NIH SCIENTISTS CITED FOR DRUG STUDIES

U. S ANALGESIC SUPPLY ASSURED

The achievements of NIH scientists in helping to develop morphine substitutes--now strategically important as a measure that may relieve the United States of dependence upon imported opium--have been cited by the National Research Council.

Opium and its derivatives, such as morphine and codeine, have in the past been indispensable to the practice of medicine. Development of substitute drugs serves to eliminate a threat to military and civilian health in this country in the event foreign supplies are cut off.

The chairman of NRC's Committee on Drug Addiction and Narcotics summed up the Committee's view as follows:

"It is now definitely known that synthetic compounds--especially methadone and its derivatives, manufactured from readily available domestic chemicals--can do everything that morphine can do in the relief of pain and in other medical usages of morphine. They can be produced cheaply and in sufficient quantity to meet all medical needs. Therefore, if war should come, this country would not have to depend on the importation of opium for medical purposes."

"This favorable situation is due to the research achievements over the past 20 years of the Public Health Service and the armed services, of various universities, medical schools, and hospitals, and of several pharmaceutical manufacturers. The National Research Council has aided in coordinating

ACTH-CORTISONE FUNDS EXCEED $2,000,000

To support ACTH and cortisone research, PHS has allocated over $2,000,000 to non-Federal research agencies from funds appropriated by Congress for testing these hormones against a host of diseases.

Federal Security Administrator Oscar R. Ewing said the program covers probably every aspect of ACTH-cortisone research. "Through these grants," he stated, "the government is aiding research into the synthesis of and substitutes for ACTH and cortisone, still expensive and in relatively limited supply. The grants also support research on their medical usefulness in a wide variety of diseases, including rheumatic fever, leukemia, asthma, and goutier."

The PHS grants totaled 129 and went to institutions in 17 States.

(See ACTH Funds, Page 3)

DR. SMALL APPOINTED CHIEF OF N I A M D LAB

Appointment of Dr. Lyndon F. Small as Chief of the Laboratory of Chemistry, NIAMD, has been announced by Dr. Russell W. Wilder, Director of the Institute.

Dr. Small succeeds Dr. Claude S. Hudson, who retired last month. In making the appointment, Dr. Wilder also announced that the name of the Laboratory of Chemistry and Chemotherapy has been changed to the Laboratory of Chemistry.

Before his appointment to the new post, Dr. Small served as Chief of the Section on Chemotherapy. He came to NIH in 1939 when the Drug Addiction Laboratory of the National Research Council, which he established in 1929 at the University of Virginia, was transferred to PHS.

Born in Boston in 1897, Dr. Small was graduated from Dartmouth in 1920 and received his Ph.D. degree from Harvard in 1926.

(See Drug Research, Page 4)
Podophyllin in Cancer Research

No. 41 in a Series

Dr. Hartwell Separates Active Compounds from Podophyllin

In the search for chemical agents with cancer-destroying properties, scientists have tested hundreds of chemicals in recent years. At NCI, this work by the Chemotherapy Section has included extensive studies of podophyllin, a crude brown resin obtained from the roots of the May apple or mandrake plant.

Podophyllin was selected for collaborative study by scientists in several fields because it was found to cause destruction of tumor tissue in mice. One aspect of this study—the organic chemical phase—has been conducted by Dr. Jonathan L. Hartwell, with Dr. Anthony W. Schrecker; Dr. Moreshwar Nadkarni, postdoctoral fellow from India; Wendell E. Detty, now a graduate assistant at the University of Oklahoma; Mrs. Gertrude B. Greenberg; and Mrs. Priscilla B. Maury.

In searching for the active components of the American variety of this drug, Dr. Hartwell and his associates isolated three pure crystalline compounds. One of these was podophyllotoxin, which has been known to scientists for 70 years, although no one suspected its capacity to damage tumors. The other two, which were named alpha-peltatin and beta-peltatin, had been missed by earlier investigators.

