NII SUPPORTS RESEARCH IN ATHEROSCLEROSIS

Research in atherosclerosis, a form of hardening of the arteries that leads to heart attacks, will be furthered by National Heart Institute grants announced September 14. $230,773 was awarded to four institutions—the University of California, Harvard School of Public Health, Cleveland Clinical Research Division, and the University of Pittsburgh.

Atherosclerosis, a major disease of our times, is responsible for over 40 percent of the annual three-quarters of a million deaths from cardiovascular disease in the United States. Not only older persons are affected, but also many in the younger age groups.

Mainly, the NIH grants will support studies on the genesis of atherosclerosis and the relation of lipoproteins to arterial disease. The studies may lead to the development of a simple and non-hazardous test for early case-finding.

Occupyance of Building 12, the new Utility Building, is now under way. This two-story, L-shaped structure is the first of several plants that will serve the Clinical Center and other NIH facilities.

Features of Building 12 are a complete garage and filling station, with the latest equipment for service and repair. The garage services 73 Government vehicles.

The remainder of the Utility Building was planned for storage, but crowded conditions at NIH necessitated modifications. At present, temporary facilities for animal breeding are being installed. Several shops—Carpenter, Instrument, and Gardening and Grounds—have moved to temporary but more spacious quarters in the building. The Sheet Metal Shop will be housed there, and also the Receiving and Shipping Section of Purchase and Supply, now in Bethesda.

Mr. May, Chief of the Buildings Management Branch, pointed out that moving these facilities will help relieve parking as well as space problems, since the Utility Building has a new parking lot.

Dr. Arthur Kornberg, Chief of the Section on Enzymes and Metabolism, EBMII, has received the 1950 Paul-Lewis Award for his contributions to enzyme chemistry. The announcement was made at the annual meeting of the American Chemical Society, held September 3-6 in Chicago.

Dr. Kornberg was honored for his discovery of a mechanism by which the body utilizes high-energy phosphate compounds in producing co-enzymes essential to cellular respiration.

The Paul-Lewis Award, of which Dr. Kornberg is the sixth recipient and the first from NIH, consists of a gold medal and $1,000, plus an allowance for travel to the meeting at which the award is presented. The purpose is to stimulate basic research in enzyme chemistry in the United States.

The work for which Dr. Kornberg was honored is reported in several papers, especially "Reversible Enzymatic Synthesis of Phosphopyridine Nucleotide and Inorganic Pyrophosphate." This appeared in the Journal of Biological Chemistry, February 1950.
What happens to a foreign protein from the time it enters the animal body until the development of immunity? In short, how is it metabolized? This is one of the problems in immunology explored with the aid of isotopic tracers by Dr. W. C. Knox, Dr. R. R. Williams, Mrs. F. C. Endicott, and Miss M. C. Havens, of the Laboratory of Pathology and Pharmacology, EBMH.

Radioactive or stable isotopes (see no. 19 of this series) are used to label antigens—substances that when introduced into the blood or tissues give rise to antibodies, which attack similar invaders. Examples of antigens are bacteria, pollen, incompatible blood. In typical studies by Dr. Knox and his group, bovine serum albumin is labeled with radio-iodine ($^{131}I$) and injected into rabbits.

In nonimmune animals—those not previously sensitized with the foreign albumin—some of the antigen passes rapidly from the blood into the tissues. This results in a rapid initial fall in the antigen concentration in the blood stream. The antigen in the tissues and that in the blood stream remain in equilibrium, but gradually and uniformly disappear.

Tests showed that the radio-iodine used as a tracer did not significantly alter the disappearance rate of the albumin.

Between seven and twelve days after the injection, the labeled antigen falls suddenly to immeasurable levels. This is apparently due to the production of antibodies.

Most of the radio-iodine appears in the urine as iodide and diiodotyrosin. The exact proportions have yet to be determined, and complete data on the distribution of the remaining iodine is lacking.

Studies in progress at present are aimed chiefly at throwing light on the antigen disappearance rate, and determining the end products of antigen metabolism.

NCI EXCELS AT CHEMICAL MEETING

The structure of podophyllotoxin, a chemical that retards cell division and damages tumors in mice, has been established by Drs. J. L. Hartwell and A. W. Schrecker of the Chemotherapy Section, NCI. Their report was a high light of the annual American Chemical Society meeting in Chicago, September 5-8.

The report also related the spatial arrangement of the atoms and the tumor-damaging activity of podophyllotoxin and derivatives.

Attempts to determine the complex structure of podophyllotoxin have been made since 1881, when the chemical was first isolated from Mandrake, or May apple, known by the ancients for medicinal properties. The work at NCI finally established the constitution of podophyllotoxin and some derivatives, the apopicropodophyllins.

At the same meeting, the Biochemistry Section of NCI reported the isolation of $L$-isoleucine, an amino acid essential to animal life.

This was accomplished by the enzymatic resolution method, previously described by Greenstein and his collaborators in this Section. The method makes possible the commercial production of all essential amino acids in quantities sufficient for intravenous clinical feeding. Dr. Leon Levintow of NCI delivered the paper at the recent meeting. Other authors were C. G. Baker and J. White.

