BRITISH GYNECOLOGISTS AT NIH

An NCI scientist discusses studies of hormonal and nutritional factors affecting tissue growth with three of a group of ten British visitors who recently toured NIH laboratories. Shown here, from left, are A. S. Gemmell, Liverpool; Dr. Roy Hertz, NCI; C. H. G. Macafee, Belfast; and J. A. MacGregor, Edinburgh.

PHOTOS SHOW HEAVY ELEMENTS IN COSMIC RAYS

Very heavy tracks formed by cosmic ray particles have been observed in special photographic emulsions exposed in the stratosphere in gigantic plastic balloons which reached a top elevation of 110,000 feet.

Evidence that the tracks were formed by charged nuclei with masses greater than those of iron was presented by Dr. Herman Yagoda, NIAMD scientist, in a paper delivered before the American Physical Society in Chicago, October 26.

Absorption or destruction of these particles in the stratosphere explains why they have not previously been observed. Their detection was made possible by the use of emulsions about one hundred times thicker than the coatings commonly employed on films used in everyday photography.

The heavy metal nuclei described by Dr. Yagoda represent an extension of the charge spectrum of the primary cosmic ray particles to the heavy elements. They indicate the presence of copper, bromine, and atoms as massive as those of tin in the stream of incident radiation. Existing knowledge of primary cosmic radiation points to the fact that the earth is constantly receiving not only a rain of energetic hydrogen nuclei but also a sparse dusting with most of the members of the periodic system of elements.

Dr. Yagoda explained that in passing through materials, the heavy cosmic rays produced very intense ionization comparable to that of the fragments arising from the neutron splitting of uranium. Because they are several thousand-fold more energetic, the heavy metal primaries can plow deeply into solids and produce marked chemical and biological changes along the furrow. These nuclear projectiles are stopped by the upper layers of air; even the lighter particles are seldom observed below 50,000 feet.

NEW B VITAMIN ISOLATED BY NIAMD SCIENTISTS

A vitamin of the B family has been isolated in pure form by NIAMD scientists.

The new substance, known as the citrovorum factor, is the work of Dr. John C. Keresztesy and Dr. Milton Silverman of NIAMD's Laboratory of Biochemistry and Nutrition. A report on their discovery appeared in the November issue of the Journal of the American Chemical Society.

The chemical structure of this new vitamin, isolated from horse liver, is now under investigation. When further knowledge of its structure and physiological effects is gained, scientists may be able to learn more about the causes of such blood diseases in man as the anemias of infants and pregnant women, pernicious anemia, the leukemias, and general malnutrition.

The citrovorum factor appears to be related chemically to folic acid, which is used in treating several types of malnutrition and anemia. Under laboratory test conditions, however, it has proved to be substantially more active biologically than folic acid. Folic acid itself probably does not exist in nature as such but is derived from the citrovorum factor as the result of chemical treatment.

The new substance has not yet been tested against human disease. But studies with microorganisms show it is twice as active as a synthetic material derived from folic acid which has been thought to be the citrovorum factor. It may prove useful in preventing some of the serious toxic effects stemming from the folic acid antagonists employed in the treatment of leukemia.
The Milk Agent in Cancer
No. 60 of a Series

Initial observations on the milk agent in cancer were made in the 1930's by scientists of the Jackson Memorial Laboratory in Bar Harbor, Maine, where much of the work in developing inbred strains of animals for medical research has been carried on for years. (An inbred animal is one obtained by brother-sister mating through at least 20 generations.)

By crossing mice of high and low mammary tumor strains, the scientists were able to produce tumors in the offspring if the mother was a high strain animal. This posed the question as to how the mother was influencing tumor development. Since all the hybrid animals had the same genetic constitution, it was reasoned that the unknown factor must be extrachromosomal. Three possibilities were considered: the egg, the uterus, and the milk.

In 1936, it was discovered that the milk was responsible for this agent of tumor development. But although suckling mice received the agent from the mother's milk, the tumors did not develop until middle or old age.

At NCI, studies of certain aspects of the milk agent are being made in the Laboratory of Biology by Dr. Richmond T. Prehn, with the assistance of Miss Joan Michel. (Other investigations in this field have been carried on for some time by Dr. H. B. Andervont, Chief of the Laboratory.) By transplanting mammary glands from resistant animals to susceptible hybrids, Dr. Prehn hopes to find clues to some of the problems that remain unanswered.

There is little evidence at present as to why some strains of animals are more susceptible than others. Nor do scientists know whether the factor of susceptibility rests with the mammary gland or is found elsewhere in the physiology of the mouse.

Concerning the latter, it is known, for example, that the degree of hormonal stimulation exerts influence on the development of mammary tumors. Another factor is the genetic constitution of the mouse itself.

Studies of the milk agent in cancer have been carried out solely with selected strains of mice.

