ARTHRITIS INVESTIGATION FOSTERED BY NIH

**DR. FELIX STRESSES PSYCHIATRIC NEEDS**

Dr. Robert Felix, director of the National Institute of Mental Health, stressed the need for general practitioners with a psychiatric background at the 105th annual meeting of the American Psychiatric Association. The meeting, recently held in Montreal, was attended by 2,500 psychiatrists.

Because of the shortage of psychiatrists, Dr. Felix declared that it was extremely important that the general practitioner be equipped to deal with the emotional problems of his patients and that he receive training in psychiatric principles.

A move in this direction has already been made through NIMH funds. Forty-two medical schools have been the recipient of these funds which are used to foster psychiatric training among undergraduate medical students.

**STUDY SECTION ISSUES**

**PAMPHLET ON DOG CARE**

A pamphlet titled "Care of Dog Used in Medical Research" has been recently issued by the Surgery Study Section of NIH.

Written primarily for investigators receiving federal grants-in-aid, the authors of the pamphlet stress high standards of animal care, not only for humane reasons, but because unhealthy dogs will not tolerate investigative procedures as well as healthy dogs, and for this reason, false scientific conclusions might be attained.

**NCI DOCTORS LECTURE AT BAR HARBOR**

As guests of the Jackson Memorial Laboratory in Bar Harbor, Maine, Drs. H. B. Andervont, W. E. Heston, and L. W. Law, NCI scientists, participated in the laboratory's 20th anniversary lecture series in honor of its director, Dr. C. C. Little.

(See BAR HARBOR, Page 4)

**MOOSE AND ELK CAVORT NEAR ROCKY MT. LAB**

Elks cavort and local moose convene in the vicinity of Hamilton, Montana, where the Rocky Mountain Laboratory is located.

"Nobody out here gets too excited," the Record's Hamilton reporter reports, "but when a whole family of moose puts on a show near Lake Como for the special enjoyment of several laboratory families who picnicked several weeks ago in this area, even a veteran nature photographer like Nick Kramis is stirred."

"Nick took a whole reel of the reunion of not only the annually appearing cow elk and her customary new calf, but of last year's calf and his dad who made a separate, surprise appearance on the scene to the cow's obvious annoyance. Within a hundred feet of the onlookers, the cow reared up and threw her hoofs at pa and the yearling, who obviously was bewildered and hurt at his mother's unmatrial attitude."

(See ARTHRITIS, Page 3)

**DR. MOSETTIG VISITS FOREIGN LABORATORIES**

The opening drive in the United States for the rapid synthetic preparation of cortisone, scarce hormone that relieves arthritic pain, is an important new NIH activity.

Dr. Erich Mosettig, biochemist in the Section on Chemotherapy, EBMI, is now in London where plants of the Strophantus group, which are believed to contain steroid compounds essential to the synthesis of cortisone, are under cultivation in Kew Gardens.

Earlier this month Dr. Mosettig, accompanied by Dr. John T. Baldwin, botanical expert of the U. S. Department of Agriculture, visited the laboratories of Dr. Tadeus Reichstein in Basle, Switzerland. Dr. Reichstein has been in charge of several recent Swiss missions to Africa for botanical sources of supply for sex hormones.

An African expedition, jointly sponsored by PHS and the Department of Agriculture, has already been dispatched to obtain specimens of various plants which grow in equatorial Africa, Malaya, Liberia, as well as certain areas of eastern China.

The advantages of plants as a source of supply for cortisone are readily apparent. At present forty head of cattle are needed to provide the cortisone requirements of one patient for one day. The yield by the plant of the raw material (steroids) for cortisone is more than 12,000 times greater on the basis of a given quantity of seed.
**Science Elsewhere**

**Clonorchiasis in U.S.**

Infection with the Chinese liver fluke (Clonorchis sinensis) has been reported for the first time among the members of the white race in this country. A report of four cases is given by Drs. M. H. Edelman and C. L. Spingarn in the Journal of the American Medical Association, August 6 issue.

The discovery of these cases is another example of the global spread of regional diseases by the movement of populations as a result of the last world war.

**Radiosensitive Cells**

Primitive (reticular) cells of the lymphoid organs and the bone marrow are comparatively radio-resistant.

This view contradicts a commonly held concept that primitive cells are more sensitive to radiation than specialized cells and is based on experimental work with swine that were exposed to radiation at the Bikini atomic bomb trials in 1946.

The importance of this discovery is that it holds hope of recovery for radiation casualties.

Commander John L. Tullis of the Naval Medical Research Institute, Bethesda, reports this pathological finding in the August issue of the Archives of Pathology.

**CHEMISTRY, CLASS**

In the July issue of the NIH Record the story about the fall chemistry class being conducted by Mr. Theodore D. Perrine failed to mention the fact that the class is sponsored by the United Public Workers of America (CIO). The omission is regretted.

In the meanwhile, we find that the class is almost ready to enter the stage of laboratory experiments, while continuing with chemical theory and arithmetic. Also, answering the several queries we have received, the class cannot accept any more members at the present time.

