

John F. Hanson

John F. Hanson passed away on September 15, 2013 in Traverse City, Michigan. A daughter, son-in-law and loving care-givers were by his side. John was born on April 25, 1915 in Medford, Massachusetts to Nils Johan and Alma Maria Hanson. He received his B. S. (1937), M. S. (1938), and Ph. D. (1943) degrees from the University of Massachusetts, Amherst majoring in entomology. He was a student of both the prolific insect taxonomist Charles Paul Alexander and the distinguished insect morphologist Guy Chester Crampton, and specialized in the morphology and systematics of the insect order Plecoptera or stoneflies. In actuality, however, he had two parallel but somewhat different careers. His older brother, an MIT engineering graduate, and an employee with Raytheon Manufacturing Company in Waltham, Massachusetts got him involved with the company. Prior to the second world war John worked at Raytheon during the summers to help with the expenses of raising a family. During the last three years of the war he worked full-time as a Magnitron production engineer. Although not formally trained as an engineer, his ability to examine problems from many different perspectives led to saving Raytheon production time, space as well as millions of dollars in costs. These efforts led him to being named in 1946 as a magnetron development engineer and in that capacity he invented and developed the cermet cathode which was central to the operation of the high-wattage magnetron that served the radar network of that time. The magnetron is also the heart of the "Radarange" or microwave oven and its inventor at Raytheon, Percy Spencer, when he retired recognized John's contributions by presenting him with his personal office desk. After leaving full-time employment at Raytheon, John continued to work for them as a consultant and in this role conducted critical surveys and technical analyses of certain nonproductive research divisions and made suggestions for corrective measures and administrative changes.

Later, John and his wife Marie founded and operated the Ace Filament Company which for more than two decades provided engineering consulting, inventing, and manufacturing services for Indelco, Ceramic Coating Incorporated, Optical Micro Systems, Tesla Engineering and Raytheon. One of the company's tungsten projects was used in the space program and now sits on the moon. In 1991, more than ten years after he retired from his engineering and academic pursuits, Raytheon invited John back for ceremonies surrounding the visit of President George H. W. Bush.

However, the study of stoneflies remained his first calling. While still a graduate student his first paper, "*Studies on the Plecoptera of North America I*" was published. And in 1945 he was a successful recipient of a Guggenheim Memorial Foundation Fellowship for the study of this insect group. His published doctoral dissertation the "*Comparative Morphology and Taxonomy of the Capniidae (Plecoptera)*" stands as an authoritative contribution to the phylogenetic and taxonomic relationships of the genera within this family. In 1947 he returned to the University of Massachusetts as assistant professor and ultimately advanced to full professor. There, 'Doc' as he was affectionately known, taught courses in evolution, insect morphology, taxonomy, and forest entomology. His teaching was punctuated with his expertise in genetics, physics and his advocacy of evolution as a universal operational principle that underlies and connects both the inorganic and organic realms. Generations of students will recall learning of the acronym HUSP - Hanson's Universal Principle of Progress. In the classroom John had a knack of simplifying complex concepts through visually insightful examples. Students in his insect morphology course working late at night in the laboratory found it common for John to drop by to see if they needed assistance. He was approachable both in and outside the classroom. His door was always open and in his office one could always find his classroom or thesis students discussing evolutionary, entomological or other topics of interest. During this time, aided by grants from Sigma Xi and the National Institutes of Health, he published a

number of papers on stoneflies. These studies were based on numerous field-collecting trips in eastern and western North America. The line drawings that accompanied each paper were always skillfully and carefully crafted to depict the diagnostic characters that readily distinguished the relevant taxonomic groups. Several papers reflected his interest in thoracic sternal plate morphology and what it could inform about stonefly relationships. Occasionally his engineering proclivities would show up and articles appeared on such diverse topics as improving and accelerating KOH clearing of specimens, a foot-focusing device for the stereomicroscope, a dripless dispensing bottle, and trays for filing and storing liquid preserved specimens. He co-authored a bibliography of stonefly papers to supplement the earlier published Claassen catalog and authored a bibliography of entomology papers published by the entomology department through 1955 for department's annual yearbook. Many of his research papers appeared in the *Bulletin of the Brooklyn Entomological Society* where he served for a number of years as editor. Upon his retirement from the university in 1980, John's Plecoptera collection with its types and many thousands of specimens was provided to the United States Museum of Natural History at the Smithsonian Institution. The species patronym *Isogenoides hansonii* and the generic patronym *Hansonoperla* also honor his contributions. In 2011, at the age of 96, he was named as a recipient of the Lifetime Achievement Award by the International Society of Plecopterists.

When not working in either of his laboratories, John's passion was collecting and discovering new stonefly taxa as well as skiing, camping, gardening, traveling, and hiking in the mountains with his family. He was an avid participant in sports and organized and played on the entomology department's intramural softball and volleyball teams. He often found himself playing with as well as outplaying graduate and undergraduate students some twenty years his junior. John also loved the game of tennis and could be found on the courts until he was ninety. Another pastime he greatly enjoyed was collecting and refurbishing antique cars and he frequently could be found attending meetings and shows with fellow old car enthusiasts.

John as a person was direct and honest. He had a great sense of humor and throughout his life appreciated a clever joke. Moreover, he was warm-hearted and generous with his enthusiasm, encouragement, and support to family, friends, and his students. He held high expectations for himself and others. A goal-centered individual, John in retirement continued to work on various engineering-related projects as well as a book about his views concerning a universal system of evolutionary progress. When John was a very young man he wrote the following life objectives in his diary: "*To do everything as best I can; to teach college; to travel and collect insects; to be active in sports; to live 100 years in perfect health.*" It is a tribute to his drive, energy, and love of life that he accomplished the first four of these, and just barely missed the last one, written when life expectancy was approximately 62 years, by a mere nineteen months. John was predeceased by Marie - his wife and partner of 72 years, a daughter Marie Saunders, a brother Per Roland Hanson, a sister Lillian Bartlett and a granddaughter Erika Pankow. He is survived and missed deeply by daughters Trina (Joe) Ball, Patricia (Harry) Joiner, Phyllis (Bernd) Pankow, seven grandchildren, thirteen great-grandchildren and numerous nephews, nieces, colleagues, students, and loyal friends.

Trina Hanson Ball

P. O. Box 467

Empire, MI 49686

Charles H. Nelson

Department of Biological and Environmental Sciences

The University of Tennessee-Chattanooga

Chattanooga, TN 37403