The next step was determining the chemical structure of the new compounds, which are closely related to podophyllotoxin. In the course of extensive experiments, it was found that the previously accepted formula for podophyllotoxin was in error, and a revised formula was proposed.

While these investigations were in progress, Dr. Hartwell's unit was able to synthesize selected new compounds in an effort to determine what parts of their molecules are responsible for causing tumor destruction. These experiments may result in the eventual synthesis of compounds more useful in cancer research.

An Indian variety of podophyllin has also been obtained in the course of this work. Preliminary results show that the Indian drug contains over three times as much podophyllotoxin as the American drug, in addition to at least two substances not found in the American variety.

The work of the Organic Chemistry Unit is only one aspect of podophyllin research in the Chemotherapy Section. Other investigations are being conducted by the Biochemistry, Cytology, and Pharmacology Units, as well as by the Clinical Research Unit of NCI at Baltimore. Viewed together, they illustrate how scientists of varied disciplines collaborate for joint attack on a single problem: developing drugs for use in treatment of cancer.

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Here and There

Awards and Honors
Dr. Ralph W. G. Wyckoff, NIAMD, has been appointed a member of the newly established Advisory Board for the Journal of Colloid Science. Dr. Wyckoff was also notified recently of his election to honorary membership in the French Society of Microbiology.

Trips and Talks
Cancer in industry was the subject of two addresses given by Dr. W. C. Hueper, NCI, before the Central New York Industrial Nurses' Club on February 5 and the Philadelphia Regional Safety Conference on February 6.

Dr. H. Trendley Dean, Director of NIDR, conferred with dental leaders at the midwinter meeting of the Chicago Dental Society, February 3-6. On February 13, Dr. Francis A. Arnold, Jr., Associate Director of the Institute, participated in a discussion of fluoridation of water supplies at a meeting of the Northern District Dental Society in Atlanta, Ga.

Enumeration of blood platelets will be discussed and demonstrated by Dr. George Brecher of NIAMD at a meeting of the Maryland Association of Medical and Public Health Laboratories in Baltimore, February 28.

Offices in New Rooms
Seven NIH offices have been moved to new locations in Building 1. The new room numbers of the transferred offices are listed below.

Personnel Branch--21; Research Facilities Planning Branch--107-114; Research Planning Branch--136-B; Management Analysis Section--134-136; Scientific Reports Branch--116, 117, 118, 118-A; Safety Engineer--115; and Credit Union--101-A.

NIMH Hormone Study
NIMH and the Worcester Foundation for Experimental Biology, Shrewsbury, Mass., will undertake a cooperative project to study the role which ACTH, cortisone, and similar hormones may play in psychoses. Research will deal mainly with differences between the output of adrenal cortical hormones in schizophrenic patients and in well persons.
PHS ADVISORY GROUPS

HOLD JOINT SESSION

The second annual joint session of seven national advisory councils to the Public Health Service was held February 17 in Washington, D.C.

This year the joint session was scheduled to give particular attention to policies followed in making grants for research and hospital construction as they relate to civil defense and the maintenance of a volume of basic research sufficient to meet the future scientific needs of the Nation.

Two new advisory councils took part in this year's joint session--the Arthritis and Metabolic Diseases Council, and the Neurological Diseases and Blindness Council. The other councils included the over-all health advisory group and the councils representing cancer, dental research, heart, and mental health.

The national advisory councils consist of outstanding nongovernmental authorities in the medical sciences, public health, and public affairs. One of their important functions is to make recommendations for research grants to non-Federal institutions. All councils are established by law to advise and consult with the Surgeon General on health problems in their respective fields. Serving as ex officio members are representatives of the Department of Defense, Veterans Administration, and PHS.

The joint meeting was preceded by individual council meetings to consider matters not requiring joint action.

NIMH ISSUES REPORT

A report on patients in public institutions for mental defectives and epileptics was recently released by NIMH.

