

REVIEWS & ABSTRACTS

Abstracts originate from edited Australian Medlars, as well as from the literature of the basic sciences, orthodontics, dentistry and medicine. All inquiries regarding information on specific articles should be directed to authors. Articles or books for review should be addressed to Dr D. Fuller, Reviews and Abstracts Editor, Australian Orthodontic Journal, 22 Carpenter Street, Brighton, Victoria 3186. Offers to write abstracts or reviews of articles or texts of interest to orthodontists are welcome.

BOOK REVIEWS

Carlson, D.S. and Ribbens, K.A. (Editors) (1987)

Craniofacial Growth During Adolescence

Published by: Center for Human Growth & Development, The University of Michigan, Ann Arbor, Michigan
Available from: Center for Human Growth & Development, 300N Ingalls, Ann Arbor, MI 48109 USA.

Price: \$US30

This book is Monograph 20 in the Craniofacial Growth Series. It includes the proceedings of a symposium on 'Craniofacial Growth During Adolescence' held in Ann Arbor in 1986.

Orthodontic treatment is often intended to influence or exploit craniofacial growth. Ideally, such treatment should be started during the profound change in the rate of growth at, or just before, adolescence. Various 'developmental indicators' can be used to evaluate the developmental stage of a patient and to help predict when adolescent growth will occur. It was with this basic philosophy in mind that the papers in this volume were selected.

The first paper is an introduction to growth at adolescence. It outlines the history of growth studies, the development of standard growth curves, and the way in which an individual should be assessed in relation to these standards.

The second paper considers the endocrinology of adolescence. It is a readable account of what some orthodontists might consider to be a dull and relatively unrelated subject. The sex steroids cause the pubertal growth spurt, stimulate the attainment of the last 15 percent of adult height, and terminate linear growth by epiphyseal fusion. Future therapeutic considerations such as 'cosmetic endocrinology' are mentioned.

The third paper describes the endocrinological measurements currently used for monitoring the developmental age of a patient. There is a clear relationship between alterations in the level of pituitary gonadotropins, the adrenal and gonadal sex hormones, and the onset of puberty. It would seem that these indicators are better predictors of the appropriate timing for craniofacial orthopaedics than are presently used indicators such as the calcification of bones in the hand.

The next two contributions focus more specifically on craniofacial growth during adolescence. The first of these papers presents evidence of a pubertal spurt in mandibular growth in monkeys. This finding suggests an endocrine control of condylar growth similar to that which has been described for epiphyseal growth. The second paper describes the shape change of the mandible during adolescence. It is often assumed, when serial tracings of a growing mandible are superimposed, that the mandible enlarges proportionately along the ramus and corpus. However recent findings show that growth is far less regular than is generally assumed.

The following paper by Hagg, Pancherz and Taranger is entitled 'Pubertal growth and orthodontic

treatment'. The aim of this study was to relate mandibular growth during treatment with the Herbst appliances to (1) chronological age, (2) the growth period, and (3) skeletal development.

The next paper by Riolo, Moyers, TenHave, and Mayers looks at facial soft tissue changes during adolescence. The effects of various parameters (including treatment) are considered.

The following paper by Surrender Nanda investigates the use of various biological criteria (skeletal age, dental age, vertebral age, and height age) for predicting facial growth.

The final essay, by Sheldon Baumrind, summarises the problems associated with the variation in craniofacial growth that may occur during adolescence and concludes with a discussion of the implications of these problems for clinical treatment.

This book is a collection of scientific papers and, as such, is 'heavier going' and more disjointed than a conventional text. The reader has to extract the pertinent information from a plethora of graphs, charts, tables, and statistical information. Apart from the final paper, there is little in the way of 'armchair reading' for the clinical orthodontist.

David Fuller

Vig, P.S. and Ribbens, K.A. (Editors) (1986)

Science and Clinical Judgment in Orthodontics

Published by: Center for Human Growth & Development, The University of Michigan, Ann Arbor, Michigan
Available from: Center for Human Growth & Development, 300N Ingalls, Ann Arbor, MI 48109 USA.

