SUPERSTRUCTURE OF OUR CLINICAL CENTER IS BEGINNING TO RISE

This recent airview of our Clinical Center shows how it looked just before the superstructure began to rise.

Wooden forms for pouring the reinforced-concrete walls have now been set up on a good portion of the first floor.

Work on the superstructure was begun January 1 by John McShain, Inc., of Philadelphia. The contract (See Center, page 4)
Science Elsewhere

Anti-ACTH?

Rats receiving repeated injections of purified hog ACTH gradually became refractory to a test dose of the hormone which consistently depleted the adrenal ascorbic acid concentration of control rats.

This was reported by Dr. Gilbert Gordon of Yale University School of Medicine in the December issue of Endocrinology.

On a body-weight basis the dosage level of ACTH that produced the refractory state in rats is comparable to that which has been used in man in the treatment of rheumatoid arthritis.

The formation of anti-hormone is suspected, since it has long been known that continual injection of pituitary extracts from heterologous species may render animals refractory to their own pituitary hormones.

PROF. WAGNER-JAUREGG SPEAKS HERE MARCH 24

Prof. Theodor Wagner-Jauregg, German chemist now with the Medical Division of the U. S. Army Chemical Center at Edgewood, Maryland, will conduct a seminar on "The Search for Chemotherapeutic Agents and Insecticides" at 3 p.m., Friday, March 24, at Top Cottage.

The seminar is sponsored by the Experimental Biology and Medicine Institute.

A native of Vienna, Professor Wagner-Jauregg was educated at the University of Vienna and at the University of Munich, where he received his Ph.D. degree under Richard Kuhn in 1926. During the following 10 years he held positions at the Eidgen. Techn. Hochschule in Zurich and at the Kaiser Wilhelm Institute in Heidelberg. From 1936 to 1948 he served as Chief of the Chemical Section at the Georg Speyer Haus in Frankfurt and at the same time held a professorship at the University of Frankfurt.

NO. 19 IN A SERIES

Studies with Isotopic Tracers

Progress toward solving some knotty problems in tumor biochemistry is being made by Dr. Julius White, Chief of the Isotope Unit, Biochemistry Section, National Cancer Institute, and his collaborators -- Drs. W. S. Fones, M. Berenbom, J. C. Reid, and H. A. Sober, and Mr. S. Evans.

This group is using isotopic tracer techniques in the study of two general problems: (1) the metabolism of compounds that occupy a key position in maintaining tissues, and (2) the process of tumor formation.

The tracer technique utilizes rare forms of elements, known as isotopes, which may or may not be radioactive. Stable or radioactive isotopes are substituted for elements ordinarily present in the compounds to be traced through the bodies of laboratory animals.

An example is the use of substituted N\textsubscript{15} in studying the fate of a dietary constituent, such as an essential amino acid. In synthesizing the constituent to be traced, N\textsubscript{15} is substituted for the more abundant form of nitrogen, N\textsubscript{14}. After ingestion or inoculation, samples of organs, tissues, or excreta are analyzed at various times, and thus the course of nitrogen is followed.

Stable isotopes are traced by means of a remarkable instrument called the mass spectrometer, which distinguishes between elements of different mass with high accuracy. Thus the isotope N\textsubscript{15}, which occurs only rarely in nature, can be distinguished from N\textsubscript{14}, which is chemically identical and differs only in mass, or atomic weight.

The radioactive isotopes, such as C\textsubscript{14}, produced from N\textsubscript{14} by atomic bombardment, are traced by means of a Geiger counter, which is sensitive to radioactive emanations.

Tracer studies of metabolism have demonstrated a constant turnover of substances composing tissues. This refutes the previous assumption of a relatively static equilibrium between body tissues and amino acids available for the building of tissue proteins. In recent studies by Dr. White and his collaborators, isotopic glutamine injected into rats was rapidly removed from the blood, with relatively slight accumulation of the isotope in liver or kidneys, indicating rapid utilization by body tissues.

In a similar manner, tumor induction by means of carcinogens can be studied. Dr. White and his group have synthesized "butter yellow" (chemically called para-dimethylaminoazobenzene) with N\textsubscript{15} in all three nitrogen positions. Butter yellow ingested orally by rats combines with the proteins of the liver, apparently resulting in a disturbance of liver function. This leads to the development of liver tumors. By means of isotopic tracers it is hoped to determine what changes in the liver cell permit butter yellow to induce malignancy.

These studies may reveal differences between normal and tumor metabolism and may lead to clues to the cause of tumor formation and growth.
DR. MAURICE I. SMITH RETIRES AFTER 30 YRS.

Dr. Maurice I. Smith, Chief Pharmacologist, has retired after 30 years with NIH and the old Hygienic Laboratory.

He first worked for the Hygienic Laboratory in 1918 and before his retirement had served for several years as Chief of the Section on Pharmacology in the Laboratory of Pathology and Pharmacology, EBMI.

In commenting on Dr. Smith's retirement, Dr. R. E. Dyer, Director of NIH, said: "He has been known for his originality and the high quality of his work. His studies on the assay of posterior pituitary extracts and on B complex vitamins, his toxicological studies on Jamaica ginger paralysis and selenium poisoning, his work in the chemotherapy of tuberculosis, and his showing of a synergism between drug and antibiotic treatment -- all these have been permanent contributions to our knowledge and have resulted in valuable practical applications."

Born in Russia in 1887, Dr. Smith received his B.S. degree from the College of the City of New York in 1909 and his M.D. degree from Cornell University Medical School in 1913. After three years as an instructor at the University of Michigan Medical School he became Professor of Pharmacology at the University of Nebraska Medical School. He occupied a temporary "summer position" with the Hygienic Laboratory in 1918, and two years later he left the University to accept a permanent position with the Laboratory.