Production of a chemical that may be a precursor of hemoglobin was reported by Drs. S. C. Fu (Special Research Fellow), V. F. Price and J. P. Greenstein, Biochemistry Section, NCI. Known as hydroxyproolidone carboxylic acid, the substance resulted from addition of alkali to pyruvyl-glycine.

The American Chemical Society has invited Dr. Greenstein to make a lecture tour in February.
Here and There

Ounce of Prevention

We could all give a thought to some recent accidents that almost happened at NIH. A technician was seen defrosting a refrigerator with a hammer and screwdriver....Two large bottles of hydrochloric acid were found in the regular trash receptacle....An employee noticed a smoking electric motor. Uncertain of what to do, he did nothing! Fortunately, an attendant came along just in time....A laborer was seen flipping a sickle and trying to catch the handle. NIH doesn't sponsor such activity!

Newcomer

Dr. Abraham M. Shanes has joined the Section on Pharmacology and Toxicology, EBMII. He will conduct studies in neurophysiology. Previously, he taught physiology and did research in biophysics at Georgetown University Medical School.

Foreign Travel

From NCI comes word that Dr. Vincent Price, Biochemistry Section, left September 12 to spend a year at the Institute of Cytophysiology of the University of Copenhagen, Denmark. Dr. Price will collaborate with Dr. Herman Kalckar in a study of enzymes involved in nucleic acid metabolism.

Free Reprints

At the NIH Library, extra copies of current reprints from scientific journals are available. The supply is on the table in the Periodical Reading Room (218). Help yourself.

Exhibit

The New Jersey Laboratory Supply Division of the Central Scientific Company will present a demonstration and exhibit of equipment on September 26 at Wilson Hall. Among the items to be seen from 8:30 to 5:00 p.m. are a liquid metering pump, electrical staining apparatus, and titration pH meter.

Army at NIH Tests Area for Defense

A temporary Army installation for study and training in anti-aircraft defense has been set up at NIH. Arriving September 11, two U.S. Army units have occupied an area along Rockville Pike between Wilson Road and Cedar Lane. The operation is a detail of "Exercise Metro," a field-training project of the Second Army's 35th Anti-Aircraft Artillery Brigade.

The purpose of Exercise Metro, engaging about 2,000 men, is to simulate problems that may be encountered in the anti-aircraft defense of a large city.

NIH has been selected as headquarters of 19th AAA Group and the 70th AAA Battalion, commanded respectively by Col. H. P. Gard and Lt. Col. F. G. Gregory. These units are primarily concerned with testing selected positions for integrated defense of the Capital.

Anti aircraft guns and other heavy equipment will not be installed at NIH, but have been set up in nearby Maryland. Rapid-fire 120- and 90-millimeter weapons, radar-controlled, are being placed in eight positions around Washington. In addition, several observation posts are in operation.

In the training maneuver, Washington is being "defended" against Air Force jet bombers, which "attack" unexpectedly.

The operations at NIH are to be completed this month. Lessons learned will be used in other field drills.

Calendar of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Study Section Meeting</th>
<th>Time</th>
<th>Place</th>
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<tbody>
<tr>
<td>Sept. 26</td>
<td>Morphology &amp; Genetics</td>
<td>10:00 a.m.</td>
<td>Room 1057, T-6</td>
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<tr>
<td>Sept. 29</td>
<td>Environmental Health</td>
<td>9:00 a.m.</td>
<td>Cincinnati, Ohio</td>
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<tr>
<td>Sept. 29</td>
<td>Virus &amp; Rickettsial</td>
<td>9:30 a.m.</td>
<td>Room 1057, T-6</td>
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<tr>
<td>Sept. 30-30</td>
<td>Pathology</td>
<td>10:00 a.m.</td>
<td>Mayflower Hotel</td>
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<tr>
<td>Sept. 30</td>
<td>Pharmacology</td>
<td>10:00 a.m.</td>
<td>Room 1057, T-6</td>
</tr>
<tr>
<td>Oct. 6-8</td>
<td>Mental Health</td>
<td>10:00 a.m.</td>
<td>Room 1057, T-6</td>
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Note: Above meetings are all closed.
Barr is one of the five monitors responsible for detecting and measuring radiation at the new NIH Isotope Laboratory.

In addition, Miss Barr surveys other laboratories at NIH where scientists are using radio-isotopes. The five monitors scrupulously comb the labs, tracking down evidence of radio-contamination on walls, workbenches, equipment. This is done with portable survey instruments, such as Geiger counters and ion chambers.

Another important responsibility of the monitors is the disposal of radioactive waste. (NIH RECORD, June 19, 1950.)

Miss Barr arrived at her present position as Health Physicist through a fellowship from the Atomic Energy Commission. This provided a year's postgraduate training at the University of Rochester, in subjects such as monitoring, industrial hygiene, nuclear physics, and radiation biology.

Miss Barr has always been interested in science, hates sloppy work. She deeply respects the importance of accuracy in research.

Discussing the hazards associated with excessive exposure to radiation, 'Ike' mentioned burns, cataracts, loss of hair, sterility, and cancer. "But with adequate facilities and precautions for handling radioactive materials," she added, "the danger of over-exposure is very slight."

**NIH Spotlight**

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