

The NIH Record

U.S. Department
of Health,
Education, and
Welfare

January 22
1980
Vol. XXXII
No. 2

National
Institutes
of
Health

NIAID Scientists Report Major Step Toward Developing Vaccine for Infant Diarrhea

An important step toward developing a vaccine to prevent a serious infant diarrheal disease—which was responsible for between 5 and 18 million deaths among children under 5 years of age in 1975—has been reported by scientists of the National Institute of Allergy and Infectious Diseases.

The development allows scientists to grow a virus which will enable them to study the connection between the virus's genetic structure and its ability to cause disease. It is expected that scientists will be able to create a weakened virus that could be used as an effective vaccine. Dr. Richard G. Wyatt, a clinical virologist, led the NIAID research effort.

The virus, known as the rotavirus, was first identified in 1973 by Australian scientists, who examined specimens from young patients stricken with severe diarrhea. Since then, epidemiologic studies from many parts of the world and the United States have shown that

rotaviral infection is responsible for approximately 50 percent of serious diarrheal disease in hospitalized infants and young children.

"Although the proportion of deaths due to rotavirus is not currently known, it is suspected that this virus accounts for a large share of mortality associated with diarrhea. Since diarrhea can be so devastating in the younger age group, a rotavirus vaccine is urgently needed," says Dr. Richard M. Krause, NIAID Director.

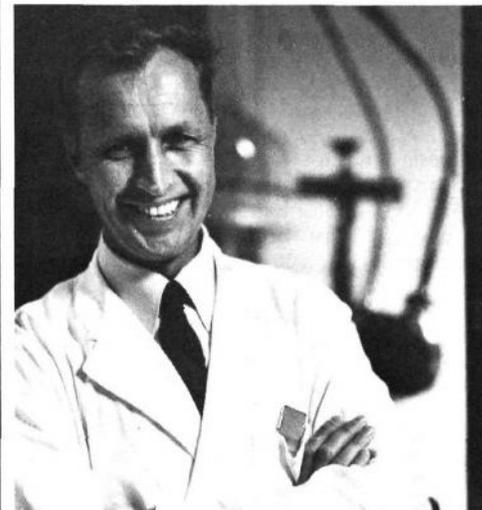
Previous laboratory attempts at growing human rotavirus in sufficient quantities for vaccine development have failed. The NIAID team succeeded, however, in growing a strain of the virus efficiently in monkey kidney cells. These laboratory-grown cells are widely used in reproducing virus for investigation and for vaccines.

The strain of rotavirus used—type 2—was
(See *INFANT DIARRHEA*, Page 6)

Dr. K. Omnell Is Named NIDR Clinical Director

Dr. Karl-Ake Omnell was recently named clinical director and chief of the Dental Services Section, National Institute of Dental Research.

Dr. Omnell will lead the Institute's clinical research on orofacial diseases and disorders, with emphasis on the development of preventive, diagnostic, and treatment measures.



Dr. Omnell has served on the editorial boards of several Swedish dental publications.

He will also head the dental clinic which provides services to patients in the Clinical Center.

Dr. Omnell comes to NIH from the School of Dentistry of the University of Lund, in Malmo, Sweden, where he was professor and chairman of the department of oral radiology since 1962. In addition, he served as its dean from 1971 to 1974.

The new clinical director received his D.D.S. degree from the Royal Dental School of Stockholm in 1950, and a doctor of odontology degree from the University of Lund in 1957. He was a visiting scientist in NIDR's Laboratory of Histology and Pathology in 1961, and continued his laboratory and

(See *DR. OMNELL*, Page 3)

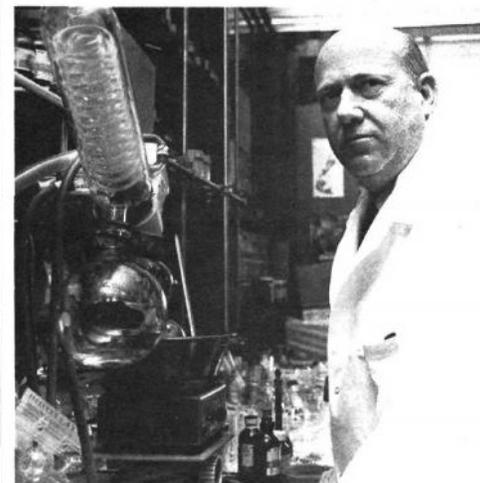
Limited Tax Return Aid Available

Tax forms, tax information, and limited assistance in computing 1979 returns will be available in Bldg. 31, Rm. 5A-35, beginning Feb. 4.

Employees should collect receipted medical bills, tax receipts, and proof of contributions and prepare a draft tax return prior to seeking assistance.

More details will be announced later.

Dr. Stadtman Wins National Science Medal



Dr. Stadtman is internationally known for his contributions in the field of intermediary metabolism.

Dr. Earl R. Stadtman, chief of the National Heart, Lung, and Blood Institute's Laboratory of Biochemistry, was one of 20 eminent scientists recently awarded the National Medal of Science, the highest honor that the Federal Government accords to this Nation's scientists and engineers.

Since the medal was established in 1959, it has been awarded to 133 scientists and engineers. Five of the recipients have been NIH scientists.

Dr. Stadtman is being honored for "seminal contributions to understanding of the energy metabolism of anaerobic bacteria and for elucidation of major mechanisms whereby the rates of metabolic processes are finely matched to the requirements of the living cell."

A native of Carrizozo, N.M., Dr. Stadtman received his B.S. degree in 1942 and his Ph.D. in 1949 from the University of California, Berkeley.

After a year as an AEC fellow in biochemistry at Massachusetts General Hospital, he joined NIH as a chemist in 1950. He subsequently rose to the position of chief of the NHLBI Laboratory of Biochemistry, in which post he has served since 1962.

Dr. Stadtman is author or coauthor of more

(See *DR. STADTMAN*, Page 6)

The NIH Record

Published biweekly at Bethesda, Md., by the Editorial Operations Branch, Division of Public Information, for the information of employees of the National Institutes of Health, Department of Health, Education, and Welfare, and circulated by request to writers and to researchers in biomedical and related fields. The content is reprintable without permission. Pictures may be available on request.

The NIH Record reserves the right to make corrections, changes, or deletions in submitted copy in conformity with the policies of the paper and HEW.

NIH Record Office
Bldg. 31, Room 2B-03, Phone 496-2125

Editor
Frances W. Davis
Staff Writers
William B. Reinckens
Susan Johnson

Staff Correspondents
ADA, Judy Fouche; CC, Susan Gerhold; DCRT, Mary Hodges; DRG, Sue Meadows; DRR, Barbara Menick; DRS, Arthur F. Moore; FIC, Toby P. Levin; NCI, Dr. Robert M. Hadsell; NEI, Marsha Corbett; NHLBI, Bill Sanders; NIA, Ann Diefenbach; NIAID, Jeanne Winnick; NIAMDD, Linda Cross; NICHD, Pamela Driscoll; NIDR, Sally Wilberding; NIEHS, Hugh J. Lee; NIGMS, Wanda Wardell; NIMH, Betty Zubovic; NINCDS, Doris Parker; NLM, Roger L. Gilkeson.

