



OBITUARIES

Frank Eyvind Hytten

John Davison



Frank Eyvind Hytten was a pioneer of physiological research in pregnancy and lactation and a key contributor to the promotion of scientific attitudes and improved research and clinical practice in obstetrics. Frank was born in Hobart, Tasmania, Australia, but his family moved to Sydney during his childhood. He started his qualified career in Sydney with residencies in obstetrics and gynaecology, followed by the award of a prestigious three year Walter and Eliza Hall travelling research fellowship to study research methods abroad. This enabled him to spend time in Aberdeen and Boston (USA), returning to Sydney for the final year. His interests were initially in the newborn, focusing on lactation and breastfeeding. When he returned to Aberdeen in the early 1950s, this research continued, but by the time (1954) he had joined the permanent scientific staff of Sir Dugald Baird's Medical Research Council (MRC) Obstetric Medicine Research Unit (OMRU), what he referred to as his "meandering trail career path" had led him to focus on maternal physiology in pregnancy, a much neglected research area. Perhaps it was no coincidence that the term "obstetric medicine" had already been coined, with the acronym OMRU becoming famous worldwide.

It was while Frank was in Aberdeen that he and Isabella Leitch (an animal nutritionist) undertook a systematic search and analysis of the literature, which led in 1964 to publication of the first edition of their classic book *The Physiology of Human*

Pregnancy. This substantial volume (a "bible" to many) was recognised as a model of scholarship, and its content, style, analysis, and predictions eclipsed all previous publications. The concepts set out by Hytten and Leitch may have been the first guides to rigorous investigation of human pregnancy. A major message was that gestational maternal physiological changes were to benefit the fetus not the mother, as why otherwise would so many of her homeostatic mechanisms that she had been guarding all her life be altered? Indeed, pregnant women may be inconvenienced by these enforced changes, with one danger being that these might provoke unnecessary treatment by untutored clinicians unfamiliar with the new research informed "norms." Furthermore, such adaptations could be suboptimal or very disturbed in the presence of chronic maternal disease or dysfunction and/or pregnancy complications. Also, it was strongly advised that labour and the immediate "winding down" in the puerperium deserved books in their own right.

Among OMRU's projects, investigating plasma volume changes, body composition, and blood and electrolyte alterations, it was obvious that Frank's mentoring and encouragement of the young and the "not so young" budding researchers were unique, done so willingly, thoroughly, firmly, and without fuss. He was already an excellent scientist and, like many others of this ilk, was to prove how much could be achieved by simple but thorough methods and by encouraging objectivity in modifying or even revising opinions if convincing new data demanded this. Without doubt, he was to play a very important part in the intellectual and research life of obstetrics.

In 1965, with the retirement of Sir Dugald Baird, the honorary director of OMRU, the reorganisation entailed the disbandment of the Aberdeen unit, and a nucleus of staff who had been concerned in research into the physiology and epidemiology of human reproduction were re-established as members of the MRC reproduction and growth unit, in association with the department of obstetrics and gynaecology at Newcastle University. Angus Thomson was the director and Frank deputy director, bringing his creativity, extensive knowledge, and scientific discipline and experience to Newcastle, where again countless researchers and clinicians were mentored, all becoming familiar with the "bible" and its vastly updated second edition in 1971 (in which etymological correctness meant that "fetus" was preferred to "foetus"). Everyone had come to appreciate so called maternal physiological adaptation in pregnancy and its significance.

Frank emphasised that results of research in pregnancy must be considered in the light of how these were derived. He was a stickler for detail in the laboratory and derided shortcuts or sloppiness in clinical physiological studies. He also saw how laboratory apparatus and clinical research equipment could be

improved. Such inventiveness was no surprise, given that as a medical undergraduate in Sydney, along with an engineering student (an old school pal), he had built a prototype neonatal respirator using an old motorbike engine.

In Newcastle, groundbreaking studies showed that the maternal adaptations occurred in very early pregnancy as evidenced by investigations into carbohydrate metabolism, trace element and vitamin biochemistry, renal function, osmoregulation, water metabolism, and oedema as well as haematology. In all of this work, Frank's motivation for seeking new knowledge was that it should lead ultimately to improved clinical care. Translational research are current buzz words, but Frank was already fostering this bench to bedside link, which was also to prove so successful as a research strategy later for many of those whom he had trained.

The expansion and development of his research often required new laboratory technology which Frank oversaw, coordinated, and actually understood. He also ensured that the young doctors and midwives were well taught about the methodology of research, the need for properly designed studies after thorough review of the literature at the outset and for statistical rigour. Arrangements were made for many of the doctors to have some clinical duties too, for which recognition by the Royal College of Obstetricians and Gynaecologists was obtained towards higher training accreditation. Frank understood the needs, trials, and tribulations of progress in clinical academia, and, interestingly, always ensured that his researchers met with the unit's many distinguished visitors, perhaps most memorably, Leon Chesley, the "father" of hypertension studies in pregnancy. He was his lifelong friend, and both of them occasionally alluded to two qualities that were essential for academic survival and success as well as keeping one's sanity—a sense of humour and maintaining a sense of fun in our working lives.

