

tissues and solutions. Recently Dr. Kahler has been using the glass electrode for *in vivo* studies of the pH of virus-induced animal tumors.

The fifty-three publications in Dr. Kahler's bibliography include use of ultracentri-



Dr. Kahler

fuge in studies of the Bittner mammary tumor agent and development of an apparatus for milking mice.

Dr. Kahler used electron microscopy to study the polyoma and Shope papilloma viruses. He also reported electron micrographs of sodium desoxyribonucleate and of the tobacco mosaic virus.

Career Varied

Dr. Kahler received a B.S. degree from the University of Washington in 1918 and a Doctorate in mathematical physics from Cornell in 1922. He was on the staff of the Laboratory of the Bureau of Standards, a Carnegie Fellow at Cornell, an instructor of physics at Yale University, a National Research Fellow at California Institute of Technology, and a Research Engineer at Westinghouse Research Laboratory.

In 1928 Dr. Kahler joined the Hygienic Laboratory of the Public Health Service, forerunner of NIH, as a biophysicist, and became Head of the Physical Biology Section in 1931.

'Woman of Year' Title Won by Dr. Thurman

Dr. Ernestine Thurman, Executive Secretary of the Tropical Medicine and Parasitology Study Section, DRG, was named "Outstanding Professional Woman of the Year" recently by the D.C. State Federation of Business and Professional Women's Clubs.

Dr. Thurman, who has been with DRG since August 1958, holds the rank of commander in the PHS Commissioned Corps and is the only woman entomologist who is a commissioned officer.

R&W Concert Nov. 10 Features D.C. Violist Raymond Montoni

The second R&W concert of this season will feature Raymond Montoni, violist, on Thursday, November 10, at 8:30 p.m. Mr. Montoni will be accompanied by Allen Bonde at the piano.

Mr. Montoni will play selections by Beethoven, Schumann, Honegger, Piston, and Bloch.

The concert will be held in the CC auditorium. Tickets, costing fifty cents, may be obtained at the R&W film desks.

A teacher of violin and viola at Catholic University, Mr. Montoni is the conductor of the Catholic University orchestra and of the Young Peoples' String Orchestra of Washington. He has received critical acclaim for numerous performances both as a recitalist and with chamber groups.

Mr. Bonde is studying for his Masters and Doctors degrees at Catholic University.

UGF DRIVE

(Continued from Page 1)

ployee who has not yet made his gift to the campaign.

The 15-foot rockets at the east and west entrances to the NIH grounds indicate the percentage of employee giving. The rocket effect is an improvement made this year over the thermometer used formerly. The rockets were designed by George Marsden, Chief, Medical Arts Section, DRS, who is also a member of the publicity committee for the UGF campaign. They were constructed by the Shops Section, DRS.

Other members of this year's publicity committee are Arlene Butterly, DBS, Chairman; Laurence E. Ring, R&W; Margaret A. Badger, CC; Roy Perry, DRS; and Elizabeth Mok, ORI.

A breakdown of the third week's contribution figures follows:

	Percent of Participation	Amount Contributed
OD-NIH	58	\$3,625.65
DRS	56	3,691.05
DRG	98	3,974.90
DGMS	91	956.00
DBS	90	1,812.65
CC	84	7,608.30
NCI	57	6,487.45
NHI	44	2,508.75
NIAID	81	3,651.72
NIAMD	51	4,600.70
NINDB	55	2,111.05
NIMH	51	4,762.00
NIDR	87	1,753.75
Totals	66%	\$47,543.97

EQUIPMENT EXHIBIT BECOMES CROWDED

Story on Page 1



The research equipment of 111 manufacturers attracts the interest of a portion of the thousands of visitors who viewed the displays in Building 22 during the 10th Annual Research Equipment Exhibit held here early this month. Because of lack of space, 10 additional exhibits . . .



. . . were housed in trailers adjacent to Building 22, some of which are shown here. Three trailers were used last year.

New Monthly Periodical Is Published by HEW

A new monthly periodical is being published by the Department of Health, Education, and Welfare.

The booklet, *Health, Education, and Welfare Indicators*, provides a handy reference on current developments in the field of human resources. It features up-to-date statistical information in such areas as consumer interests, health conditions, population trends, social security, births, deaths, and marriages. Month-to-month changes in a wide-ranging field of subjects are reflected in a series of charts and tables.

The publication is being issued as a companion piece to the annual *Health, Education, and Welfare Trends*, published earlier this year.

Subscription price for *Health, Education, and Welfare Indicators* is \$3.50 a year from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. *Health, Education, and Welfare Trends* is available from the Superintendent of Documents at 50 cents a copy.

An American Medical Association survey finds that the retirement age for 80 percent of U. S. doctors is 72.

Award-Winning Exhibit Displayed in CC Lobby

An ophthalmology exhibit that won three top awards at a recent meeting of the American Medical Association is on display in the lobby of the Clinical Center, where it is scheduled to remain through November 2.

The exhibit, developed at the State University of Iowa, is entitled "Chamber Angle Anomalies in Developmental Glaucoma and in Systemic Mesodermal Disorders." It is based on the work of Drs. Hermann M. Burian and Gunter K. von Noorden, and Edwin Lee Allen, NINDB grantees of the University's Department of Ophthalmology, and Dr. Ignacio V. Ponseti of the Department of Orthopedic Surgery.

The American Medical Association's Hektoen Gold Medal, the Knapp Fund Prize, and the Award of Merit for Medical Illustration were awarded the exhibit at AMA's 1960 convention in Miami Beach.

Bloodmobile Scheduled to Be at NIH Nov. 8

A Red Cross Bloodmobile unit will be in Wilson Hall Tuesday, November 8, from 9 a.m. to 12:45 p.m. to receive blood donations from NIH employees.

Anyone over 18 years of age or

Fire Prevention Week Observed With Drills, Demonstrations at NIH

NIH employees participated extensively in fire drills and had an opportunity to observe the NIH Fire Department in action during National Fire Prevention Week, October 9-15.

The observance featured fire drills involving every building on the reservation and the Robin and Arts Buildings in Silver Spring. This year for the first time drills were conducted without specific time announcements.

Even the Clinical Center, which because of its functions as a hospital could not participate in a total evacuation, held a drill in one of its patient areas.

The Plant Safety Branch, of which the NIHFD is a part, was particularly encouraged by the cooperation of employees in the drills and commended the building wardens for their "excellent job" in handling their areas.

Although NIH has never experienced a fire resulting in loss of life, PSB stresses the fact that the potential for such a fire is always present. A knowledge of the buildings combined with training in evacuation will insure an extra margin of safety for NIH employees should such an emergency occur, the Safety Branch points out.

Computer Group Holds First Meeting Here

The first general meeting of the recently formed DRG Advisory Committee on Computers in Research was held here September 20-21.

Dr. Lee B. Lusted, Professor of Radiology, University of Rochester, is chairman of the nine-man committee, and Dr. Fay Hemphill, Assistant Chief for Training, DRG, is Executive Secretary.

Dr. Shannon addressed the first session of the meeting September 20. He charged the group with the mission of contributing advice and recommendations on the direction of NIH policy concerning the application of electronic computers in biological and biomedical research.

A subcommittee appointed by Dr. Lusted met here October 15 to discuss recommendations on organization of the entire program.

under 60 is eligible to give blood. Volunteers under 21 must have written permission from a parent or guardian. Further information may be obtained by calling Ext. 4851.

Get the UGF Rocket in Orbit—Give the United Way