Editorial

The six articles in this issue of *Fetal Medicine Review* cover areas in which our understanding is rapidly increasing. In each case the author has taken care to give an account of current perceptions of normality before discussing the possible derangements associated with abnormality. This approach helps to ensure that the writing is not only authoritative, but is also easily assimilated by the nonexpert reader.

Implantation of the human pre-embryo has become the subject of intensive research in the decade following the success of *in vitro* fertilization. Embryo transfer in humans is still relatively inefficient and there is little doubt that a better understanding of the mechanisms involved will lead to greater success rates in fertility programmes, thus reducing the substantial costs. Dr Michael Chapman reviews the advances which have recently been made in this complex process and speculates briefly upon the clinical implications of this explosion of new information.

No aspect of fetal medicine illustrates more vividly the rate of progress in this young discipline than the amazing amount of information which can now be obtained about the contents of the pregnant uterus using modern, high-resolution ultrasound apparatus. Dr Chris Harman's account of the comprehensive examination of the human fetus is of interest, not just because of the range of abnormalities described, but also because of the methodical way in which he approaches what is becoming an increasingly daunting task for all those involved in diagnostic imaging during pregnancy.

Professor Priscilla Kincaid-Smith and Dr Kenneth Fairley are distinguished members of a small group of obstetric nephrologists who have helped to revolutionize our approach to renal disease in pregnancy during the second half of the twentieth century. Their experience of the impact of renal pathology upon pregnancy is among the most extensive in the world. In reviewing this important topic, which is often a major source of concern to obstetricians, they have provided up to the minute data supporting the conclusions which they draw about the significance of various pathological conditions in terms of the outcome of pregnancy. They have also attempted to assess the significance of pregnancy in terms of the progression of renal pathology, a controversial area which is the subject of considerable current speculation.

One significant aspect of the altered renal function which is a central feature of human pregnancy is the subtle alteration which has to take place in sodium handling to compensate for the rapid growth of the fetus and placenta. This is an area which has been of considerable interest to Dr Mark Brown, who provides a detailed account of sodium balance in pregnancy. He not only surveys the results of studies which have attempted to manipulate sodium intake, but also reviews the alterations which are known to occur in the various physiological systems responsible for regulating sodium excretion. Of particular importance in considering sodium balance are the further changes which might be anticipated in women whose pregnancies are complicated by hypertension. Dr Brown reviews the extent of current knowledge in this area and demonstrates the need for further research.

Another cation which is of significance in

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relation to human pregnancy is calcium. This is a particular interest of Dr Barry Walters, who provides an overview of the subject. He discusses the factors controlling the circulating concentrations of calcium and the alterations in these mechanisms which occur during pregnancy. Disorders of parathyroid function, which are also described, are relatively rare but of considerable clinical interest.

Few topics in the discipline of fetal medicine better illustrate the beneficial influence of basic research upon clinical practice than that of fetal lung maturation. Improved understanding of the processes involved in the initiation and maintenance of respiration has led within the last two decades to dramatic reductions in perinatal mortality and morbidity associated with neonatal respiratory disorders. This fascinating and important subject is reviewed by Drs McClure and Dornan, who discuss the embryology and physiology of lung development before describing the clinical implications of the management of pulmonary immaturity, both inside and outside the uterus.

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