Ski Club Sponsors Trips For Winter Season

The R&W Ski Club is sponsoring several winter trips. These include:

Jan. 25-27, Pocono Under Glass. Trip includes lodging for 2 nights at the Sheraton-Pocono Inn, two full American breakfasts and two smorgasbord dinners on Saturday and Sunday, entertainment, prefitting of ski equipment at hotel, ski lesson on Saturday, and transfers to ski area.

Feb. 9-17, Mt. Tremblant. Trip includes transportation, three meals a day, lessons in all ranges of experience, lodging, and lift tickets. \$339.

Mar. 9-15, Mt. Tremblant. Round trip air transportation to Montreal, with 1½-hour bus transfer to Mt. Tremblant; 7 days' lift tickets; 6 nights' lodging in private chalets, one or two persons per room; three meals per day; and social activities. \$412.

Austrian Alps, dates available in January, February, and March. Includes round trip air transportation, first class accommodations for 7 nights based on double occupancy, continental breakfast and dinner daily, portage, and 6-day lift tickets. \$749.

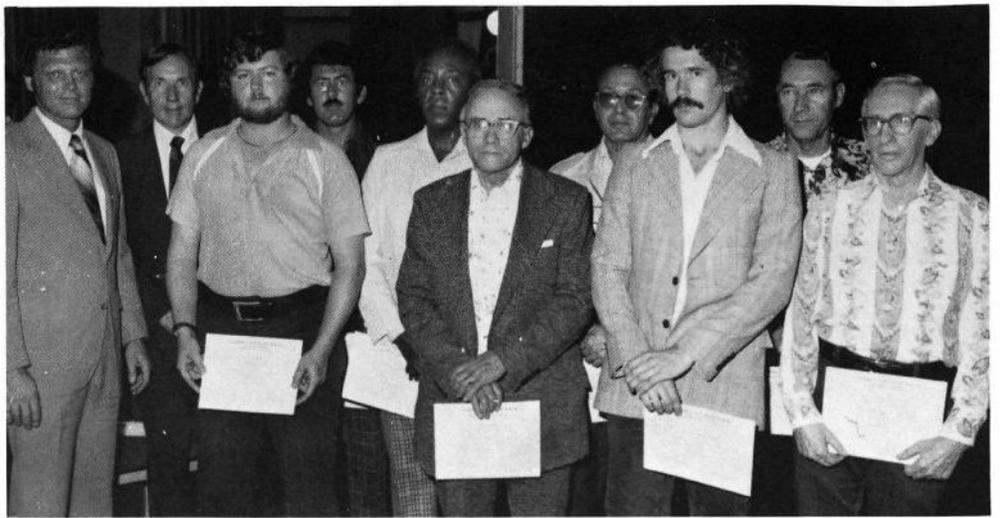
For further information about these trips, contact June Jontiff, 496-6061.

PHS Professional Ass'n To Meet In Houston in May

The U.S. Public Health Service Professional Association will hold its 15th annual meeting at the Hyatt Regency Hotel, Houston, Tex., May 27-31.

The meeting will be open to Commissioned Corps and Civil Service professionals.

For further information, contact William Lucca, executive director, Commissioned Officers Association of the USPHS, 1750 Pennsylvania Ave., N.W., Washington, D.C. 20006, telephone: (202) 393-5430.



The Division of Research Services made 164 presentations to its employees at its recent annual awards ceremony in the Masur Auditorium. These included special individual and group, cash and length-of-service awards. One award-winning group was the Primate Quarantine Unit, Veterinary Resources Branch. L to r are: Dr. Robert A. Whitney, chief, VRB; Dr. Joe R. Held, Director, DRS; Edgar Settle; Charles W. White; William T. Roseboro; Paul B. Late; Charles R. Norwood; Dennis E. Barnard; Donald E. Forrest; and Raymond W. Atwell.

Stride Now Open to NIMH-IRP Employees

Employees in NIMH's Intramural Research Program are now eligible to compete for NIH Stride positions in the FY 1980 program announcement.

Two new Stride training positions in NIMH-IRP, a chemist and a biologist, will be announced beginning Jan. 21. All eligible NIH and NIMH-IRP employees may compete for these positions.

Program eligibility requirements on length of service now call for 1 year's employment at NIH or NIMH-IRP, or a combination of service at NIH and NIMH-IRP equal to 1 year of work immediately prior to Feb. 4, 1980.

The 18 participants selected for the 1980 Stride Program will receive on-the-job training and related academic course work to qualify for placement in professional positions.

Applications for the positions are being accepted until Feb. 4.

Employees interested in the program should consult the NIH Merit Promotion Plan Vacancy Listing about specific positions, eligibility requirements, application procedures, etc.

Details may be obtained from the previous issue of *The NIH Record* (Jan. 8, 1980, page 3) or for a copy of the Stride Program Information Sheet, call the Career Development Branch, 496-6211.

Also, applicants should plan to attend one of the information sessions in Bldg. 31, Conf. Rm. 8:

Thursday, Jan. 24, noon to 1 p.m.

Monday, Jan. 28, 5 to 6 p.m.

Dr. Christian Lantz Dies; Recent CC Resident

Dr. Christian H. Lantz, 33, a resident in the Clinical Pathology Department, Clinical Center, from 1977 until July 1979, died Dec. 17 in Kalamazoo, Mich., following a stroke.

At the time of his death, he was director of the clinical research laboratory of the Upjohn Co. in Kalamazoo.

Born in Washington

Dr. Lantz, who was born in Washington and grew up in Temple Hills, Md., earned a bachelor's degree at the University of Maryland and a doctorate in pharmacology at the University of Virginia, graduating from its medical school in 1977.

He is survived by his wife, Holley; son, Eric; daughter, Katherine; and his parents, Mr. and Mrs. F. C. Lantz of Temple Hills.

The family suggests that expressions of sympathy be in the form of contributions to the National Institute of Neurological and Communicative Disorders and Stroke.

Ethics Board Meets Feb. 1, 2

The Ethics Advisory Board will meet on Feb. 1 and 2 in Rm. 800 of the Humphrey Bldg., 200 Independence Ave., S.W., Washington, D.C. The meetings, which begin at 9 a.m. on both Friday and Saturday, will be open to the public subject to limitations of available space.

The agenda includes a discussion of procedural matters and further consideration of the Center for Disease Control's request for limited exemption from the Freedom of Information Act.