Dr. Prehn anesthetizes mouse in preparation for transplanting mammary gland in connection with milk agent studies.

Here and There
Crusade Fund Drive

NIH employees have contributed $478 to the Crusade for Freedom, Personnel Branch reports.

Chicago Meetings

Twelve NIM scientists are scheduled to present papers at the November 14-17 meetings in Chicago of the American Society for Tropical Medicine, the National Malaria Society, and the American Society of Parasitologists.

Civil Defense Post

The D. C. Office of Civil Defense has appointed Dr. Victor E. Archer, NIAMD, a member of its Technical Subcommittee on Atomic Defense. He replaces Dr. Clinton C. Powell of NIAMD.

Public Health Tests

Dr. Harold F. Dorn, Chief of the Biometrics Branch, will speak on evaluation of special tests and procedures in public health at the annual conference of the Milbank Memorial Fund in New York, November 14-15.

Training Course

The third in a series of training courses in Federal purchasing will begin at NIH November 27 under the sponsorship of the Purchase and Supply Branch.

Boston Talks

Two lectures on "Hypoglycemia" and "Practical Aspects of Diabetes Mellitus" were given by Dr. Russell M. Wilder, Director of NIAMD, before the New England Diabetes Association and the New England Postgraduate Assembly, November 6-7, in Boston.

Visiting Scientist

Dr. Allan Stralfors of the School of Dentistry, Stockholm, Sweden, is scheduled to spend several weeks working with Dr. R. M. Stephan of NIDR.

Atherosclerosis

"Transfusion Transfer of Atherosclerosis" was the subject of a paper delivered by Dr. Joseph H. Bradgon of NIAMD before the American Society for the Study of Atherosclerosis in Chicago, November 3-6.
SAFETY OFFICE CITES ACCIDENTS AT NIH

"Be happy -- go lucky" may be a good cigarette slogan, but don't apply it to safety.

A glance at NIH's accident record for the last two months, compiled by Safety Officer James B. Black, suggests that luck has a periodic habit of running out. It did in the following instances.

A parked car rolled down an incline at NIH and smacked into a building. This could easily have been prevented by placing the car in gear and setting the hand brake.

A cable dangling loosely from a centrifuge threw a chemist across the room and fractured his arm.

Dry ice stored in a "walk-in" box nearly asphyxiated a lab technician. A batch of cloths caught fire in a dry wall gas sterilizer left on over the week end. The fire was discovered by an alert guard and extinguished.

A technician received splash burns about the face when she applied air pressure to agitate a large bottle of a chemical solution. House line pressures should not be used for such purposes.

A carboy bottle filled with sulfuric acid broke as an attendant lifted the heavy container onto a table. This type of hazard can be eliminated by using special apparatus, available from the Safety Officer, for handling cumbersome containers.

BIOLOGY MEETING

Dr. Mark Woods and Miss Marie Hesselbach of NMI will present papers at the Conference on Biology of Normal Atypical Pigment Cell Growth, November 15-17, in New York. Two others from NMI will attend the meeting.

GERMAN VISITOR

Dr. Franz Helmut Grossmann, Medical Director of the Kreiskrankenhaus, Bad Homburg, Germany, visited NIH recently to discuss nurse education with nurse administrators here.

If the phones in NIH's administrative office ring with an insensitivity that seems excessive at times, it's with good reason. Most of the calls are directed to brisk, knowledgeable Celie Kennedy, secretary and all-around factotum, whose readiness with the right answers to inquiries of all sorts has made her a valued contact throughout the Heart Institute.

A native Washingtonian, Celie came to NIH three years ago, after a short period with the Division of Research Grants. She takes an active part in employee activities, serving on Recreation and Welfare's board of directors and participating in the annual Hamster shows.

Much of what she has learned about dealing with people is credited to the seven hectic years she spent with the District of Columbia Selective Service. Among the local boards with which she served was the District's largest and most unusual unit -- the foreign board -- which had 20,000 registrants on its rolls during World War II.

As Chief Clerk of this local board, Celie (and a staff of eight) had the difficult job of registering American citizens living abroad. This was handled through American consulates and embassies.

Although the work involved few face-to-face contacts with registrants, the most notable cases Celie remembers were those in which registrants appeared personally at the local board office. An anxious registrant in Mexico used to telephone her twice a week at the time his classification was being determined. After receiving his notification to report for a pre-induction physical, he flew to Washington to plead his case for deferment. As a last ditch measure, he notified the board that he wished to renounce his American citizenship. But it was too late for that. The induction wheels had begun to turn and he was sworn into service. A few months later, however, he was able to get himself discharged. Just to rub things in, he paid the local board a visit to emphasize his release.