According to the report, there were 421,426 resident patients in 94 State institutions for mental defectives and epileptics at the end of 1948--a 2.3 percent increase over 1947. Daily patient population averaged 14.4 percent over the rated capacity. For copies of this report, call Ext. 651.

NIH Spotlight

Elmer B. Saffell

Elmer B. Saffell is one of the assistant foremen in the Electrical Shop of the Buildings Management Branch. As a general factotum in matters electrical, he handles everything from repairing ordinary lighting fixtures to installing power panels and electrical circuits in the laboratories.

"Moe" also has charge of the projection equipment and public address systems. NIH employees know him as the operator who handles all the films and slides used in Wilson Hall. Employed here for four years, Moe is the "official" electrician for the Ham­ster shows, and plays on the NIH baseball team each season.


One Saturday night recently, Moe and his wife were riding past NIH on their way downtown. Moe noticed some of the lights in Building T-6 were dimmer than others. He decided to investigate. On his way to the building he met Mr. May, Chief of Buildings Management Branch. Together, they checked over facilities. By turning off the power they were able to save a great deal of equipment which would otherwise have been ruined. The source of the trouble turned out to be power transmission difficulties.

During World War II, Moe served five years in the Navy. As Chief Electrician's Mate on the submarine, U.S.S. Tunny, he saw plenty of action in the Pacific. Moe expects to be recalled to active duty within the next few months.

LAB VISITS ARRANGED FOR N. Y. CONGRESSMEN

The New York State congressional delegation will visit NIH on February 21 to become acquainted with the methods of medical research.

Before touring several of the laboratories, the congressmen will be briefed in Wilson Hall on the organization and operations of the Institutes, the research grants program, and the Clinical Center.

A demonstration of the research leading to the discovery that ordinary salt solution taken by mouth can be used as an emergency treatment for shock will be given by Dr. Sanford M. Rosenthal.

The visitors will next be escorted through the Isotope Laboratory. Here they will observe typical uses of radioactive isotopes in research and in treatment of disease. Certain research aspects of defense against radiation warfare will also be demonstrated.

ACTH FUNDS Cont'd

They were approved by Surgeon General Leonard A. Scheele on recommendations by the national advisory councils.

Typical of the large number of grants for combined clinical-basic research is the attack on rheumatic fever--important cause of crippling and death in childhood--for which about $500,000 has been allocated. The funds will be used to try to determine whether ACTH-cortisone treatment, which suppresses acute rheumatic fever symptoms, can prevent relapse and recurrence of the disease.

A sizable part of the grants program will be devoted to basic research, which was stressed by the Surgeon General. "It is now fairly well established," said Dr. Scheele, "that ACTH and cortisone do not act directly upon the causes of disease. Moreover, they seem to alleviate a great many diseases apparently unrelated to each other. These and other facts have led investigators to believe that the adrenal cortex--outer layer of the adrenal gland--and its secretions somehow enable the regulatory mechanisms of the body to expand the additional effort necessary for internal adjustment against all kinds of stress."
HOW PLANNING STAFF HELPS RESEARCHERS

Exchange of information within a small laboratory is a relatively simple process. But multiply the staff and research functions many-fold and the picture changes. Communication becomes a complex operation. There is not only more information to disseminate; there are more people to be reached and more areas of activity involved.

How can the scientist engaged in a given study be kept informed of related investigations carried out by other scientists within PHS?

This is one of the problems confronting the Research Planning Branch at NIH. The Branch serves in a staff capacity for the Research Planning Council, which was set up in 1946 under the Surgeon General to evaluate PHS research activities as they relate to the organization's total program.

Directing this work is Charles V. Kidd, who also serves as Executive Secretary of the Research Planning Council. Assistant to the Director is Irving Ladimer.

The Research Planning Branch maintains a clearinghouse of current information on all research projects conducted within PHS. This service is complemented by the work of Dr. Stella Leche Deignan, Director of the information exchange service of the National Research Council, who was formerly with the Division of Research Grants, NIH.