For further information, contact Amanda F. MacKenzie, Westwood Bldg., Rm. 125; telephone, (301) 496-7776.

Tickets to New Musical Offered by R&W

R&W is offering tickets to the new musical, "The Best Little Whorehouse in Texas," starring Alexis Smith, at the Warner Theatre.

Orchestra seating is being held for NIH'ers on Wednesday, Feb. 6, at \$14.85 per ticket.

Order now at the R&W Activities Office, Bldg. 31, Rm. 1A-18.

Blood Bank Begins Recruitment Drive

What bank today will give an investor a 3 to 1 rate of exchange for an investment? The NIH Clinical Center Blood Bank will do just that for anyone willing to donate a pint of his or her blood so that three patients might benefit.

Even by today's standards a 3 to 1 split is not a bad return rate for a virtually painless gift that takes only about 40 minutes to transact. It is also a gift that will hedge against possible future needs of the donor or any member of his family.

January begins the NIH Clinical Center Blood Bank's recruitment drive to find new donors. A dwindling supply of available blood and the need for identifying donors with rare blood types have prompted the campaign.

This year the Clinical Center expects to go through over 28,000 units or pints of blood, and blood components surpassing last year's figure by 3,000. Each month 400 to 500 NIH employees give blood. From this fresh blood supply up to three times as many blood products are made at the Blood Bank. Plasma used in controlling bleeding, red cells for carrying oxygen, and platelets essential for blood clotting are just a few of the items separable from the whole blood reservoir that can only be stored for 35 days, so a constant supply is needed.

Giving blood is something that Edward S. Condon, an NICHD management analyst, has been doing since he has worked at NIH. "I do it every time they let me," he says. As of last week, Mr. Condon has donated 34 pints of blood and has given five additional pints of his O-positive blood for different research projects. Generally, a person can donate every 56 days, in Mr. Condon's case, he gives every 3 months. A donor can also have his name put on a list to be called in an emergency, if the Clinical Center needs a blood donor with a particular blood type quickly.

"They (the Blood Bank) bend over backwards to help you," says Mr. Condon, between sips of grapefruit juice while he rests after giving blood. The Blood Bank will even go so far as to remind a donor when he can give blood again, and is flexible about setting up appointment times, he says.

The reason he has given blood so many times is that he wants to repay those unknown donors who gave him blood when he needed it, when he was in a serious automobile accident years ago.



Nurse Mary Wells (l) adjusts equipment as Ms. Blumberg donates blood.

Preparing to give blood for the third time, Barbara Blumberg, a public health educator in NCI's Office of Cancer Communications, says, "It will help with the research effort. We've got a lot of people in the Cancer Institute giving blood. It will also help my family if they should need it."

Anyone who donates blood will be credited with a pint for himself or for any member of his immediate family, according to the NIH Blood Bank, and they keep a computer record of each pint contributed. A blood donation does not cover any administrative costs associated with supplying an individual with blood, says Jimmie L. Driscoll, a retired ex-Marine whose job now is to recruit donors.

"We supply 65 percent of the blood transfused at the Clinical Center ourselves," says Mr. Driscoll of the amount obtained at NIH during the year from employees. The remainder is supplied either through the American Red Cross or other allied groups. "Sometimes we have to go out into the bushes to recruit," he says, noting that NIH cannot recruit off-campus. However, he can arrange for off-campus donors to give, if they contact him at 496-1048/49, or come to Bldg. 10A, Rm. 1C-33, any time from 8:30 a.m. to 5 p.m., Monday through Friday.

The Blood Bank is now interested in seeing donors who in the past may have been told that they could no longer give blood because of some allergic reaction they may have

experienced, says Dr. Paul V. Holland, Blood Bank Chief. "We are doing more work with blood components today."

There is also an urgent need for persons with rare blood types to donate. The following is a list of blood types as they appear in the U.S. population and the percentage of the population that has a particular blood type:

Blood type and Rh	How many have it	% of Population
O positive	1 in 3	37.4
O negative	1 in 15	6.6
A positive	1 in 3	35.7
A negative	1 in 16	6.3
B positive	1 in 12	8.5
B negative	1 in 67	1.5
AB positive	1 in 29	3.4
AB negative	1 in 167	.6

"I can even see the need for blood in my area," says Marylyn Gillson, a CC pediatric oncology nurse, who has only started working at NIH recently, as she gives blood. Every day she works with children affected by different forms of cancer. "Seeing that I'm here in the hospital, I thought that I'd drop down and give."

Dr. Omnell

(Continued from Page 1)

clinical studies upon his return to Sweden.

He has won several awards, including the Silver Medal of the University of Helsinki and the Prize of the Swedish Dental Association for the most important scientific contribution to Swedish dentistry for the period 1956 to 1957.

From 1974 to 1977, Dr. Omnell was president of the International Association of Dento-Maxillo-Facial Radiology and chairman of the fourth International Congress of Dento-Maxillo-Facial Radiology held in Sweden in 1977.

FAES Concert Features Denis Brott

Canadian cellist Denis Brott will appear in the Fourth Piatigorsky Memorial Concert on Sunday, Jan. 27, at 4 p.m., in the Masur Auditorium.

This is the fifth concert of the 1979-80 Chamber Music Series sponsored by the Foundation for Advanced Education in the Sciences.

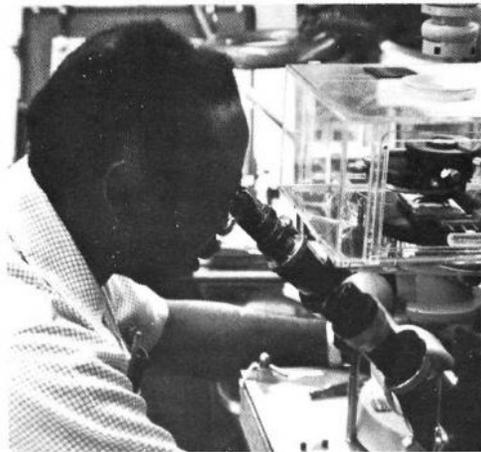
Admission is by ticket only.



Mr. Condon (l) gets his blood donor record updated by Mr. Driscoll, while he takes a break after giving blood.

Biologist Uses Time-Lapse Photography To Study Cells and Organs in Culture

By Angela Ducker



Mr. Morgan uses phase contrast microscopy and a special incubator to examine living cells.

Willie D. Morgan was well prepared for his job as a biologist at the National Cancer Institute, but his role as a filmmaker came about unexpectedly.

Mr. Morgan, who works in the Laboratory of Pathology, uses time-lapse photography to study and experiment with cells and organs in culture.

He got started in this work about 25 years ago, when researchers discovered that injecting polyoma virus into newborn mice produced a cancer in the animals' salivary glands.