On a few occasions, a naive registrant would resort to threats or attempt bribery in an effort to avoid service. Threats were usually of the "I'll get my Congressman-after-you variety."

One case Celie remembers with interest concerned a registrant who had married a South American girl and established residence in Uruguay. Before being called up for service in the closing weeks of the war, he informed Celie, jestingly, that it was a waste of time to place him in service -- that the war would end by the day after his induction. Ironically, it did. He reminded Celie of his omniscience with a postcard which read, "What did I tell you!"

COMMUNITY CHEST QUOTA AT NIH IS $14,800

The Greater Washington Community Chest Drive got under way at NIH in late October, with Dr. David E. Price, Associate Director of NIH, serving as general chairman. NIH's quota this year is $14,800.

The Chest's over-all quota for its 100 local affiliates has been set at $3,730,000, with an additional $220,000 for the United Defense Fund, which finances services for the armed forces through the USO and USO Camp Shows.

This year's combined objective is almost a half million dollars more than was raised in the Red Feather campaign last fall.

Local Chest agencies will be called on to help approximately 250,000 persons in the next 12 months.
NMI TO COORDINATE NATION-WIDE SECTIONAL RESEARCH PROGRAM

The National Microbiological Institute has been named by Surgeon General Leonard A. Scheele as the coordinating headquarters for a stepped-up Nation-wide program of medical research which seeks to find faster and more accurate methods for identifying the organisms which cause certain infectious diseases. The Public Health Service has launched this program in cooperation with a number of medical schools, State health departments, and the medical departments of Army, Navy, and Air Force.

In addition to faster diagnostic methods, the research program will seek better vaccines for use before and after exposure to the diseases and more effective methods of treatment.

The research program will receive financial assistance from NIH by means of grants to aid research projects peculiar to this field and to help coordinate the activities of the various participating laboratories.

The program was described by Dr. Dorland J. Davis, of NMI, in a paper presented October 30 before the joint session of Engineering, Epidemiology, Health Officers, and Laboratory Sections of the APHA annual meeting in San Francisco.

The new programs of laboratory research and disease identification will be coordinated with the recently established Epidemic Intelligence Service of PHS, which through the Communicable Disease Center - will station 21 specially trained medical officers in strategic locations throughout the country to assist in investigation and control of disease outbreaks that are beyond the resources of State and local health departments.

The new program will focus around a number of sectional laboratories, the heads of which are designated as sectional coordinators. Each will explore the research competence of other medical laboratories in his geographic section in the various specific diseases involved and their interest in cooperating with the program. The head of each participating laboratory will determine what research responsibilities his organization can undertake and the special

GET ME OUTTA HERE!

Look, chum, you don't understand. I'm a hamster, see. How many times do I have to tell you?

If you picture guys were smart, you'd know this is no place for me. Not at a time like this, when folks want to learn about hamsters. They've heard of us at NIH... wanna know what we do for a livin' and all that stuff.

Okay, okay. So you don't believe me. Show him the letter, boss. See what it says? "Dear Sir: Please send us a booklet about hamsters. Thank you." And it's signed, "Margaret, second grade, Woodside School." That's in Silver Spring, chum.

So stop pokin' around with that camera and get me out of this fool beaker. And never mind that just-one-more line of yours. It's a lot of guff.

NCI SCIENTIST WRITES FOR SATURDAY REVIEW

"Staying Alive," a biologist's view of the struggle for existence, is the lead article in the October 27 issue of the Saturday Review of Literature.

The author is Dr. R. R. Spencer of the Cancer Institute. In the article he sets forth his observations on the survival problems of man and his fellow creatures. Some notable quotes appear below:

"There is a universal law, older than life itself -- the law of change. That nothing stays the same is true for inanimate as well as for animate matter. And so it happens that individual organisms of all species are prodigal Nature's most expendable commodities... species, too, come and go relatively rapidly. Far more are extinct than extant. In our own time we have witnessed the passing of the passenger pigeon and the heath hen. Not so very long ago the dodo gave up the struggle and the whooping crane is said to be on its way out. If surviving forms never changed or adapted to a changing environment... evolution would be a myth..."

"Yet, adaptation does not always mean adaptability... For example, orange trees grow in Florida but cannot live in New York; while contrariwise, apple trees thrive in New York but fail to survive in Florida. Stability and perfect adaptation, which is usually accompanied by a high degree of specialization of structure and function, insures survival only if the specific environment does not change..."

"More and more, certain species are becoming dependent upon man. The newspapers recently reported that around St. Augustine, Florida, great flocks of sea gulls were starving amid plenty. Fishing was still good, but the gulls didn't know how to fish. For generations they had depended on the shrimp fleets to toss them scraps from the nets. Now the fleet had moved to Key West. Life had been so easy for so long that when left to their devices, they perished."

Science Digest has requested permission to reprint Dr. Spencer's article.