Price: \$US30

This timely book covers the Annual Symposium on Craniofacial Growth held at the University of Michigan in March 1985. The text is divided into eleven chapters with contributions from outstanding members of the orthodontic community such as Feinstein, Ransohoff, Sackett, Moorrees, Johnston, Vig, Baumrind and Petrovic.

The transactions emphasise the 'science', rather than the 'art' in clinical orthodontic treatment. A common recurring theme is that the clinician needs to be a 'scientist', although the 'artistic' aspects of orthodontic treatment should not be forgotten. Whilst no textbook can possibly cover all fields in orthodontics, this text does present a useful synopsis of the current direction of 'clinical science' and the 'art of therapy' in orthodontics.

The first few articles consider the scientific aspects of diagnosis and treatment planning. It is noted that science is often misused to rationalise empirical forms of treatment. This topic highlights the rapid proliferation of new treatment systems and emphasises that no standardised treatment system has yet been devised. Many authors stress the need for clinical research to validate 'clinical judgment'.

Most of the contributors agree that many of the so called 'scientific studies' which have been published in

the orthodontic literature are widely varied in the criteria they use for sample selection. In some studies the norm for a given population has been determined from as few as two subjects.

The chapters by Bookstein and Baumrind stress the need for the clinician to be able to critically evaluate the statistical significance of research results so that he can be more critical and less likely to accept unscientific claims. It was suggested that future research should not focus on physical variables, but rather it should be directed at trying to understand the underlying logic behind a particular treatment strategy.

It is suggested that there appears to be two competing paradigms in clinical research. The first tries to increase the predictive capabilities of the clinician prior to the start of treatment (this approach assumes that sufficient data can be obtained from the records to enable successful treatment planning and treatment) whereas the second focuses attention on the uncertainty and variability that characterises the course of treatment in real patients. Whilst it appears reasonable to use mean relationships as an initial goal of treatment in the growing patient, an understanding of the limitations, adaptations, and normal variation is an integral part of successful treatment.

This hard covered text is well produced. The quality of the paper is good and the illustrations are clear and easily understood. A comprehensive bibliography is found at the end of each chapter. The book is written primarily for practising specialists, postgraduate students and clinical researchers.

Overall, the text is comprehensive. It gives an excellent overview of the integration of basic research and clinical studies with actual treatment. Emphasis is placed on the shift from the genetic to the functional paradigms of clinical treatment and the misuse of science is stressed.

There is little doubt that this book underlines the difficulties encountered in the speciality of clinical orthodontics. Whilst the articles do not make for exciting bedtime reading, the outstanding contributions make this an informative orthodontic text.

Rudolf Linker

Mohl, N.D., Zarb, G.A., Carlsson, G.E. and Rugh, J.D. (Editors) (1988)

A Textbook of Occlusion

Published by: Quintessence Publishing Co Inc. Chicago
Available from: Quintessence Publishing Co Inc,
Australian Division 209-211 Burke Street Sydney 2000
Australia
Price: \$68.00

This book presents a multidisciplinary, non-doctrinaire approach to the subject of occlusion. The editors and contributors are well respected researchers, clinicians and teachers in this field. Much of the material presented is taken from the contributors' own publications with the addition of references. It is pleasing to note that the references contain the most recent publications.

The book is divided into three sections: Part I. 'Anatomy and Physiology of the Masticatory System'; Part II. 'Occlusal and Dysfunctional Problems of the Masticatory System'; and Part III. 'Management of Occlusal and Dysfunctional Problems'.

The first chapter of the book deals with the terminology that is used throughout the book. This is an important part of a textbook meant for international readership, where terms have different meanings in different parts of the globe.

In Part I, the development of the stomatognathic system is described. Occlusal functions are described under the headings of mastication, deglutition, respiration, and

speech. The final chapter in this section presents concepts of occlusion from early Bonwill's 'laws' to modern mutual protection and gnathological ideas.