His supervisor, Dr. Clyde J. Dawe, was interested in exactly what happens to the epithelial and mesenchymal cells of the salivary glands when the virus is injected, and he wanted to study the virus/cell interaction microscopically.

"I knew absolutely nothing about time-lapse photography," recalls Mr. Morgan. He began experimenting and learned to use the time-lapse equipment available in the laboratory.

The next challenge he faced was developing a method for keeping the cells alive while they were being observed. "I knew enough about physiology and the fundamentals of

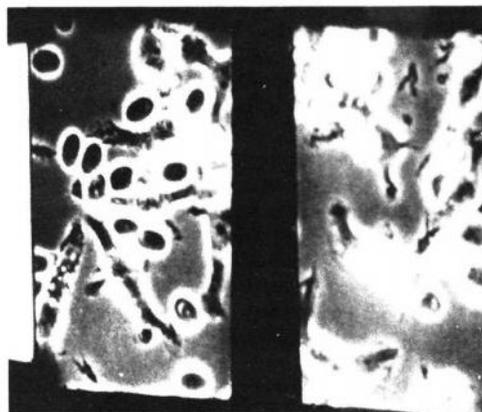
biology to approach the problem," he says.

Mr. Morgan developed a method of pumping carbon dioxide into a tissue culture cubicle, where the gas diffuses through walls of polyethylene tubing to reach the cells in a culture chamber. The exchange of gases in the chamber keeps the cells alive and growing.

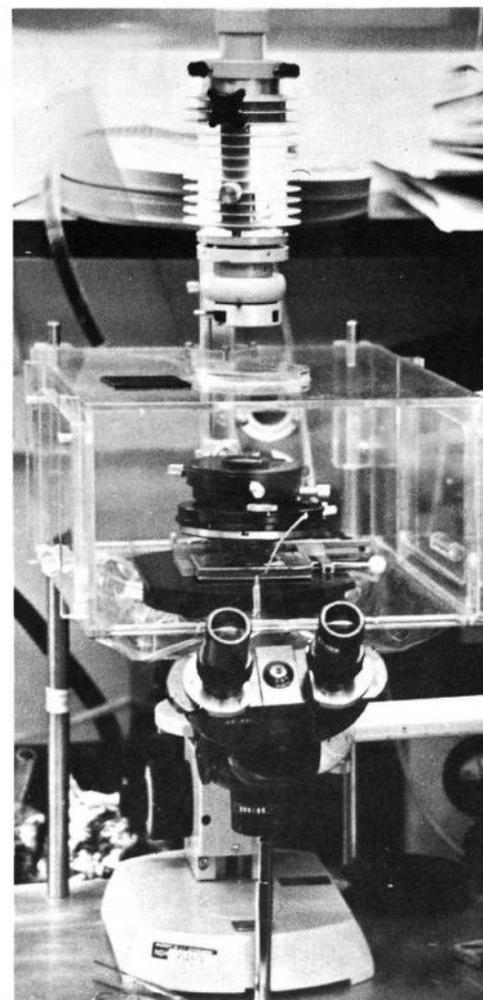
Once the incubator and gas exchange method were designed, all that was left was to take the pictures. Mr. Morgan has made almost 100 films of different types of cell interactions.

Highlights of Mr. Morgan's work include capturing on film the contractions of myoepithelial cells in the mouse salivary gland and demonstrating cell-mediated cytotoxicity, the reaction in which cells treated with antibody are killed by macrophages. He was the first person to photograph myoepithelial contraction.

One of Mr. Morgan's future goals is to remove the nerves from the salivary glands in mice to see what part they play in the myoepithelial contractions. He also wants to study the cell cycle of cancerous and normal epithelial and mesenchymal cells,



Cell-mediated cytotoxicity is illustrated through a special technique developed by Mr. Morgan: a split screen time-lapse film of (l) normal chicken red blood cells and macrophages and (r) the same cells treated with antibody being attacked by the macrophages.



Mr. Morgan designed this incubator and a gas exchange method that keep cells alive so they can be studied and filmed.

and the part cancer may play in the division of cells.

Mr. Morgan, who came to NIH in 1951, received his B.S. in biology from Shaw University in North Carolina. He has also taken courses at NIH and Howard University in physiology, virology, immunology, and embryology.

Although he uses many cameras in his work, photography is not one of Mr. Morgan's hobbies. "I have a little Instamatic at home," he notes with a smile.

NIH's Offer Assistance to Foreign Visitors

About two dozen NIH's responded to a recent appeal from the Fogarty International Center (*NIH Record*, Oct. 16, 1979) for assistance for foreign visitors to NIH.

Both forms of assistance requested—social contact with the visitors and household furnishings for their use while in the U.S.—were offered.

"People volunteered to invite internationals to their homes for meals (one family was invited over for Thanksgiving), and to take them sightseeing, skiing, fishing, folk dancing, and hiking," says Joan Muller, FIC foreign visitors assistant. "Several people volunteered to help with language problems."

Donations of household goods ranged from small items to full sets of dishes, stemware, flatware, and even a living room suite.

Supplies in FIC's clearinghouse for household goods are again depleted, however. At least six families are on a waiting list for items such as dishes, cooking utensils, beds, and chairs.

There are approximately 900 foreign scientists in NIH's Visiting Program, says Mrs. Muller. "They can't bring household items with them to the U.S., because of baggage limitations," she explains. "And since shipping costs are prohibitively expensive, they must rely largely on what they can get through the clearinghouse."

If you have household items to donate, or are interested in providing social contact to visiting scientists and their families, call Mrs. Muller, 496-4335.

R&W Sponsors Cultural Courses At Jewish Community Center

The Cultural Arts Division of the Jewish Community Center of Greater Washington on Montrose Road in Rockville is offering 125 courses for children, teens, and adults—beginning to advanced levels.

Some of the classes include: tap dancing, violin, wood sculpturing, enameling, Suzuki (a method of teaching violin to young children), and musical theater.

Through a special arrangement, R&W is offering \$5 discount coupons to members who wish to register for the spring semester.

For information and application forms, call 881-0100.

Brochures and coupons are available at the R&W Activities Office, Bldg. 31, Rm. 1A-18.

Side Effects of Widely Used Epilepsy Drug Discussed at NIDR Meeting

The side effects of phenytoin (Dilantin), the drug commonly used to control epileptic seizures, was the subject of a recent international symposium sponsored by the National Institute of Dental Research.

Attending the meeting at the University of North Carolina at Chapel Hill were clinicians and researchers involved in prescribing the drug, studying its effects, and treating its side effects.

Since its development in the 1930's, phenytoin has been considered the drug of choice for controlling epileptic seizures, especially grand mal seizures.

Its undesirable side effects, however, plague many of the 2 million Americans who take the drug daily. These effects include overgrowth of the gum tissues, abnormal blood conditions, and an increased risk of certain birth defects.

