

Preface

There have been many advances in our understanding of the reproductive processes in humans since the sixth edition. Much of this progress has been due to the continuing application to reproductive studies of the expanding range and sensitivity of the techniques of molecular biology, which now allow much more sophisticated descriptions and manipulations of reproductive activities. Advances have also come from the development of live imaging techniques of greater utility. These include imaging of reproductive organs and also of brain function *in situ*, as well as less invasive long-term imaging of the behaviours of cells and embryos in culture. The advances in medical research on reproduction have been truly spectacular – which, in many parts of this edition, renders potentially dangerous extrapolations from other mammals to humans less necessary.

Major health and social issues continue to place reproduction at the centre of scientific, clinical, political and ethical discourse. The threat posed by the continuing growth in world population to the planet's resources and to our fragile climate presents a major challenge. The tragic and unnecessary high maternal mortality rates throughout much of the world are an indictment of our best efforts and intentions to 'do better' – as expressed in the WHO Millennium Aims. At least some progress is being made in managing the effects of infection with human immunodeficiency virus through the cheaper provision of generic drugs. However, it is unclear that transmission rates are coming down, a testament to the importance of understanding sexual behaviours and addressing the impact of gender inequalities. These issues are made more pressing by the rise in genitourinary infections that are resistant to antibiotics with their implications for individual fecundity. Continuing clinical developments in the field of assisted conception have expanded opportunities for the alleviation or circumvention of subfertility, genetic disability and, through stem cells, degenerative disease, but have also ignited new (and old) controversies. The explosion of obesity and the realization that both child and adult health and well-being are affected enduringly by life *in utero* have focused work on pregnancy, the placenta and the neonatal period of care. Finally, we are at last beginning to understand more fully how genetic expression during development interacts with environmental factors to influence complex behavioural phenotypes that include psychiatric disease and antisocial behaviour. It is clear from all these examples that reproduction reaches into all parts of our lives! Science thus forms just part of this book – albeit at its core. One might have hoped that the advances in scientific knowledge and understanding would helpfully inform prevailing socio-legal discussions, attitudes and values. Sadly, since the last edition, for much of the world, the enlightenment viewpoint based on a cool appraisal of evidence has been crushed in a miasma of antiscience rhetoric: whether against climate change, evolution, women's progress, or rights for sexual minorities.

On a more positive note, I am very happy to formally record here my delight that the Nobel Foundation at last decided to award the 2010 Nobel Prize for Physiology or Medicine to the dedicatee of this book, Professor Sir Bob Edwards. This belated award, followed by a Knighthood in 2011, recognized Bob's unique role in the development of research on human reproduction. Although his award cited his work on IVE, it explicitly recognized the wider role Bob has played in reproductive science, medicine and ethics, together with his pioneering role in communicating science to the public. Sadly, Bob's ill-health prevented him from receiving the prize in person. I was honoured that Bob and his wife and long-term scientific collaborator, Ruth, who received the prize on Bob's behalf, both invited me to open the Nobel Symposium dedicated to his work. A flavour of his achievements can be gained from the published paper based on that lecture, which is freely available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3171154/?tool=pubmed>

Finally, for this edition, the book has been totally restructured as well as updated. This restructuring hopefully gives better balance to the contents and a stronger narrative thread to the text. To aid this, in many places, more detailed information on deeper, comparative or applied aspects of some topics has been transferred to boxes, table and figures. In addition, requests for more specific references have hopefully been met with longer reading lists divided into general and specific references. As before, many helpful comments, corrections and letters of advice have been received from readers, students and teachers all over the world. As always, in this seventh edition, now in its 33rd year, I have tried to provide for students of reproduction a compact and comprehensive text that carves through the micro-detail of the subject to bring out its theoretical cores, but illustrates it with experiment, information and context.