Endocrine Control of Skeletal Maturation
Ze’ev Hochberg

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Annotation to Bone Age Readings

70 figures and 2 tables, 2002
To Naomi

Bone of my bones
(Genesis, 2:33)
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Students and practitioners of child growth have long expressed a need for a small book that clearly delineates the relationship between theory and practice of fundamental bone biology as manifested in routine X-ray films. The basic concept that inspired the purpose of this book was that by holding an X-ray film of the hand and wrist for a reading of ‘bone age’, the clinician is afforded a unique glimpse at the growing and maturing bones of a child. For me, as a clinician and scientist studying child growth, the growth plate is an exciting place to look at, provided that one has an understanding of the biological basis of the growth process. In the book, I have tried as much as possible to correlate the radiological appearance of normal and abnormal bones with the histology and pathology of the relevant condition. I hope that learning this text will inspire clinicians to read the skeletal maturity films themselves in order to understand the biological basis and control mechanisms of bone growth.

My personal conceptions of bone maturation and growth are based on my own experience. Yet, the preparation of a book such as this inevitably owes great debt to many researchers who have investigated bone growth and maturation. Their names are too numerous to list here, although many are detailed in the reference index. It has not been found feasible to give detailed citations of the vast literature. One name that cannot go unmentioned is that of a bone pathologist, the late Henry L. Jaffe, who, as I learnt, utilized a similar approach to the one presented here over 30 years ago, collecting specimens and figures from his predecessors. Some of the pictures in this book were prepared from this historical collection. Many colleagues granted me permission to use figures from their clinical files and scientific work; their names are cited in the ‘Photographic credits’ and I am thankful to them all.

A special debt of gratitude goes to Dina Lewinson and Gila Maor from the Department of Anatomy at the Technion Faculty of Medicine, Haifa, for teaching me the fundamentals of bone and cartilage morphology. An old Hebrew idiom says: ‘I have learnt understanding from all my teachers, but more so from my pupils.’ In that respect, I would like to extend personal thanks to Martin Ritzen, who invited me to give a series of lectures in Stockholm, during which the concept of this book crystallized.

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