Overgrowth of gum tissue, sometimes almost burying the teeth in soft tissue, occurs most often and more severely in children taking phenytoin. Because dental hygiene becomes difficult for these patients, tooth decay and periodontal disease often result. Dentists sometimes remove the excess tissue surgically, but it often grows back.

The concentrations of immunoglobulins A, G, and M in the blood are lowered in many persons following phenytoin therapy. The drug also frequently reduces the amount of immunoglobulin A in saliva.

The 2 percent average risk of serious birth defects increases threefold in offspring of women who take phenytoin during the first 3 months of pregnancy. Mental retardation is the most common defect; reductions of overall growth and head dimensions are also common. Clefts of lip, palate, or both, and serious heart defects occur less often.

Some investigators at the NIDR meeting reported animal studies which show that phenytoin itself is harmless, but metabolism of the drug may produce toxic by-products.

Other scientists, who used radioactive

phenytoin on inbred animals, presented evidence that one metabolic by-product, an epoxide, binds more to certain protein molecules in some strains than in other strains. In the bound state, the epoxide is believed to interfere with excretion, causing the concentration of the drug to rise to a damaging level in the fetus.

The findings of a number of studies indicate that a genetic predisposition is necessary for developing many of the reactions to phenytoin.

Geneticists have shown that, in mice, certain genes control many drug-metabolizing activities. These same genes are also associated with birth defects, risk of cancer, and drug toxicity. Scientists now believe that a child's responses to phenytoin are affected not only by the nature of the mother's drug regimen and her genetic ability to metabolize the drug, but also by the child's own genetic constitution.

It is not possible to perform experiments in humans to separate the effects of epilepsy itself from the effects of therapeutic drugs, but these experiments are being attempted in animals.

One investigator reported that the rate of offspring with clefts increased 4-5 times when pregnant Ajax mice were given a single dose of phenytoin on the 10th day of gestation in an amount sufficient to bring their serum concentration of the drug up to levels found in humans on phenytoin therapy.

Larger doses of the drug given on the same day caused clefts in almost 100 percent of the offspring. In this case, the clefts were attributable to severely reduced growth of embryonic facial processes.

This growth reduction correlates with other observations that there is a drug-induced loss of a meshwork of projections (cell processes) from embryonic mesenchymal cells. The meshwork appears to control the paths of cell migration in the developing head.

NICHD Sponsors Research Update on Peptides: A New Generation of Contraceptives

A new nonsteroid approach to fertility regulation using peptides will be the subject of a research update for science writers on Wednesday, Jan. 30, from 9 a.m. to noon in Bldg. 31A, Rm. 2A-52.

The discussion on Peptides: A New Generation of Contraceptives is sponsored by the National Institute of Child Health and Human Development, which has started a major program of human clinical trials to assess the use of certain peptide analogs as fertility regulators in both males and females.

These clinical trials are the direct result of the basic research in brain hormones which won Andrew Schally and Roger Guillemin the 1977 Nobel Prize in Medicine or Physiology.

The development of these peptide analogs opens a new dimension in fertility regulation. Scientists believe that one or another of them may be a practical postcoital contraceptive, make male contraception a reality, and

suppress ovulation on a regular basis with minimal side effects.

Dr. Gabriel Bialy, chief of the Contraceptive Development Branch, NICHD, will moderate the discussion. Three scientists involved in the development of these drugs will be on the program.

Dr. Wylie Vale, head of the peptide laboratory at the Salk Institute, La Jolla, Calif., will describe the basic science behind peptide analogs; Dr. Samuel S. C. Yen, University of California, San Diego, will discuss their applicability to female fertility regulation; and Dr. David Rabin, Vanderbilt University, will discuss their use in males.

There will be a question-and-answer period following each speaker.

For further information on the research update, contact Anne Ballard, Michaela Richardson, or Pamela Driscoll at the Office of Research Reporting, NICHD, (301) 496-5133.

Two Laboratory Techs Win Awards at NIEHS

Tracy Hanner, lead biological laboratory technician in the Comparative Medicine Branch at the National Institute of Environmental Health Sciences, won the Animal Technician of the Year Award for his achievement, leadership qualities, and contributions to the welfare of laboratory animals.

He was one of three NIEHS employees who received awards from the American Association for Laboratory Animal Science, Research Triangle Branch. The national association promotes professional excellence in laboratory animal handling and care.

Dr. Philip Johnson, president of the Research Triangle Branch of AALAS, presented the plaque and award to Mr. Hanner at the AALAS Christmas party held in Raleigh, N.C. on Dec. 11.

Other Employees Recognized

Other NIEHS employees recognized at the gathering were Harriet Burgess, also of the Comparative Medicine Branch, and William D. Willis of NIEHS' Laboratory of Reproductive and Developmental Toxicology. They both received awards for attaining highest scores on certification tests for the positions of assistant laboratory animal technician and laboratory animal technologist.

"Both the breeding of appropriate animals and their care require professionals with rigorous and exacting training. I congratulate our NIEHS employees on their much deserved recognition," said Dr. David P. Rall, NIEHS Director, about the award recipients.

This year NIEHS employees received three of the five awards sponsored by the Research Triangle Branch of AALAS, which is made up of more than a dozen Federal, industrial, and academic research organizations in Research Triangle Park, N.C.



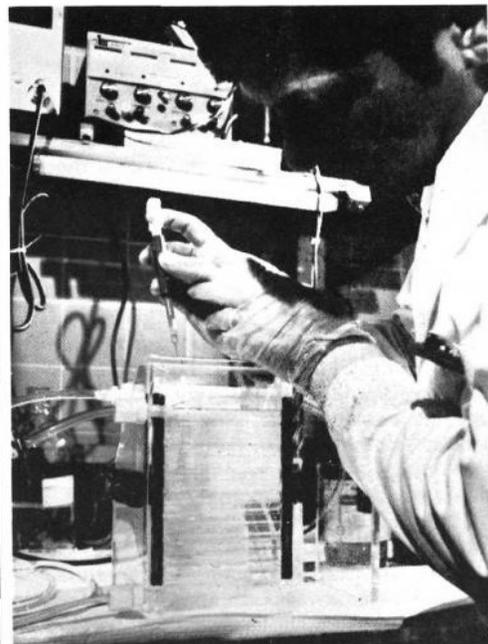
Thomas Barbour has been appointed chief of the Position and Pay Management Branch, Division of Personnel Management. Prior to joining DPM, Mr. Barbour served as supervisory position classification specialist in the Office of the Assistant Secretary for Health, HEW.