Dr. Smith is the author or co-author of 124 scientific papers and a member of the American Society for Pharmacology and Experimental Therapeutics, the American Physiological Society, the Society for Experimental Biology and Medicine, the American Association for the Advancement of Science, the Washington (D. C.) Academy of Science, the American Trudeau Society, and Sigma Xi.

Calendar of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting</th>
<th>Time</th>
<th>Place</th>
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<tbody>
<tr>
<td>Mar. 17</td>
<td>NIH Film Showing. &quot;Office Safety&quot; and &quot;Something You Didn't Eat,&quot;*</td>
<td>11:45 a.m.</td>
<td>Wilson Hall</td>
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<td>Mar. 17</td>
<td>NCI Staff Lecture. &quot;Studies of Fatty Acid and Ketone Body Metabolism with Radioactive Carbon,&quot; Dr. Samuel Gurin of University of Pennsylvania. (Dr. Julius White, chairman)*</td>
<td>12:30 p.m.</td>
<td>Wilson Hall</td>
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<tr>
<td>Mar. 24</td>
<td>EBMI Seminar. &quot;The Search for Chemotherapeutic Agents and Insecticides.&quot; Prof. Theodor Wagner-Jauregg of Army Chemical Center.*</td>
<td>3:30 p.m.</td>
<td>Top Cottage</td>
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<tr>
<td>Apr. 27-28</td>
<td>VD Symposium sponsored by American Venereal Disease Assn. and NIH Experimental Therapeutics Study Section.*</td>
<td>10:00 a.m.</td>
<td>Jefferson Auditorium, Dept. of Agriculture</td>
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*Open Meeting

DR. LYDON F. SMALL GETS HILLEBRAND PRIZE

For his "outstanding contribution to the chemistry of alkaloids" Dr. Lyndon F. Small, Chief of the Section on Chemistry in the Laboratory of Chemistry and Chemotherapy, EBMI, was formally presented with the 1949 Hillebrand Prize at a dinner-meeting of the Washington Section of the American Chemical Society on March 9, at Hotel 2400.

The Hillebrand Prize is awarded annually to a member of the Washington Section, ACS, for an original contribution to the science of chemistry.

Past winners include Dr. Claude S. Hudson, Chief of the Laboratory of Chemistry and Chemotherapy.

A Boston native who received his Ph.D. from Harvard, Dr. Small has devoted much of his life to a search for a substitute for habit-forming morphine. Most effective of the new compounds which Dr. Small and his associates have prepared is metopon, now in use as a painkiller, particularly in chronic pain, as of inoperable cancer.

Dr. Small has been with NIH since 1939.

DR. H. T. DEAN SHARES WATER WORKS PRIZE

Dr. H. Trendley Dean, Director of the National Institute of Dental Research, is a member of the committee of the American Water Works Association which was awarded the John M. Goodell Prize of 1949 for its report on "The Fluoridation of Public Water Supplies -- Statement of Recommended Policy and Procedure."

The prize will be presented to the committee at the Association's convention at Philadelphia in May.

MORE HONORS WON BY DR. W. H. WRIGHT

Dr. Willard H. Wright, Chief of the Laboratory of Tropical Diseases, MI, has been reelected to the Advisory Scientific Board of Gorgas Memorial Institute. He has also been appointed Chairman of the C. F. Craig Lecture Committee of the American Society of Tropical Medicine for 1949-50.

The National Institute of Mental Health, authorized by the 79th Congress, was established in April 1949.
CENTER cont'd
includes the shell of the building and all fixed equipment for the patient and nursing areas.
There will be separate contracts for the laboratory partitions and for fixed and movable laboratory equipment.
Planning for the laboratories is being done by the Laboratory Facilities Planning Subcommittee, which meets every Wednesday morning in Wilson Hall.
The members include Dr. Allen Eschenbrenner, NCI; Dr. Arthur Kornberg, EBMI; Dr. John Bozicevich, MI; Dr. C. D. Larsen, NCI; Dr. T. J. Kennedy, NIH; Dr. F. A. Arnold, NIDR; Dr. Wade Marshall, NIMH; and Dr. Clinton Powell, EBMI (radiation).
Construction of the Utility Building, south of the Center, will be completed this summer. This building will provide space for animal breeding, garage, storage, a temporary carpenter shop, and additional activities if necessary.
Mr. Harry Stierli, PHS sanitary engineer formerly with CDC in Savannah, has joined the Research Facilities Planning Branch. He will be concerned with various development problems and is now working on the cleaning of laboratory glassware.
Miss Muriel R. Carberry is serving as a consultant on operating-room nursing. She was Department Head of the Operating Room at New York City Hospital and is now doing graduate work in nursing administration at Catholic University.
SECOND FILM SHOW WILL BE MARCH 17
The second in a series of film showings for NIH employees is scheduled for Friday, March 17, at 11:45 a.m. and 12:30 p.m., in Wilson Hall.
Two films will be shown. One is humorous, concerning some of the daily safety hazards in an average Government office. The other, a Disney color animation, has to do with the diet of Americans.
Films will be shown every other Friday from now on, same time and place.

Selected Reading
Recent additions to the Library:
Burk, Robert E., ed.
(Frontiers in chemistry, v.8)
Chicago, 1949.
Irvine, Kenneth N.
Jenkins, Glenn L.
Pringsheim, Peter.
Sunderman, Frederick W.