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THE EIGHTH REMSEN LECTURE

May 15, 1953

Dr. Edward Lawrie Tatum

on
Contributions of
Biochemical Genetics and Microorganisms
to Biochemistry

The eighth Remsen Memorial Lecture will be given on Friday, May 15, at 8:30 P.M. (D.S.T.) in Remsen Hall on the Homewood Campus of The Johns Hopkins University. It is open to all who are interested. Dr. Edward L. Tatum, Professor of Biology at Stanford University, has been chosen as the recipient of the Remsen Memorial Lectureship Award, and he will deliver the Remsen Lecture, speaking on "Contributions of Biochemical Genetics and Microorganisms to Biochemistry". He will be introduced by Dr. William D. McElroy, a former associate, and now Professor of Biology at The Johns Hopkins University.

Dr. Tatum is being honored for his pioneering work in a new field of biology now commonly called biochemical genetics. With a former Stanford colleague he discovered a means of producing, at will, organisms with almost any desired biochemical characteristics. His work in collaboration with G. W. Beadle in 1941 was to select mutants of the bread mold Neurospora crassa from cultures treated with X-rays and, by studying nutritional requirements, find how far a particular mutant could carry a series of reactions. Where there is a genetic block (absence of the enzyme system capable of accelerating the next step), another mutant, selected from the enormous number of cultures studied, can carry the synthesis further.

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LOCAL SECTIONS COOPERATING

Through the efforts of Chairman Hartford of the Maryland Section, the officers of the Maryland and Washington Sections met at the Johns Hopkins Club on April 13. Many items of mutual interest were discussed in addition to helpful suggestions from both sides concerning local section affairs. Most of the problems discussed will be referred to the executive committee for discussion at their next meeting early in May.

However, it was agreed to publish information concerning the meetings of the Washington Section in THE CHESAPEAKE CHEMIST and information of the meetings of the Maryland Section in THE CAPITAL CHEMIST. This is being done as a service to those members of both sections who might be interested in attending the meetings.

Washington Section Meeting. On Thursday, May 14, the Chemical Society of Washington will meet at the University of Maryland, College Park, at 8:15 P.M. in the Arts and Science Building. This is the spring divisional meeting with two symposia and two divisional meetings, Organic and Biological, and Physical and Inorganic. The symposia will be on Radioactivity and on Spectroscopy. There will be a dinner at 6:30 P.M. in the University Dining Hall. Subscription price including tip, \$2.00.

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Another Puzzler. Try this one on your analytical balance. Given twelve pennies, one of which is counterfeit and either heavier or lighter than the others which are identical. Find the counterfeit penny and determine whether it is heavy or light using only three weighings on a simple balance.

Answer to April Puzzler. You should have been able to figure it out for yourself, but in case you didn't, here is the answer. The vice-president is Mr. Brown, the stock clerk is Mr. Jones, the stenographer is Miss White, and the chief chemist is Mr. Smith. No names were given in the puzzle for the president and the technician.

from page 1) The Remsen Lecture

This research initiated a large amount of work which has demonstrated steps in the biosynthesis of many amino acids, vitamins, purines, pyrimidines, and other substances of biochemical importance. It has revealed in several cases a close relationship between the pathways followed in microorganisms and those followed in higher organisms. In recent work Dr. Tatum has given special emphasis to amino acid metabolism in mutant strains of microorganisms. Many new and unsuspected relationships have been the result of this work, and he has added much to our understanding of comparative biochemistry. Dr. Tatum will show specific examples of pathways as revealed by the use of mutants and the bearings of his findings on enzymology and genetics.

The lecture will be preceded by a dinner in honor of Dr. Tatum. The dinner will be held at the Johns Hopkins Club at Homewood at 6:30 P.M. (D.S.T.) and will be open to members of the section and their guests. Formal dress is optional. Since space in the dining room is limited, only the first fifty reservations will be accepted. Reservations should be made by Tuesday, May 12, with Dr. W. H. Summerson, 501 West University Parkway, Baltimore 10, and should be accompanied by a remittance of \$3.00 for each dinner.