INFANT DIARRHEA

(Continued from Page 1)

preselected from one of 42 stool specimens obtained mostly from young patients with serious diarrhea at Children's Hospital in Washington, D.C. This strain was chosen because of its ability to initiate the early stages of infection in monkey kidney cells and because, among the rotaviruses, it is the most prevalent cause of serious diarrheal disease.

During their research, scientists found that the type 2 rotavirus strain could not be grown



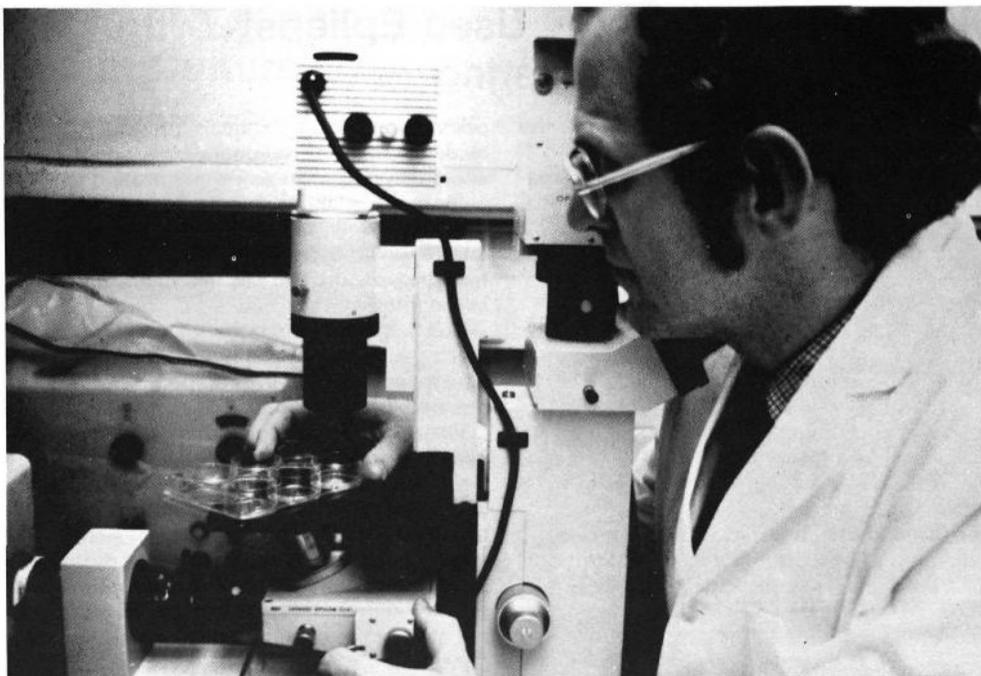
Dr. Kalica loads a sample of rotavirus RNA into a gel electrophoresis apparatus. Researchers use this technique to confirm that the rotavirus is of human origin and not a contaminating animal rotavirus.

serially in tissue cultures of monkey kidney cells. Instead, investigators chose a susceptible animal, a newly born germfree piglet, in which the virus grew well.

By passing the virus from piglet to piglet, they increased the probability that an altered or mutant virus capable of growing in a tissue culture would emerge. After 11 successive passages, the desired virus was detected and could be transferred from the piglets to monkey cells in culture. Previous attempts to transfer the virus from human specimens or from earlier passages in the piglets failed to yield viruses that grew efficiently in cultured cells.

The tissue culture-adapted virus was then passaged 14 times in monkey cells, demonstrating its ability for continuous growth in culture. Various laboratory tests confirmed the identity of the tissue culture-adapted virus as the strain originally obtained from the patient.

This research was reported in the Jan. 11 issue of *Science* by: Drs. Wyatt, Walter D. James, Anthony R. Kalica, Harry B. Greenberg, Albert Z. Kapikian, and Robert M. Chanock, all of the Laboratory of Infectious Diseases, NIAID; and Edward H. Bohl, Kenneth W. Theil, and Linda J. Saif, all of Ohio Agricultural Research and Development Center, Wooster.



Dr. Wyatt performs an immunofluorescence test to detect human rotavirus.

DR. STADTMAN

(Continued from Page 1)

than 180 scientific papers on subjects ranging from the preservation of dried fruits to enzyme cascades in the control of metabolic processes in microbes. He has also been coeditor or contributor to numerous volumes on biochemistry, microbiology, and enzymology.

His numerous honors and awards have included the Paul Lewis Laboratories Award in Biochemistry, 1952; the Washington Academy of Sciences Annual Award in Biological Chemistry, 1957; the DHEW Superior Service Award, 1968, and the DHEW Distinguished Service Award, 1970; election to the National Academy of Sciences, 1969, and winner of its award in microbiology, 1971; the Hillebrand Award of the Chemical Society of Washington, 1969; and honorary medallions from the Societe de Chemio Biologique, 1955, the University of Pisa, 1966, and the University of Camerino, 1972.

Dr. Owens Joins Extramural Program

Dr. Robert G. Owens was named recently as deputy associate director for Extramural Program at the National Institute of Environmental Health Sciences.

The Extramural Program administers more than half of the annual NIEHS budget and supports various research and training grants.

Dr. Owens has served with the Institute as a health scientist administrator since January 1972, and from 1967 to 1972 as chief of the Cell Biology Branch.

Dr. Owens received his Ph.D. in biochemistry from Columbia University in 1955, and his B.S. in chemistry from North Carolina State University in 1950. He is a fellow of the American Chemical Society, the American Phytopathological Society, Sigma Xi, and has been listed in American Men of Science.

Films To Be Featured At Sailing Club Meeting

Two short sailing films will be featured at the NIH Sailing Club meeting on Thursday, Jan. 31, at 8 p.m. "Sailing," a Dutch film which received a blue ribbon at the American Film Festival, will be shown. It shows the different ways to sail on calm days, during a squall, and after a storm.

The other film, "Bluenose in the Sun," is a story on the recreation of the legendary Nova Scotia fishing schooner Bluenose. It shows its racing victories over the rest of the fleet, features exciting heavy-water sailing, and has as its background music the stirring music of sea chanties.

The program will also include a brief look at upcoming Sailing Club activities. The meeting will be held in Bldg. 30, Rm. 117. Refreshments will be served, and everyone is welcome.

Volunteers Needed for PALS Program

The PALS program, sponsored by the Mental Health Association of Montgomery County, is seeking high school volunteers, ages 16 to 18, who are interested in working on a one-to-one basis with elementary school-aged children in need of additional attention and support.

Volunteers must be able to provide their own transportation for activities.

To obtain an application for the January training sessions or for more information, call 949-1255.

R&W Offers Advance Tickets For Ice Capades

Discount tickets are being offered by R&W to the 40th anniversary edition of the Ice Capades, Feb. 5-17, at the Capital Center.

Order tickets early at the R&W Activities Office, Bldg. 31, Rm. 1A-18.

Dr. Hasselmeyer Named NICHD Assoc. Dir.

