

## REVIEWS & ABSTRACTS

Abstracts originate from edited Australian Medlars, as well as from basic sciences, orthodontic, dental and surgical literature. 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.

### LITERATURE ABSTRACTS

#### Dental Medicine and Periodontics

*Bouquot, J.E.*

##### **Common oral lesions found during a mass screening examination**

J. Am. Dent. Assoc. (1986) 112(1):50-57

Oral mucosal and connective tissue lesions are frequently viewed as rare conditions. The aim of this study was to examine an American adult population in order to assess the prevalence of these conditions. 23,616 American adults with a mean age of 56 years (range: 10-90 years) were examined between 1957 and 1972 at the University of Minnesota School of Dentistry.

3,783 oral mucosal and connective tissue lesions were observed in 2,824 people (i.e. 10.3% of the population). 37.4% of the lesions presented as a single exophytic mass. 37.6% of the lesions were white patches and 26% were leukoplakias. Of the leukoplakias, 13.8% showed evidence of epithelial dysplasia and 12.2% were early invasive squamous cell carcinomas.

This epidemiological survey provides a baseline of the prevalence of oral mucosal and connective tissue lesions in an American adult population. Ten per cent of this population demonstrated the presence of the above lesions and so the need for a thorough examination is reinforced.

Jonathan Tversky

*Helpin, M.L., Krejmas, N.L. & Krolls, S.O.*

##### **Complications following radiation therapy to the head**

Oral Surg. (1986) 61(3):209-211

The case of a two year old male who was treated with radiotherapy and then cytotoxic chemotherapy for management of an embryonal cell rhabdomyosarcoma of the right infratemporal and parapharyngeal area is presented. At review 2 years following treatment only the remnants of the primary dentition remained due to a high carbohydrate diet. In order to minimise the risk of osteoradionecrosis, an intensive preventive program was instituted. At review at 8 years of age, in addition to the aborted dental development, the adjacent irradiated mandible was hypoplastic.

In conclusion radiotherapy has a long term effect on the developing hard tissues.

Jonathan Tversky

### BOOK REVIEWS

*Johnston, L.E. Jr.*

##### **New vistas in orthodontics**

Published by Lea & Febiger (Philadelphia) 1985

Australian distributor: CIG Medishield, 11 Khartoum Road, Macquarie Technology Centre, North Ryde N.S.W. 2113  
Price \$82.75

New Vistas in Orthodontics provides insights into the future of many areas which are related to, or form the basis for, the science and art of orthodontics. Concepts, basic science, research and mechanotherapy receive prominence as do the currently popular fields of functional therapy, occlusion,

temporomandibular joint problems and the surgical-orthodontic interface.

Chapters by Vig, Williamson, Kesling, McNamara and Proffit are complemented by contributions from lesser known authors.

Believing that 'a knowledge of history is mandatory if we are not to repeat past errors' one can only applaud the first chapter by Alton Moore tracing the evolution of orthodontics from the late 19th century to this day. His summary of the rise and fall of orthodontic luminaries and their philosophies is a reminder to older orthodontists of the way our profession has thrown up new leaders who frequently divided the profession and all too often lead to disappointment and disillusionment. It should motivate the younger orthodontist to examine each new prophet cautiously, to evaluate his message strictly in terms of fact and science and to be aware that wishful thinking and salesmanship are no basis for a scientific discipline.

Carlson, in his chapter on craniofacial biology, raises the issue of whether orthodontic philosophies have truly evolved from craniofacial scientific facts and ideas or whether this science has been misused to rationalise empirical forms of treatment and give them an unjustified scientific aura.

McNamara provides a concise essay on the state of functional appliances in contemporary orthodontics. Clearly written, with appropriate illustrations, it regrettably is necessarily lacking in depth and gives no indication of future paths that research might take in this field.

Vig provides a thought-provoking iconoclastic essay on the effects of nasal airway function on the development of malocclusion. Whilst giving the reader the opportunity to form his own opinions he offers rational criticism of several current ideas and practices.

Chapters on the neurobiology of occlusion, occlusal concepts in orthodontics and temporomandibular orthopaedics provide an extensive insight into the function of this joint and the various mechanical and neuro-muscular factors which govern normal relationships and contribute to pathological behaviour. The continuing discussion about centric relation and centric occlusion, their coincidence or otherwise and the effect that age, state of occlusal development and growth have upon them is discussed.

Williamson and Selberg and Seligman summarise temporomandibular joint deformities and malfunction and the treatment approaches required for diagnosis and treatment where practicable. The feasibility of treatment and assessment of likely improvement via the various modalities is discussed with a sense of reality.

Chapters on the mechanics of tooth movement by Merrifield, Root and Kesling all too clearly highlight the diversity of opinion that pervades orthodontics.

Kesling's apologia for the Begg Philosophy with its emphasis on light forces and concern for the patient contrasts with the basically Tweed edgewise philosophy of Merrifield and Root.

Merrifield and Root also are diametrically opposed within their philosophy. One advocates an approach reliant upon skilful archwire manipulation the other a straight wire approach with engineered bracket adjustments to simplify archwire control. For orthodontists maintaining their allegiance to one group or the other these chapters provide an interesting over-view of the opposition.