**NO. 8 IN A SERIES**

**Studies on Radiation Biology**

Although X-rays and radioactive materials have been used in ever-increasing amounts for about half a century, very little is known today of actions of the high-energy radiations on tissues. Much of the effort of the Nuclear Radiation Biology Section, Laboratory of Physical Biology, EBMI, headed by Dr. Howard L. Andrews, is directed toward attempting to determine the mechanisms of interaction between these radiations and tissue. Although the primary aim is to obtain fundamental information there is always the hope that a more complete understanding may lead to better treatment of radiation casualties.

Molecules of known chemical structure are bombarded with alpha particles, high-speed electrons, or X-rays, and the resulting products analyzed to determine the reactions induced by the radiation. The compounds being studied are biologically important and their behavior under irradiation is of immediate interest. All the reactions studied so far are quite complex, and a complete understanding of their mechanism will require much more work.

Protozoa such as amoeba and paramecium, relatively simple living systems, are also being studied with X-rays and beta rays. As with all living organisms a sufficiently large dose is lethal, but within a narrow dose range the effect is to increase the rate of cell division. Studies on mice are underway to determine the physiological functions influenced by radiation, and attempts are being made to modify the radiation sickness syndrome by various treatments. It has been found that thyroid administration enhances the effects of radiation, but unfortunately attempts to obtain a reverse action have failed.

Radioactive isotopes are also being used for studying the biological fate of various compounds. Radioactive penicillin has been produced by growing the mold on a medium containing radioactive sulphur, and tracing experiments using it are now in progress. Experiments to determine the metabolic fate of various carbon-containing compounds will soon be started.

The radiation health protection group has the responsibility for insuring that all research at the National Institutes of Health involving high-energy radiations is conducted in such a way as to insure complete personnel safety. All of these radiations are potentially dangerous but our present knowledge is sufficient to permit their use if proper precautions are taken. The radiation health protection group passes on all procedures involving radiation hazards, maintains records of all radiation exposures, and is responsible for the disposal of radioactive wastes. This permits any research worker at the National Institutes of Health to use radioactive materials with complete assurance that he will be doing so in accord with the best accepted practice.

**REFRESHER COURSES IN**

The U. S. Public Health Service will give the following refresher courses in laboratory diagnoses:

- **Laboratory Diagnosis of Rabies**
  - (1 week) - November 14 to November 18

- **Advanced Enteric Bacteriology**
  - (2 weeks) - December 5 to December 16

**LABORATORY DIAGNOSIS**

- Laboratory Diagnosis of Parasitic Diseases (6 weeks) - September 12 to October 21
- Laboratory Diagnosis of Bacterial Diseases, Part 2, and General Bacteriology (5 weeks) - October 31 to December 12

Information and application should be requested from the Chief, Laboratory Division, Communicable Disease Center, 291 Peachtree Street, N.E., Atlanta, Georgia.
DR. EVANS TO SPEAK AT BRUCELLOSIS SYMPOSIUM

Dr. Alice C. Evans, brucellosis authority, who recently retired from NIH, is scheduled to be the first speaker of the Symposium on Brucellosis. The Symposium will be held September 22-23 in Wilson Hall.

Other NIH speakers included in the symposium will be Dr. B. H. Hoyer and Dr. B. N. Carle of the Laboratory of Infectious Diseases, M.I.

The papers of NIH scientists will be:
"The History of 'Brucellosis"--Alice C. Evans
"The Physiology of Brucella Organisms"--B. H. Hoyer
"Chemotherapy of Brucellosis in Experimental Animals"--B. N. Carle

VIRAL MULTIPLICATION THEORIES REVIEWED

Clues to the riddle of virus multiplication are rapidly accumulating. Additional support for one of the theories of viral multiplication is found in the electron microscopic work of Dr. Ralph W. G. Wyckoff, described in a review of the subject by Dr. Frank L. Horsfall, Jr. in Federation Proceedings, June 1949.

Shortly after the entrance of a virus into a cell, investigators have observed a period of disappearance lasting from 13 to 40 minutes which is followed by a sudden reappearance of the virus in large numbers.

Studies by Dr. Wyckoff, Chief of the Section on Molecular Biophysics, Laboratory of Physical Biology, EBMI, with the electron microscope showed that during the latent period distinct particles are present in the bacterial cytoplasm. At first these particles are extremely small, but increase rapidly in size and number until they replace much of the cytoplasmic material. Just before the end of the latent period the virus particles show the sperm-like morphology which typifies the mature, infective virus.

These findings support the theory of a step-wise mechanism of viral multiplication.

ARTHRITIS (Continued)

than an equal quantity of beef. Moreover, the plant is a perennial that yields an annual crop of seeds.

The present process of synthesizing cortisone from ox bile requires 37 steps. With steroids as a starting point in the synthesis, seventeen steps are eliminated.

The plant, a species of the genus Strophanthus, is used by African natives for the production of arrow poison. Some of the other species of the plant, S. konibe and S. hispidus, particularly, are used as sources of strophanthidin, a heart stimulant similar to digitalis.

The Department of Agriculture has had plants of the Strophantus genus under cultivation in Florida for several years. Thus far, only one plant is known to have borne seeds in this country.