Dr. Eileen G. Hasselmeyer has been named associate director for Scientific Review, National Institute of Child Health and Human Development.

In her new position, Dr. Hasselmeyer will plan and direct a system for the scientific review of all research and research training programs of NICHD. These programs include approximately 1,600 active projects funded at an annual level of \$175 million in the areas of maternal and child health and the population sciences.



Dr. Hasselmeyer received the PHS Commendation Medal in 1975 for "creative leadership and achievement in development and coordination of Public Health Service research programs for prevention of the tragic sudden infant death syndrome."

She will continue to serve as assistant (for perinatology) to the NICHD Director and the NIH coordinator for program activities pertaining to the sudden infant death syndrome.

Dr. Hasselmeyer's sustained interest in SIDS research has been instrumental in stimulating scientific investigation of this once neglected disorder that takes the lives of as many as 7,500 infants a year in the U.S.

Since 1974 she has served as chairperson of the HEW Interagency Committee on SIDS and has been active in keeping the scientific community and the public informed about research advances in this area.

She joined NICHD in 1963 and has held positions as special assistant for Prematurity, chairperson of the NICHD Infant Mortality Task Force, director of the Perinatal Biology and Infant Mortality Program, and chief of the Pregnancy and Infancy Branch.

Has Researched Gavage Feeding

In 1968, Dr. Hasselmeyer had the distinction of serving as the Annie W. Goodrich Professor of Nursing at Yale University where she conducted research on the cardiorespiratory responses of premature infants to gavage feeding.

The author of numerous scientific articles and a consultant to the committee on the fetus and newborn of the American Academy of Pediatrics, she was recently honored by the Perinatal Research Society for her contributions to the society and to perinatology.

VISITING SCIENTIST PROGRAM PARTICIPANTS

12/11—**Dr. Prahlad K. Seth**, India, Laboratory of Behavioral and Neurological Toxicology. Sponsor: Dr. Stephen Bondy, NIEHS, Research Triangle Park, N.C.

12/20—**Dr. Hiroyuki Fukui**, Japan, Laboratory of Vision Research. Sponsor: Dr. Hitoshi Shichi, NEI, Bg. 6, Rm. 218.

12/27—**Dr. Iroka Joseph Udeinya**, Nigeria, Laboratory of Parasitic Diseases. Sponsor: Dr. Louis Miller, NIAID, Bg. 8, Rm. 326.

12/30—**Dr. Karl-Ake Omnell**, Sweden, Intramural Research Program. Sponsor: Dr. Marie Nylen, NIDR, Bg. 30, Rm. 132.

1/1—**Dr. Hajime Arai**, Japan, Laboratory of Neurochemistry. Sponsor: Dr. Janet Passonneau, NINCDS, Bg. 36, Rm. 4D16.

1/1—**Dr. Maria Z. Hadjopoulos**, Canada, Laboratory of Molecular Biology. Sponsor: Dr. Robert G. Martin, NIAMDD, Bg. 2, Rm. 214.

1/1—**Dr. Kimio Takahashi**, Japan, Laboratory of Chemistry. Sponsor: Dr. Arnold Brossi,

NIAMDD, Bg. 4, Rm. 135.

1/1—**Dr. Yves Tondeur**, Belgium, Environmental Chemistry Branch. Sponsor: Dr. J. Ronald Hass, NIEHS, Research Triangle Park, N.C.

1/2—**Dr. Jose A. Hedo**, Spain, Cellular and Molecular Physiology Section. Sponsor: Dr. Jesse Roth, NIAMDD, Bg. 10, Rm. 8S243.

1/2—**Dr. Gary S. Marrone**, U.S., Arthritis and Rheumatism Branch. Sponsor: Dr. John Decker, NIAMDD, Bg. 10, Rm. 9N222.

1/7—**Dr. Thomas Scharfe**, West Germany, Laboratory of Immunodiagnosis. Sponsor: Dr. James Braatz, NCI, Bg. 8, Rm. 120.

1/7—**Dr. Ulrich Siebenlist**, West Germany, Laboratory of Molecular Genetics. Sponsor: Dr. Philip Leder, NICHD, Bg. 6, Rm. 416.

1/8—**Dr. Aldina Barral**, Brazil, Laboratory of Parasitic Diseases. Sponsor: Dr. Allen W. Cheever, NIAID, Bg. 5, Rm. 106.

Two Named To Fill NLM Posts

The National Library of Medicine has recently named two employees to fill staff positions.

Thomas S. Reed was named personnel officer for the National Library of Medicine. He replaces James J. Hartman, who is now with the National Technical Information Service. In addition to heading the personnel office, Mr. Reed will also direct the management analysis activities of the Library.

Mr. Reed has worked in personnel, general administration, budget, and grants management at several NIH Institutes. Prior to coming

to NLM, he worked at the National Cancer Institute in general administration. He received his B.A. in 1971 from the University of Notre Dame.

Betsy L. Humphreys was named deputy chief of the Technical Services Division, Library Operations, which is responsible for cataloging, selection and acquisitions, and serials processing.

Received Merit Award

A graduate of Smith College in 1969, Ms. Humphreys received an M.L.S. from the University of Maryland in 1972. From 1973 until her appointment, she worked in the serials processing area in a variety of capacities, and more recently acted as assistant head of the Serial Records Section.

Ms. Humphreys was the SERLINE project coordinator for several years, and in 1978 received the NIH Merit Award for her work on the functional design and implementation of NLM's internal automatic serials system.

She is a member of the MEDLARS III task force at NLM and of the National Commission on Libraries and Information Science Advisory Committee on a National Periodicals System.



Mr. Reed



Ms. Humphreys

NCI's 'Everything Doesn't Cause Cancer' Now Available

Everything Doesn't Cause Cancer, a 12-page booklet on the causes and prevention of cancer and the laboratory animal tests conducted to identify cancer-causing substances, has been published by the National Cancer Institute.

The booklet answers commonly asked questions such as: how can we identify agents that cause cancer in people, how well do laboratory animal tests predict whether or not a

substance can cause cancer in humans, doesn't everything cause cancer if the dose is high enough, and are there safe levels for human exposure to carcinogens?

For a free copy, write the Office of Cancer Communications, NCI, Bethesda, Md. 20205; or call the toll-free Cancer Information Service number, 800-638-6694; or write the Consumer Information Center, Pueblo, Colo. 81009.

NIH Preschool Developmental Center Needs Library Books

The NIH Preschool Developmental Center in Bldg. 35 is establishing a school library. Donations of children's books, especially at the preschool or beginning reading levels, will

be accepted. Also, picture books in foreign languages would be very helpful.

For further information, call Sherrie Rudick, 496-5144.

