Robert Edwards

Pioneer of in vitro fertilisation


Bob Edwards was an extraordinarily gifted scientist. Few biologists have had such a positive and practical impact on the future of mankind through their basic research. For it was Bob, his clinical colleague Patrick Steptoe, and laboratory assistant Jean Purdy who in 1978 were to achieve the first birth after in vitro fertilisation (IVF), a technique that has brought joy to millions of previously infertile couples.

Rather than a backroom boffin, Bob was immersed completely in the development of clinical progress through his deep understanding of reproductive biology and genetics, his prodigious knowledge of mammalian biology and animal husbandry, and his empathy for the plight of the “undeserving infertile.”

The possibility that fertilisation could be manipulated or assisted in the laboratory had been mooted by the early experiments of Gregory Pincus, inventor of the oral contraceptive pill, and referred to in a prophetic 1937 editorial entitled “Conception in a watch glass.” Bob was passionate about the possibility that infertile couples could be helped by new techniques being developed in the laboratory, and exemplified the principle of translational science: of bringing ideas from bench to bedside.

Robert Geoffrey Edwards was one of three brothers from humble beginnings in Yorkshire. His Mancunian mother worked as a mill machinist, and his father as a railway worker. He was schooled at Manchester Central High School for Boys, and his further education was unimpressive. Conscripted into the army in 1943, he later read agricultural sciences at the University College of North Wales but, disillusioned by the establishment, he worked in a cottage hospital in Oldham in Lancashire. This necessitated many a trip for Bob or Jean Purdy bringing eggs from Oldham to Cambridge for the early experiments to develop the basic techniques needed. Their landmark papers demonstrating the feasibility of human fertilisation and early development in the laboratory were pivotal in underpinning the later clinical techniques. These were to bring him into conflict with religious groups, especially the Catholic church, which opposed all work involving artificial conception, as it does to this day. Indeed, the day after Bob was awarded the 2010 Nobel prize for medicine, a critical Vatican statement was issued decrying the award.

It is difficult for clinicians and scientists now to appreciate the antipathy and repugnance to Bob’s work between the 1960s and 1980s; it was viewed as unnatural and ungodly, and the slippery slope to Aldous Huxley’s Brave New World. There were calls from the BMA for a halt to all embryo research, and, even after the birth of Louise Brown, the first child to be born after IVF, calls from a US Senate committee for a moratorium.

Bob did not brush aside these criticisms but took them seriously, as he did most things. He spent time in the early 1970s contemplating the ethical issues raised and published widely on bioethics from 1971. With characteristic energy he proceeded to talk publicly about the work and to encourage debate—for which he was also roundly criticised by his colleagues. His visionary ideas were way ahead of his time: whether scientifically, ethically, or in educating the public about science. His 1965 paper in the Lancet on human egg maturation charted with remarkable and characteristic foresight a programme for assisted reproductive technology for the next 20 years. He set the foundations for preimplantation genetic diagnosis and understood the importance of embryonic stem cells for regenerative medicine.

He leaves his wife, Ruth, five daughters, and 12 grandchildren.

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References are in the version on bmj.com.

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