

George Burr Upton

October 16, 1882 — October 29, 1942

In the sudden passing of George Burr Upton, Cornell University lost not only one of her most distinguished scientists, but also one of her most inspiring teachers.

Professor Upton was born in Newark Valley, New York, on October 16, 1882. He attended high school in Denver, Colorado, and in Ithaca before entering the Sibley School of Mechanical Engineering in 1900. Four years later he received his Mechanical Engineering degree, and was awarded a University Fellowship. Following the completion of his graduate work in 1905, he received the degree of Master of Mechanical Engineering, and was appointed an instructor on the staff in Experimental Engineering. Five years later he became Assistant Professor, and in 1919 was named Professor of Experimental Engineering. Although he was unquestionably one of the most versatile scientists in the College of Engineering, Professor Upton's primary interests in engineering were in the field of materials, and in the internal combustion engine and its application to the automobile. He became an outstanding authority on automotive engineering, and the courses with which he had pioneered in that field became so popular that in 1936 the Department of Automotive Engineering was organized with Professor Upton as department head.

Along with his university work, Professor Upton was frequently called upon by industry to act as a consultant. He was particularly valuable as an expert witness, especially in patent suits. During the period of World War I, he was associated with the Bureau of Ordnance in the development of shell case manufacture, and also with the National Advisory Committee for Aeronautics on airplane power plants. In addition, he served as a consultant for the Curtiss Airplane Company at that time.

Early in his career, Professor Upton made a profound study of engineering materials and metallography, and was responsible for many advances and developments in the technique of testing materials, and in the improvement of the physical and mechanical properties of materials through careful metallurgical analysis. He invented and patented, with George W. Lewis, the Upton-Lewis Fatigue Testing Machine. He was the author of the widely known and popular book *Materials of Engineering*, which was in a large measure responsible for the rapid development of the testing and utilization of engineering materials industrially, and for the progress in the study of this subject in engineering schools and colleges. Professor Upton contributed extensively to the writing of a text book on *Experimental Engineering* by Carpenter and Diederichs; was the author of many technical papers which appeared in the current publications in the fields of engineering materials and internal combustion engines.

Besides being a licensed Professional Engineer, Professor Upton was a member of the American Society for Testing Materials, the Society of Automotive Engineers, the American Society of Mechanical Engineers and the American Society for Metals. He was further honored by election to the honorary societies of Sigma Xi, Tau Beta Pi, and Phi Kappa Phi.

Although Professor Upton was most widely known for his work and writings in the field of engineering, his studies and research covered every branch of science. "G. B.," as he was affectionately known to his friends, was a person to whom they could take any scientific problem and be assured of an enthusiastic reception with a just criticism and a sound analysis of the problem and its solution. He had a most retentive memory and a keen analytical mind. G. B. was regarded by all who knew him as an unexcelled source of reliable information, and as a person who was able, not only to inform accurately and fearlessly, but who could also exercise sound judgment and offer wise counsel. He was so modest that he rarely took the credit he deserved for the ideas and inspiration he instilled in those who sought his advice. His ability to combine the fundamental principles of chemistry, physics, and mathematics in the solution of practical engineering problems was so boundless that it at times amazed even his most intimate friends who were already aware of his brilliance and the broad scope of his knowledge.

Professor Upton's lectures, like his conversation, were always stimulating and challenging; he taught with enthusiasm and understanding. He expected in his students the same high and exacting standards as those which he set for himself. His lectures were in a constant state of revision, as he added to them the results of his critical and extensive reading and the information gleaned from his experiences in the solution of practical engineering problems. Graduate students and his colleagues on the faculty revisited his lectures year after year to broaden their knowledge and to be stimulated with his uncanny knack of arriving at logical solutions for seemingly impossible problems.

While Professor Upton was widely known as an eminent engineer and teacher, it was only his most intimate friends who knew that this modest man was early a student of birds, an author of a paper on plant breeding, and a collector of reptiles. As a member of a transcontinental entomological expedition in 1917 and again on a cross-country trip with botanists in 1920, he was ever ready with unique and ingenious devices for collecting small animals and for drying plants.

To his colleagues, Professor Upton was more than a brilliant scientist and engineer. He was a fine and loyal friend, sympathetic and helpful at all times. It is by them that his loss will be most keenly felt. Although he has now passed on, the inspiration and high ideals he has instilled in them, and their admiration and affection for their departed friend and teacher, will keep him alive in their memory forever.