By 1970 Frank was awarded a personal professorship in human reproductive physiology by Newcastle University as well as becoming a fellow of RCOG ad eundem, and to many he was also "the inaugural dean" of human pregnancy physiology. By now he was overseeing many clinical research projects and at all times emphasised the need to maintain excellent rapport with the adjacent clinical department. Indeed, throughout his entire career he took clinical teaching very seriously, be it on antenatal ward rounds or in the antenatal clinics, and he had that special combination of a logical, simple, and scholarly approach, with his sense of humour, thus captivating students, midwives, and doctors alike. There was always an empathy with and an appreciation of the uniqueness of each patient and her family. Another characteristic was that he assiduously resisted adding his name to the manuscripts that he edited or even rewrote for his researchers unless he had actually been closely involved with the clinical investigations and data gathering.

In 1975 Frank moved to the MRC Clinical Research Centre (CRC) at Northwick Park Hospital, Harrow, as the head of the division of perinatal medicine. The placental transfer of nutrients, vitamins, and drugs was a major interest, and staff there successfully developed an ex vivo placental cotyledon perfusion model. As was to be expected, Frank's clinical teaching resumed unabated with great success, and his unit attracted visiting fellows who worked alongside the established team. True to his 1964 advice, he started to research the literature about the physiology of "winding down" after delivery and in 1995, he published another "bible"—*The Clinical Physiology of the Puerperium*—acclaimed by clinicians and scientists alike. He retired as head of the centre in 1984.

Throughout his life he willingly undertook overseas advisory work for many international organisations. He was a "consummate but quiet politician" and an indefatigable and conscientious "committee man," loyally and conscientiously serving every place where he worked, many editorial boards, the RCOG, the MRC, the DHSS, and obstetrics so well. Between 1979 and 1989, he also used his position as editor of the *British Journal of Obstetrics and Gynaecology* to promote modern scientific attitudes as well as improved research and clinical practice in obstetrics, appointing several specialist assistant editors and statistical advisers, and training many other "helpers" in the arts of sound refereeing, wise judgments, concise writing, and journal politics. The journal was one of the first in the world in any subject to publish reporting guidelines making clear the Journal's expectations of authors.

Frank was a visiting professor at many centres worldwide and a member of a host of prestigious societies and organisations, recognised and honoured on many levels at home and abroad. He was particularly proud of his honorary membership of the British Society of Perinatal Medicine and the fact that, in 1975, he had been a founder member of the MacDonald Club, named after Angus MacDonald (1836-86), an Edinburgh physician who was the first to link the subjects of medicine and obstetrics in the literature. These informal club gatherings of physicians, obstetricians, and non-clinical scientists interested in the medical disorders of pregnancy ultimately gave birth to the MacDonald Obstetric Medicine Society (MOMS), now a thriving and internationally recognised organisation.

In remembering Frank Hytten, we rejoice in his life of unalloyed fulfilment, his pride in his happy family, that mischievous sense of humour, his generous nature, his loyalty in all things, and that wonderful characteristic—his disregard for his own importance and eminence. He was an internationally distinguished scholar, a visionary, an instigator and organiser, and an inspiring teacher and mentor. He was a legend—a legend of a compassionate doctor and brilliant scientist, of dedication to help all around him and of commitment and invincible integrity. And what gave a definitive stamp to all that he did was his understanding of human decency. Frank gave a special friendship, trusted and trusting, and what everyone will carry with them always was his huge gift for loyalty and affection, as well as his innumerable kindnesses and, when requested, his wise advice.

Frank was very much at ease with nature—a very knowledgeable and passionate gardener (unofficially an adviser at the RCOG too), with trees a major interest, as well as substantial building projects and garden design. His many other interests included his cats and dogs, vintage cars, cricket, travel, and wood carving—many of his sculptures were on display, inside and out, at his beloved home, "Blossoms."

Frank had chronic heart failure in recent years, and he coped with his illness with a steadiness, courage, humour, and dignity that were an example to us all, protected by the love and devotion of his family at all times. Frank's first wife, Cath, predeceased him in 1984, and he then married Jonna (also widowed), who was to be his wife of 32 years, and whom he leaves, along with two daughters, a son, six grandchildren, and two great grandchildren, all of whom he was immensely proud.

His funeral was held on 29 January 2018 at Greenacres, Chiltern Natural Burial Park.

Biography

Head of division of perinatal medicine MRC Clinical Research Centre, Harrow, and honorary consultant North West Thames

Regional Health Authority, Northwick Park Hospital (b 1923; q University of Sydney 1946; MD, PhD, FRCOG), died from chronic heart failure on 21 January 2018

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