NICHD's Dr. Daniel Nebert Spends Month in Japan; Lectures on Unique Drug Metabolism Research

Dr. Daniel W. Nebert, chief of NICHD's Developmental Pharmacology Branch, visited Japan recently as a guest of the Japan Society for the Promotion of Science.

Each year, the society invites several American or European scientists to Japan to aid in the exchange of ideas between Japanese scientists and their colleagues from geographically distant countries.

During his 36-day trip, Dr. Nebert gave about 25 lectures and seminars in universities, medical schools, and research institutes.

He spoke on six topics, all related to work done in his laboratory at NIH. These topics included: the biochemistry of drug-metabolizing enzymes, the characterization of a receptor involved in the induction of drug-metabolizing enzymes, drug toxicity, birth defects, cancer, and a comparison of the induction of drug-metabolizing enzymes with the immune response. The underlying theme of all the topics was genetics.

In his laboratory, Dr. Nebert and his co-workers are interested in the area of pharmacogenetics, the study of genetic differences in reactions to drugs.



On his return from Japan, Dr. Nebert gave the Annual Pfizer Lecture at Stanford University School of Medicine. He spoke on *The Biochemical Characterization of Drug-Metabolizing Enzymes and the Receptor Which Binds to Certain Environmental Chemical Inducers*.

'Ah' Locus Discovered

Several years ago, they discovered a genetic system called the *Ah* locus which controls the body's ability to rid itself of many foreign chemicals.

The *Ah* locus does this by coding for a receptor, present in the cell sap of most cells in the body; this receptor binds specifically to certain foreign chemicals, or inducers, when they enter the cell.

The inducer-receptor complex then moves into the nucleus, resulting in the activation of at least two dozen enzyme activities. Some of these enzymes are drug-metabolizing enzymes known as cytochrome P-450's. These enzymes break down the foreign chemical into metabolites, or by-products, which can be excreted from the cell and the body.

The *Ah* receptor binds to at least 10 foreign chemicals, all of them aromatic hydrocarbons (hence the name, *Ah* locus). Included among these inducers are combustion materials such as TCDD (a synthetic by-product of the defoliant Agent Orange) and benzpyrene, found in cigarette smoke, city smog, and charcoal-broiled foods.

The *Ah* receptor is the only known example of a receptor which "sees" a select group of foreign chemicals. Scientists are not yet certain why such a receptor exists. It could exist for a normal body substance not yet identified but critical to life. Alternatively, Dr. Nebert speculates that, because all living things have been exposed to combustion materials since the beginning of life on this planet, there may have evolved a receptor necessary for controlling the metabolism of such materials.

Individuals differ in their ability to metabolize aromatic hydrocarbons, depending upon the amount of receptor coded for by the *Ah* locus. Dr. Nebert and his co-workers have studied these differences among inbred strains of mice.

Ah responsiveness in mice, like brown eye color in humans, is inherited as a dominant trait. *Ah* nonresponsiveness in mice, like blue eye color in humans, is inherited as a recessive trait. Through a series of crosses between genetically responsive and nonresponsive mice, Dr. Nebert and his colleagues generated litters in which half of the offspring were responsive to aromatic hydrocarbons (enzyme activity increased greatly after exposure) and half were nonresponsive (enzyme activity increased only slightly).

The researchers found that, when mothers were given benzpyrene during pregnancy, their responsive offspring had more birth defects, lower birth weights, and an increased incidence of stillborns and resorptions.

The scientists also studied the relationship between *Ah* responsiveness and toxicity or cancer. The following conditions have been found to be associated with responsive offspring: several types of skin and lung cancers induced by 3-methylcholanthrene or benzpyrene, liver damage and cataracts induced by acetaminophen, skin ulcers induced by direct contact of certain aromatic hydrocarbons with the skin, greater toxicity following exposure to polychlorinated biphenyls (PCB's) or polybrominated biphenyls (PBB's), and ovarian toxicity and infertility. Responsive offspring also metabolize zoxazolamine, a muscle relaxant drug, more quickly.

Dr. Nebert and his colleagues found that nonresponsive offspring develop more benzpyrene-induced leukemia and aplastic anemia.

There is a growing list of cancers and toxicities in man that are probably associated with the *Ah* locus, according to Dr. Nebert. The incidence of bronchogenic carcinoma, laryngeal carcinoma, and cancer of the oral cavity is more closely associated with responsiveness, and at least one report has now claimed that acute childhood leukemia is

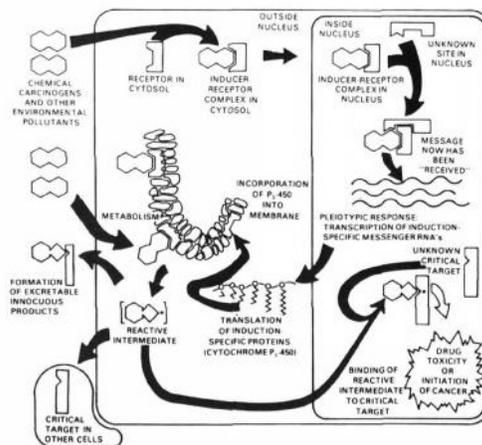
more closely associated with nonresponsiveness.

Four types of chemical toxicity—zoxazolamine-induced fatal liver damage, earlier menopause among cigarette smokers, infertility among cigarette smokers, and acetaminophen-induced cataracts—have been observed clinically; researchers suspect they are associated with the *Ah* locus because of results found in mice.

The genetic control of multiple forms of drug-metabolizing enzymes may explain why we are able to recognize a new chemical and induce enzymes to metabolize and detoxify it, says Dr. Nebert. Most living things probably have the genetic capacity to form new enzymes in response to any chemical encountered during their lives, he says. The reason for this response would be detoxification, an evolutionary advantage.

Dr. Nebert draws a comparison between the body's immune system and the induction of drug-metabolizing enzymes. "If the regulation of P-450 induction resembles in any way the other methods by which (living things) cope genetically with numerous forms of environmental adversity," he wrote in a recent issue of *Molecular and Cellular Biochemistry*, "it is very likely that mammalian tissues contain hundreds, if not thousands, of inducible forms of P-450."

To date, between 8 and 14 forms of these enzymes have been identified. Drs. Nebert, Masahiko Negishi, Matti Lang, and Larry Hjelmeand in the Developmental Pharmacology Branch are currently trying to determine the actual number of forms of P-450.



The hypothetical scheme by which a receptor, coded for by the *Ah* genetic system, binds specifically to certain foreign chemicals entering the cell is illustrated above.

Preschool Program Has Vacancies

The NIH Preschool Developmental Program is accepting applications for immediate and future vacancies.

NIH employees with children between 3 and 5 years of age may obtain applications in Bldg. 35, Rm. 2B-51.

For further information, call 496-5144.

☆U.S. GOVERNMENT PRINTING OFFICE: 1980-311-203/8