

A tribute to John Bradley, Professor of Chemistry, University of Essex, Author of Shock Waves in Physics and Chemistry, given at the International Symposium on Shock Tubes and Waves, Niagara Falls, 1981.

SHOCK WAVES IN CHEMISTRY AND PHYSICS

A Brief Tribute to John N. Bradley

John N. Bradley, Professor of Chemistry at the University of Essex died in February 1981. A shock tube enthusiast, he would have contributed a paper to this meeting and it is therefore fitting that we should pay tribute to his memory.

John Bradley was best known for his book, "Shock Waves in Chemistry and Physics", which he wrote in the early sixties. It gave the chemist or physicist, without a knowledge of fluid mechanics, critical introduction to the theory and practice of shock tubes. In particular the book pointed out the possibilities and limitations of the technique and as such provided an excellent survey, not only for practitioners like ourselves, but also for chemists and physicists in general. The book was extremely influential because of the time of its appearance and it contributed substantially to the application of shock techniques in chemistry and physics.

John Bradley was a graduate of the University of Birmingham where he obtained his doctorate for photochemical work. He then went to work with Professor George Kistiakowsky at Harvard where he took up shock tube work and participated in the first attempts to extract samples for mass spectroscopic analysis in a time-resolved regime.

He returned to England to take a position at the University of Liverpool where, among other things, he developed a combined flash-photolysis/shock tube technique. This was not an easy experiment and he was ahead of his time. Now the use of a laser to produce photochemical decomposition in a shock heated gas would circumvent many of the problems associated with a broad-band flash lamp.

In the middle sixties he became Professor and Head of the Department of Chemistry at the new University of Essex and at that time he was one of the youngest Chairmen in the country. Chairman of a developing department is more than a full-time job but his research continued unabated. In recent years he concentrated on the mechanism of pyrolysis of hydrocarbons and on oxidation, studying these most complicated systems with single-pulse shock techniques combined with computational modeling of the multi-reaction mechanisms. He developed his own sensitivity analysis before it became fashionable.

John Bradley was not just a shock tube man: he had wide ranging interests in Chemistry, and worked at various times on photochemistry, laser applications, and surface chemistry.

John had a full life outside his profession. He was a keen sailor both in dinghies and cruisers and he took part in the grueling, demanding, and at times dangerous, 'Round-Britain' race. He was a keen squash player and indeed he died following a vigorous squash game.

He attended many of these meetings, and was a member of the Advisory Committee - had he lived he would have contributed a paper this afternoon on "Chemically Enhanced Shock Waves and Detonations in Ethylene Oxide-Oxygen-Argon Mixtures". It is sad that he is missing from our ranks.

However, John Bradley was a cheerful friend of many here and he would not have wanted me, in paying this tribute, to cast a note of gloom over what has been a most successful meeting.

So I shall conclude by saying that we who knew John personally and those of us who knew him through his book and his work are privileged to have been in contact with a vigorous, able and good colleague. We remember him with honour and with pleasure.

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