The Branch also develops methods of appraising the general areas in which PHS research should be expanded or contracted.

Each year the Branch sends out a questionnaire to all PHS research divisions. Scientists are asked to describe their projects in terms of personnel, funds expended or authorized, research objectives, major findings, and publications. Added this year was a question concerning the relationship of projects to defense activities.

When all the information is compiled and analyzed, the Branch is able to summarize the total research effort of PHS and to identify common areas of research.

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BETHESDA BANK ASKS COOPERATION OF NIH

From 700 to 1,000 NIH employees visit the Bank of Bethesda in Building 1 each pay day. The long lines that form during the peak period--from 11 a.m. to 1 p.m.--are hard on customers' arches; and they create difficult service problems for the bank's busy tellers, Mrs. Marion Johnson and Mrs. Rachel Walter.

"The Bank of Bethesda is eager to provide NIH employees with the most efficient service possible," Mr. S. Walter Bogley, president of the bank, emphasized. "To this end, we would like to suggest a few simple ways in which all employees can help eliminate delays that develop on pay day.

"First of all, limit your banking transactions on pay day to cashing or depositing your pay check. The bank is happy to assist you with other business--cashing or buying U.S. Savings Bonds, issuing travelers' checks, opening new accounts--but these are matters that can usually be handled on days other than pay day.

"In order to eliminate extremely long waiting lines on pay day, the volume of business must be staggered," Mr. Bogley added. "This can be done if some of the employees who now visit the bank during the noon hour could arrange to transact their business between 9 and 11 a.m. Also, customers who can defer cashing or depositing their pay check for a day or two can be served by our tellers without delay."

NIAMD SPEAKING PLAN

An in-service training program in public speaking has been scheduled for NIAMD scientists by William G. Baylis, Executive Officer of the Institute.

The program will provide scientists who give lectures and present papers at scientific meetings with help and advice on how to deliver their material.

Several of the Sections in NIAMD will schedule symposia and "dry runs" to enable the scientist to present his material before a group. Wire recordings will be made to assist the speaker in perfecting his presentation, with the advice of his colleagues.

DR. M. I. SMITH, RETIRED NIH SCIENTIST, DIES

Friends and associates of Dr. Maurice I. Smith, who retired last spring after 30 years of service with NIH, learned with sorrow of his death on January 26 at George Washington University Hospital of a heart ailment. He was stricken only a few days earlier.

Dr. Smith was Chief of the Section on Pharmacology, NIAMD, for several years before his retirement. He entered PHS in 1918, and served continuously in the Hygienic Laboratory and NIH from 1918-1950.

Born in Russia in 1887, Dr. Smith received his B.S. degree from the College of the City of New York in 1905 and his M.D. degree from Cornell University Medical School in 1913. He was the author or co-author of 124 scientific papers, and belonged to numerous scientific societies.

DRUG RESEARCH Cont'd

all these efforts in order to bring them to swifter fruition."

NIH scientists who aided in this work include Drs. Lyndon F. Small and Nathan B. Eddy of NIAMD, Dr. Harris Isbell of the PHS Hospital, Lexington, Kentucky, and Dr. Dale C. Cameron, NIH.

Dr. Small worked on the chemical aspects of the experiments, which began a number of years ago with the aim of developing pain-relieving drugs from domestic chemicals. The work of testing new drugs upon laboratory animals was carried out by Dr. Eddy, and follow-up studies to investigate the drugs' effects upon humans were conducted by Dr. Isbell. Dr. Cameron was in general charge of planning the latter experiments at the Lexington hospital.

The Lexington studies proved that the new compounds, like morphine, cause drug addiction. Consequently, they must be used with the same care as morphine.

Because the substitute drugs are not yet made in sufficient quantity and are largely unfamiliar to most physicians, the National Research Council emphasized that stockpiles of the natural drugs are still important.