The second part overviews the structural and functional problems of the masticatory system. It deals specifically with dentition, periodontium, and temporomandibular joint as related to occlusal variances. A chapter on occlusal parafunction is a noteworthy inclusion.

In the third part, the management of occlusal dysfunction is presented. Although under the headings of splint therapy, occlusal adjustments, prosthodontic, restorative, and orthodontic therapy, behavioural therapy, pharmacological therapy and surgical therapy, the outlines are not definitive (nor, I suspect, are they meant to be) and it would be necessary to consult specific texts in the above disciplines to develop the necessary skills to treat occlusal dysfunction.

As a text, I particularly liked the concept of 'physiologic occlusion' as distinct from terms such as 'normal' and 'ideal' occlusion. Not all patients with malocclusions present with dysfunction and this is noted. A theme presented throughout the book warns that the clinical success of irreversible occlusal therapy is not scientific proof of cause and effect.

As with many Quintessence publications, this book is well illustrated with line drawings and photographs. I particularly liked the table on page 322 which gives a practical guide to jaw relation records and occlusal morphology in prosthodontics. The only drawback to the illustrations is that the accompanying text is often found on previous or following pages.

This text is a valuable addition to any practitioner's library. Students may find some difficulty with the text, as it appears to have been written for those with some experience. This is one of the best texts on the subject that has published.

John R. Pearson

Rowe, A.H.R. (Editor) with Alexander, A.G. and Johns, R.B. (1986)

Clinical Dentistry (Volume 3 of the series: A Companion to Dental Studies)

Published by: Blackwell Scientific Publications Oxford
Available from: Blackwell Scientific Publications 107 Barry
Street Carlton Victoria 3053 Australia
Price: \$198.00

The publishers state: 'A Companion to Dental Studies' is a comprehensive work in three volumes written for dental students. It provides an interesting, exciting and up-to-date text essential for the modern dental course, in much the same way as the highly successful 'Companion to Medical Studies'. The student is thus spared the necessity of buying many individual books in which much material is inevitably duplicated. All the contributors are experienced teachers and many are examiners of dental students.

'Clinical Dentistry' is Volume 3 of 'A Companion to Dental Studies'. The editors state that this is the first book to give such a comprehensive account of the clinical disciplines of dentistry with the exception of oral medicine and pathology which are included in Volume 2. There are 1489 double column pages in this volume, which is compiled by ninety-one contributors.

The chapter on orthodontics is edited by the prolific W.J.B. Houston. It comprises 105 pages and has three contributors. This review is restricted to this chapter on orthodontics.

The usual topics for any undergraduate text are covered. There are interesting comments on the indications for orthodontic treatment, the growth of the skull is briefly discussed, and cephalometry is touched upon. The orthodontic examination is covered comprehensively and

exodontia and the treatment of developmentally missing teeth are explored carefully.

The chapter is particularly strong in the field of English-type removable appliances. There are many practical points including the design and activation of components, instructions for patients, monitoring progress of treatment and problem solving.

Treatment for the major malocclusions is discussed systematically and succinctly and the appliances are well illustrated. One would need a lot of expertise and some luck to obtain adequate results for some of the complicated cases with the removable appliances which are recommended.

There is a straightforward and clear description of the components and principles of fixed appliances with particular emphasis on the Begg and Edgewise techniques.

Figure 25.17, which occupies the whole page, is worthy of praise. In an interesting and comprehensive manner it illustrates factors determining overbite.

Orthognathic surgery and cleft palate orthodontics are discussed in other chapters in this volume.

The type is clear but condensed - suitable for undergraduate eyes. There are many illustrations, mostly in the form of adequate line drawings, and the content is expressed well.

Only five references and suggestions for further reading are included in this chapter whereas many more references are given in other chapters of the book. There are a few typographical errors, a significant achievement for the first edition of any book. This chapter does succeed in its objective of providing interesting and up-to-date knowledge for the modern dental course in orthodontics.

Stanley G. Jacobs