very useful as a source of illustrations for lectures to students on normal embryology in relation to malformations.

Altogether a magnificent achievement, and a volume that will be widely used as in situ hybridisation with molecular probes for 'developmental genes' becomes a standard procedure. This is not a book for the clinical genetics department but I imagine it should be the bible for developmental biologists.

R M WINTER

Neurofibromatosis: Phenotype, Natural History and Pathogenesis. 2nd edition. V M Riccardi. (Pp 498; $68.50.) Baltimore: Johns Hopkins University Press. 1992.

When the first edition of Dr Riccardi's monograph on neurofibromatosis was published in 1986, work on the molecular genetics of the neurofibromatoses was only just beginning. The NF1 gene has now been cloned and scientists are beginning to elucidate the pathogenetic mechanisms of the disease; the NF2 gene has been localised to such a small part of chromosome 22 that its cloning must be considered to be imminent. The last six years has also seen a continuing increase in the number of clinical papers about the different types of neurofibromatosis published each year. Much of the credit for stimulating this interest in the disease must go to Dr Riccardi, both through his extensive publications and personal encouragement to young investigators when they first enter the field.

With this recent rapid increase in knowledge an updated second edition of the monograph is timely. The revised layout of the book reflects the increased knowledge, in that in the 1986 edition there was just one chapter on pathogenesis, where there are now four separate chapters covering molecular biology, cell biology, clinical biology, and animal models. In the clinical sections of the book, recent publications have been widely reviewed and the appropriate sections updated or expanded. The bibliography at the end of the book is extensive.

My only criticism is that on some of the sections on clinical management, a thorough discussion of the pros and cons of various management options is not presented. One of the examples of this is whether patients with neurofibromatosis type 1 should have routine cranial imaging to detect asymptomatic optic gliomas. Dr Riccardi is in no doubt that this is indicated and comments "... it seems clear that until physicians who are immediately responsible for the health care of these children adopt a publicly stated, aggressive 'go get 'em' attitude, dozens if not hundreds of children with NF1 will unnecessarily lose at least a portion of their sight each year". Many other clinicians in the field would not agree that symptomatic optic gliomas are frequent enough to warrant routine cranial imaging in children with NF1.

At the time of the first edition in 1986, there were no other recent books about neurofibromatosis. In 1990, a multi-author handbook on neurofibromatosis was published for both patients with the disease and health care professionals (*Neurofibromatosis. A handbook for patients, families, and health care professionals*. Eds Rubenstein AE, Korf BR. New York: Thieme Medical Publishers, 1990). The two books complement one another as they are aimed at different audiences. If I had to choose, as a clinical geneticist, which to purchase at present, it would be the Riccardi monograph because of its more in depth coverage of research aspects and the extensive bibliography. However, for health professionals caring for NF families and their patients, the Rubenstein and Korf book is a good introductory text. For anyone embarking on scientific and clinical research of neurofibromatosis, the Riccardi book, particularly in view of its exhaustive bibliography, is a must.

SUSAN M HUSON

Genetic Disorders and the Fetus. Diagnosis, Prevention and Treatment. 3rd edition. Editor A Milunsky. (Pp 336; $111.50.) Baltimore: Johns Hopkins University Press. 1992.

Six years have elapsed since the second edition of this standard textbook in the field of prenatal diagnosis was published. These years have seen a particularly rapid growth in the number of applications of prenatal molecular genetic diagnosis and in the development of maternal biochemical screening for fetal aneuploidies in the first and second trimesters of pregnancy. A new edition was thus essential and, reflecting the multidisciplinary nature of the subject, 48 distinguished contributors were recruited from a diversity of clinical and scientific disciplines.

The new edition succeeds in its goal of providing extensive critical discussion of the state of the art in prenatal diagnosis and the editor and publishers are to be congratulated on bringing a project of this scale so rapidly into print. My two main criticisms relate to imbalanced coverage of disorders and to areas of omission. I suspect the former is historical but the result is comprehensive coverage of chromosomal and biochemical disorders with relative neglect of other genetic disorders. Thus, for example, cystinosis has over one page which details the clinical, genetic, and biochemical features whereas Duchenne muscular dystrophy and Huntington's disease are covered much more briefly and the emphasis mainly relates to molecular diagnosis. Surprising omissions are the psychosocial sequelae of termination of pregnancy for fetal abnormality and the aspects of clinical management which can influence these sequelae; inherited serious skin disorders and the role of fetal skin biopsies; and no mention in the index of a variety of rarer disorders for which prenatal diagnosis is available. This last omission could be rectified by including an appendix of conditions for which prenatal diagnosis has been reported and so avoid the potential user error that lack of inclusion reflects lack of availability of a prenatal test.

The pace of progress in the field of prenatal diagnosis and screening is relentless with over 500 publications a year. This textbook has a track record for successful evolution to meet this challenge and this should ensure its continued inclusion in the libraries of those who are actively involved in prenatal diagnosis research and practice.

J M CONNOR

Micromanipulation of Human Gametes and Embryos. J Cohen, H E Malter, B Talansky, J Grifo. New York: Raven Press. 1992.

This book is a mixture of subject review and hands on guide. The first five chapters are excellent reviews within the field of micromanipulation in developmental biology and the later chapters are presented more in the mode of a techniques manual. There is some confusion in the organisation of these sections especially in the second half of the book. Despite this, both the review and techniques chapters in themselves are presented in clear and consistent fashion and with excellent use of illustrative diagrams and photographs throughout. The coverage of past work on the development of the ideas and procedures is comprehensive. This makes interesting reading and it is pleasing to see the original work acknowledged.

Chapter 1 gives an interesting historical perspective of micromanipulation over 150 years from hair loops (still used today) to the most sophisticated instrumentation now available. I would like to comment at this point that there might be a tendency today to rely too much on sophisticated (and expensive) equipment and thus to bypass our own inherent skills which are developed by working always with the minimum assistance from instrumentation and the lowest magnification possible. It is truly amazing the skills I have seen developed by persons who, with perseverance, practice, and acclimatisation to the microenvironment, regularly produce hand crafted pipettes with 5 micron apertures and who accomplish reliable single cell work using only a simple dissecting microscope. Conversely, I have visited laboratories where it takes hours or days to set up the micromanipulation apparatus to perform a task that could be done in minutes with a dissecting microscope. Micromanipulation then can be saved for the most delicate tasks which cannot be done by hand and chapters 2 and 3 cover its application to these tasks in the fields of developmental embryology and animal breeding. Chapter 4 describes gametogenesis and fertilisation and chapter 5 homes in on the different approaches to microsurgical fertilisation in mammals. Microsurgical fertilisation may be a treatment for some forms of infertility which have not been amenable or suitable for regular IVF procedures and this is the main research interest of the authors. The following chapters present the practical approaches to microsurgical fertilisation (chapter 6) and their evaluation (chapter 7), consequences of zona pellucida micromanipulation (chapter 8), and a comprehensive coverage of equipment, tools, and techniques (chapter 10). This covers nearly all of the micromanipulation procedures which are currently applied to human gametes and embryos except for oocyte and embryo biopsy, so important in the rapidly developing field of preimplantation diagnosis of genetic disease. Unfortunately, embryo biopsy is not adequately covered in the rather poorly written chapter 9 in which detailed procedures are given only for gel electrophoresis and fluorescent in situ hybridisation.

Other micromanipulation procedures, such as disaggregation and cloning, nuclear transplant, gene injection and transgenesis, aggregation and chimaerism and embryonic stem cell technology are not covered technically in this book. Such procedures are rightly limited to mouse models and animal