

pass through an enormous number of other atoms without deflection, unless it strikes a nucleus. Since, on the average, about two neutrons are emitted by each fission and only one is needed to produce it, and since, in addition, the reaction is exceedingly fast, the number of neutrons and also the number of fissions increases with extreme rapidity, provided no neutrons escape. However, unless the body is moderately large, so many neutrons escape that, on the average, less than one of the neutrons produced by a fission is effective in uniting with a nucleus to give another fission, so the reaction dies out. If the body is larger than this (known as the critical volume highly dependent upon the shape), the reaction proceeds. In such a case the term, chain reaction, has been employed, although this is somewhat different from the prior use of this term in chemistry.

The writer realized not very long after the beginning of the development of his general theory of nuclear transformation, in 1926, that the complete theory is of the quantum-mechanical type. Such an enlargement of the theory was developed in 1937 by Bohr and Kalckar (2). However, this was not done until the point of view of nuclear physicists in general was changed by experimental evidence, which demonstrated that the *primary* process is the formation of a nucleus, rather than its disintegration.

References

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Obituary

Thomas J. Maney 1888-1945

Last 12 October marked the passing of T. J. Maney, chief in pomology at Iowa State College. His death occurred at Rochester, Minnesota, where he had undergone an operation.

Maney was born at Geneva, New York, on 24 April 1888. He gained his inspiration for horticulture under the tutelage of Professor S. A. Beach and graduated from Iowa State College in 1912. He was employed by the college immediately following his graduation, in which relationship he continued for the past third of a century. He served as chief in pomology at this institution since 1917. His special field was hardy stocks for the pomaceous fruits. His genial fellowship and keen Irish wit will be missed by his college associates.

Mr. Maney is survived by his wife and three sons, one of whom is in the Army Air Corps.

A. T. ERWIN

Iowa State College

Bruce Lawrence Clark 1880-1945

Dr. Bruce Lawrence Clark, associate professor of paleontology, emeritus, of the University of California and one of the country's outstanding authorities on invertebrate paleontology, died on 23 September 1945 at his home, 916 Euclid Ave., following a six-month illness. His death will be mourned by hundreds of his

former students in all parts of the world, who held him in affectionate regard as a friend as well as an instructor.

Dr. Clark graduated from Pomona College in 1908 and received his Master of Arts degree and his Ph.D. degree at the University of California in 1909 and 1913, respectively. He joined the university faculty as a teaching fellow in 1909. He became an associate professor in 1923.

On the Berkeley campus, Dr. Clark developed a school of graduate students who went out to all parts of the world to develop the vast oil fields in Arabia, Sumatra, Java, Borneo, Colombia, Venezuela, and Mexico. He himself traveled extensively in Europe and Mexico visiting other scientists in his field.

His principal interest was in the invertebrate fossils of the Pacific Coast and he had recently discovered radiolarian deposits from the Eocene period in the region of Mount Diablo. He was a member of the American Association for the Advancement of Science, the Paleontological Society, the Geological Society of America, the California Academy of Sciences, the Faculty Club, and the First Congregational Church of Berkeley.

Dr. Clark was born in Humboldt, Iowa, on 29 May 1880. He is survived by his wife, Mrs. Delia E. Clark, a daughter, 2d Lt. Elizabeth Clark of the Army Nurse Corps at DeWitt General Hospital at Auburn, California, and a son, Bruce E. Clark, CM1/c USNR, now home from Okinawa.

CHARLES L. CAMP

University of California, Berkeley