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WILLIAM DAVID McELROY

Dr. William D. McElroy, who will introduce the speaker at the Remsen Memorial Lecture, is known to many people in Baltimore as the "firefly man". Each summer for a number of years Dr. McElroy has cornered the market on fireflies. The children of Baltimore have brought them in by the hundreds to sell to him. When the season is over the person with the greatest number to his credit has received the grand prize.

Others know him as a Professor of Biology at The Johns Hopkins University and as a man with varied research interests. In his work on bioluminescence Dr. McElroy uses the lanterns of hundreds of "lightning bugs" to obtain the enzyme, luciferase, and the pigment, luciferin. Mixing these substances with magnesium ions, adenosine triphosphate (ATP), and oxygen, he has duplicated the flash of the firefly. As a National Research Fellow at Stanford University he was associated with Drs. Beadle and Tatum, and became interested in bacterial mutants and biochemical genetics. In his own work he has used nitrogen mustard gas treatments to produce bacterial mutants. With these he is studying the pathways in the biosynthesis of amino compounds from nitrates.

He is also known as Director of the McCollum-Pratt Institute. This Institute is engaged in studying the role of trace elements in plant, animal, and human nutrition.

The Maryland Section is honored once again to have one of its members, Dr. William D. McElroy, consent to introduce the Remsen Memorial Lecturer.

THE REMSEN MEMORIAL LECTURE

LECTURER Dr. Edward L. Tatum
SUBJECT Contributions of Biochemical Genetics
and Microorganisms to Biochemistry
PLACE Room 1, Remsen Hall, Johns Hopkins
Charles and 34th Streets
DATE Friday, May 15 TIME 8:30 P.M.
DINNER The Johns Hopkins Club, Hopkins Campus, at 6:30 P.M.
The dinner is open to members of the section and their guests.
Reservations should be made on the enclosed card. See page 3.

EDWARD L. TATUM

Dr. Tatum, a native of Colorado, received both his undergraduate and graduate training at the University of Wisconsin. He was awarded the Ph.D. in biochemistry in 1935 and served as assistant in agricultural chemistry and agricultural bacteriology at the same school from 1934-1936. After a year at Utrecht, Holland, as General Education Fellow in bacteriological chemistry, he was appointed research associate at Stanford University. He became an Assistant Professor in 1941, and after a year at Yale as Associate Professor of Botany in 1945, he returned to Stanford as Professor of Microbiology. In 1948 he was appointed Professor of Biology which position he now holds.

Professor Tatum's early work was concerned mainly with growth factor requirements and the metabolism of such bacteria as the butyric acid and propionic acid bacteria. During the period 1937-1941 he collaborated with G. W. Beadle and others in a study of eye-color development in the fruit fly *Drosophila*. In 1941 Tatum and Beadle started the work of genetic control of biochemical reactions. Dr. Tatum has continued this work and made many important discoveries. This and his work with biochemical mutant types of bacteria he will present as the Remsen Lecturer. In his work with Joshua Lederberg he has shown that certain strains of the colon bacillus undergo a kind of sexual reproduction during which hereditary units are recombined. Many students in this field of investigation regard this as one of the most important advances in bacteriology within the past several decades.

Dr. Tatum is also engaged in cancer research under grants from the United States Public Health Service and the American Cancer Society. Recently announced results of this research indicate that cancer may develop as a result of changes in genes. This work showed that chemicals and radiations which cause cancer will also cause gene changes.

Dr. Tatum's competence as a microbiologist, as a biochemist, and as a geneticist has been abundantly demonstrated by his work. He has recently been honored by being made a member of the National Academy of Sciences. He is also a member of the American Chemical Society, American Association for the Advancement of Science, Botanical Society, and the American Society of Biological Chemists.

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