University of California: In Memoriam, 1985

William Duane Brown, Food Science and Technology: Davis

1929-1983
Professor of Marine Food Science

Duane Brown died on May 6, 1983 after battling melanoma for several years. His courage, quiet dignity, and empathy for those around him during his struggle were inspirational.

Duane was born in Hamlin, Texas on December 8, 1929. He was the only child of Mr. and Mrs. Earl Brown. He developed rapidly both mentally and physically and graduated as class valedictorian of Hamlin High School at the age of 15. After two years at Hardin-Simmons University he obtained both his B.S. and M.S. degrees in chemistry from the University of Texas at Austin. Between 1951 and 1953 he served as a second lieutenant in the Medical Service Corps. He ran the clinical laboratory at Hamilton Air Force Base. In 1953 he returned to the University of Texas where he received his Ph.D. in chemistry (biochemistry) in 1955.

From 1955 to 1958 Duane was a chemist for the U.S. Fish and Wildlife Service and an Associate in the Food Technology Department at UCD. During this time he began his work on fish and fishery products. In 1959 he joined Dr. Harold S. Olcott in the Institute of Marine Resources at UC, Berkeley as an Assistant Research Marine Food Technologist. He was appointed Assistant Professor in 1963 and he advanced rapidly to the rank of Professor by 1968. In 1970 he and Dr. Olcott moved their program to the Davis campus.

Duane Brown made significant scientific contributions in a number of areas. He and his associates have published over 100 scientific papers in the fields of biochemistry, nutrition, and food science and technology. Early work with Professor Olcott included extensive systematic studies of various hemochrome pigments in fish. Duane was internationally recognized as a leader in the comparative biochemistry of the important muscle pigment myoglobin. Much of his work involved measurements of physical constants of myoglobins. In 1980 he published the amino acid sequence of myoglobin from yellowfin tuna (*Thunnus albacares*). This sequence was the first reported for a teleost, and it differed greatly from those of mammalian

myoglobins. Recently Dr. Brown participated in a study using proton nuclear resonance spectroscopy in which the diffusion coefficient of myoglobin in muscle was measured. This was the first direct proof that myoglobin diffuses at a rate sufficient to allow the oxygenated form of myoglobin to contribute significantly to the overall diffusive flux of oxygen in respiring heart muscle.

Another important contribution was the development of the equipment and procedures which enabled Dr. Brown and his associates to establish the correct stoichiometry of the autooxidation reaction of myoglobin. These studies were the basis for future work on metmyoglobin reductases as this work demonstrated that many earlier measurements of metmyoglobin reductase activity were actually measurements of non-enzymatic reactions.

Dr. Brown's program was distinguished by also having a strong component of applied research. In collaboration with Japanese workers, Dr. Brown showed that the green pigment sometimes found in canned tuna was formed from trimethylamine, cysteine, and oxidized myoglobin. Dr. Brown had an important role in the re-introduction and development of modified atmospheres (atmospheres containing high levels of carbon dioxide) for the storage and transportation of seafoods. He also patented a nitrite substitute and studied histamine toxicity and the nutrition and feeding of lobsters.

Dr. Brown was heavily involved in the UC Sea Grant program. He served as subject area coordinator, and he participated in meetings of the Institute of Marine Resources executive subcommittee for Sea Grant on numerous occasions. His range of interests was reflected in the professional societies to which he belonged. He

was a member of the Society of Biological Chemists, American Institute of Nutrition, American Society for the Advancement of Science, American Chemical Society, Institute of Food Technologists, World Mariculture Society and Pacific Fisheries Technologists.

Despite his numerous professional achievements, those who knew him personally will remember him most for the way he treated people. He had a genuine concern for the development of students and new faculty members. He was a private person, but easily approachable. He became unofficial advisor to many students who sought his encouragement and sound pragmatic advice. Dr. Brown treated students as mature adults and gave them freedom to make their own decisions. Many students flourished both scientifically and personally in this environment.

Dr. Brown's major interests were his work and his family, but he had several other skills and interests. He was an excellent cook and photographer. He loved sports, music, painting, sculpture, and the ocean. He and his family often vacationed at Bodega Bay. He enjoyed life and made life enjoyable for those around him.

Dr. Brown is survived by his wife Sue, children Dyland and Shannon, and his mother Leone of Hamlin, Texas.

David Ogrydziak George Briggs Bernard Schweigert Judith Stern

---