

## Special Article

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# Tribute to Professor Geoffrey Dawes

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The Editors join the family, friends, and colleagues of Professor Geoffrey Dawes in the sorrow at his recent death. In recognition of his many contributions we offer this tribute by Mark A. Hanson.

Geoffrey Dawes (C.B.E., F.R.S.) died in Oxford on May 6th, at the age of 78. His sudden death came as a shock to many people around the world. His name has come to represent fetal physiology, and he had been largely responsible for establishing it as a discipline in the UK since the Second World War. Appointed as director of the Nuffield Institute for Medical Research (NIMR) in Oxford in 1948, he quickly established an active research team and embarked on a career of research, which spanned nearly half a century, not ceasing with his retirement in 1985. He sometimes remarked that, when he was casting about for an area on which to focus his attention, he hit on fetal physiology in the hope that, by studying development, he might be working on a system which was simple and which would therefore give clues to adult functions. No one would think so today, with our knowledge of the adaptive processes that the fetus makes to its special environment, the degree of control over its *milieu interieur* that it exerts, and of the range of physiologic processes unique to life *in utero*. Geoffrey Dawes was in fact one of the key protagonists to challenge the idea of the fetus being “simpler” and to bring to science and medicine an insight into some of the mysteries of this fascinating period of development.

He possessed an enormous dedication to his subject and communicated his knowledge and infectious enthusiasm for it to scientific, clinical, and lay audiences alike on countless occasions. His textbook, *Fetal and Neonatal Physiology* (1968) stands as a benchmark in the subject. Reading it today, it is striking how relevant it still is, how prescient were his ideas. In every chapter the seeds for future research were sown. Each of us working in the field will have a different perspective on his major contributions, whether it be the “rediscovery” of fetal breathing movements, his early work on thermogenesis, the role of chemoreflexes acting on the cardiovascular system, the brain stem inhibitory process affecting fetal behaviour in hypoxia, the factors influencing the increase in pulmonary blood flow at birth, fetal spinal reflexes, the processes controlling fetal heart rate variation, and so on. They are too numerous to detail here, but any list emphasizes Geoffrey Dawes' perception that, however focused a study, it had also to be viewed in the context of the whole organism. He was a true champion of integrative and systems physiology, and there is no doubt that the implications of his method will be repeatedly demonstrated the more medical science incorporates the advances of molecular biology into an integrative approach. He once likened his approach to that of a crystallographer: not content to draw conclusions based on measurements of one face of a crystal, he would turn it, to examine other faces, to look at it from a different aspect, always testing his working hypothesis and willing to revise his ideas.

## Figure

### Figure 1.



Professor Geoffrey Dawes C.B.E., F.R.S. Reprinted with permission from the *Journal of Physiology*, Vol. 346, 1984.

[Full figure and legend \(156K\)](#)

Geoffrey Dawes' influence was genuinely worldwide. His achievement was to establish an amazingly successful research institute, linking it with clinical departments directly when the NIMR moved to Headington and the new John Radcliffe Hospital was built alongside it. Through the NIMR passed clinicians and scientists from the hospital and from other University departments. In addition, there was a constant stream of fellows from abroad who came to work at the NIMR for a year or more. There they were immersed in science and its applications, whether working in the laboratories or drinking tea in the Institute common room area. They took away far more than just new data and techniques, rather they exported a scientific method which they were able to hand on in their turn to their fellows and students in North America, in the Antipodes and in other European countries. Geoffrey's constant encouragement and backing, coupled with his perspicacity and scientific rigor, provided invaluable training to several generations of young researchers-this is his true legacy.

Geoffrey Dawes retired from the NIMR in 1985, to take up a post as director of Sunley Research Centre at Charring Cross Hospital. Here, he encouraged new areas of research, which encompassed molecular biology. Then on retiring from this, he was able to devote his energies to the question of computerization of fetal heart rate signals, patiently defining the many influences which affect the fetal heart rate and finding novel ways of handling the vast amounts of data necessary to establish meaningful population data. Until a few days before his death he was engaged in this work, planning new approaches and discussing data. As always, he continued to attend meetings, to review papers and grant applications and to write references for young researchers, with unflinching punctuality.

To the growing community of fetal physiologists worldwide, Geoffrey Dawes was known as an active participant at symposia. He could be an uncompromising interrogator, but took every opportunity to discuss ideas on an informal basis, too: speakers who felt that their work had been criticized harshly were usually rewarded by subsequent friendly discussions that indicated a genuine support for their endeavors. Geoffrey was a kind, sociable, and generous person who had innumerable friends. At least one young researcher, on telling him that he did not have sufficient funds to attend an international meeting to present his results, instantly received a personal check. Many will remember his and his wife Margaret's generous hospitality at their home in Oxford. His uncomplaining fight against the asthma which afflicted him was an example to us all.

Outside of academic work, Geoffrey was passionate about gardening and fishing, two activities which in their way are characteristic of him. His patience, skill, and knowledge made his garden delightful and it is good to think that right until the last, during the late spring of this year, he

was tending it. He would sometimes discuss fishing in the context of science-arguing that a carefully planned and well executed fishing expedition was not a bad thing-it might land valuable catches from the results of lateral thinking or serendipitous observation and could at least define an area for more in-depth exploration. A fishing anecdote, characteristically told against himself at a large international meeting, provides an abiding memory. Fishing with Professor Sir Graham (Mont) Liggins, they had spent (he said) many hours in a boat without any luck, without any sign of a fish. Finally, as the day drew to a close Geoffrey saw a telltale circular ripple in the distance. "There's a fish!" he shouted excitedly, "I know Geoffrey" Mont calmly replied, "It's on the end of my line."

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