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## Preface

It is with great sadness that we report here that Professor Peter Kaufmann died in December 2010 from the cancer that had troubled him for a long time. Professor Graham Burton will ably replace Peter's contributions in the future.

Most obstetricians and pediatricians would agree that the examination of the placenta often helps to explain an abnormal neonatal outcome. As early as in 1892, Ballantyne wrote that:

A diseased foetus without its placenta is an imperfect specimen, and a description of a foetal malady, unless accompanied by a notice of the placental condition, is incomplete. Deductions drawn from such a case cannot be considered as conclusive, for in the missing placenta or cord may have existed the cause of the disease and death. During intrauterine life the foetus, the membranes, the cord and the placenta form an organic whole, and disease of any part must react upon and affect the others.

Similar thoughts were succinctly detailed in Price's discussion of his concept of the "Prenatal Biases" as they affected twins. His contribution also admonishes us that placental study is a *sine qua non* for a more perfect understanding of fetal development (1950). Despite all this understanding of the past and appreciation for placental disease, great resistance still exists to perform the task of placental examination routinely. For many pathologists, therefore, the placenta has remained a mysterious organ.

This book had its beginning in 1967 when Shirley G. Driscoll and Kurt Benirschke wrote the volume on placental pathology for the *German Handbook of Pathology*, the *Henke-Lubarsch*. Because there seemed to be a need for wider dissemination of the text, this was reprinted by Springer-Verlag New York but soon became unavailable. Since then, a number of books on placental pathology have been written, in French, English, and German (Philippe, Baldwin, Fox, and Sebire; Perrin, Gruenwald, Lavery, Naeye, Becker, and Röckelein; Vogel, Kaplan, Joshi, and Baergen), and much more interest has been accorded to this "so readily available but poorly studied" organ. The journal *Placenta* founded by Harold Fox has become a significant outlet for results of sophisticated placental studies. The International Federation of Placenta Associations (IFPA) has been established to promote research interest and to integrate the activities of the former *Trophoblast Conferences* held in Rochester, N.Y., and the European and other regional placenta groups. Much new information has been obtained and the continuing enigma of placental non-rejection has been tackled by numerous investigators without complete resolution. In addition, the availability of the placenta for biochemical study has stimulated many cell biologists and molecular biologists to use this organ as a convenient source of human tissue. Genetic and epigenetic information now add to our understanding of the complexity of placental function, and so forth. Also, because much interest is developing in "Comparative Placentation," a website may be found at: <http://medicine.ucsd.edu/cpa>.

This sixth edition is being written because so many new findings have come from the systematic study in the last few years that updating seemed necessary. Moreover, there is a great need to have documentation for legal purposes as the placenta has become an important aspect of medico-legal adjudication of circumstances around the time of birth. The organization of the previous edition also left some topics uncovered that are now being corrected. Many changes have been made throughout the book. Not only has the text been updated, a more complete index has been created, the order of chapters is presented more logically and tables

are presented more usefully. The text was written with MS Word. A complete set of diskettes with the references can be made available from the authors, if desired.

I (KB) am indebted to many people, foremost to my wife for her understanding and patience with me and this task; the publishers with many of its people have been gracious and patient; my colleagues at the university; and other persons who have all helped gather data are gratefully acknowledged. Many students and colleagues have graciously read most chapters and they have made many helpful suggestions and corrections, for which I am appreciative. There are some colleagues, however, whose inspiration have helped more than others: Marjorie Grafe; the dysmorphologists Kenneth L. Jones and his wife Marilyn and their numerous fellows as well as neonatologist Frank Mannino; and ultrasonographer Dolores Pretorius who continues to challenge me and requires that I provide explanations for perinatal deaths and abnormalities. Having examined all placentas of all deliveries in the institutions with which I was affiliated over the past five decades, I have gathered a large amount of material to digest. Most of all, however, I am grateful to Dr. Geoffrey Altshuler, Oklahoma City, for many stimulating discussions and endless patience with me and his friendship.

PK gratefully acknowledges the scientific cooperation of many former and present coworkers. These comprise Mario Castellucci, Ayse Demir, Hans-Georg Frank, Hitoshi Funayama, Gabriele Gaus, Berthold Huppertz, Mahmed Kadirov, Sonja Kertschanska, Gaby Kohnen, Georg Kosanke, Azizbek Nanaev, Frank Reister, and the late Gertfried Schweikhart. Many of my data are based on their material, their findings, and their ideas. Also, many colleagues and friends from other laboratories have contributed by discussion and by offering technical help. In this respect I am particularly grateful to Ramazan Demir, Gernot Desoye, Jean-Michel Foidart, John Kingdom, Hubert Korr, Rudolf Leiser, Peter Ruck, Hobe Schröder, Tullia Todros, and the late Elizabeth Ramsey. In many cases it is virtually impossible to differentiate between their and my ideas. Unfortunately, since PK was taken ill he turned over the responsibility for his chapters to Professor Graham J. Burton of Cambridge, England. We are most grateful to him for accepting this task.

These chapters do not only require scientific inspiration but also much artistic, technical, and secretarial work. The artistic help of Wolfgang Graulich and the photographic assistance of Gaby Bock as well as of Helga Kriegel are gratefully acknowledged. The histological and electron-microscopic pictures are based on material processed by Marianne von Bentheim, Michaela Nicolau, Lian Shen, Barbara Ihnow, and Uta Zahn. Perfect secretarial assistance was provided by Jutta Ruppert. The collaboration of all these coworkers and friends was the basis for my contribution (PK).

I (GJB) wish to acknowledge the enormous contribution made by all members of my laboratory over several decades of placental research. I was introduced to the placenta by Donald Steven, and have had the great pleasure and privilege to work with many academic colleagues, post-doctoral fellows, and students. In particular, I am most grateful to Eric Jauniaux, Stephen Charnock-Jones, Ashley Moffett, Carolyn Jones, and Jeremy Skepper for long and productive collaborations, and for their comments on draft versions of chapters. I also wish to acknowledge the visionary philanthropy of Charlie Loke in endowing the Centre for Trophoblast Research ([www.trophoblast.cam.ac.uk](http://www.trophoblast.cam.ac.uk)), which has provided a unique foundation for placental research.

I (RB) am most grateful to my husband for his patience and support. I am also grateful to a number of colleagues for their helpful suggestions and their inspiration including Ona Faye-Petersen, Debra Heller, and Cynthia Kaplan. I also would like to thank our residents and Pathology Assistants who have assisted with photographs and gathering data, but I would like to particularly thank our fellow Kristina Loukeris for her support and assistance which she graciously provided on a daily basis.

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<http://www.springer.com/978-3-642-23940-3>

Pathology of the Human Placenta

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2012, XVIII, 941 p. 704 illus., 164 illus. in color.,

Hardcover

ISBN: 978-3-642-23940-3