Preliminary exploration of cortisone in treating other diseases has shown the compound to have tremendous potentialities in other fields including mental health and dermatology. Further research and extensive treatment will lag, however, until the supply of cortisone is made more available.

A.M.A. EDITORIAL CITES DR. OLIPHANT'S WORK

In an editorial headed "Inactivation of Hepatitis Virus With Ultraviolet Rays," the August 6 issue of the A. M. A. Journal cites the experimental work of Dr. Oliphant, M.I., who demonstrated with inoculation experiments on human beings that irradiation of icterogenic serum with ultraviolet rays inactivates the hepatitis virus.

The editorial of the American Medical Association states that the work of Dr. Oliphant and further studies carried out by Dr. J. Stokes and his co-workers strongly favors the routine use of exposure to ultraviolet rays of serum and plasma under properly controlled conditions.

TRAVEL INFORMATION

Effective July 1, a per diem rate of $9.00 is now allowed for travel expenses. This is a maximum allowance.

If cost of travel is less than the per diem rate, payment will be adjusted to meet the varying costs of travel.
NIMH WORKERS RETIRE AFTER LONG SERVICE

With farewell ceremonies, the National Institute of Mental Health staff recently expressed its appreciation to two employees who have given unusually long service.

Mrs. Mary Gartner of the Biometrics Branch retired on July 29, 1949 after 22 years as a public servant. She came to NIMH from the Census Bureau two years ago when Public Health Service took over the compilation of the annual census of patients in mental institutions.

Mrs. Gertrude M. Stambaugh of the Methods and Procedures Section transferred to the Division of Hospitals on July 1, 1949. Mrs. Stambaugh joined the staff in 1929 when the Narcotics Division of Public Health Service was established. She was "principal clerk" when the NIMH was established in 1949. Thus she has seen the development of the mental health program of the Public Health Service since its earliest beginnings. Her transfer coincides with the transfer of the narcotics hospitals from NIMH to the Division of Hospitals.

Others from NIMH who transferred to the Division of Hospitals are, Mrs. Addye C. Stinnette, Mrs. Margaret I. Marshall, Mrs. Anne Turner, Miss Marjorie Needham, Miss Elizabeth L. Bowie, Mrs. Vivian L. O'Neal and Mr. Charles Daw.

VACANCIES AT NIH

For information regarding the following positions call the Personnel Office, Ext. 445 or 536.

*Messenger CPC-2
*Laborer CPC-2
*Laborer CPC-2
*Laborer CPC-2
*Laborer
Library Assistant SP-4
*Biologist P-1
*Chemist (Baltimore, Maryland) P-1
*Construction Engineer P-1
*Staff Nurse (Washington, D. C.) P-1
*Biochemist P-2

Civil Service Status Necessary.

OPEN EXAMINATIONS

Bacteriologist (Medical)--Biologist (Baltimore)--Physician--Mathematician, $3,727 to $6,235. Announcement 5-82-4 (49) as amended.

Chemist--Engineer--Metallurgist--Physicist--Mathematician, $3,727 to $6,235. Announcement 4-34-2 as amended.

Clinical Psychological, $4,479 to $7,432. Announcement 33 as amended.


Electronic Scientist, $3,727 to $10,305. Announcement 4-34-4 (1949).

Engineering and Cartographic Draftsman, $2,152 to $3,727. Announcement 130.

Industrial Hygienist, $3,727 to $6,235. Announcement 4-34-1 (1949).

Librarian, $2,974. Announcement 119.

Medical Officer, $4,479 to $6,235. Announcement 106 as amended.

Medical Engineer--Rotating intern, $2,200 first year, $2,400 second year; Psychiatric Resident, $2,400 to $4,100; Surgical Resident, $3,400 to $4,150. Announcement 173.

Medical X-Ray Technican (Photography), $2,284 and $2,498. Announcement 151.

Messenger, $2,020. Announcement 58 as amended.

LIABILITY INSURANCE FOR YOUR PROTECTION

Insurance of this type protects the operator of the Federal vehicle against claims or suits in the event that the government does not recognize responsibility for the alleged negligent act or omission of the operator.

Drivers who already possess liability insurance on their private cars may secure from their own insurance company a "Drive Other Cars" policy, costing between $4.00 and $15.00 per annum, which would protect them while driving a government vehicle.

Persons who do not own a private car or who do not have liability insurance at present may obtain a policy to protect them while "Driving Government cars only" at premium rates varying between $13.40 and $28.00 per annum.

Information regarding the rates applicable to each particular officer or employee may be secured from his local insurance company. In the event that it cannot be obtained locally, a list of names of companies furnishing insurance of this type may be secured from the Public Health Service Board of Claims.

Selected Reading

Recent additions to the Library:

Rabinowitch, Eugene I.

Rappaport, E.

Remick, Arthur E.

Reyniers, James A., ed.
Germ-free life studies. Notre Dame, Univ. of Notre Dame, 1949. (Notre Dame, Ind. University. Laboratories of Bacteriology. Lembold reports no. 2)

Radium poisoning: a survey of the literature dealing with the toxicity and metabolism of absorbed radium. Oak Ridge, 1949. (AECD - 2122)