The final chapter discussing the involvement of

surgery and orthodontics in correction of malocclusion and early rehabilitation of the cleft lip and palate child reviews the well-known literature on these topics in a comprehensive form.

Overall, the book is enjoyable reading providing a fair over-view of several spheres of orthodontic practice with excellent reference material. Nevertheless the approach is necessarily brief and lacking in depth and may not have universal appeal.

Anthony Scarff

**Graber, T.M.**

**Physiologic Principles of Functional Appliances**

Published by The C.V.Mosby Company 1985.

Australian distributor: CIG Medishield (see above)

Price \$26.95

This soft-covered publication of 94 pages was produced as a companion to the text 'Dentofacial Orthopedics with Functional Appliances' by Graber, Rakosi and Petrovic (C.V.Mosby Company 1985). It is, in fact, a monograph resulting from a workshop on functional orthodontic appliances held at the University of Chicago in 1984.

The book comprises fourteen chapters, each chapter being the transcript of each panelist's paper delivered at the workshop.

The list of contributors reads like a 'Who's Who' in experimental and clinical research into function and functional appliances from both Europe and North America. The list of names includes Bimler, Enlow, Frankel, Linder-Aronson, McNamara, Moss, Petrovic, Proffit, Schmutz and Woodside. Dr Graber, who convened and chaired the meeting, adds two chapters and moderates an open panel discussion, the proceedings of which appear as a fascinating penultimate chapter.

The result is a very readable and interesting collection of short papers by a unique gathering of the world's best researchers in the area of functional orthopaedics.

Some papers (for example McDougall, McNamara and Dierkes) are a re-presentation of material previously published. Most others are an off-the-cuff appraisal by the researcher (or research group) with particular reference to his field of research.

These chapters are more interesting and reveal more of the researcher's personality and opinions.

The two papers from Professor Petrovic and his team in Strasbourg, provide a concise summary of much of their acclaimed work with particular emphasis on current directions. These two chapters will be of help in understanding Professor Petrovic's contribution to the parent text.

The obviously relaxed and frank way in which the contributors presented their papers and became involved in the panel discussion is a testament to Dr Graber's powers of diplomacy, moderation and persuasion.

The book is a very useful and readable synopsis of the current directions of functional appliance research. It is highly recommended reading for all orthodontic practitioners involved in this treatment modality.

Edward Crawford

**Thilander, B. and Rønning, O.**

**Introduction to Orthodontics**

Tandlakarförlaget, Stockholm.

Price \$92.00

This book is intended for the undergraduate dental student and is a rather comprehensive, updated English version of the original 'Nordisk Larobok i Ortodonti'. As would be expected, therefore, there is a strong Scandinavian influence reflected in the references and the clear, pragmatic presentation of relevant topics. Consequently, there is a

minimum of padding and just enough case presentations to illustrate the point yet stimulate the reader to appreciate some of the treatment possibilities and difficulties. In fact, the book contains more than most undergraduate programs demand and, at times, would challenge many an experienced orthodontist.

Chapter 1 sets the scene for the rest of the book with definitions, research methods and processes of hard and soft tissue craniofacial growth and development. There is a very useful summary of facial embryology but some figures have been reduced in reproduction and are at times a little difficult to see and interpret.

Chapter 11 provides an excellent overview of normal tooth development together with common deviations and their clinical significance. The emphasis is always upon the clinical implications and the Tables on tooth development and eruption timing are very good.

Chapter 111 presents a dynamic summary of the development of the occlusion and the facial complex. The interrelations of dentofacial development are simply and logically set out, despite some duplication of material from Chapter 1 (e.g. growth rotations) - however, this is helpful repetition and a deliberate teaching ploy. Although the figure 6 legend (p.69) appears to contradict the accompanying text, this chapter is a very good summary of skeletal and dento-alveolar interrelationships, alerting the student to individual variations and a need for caution when using growth predictions. Orthodontists may find some comfort on page 74 where it is stated that 'Eventual minor crowding of the mandibular anterior segment is thus to be regarded as normal'.

Chapter IV covers malocclusion and concepts of classification, prevalence, aetiology and treatment need. There is a short section on statistics terminology and the approach to aetiology differs from many other texts in that didactic lists are avoided and, instead, clinically relevant circumstances are used to discuss the problems and their resolution. Specifically, sections on crowding/spacing, antero-posterior, vertical and transverse dental arch malrelationships provide a different perspective whereby the exotic causes are avoided and the more usually occurring problems are examined. Unfortunately, the figure legends (e.g. Figure 33) do not always explain the symbols used.

Chapter V is a fairly routine approach to Diagnosis and Treatment Planning with minimal information on testing soft tissue dysfunction and a rudimentary section on cephalometrics in which some of the traditional landmarks differ (e.g. their Gnathion equates to Menton in most texts).

Chapter VI deals with treatment of dento-alveolar anomalies and presents preventive and interceptive approaches with limited appliance therapy. It is refreshing that no particular techniques are pushed and although more fixed appliance detail is available than a general dentist could safely use, it is important that the treatment possibilities and extraction rationale are discussed. Furthermore, the sections on retention and management of impacted and traumatised teeth are a must for general practitioners.

Chapter VII follows logically and aims to delineate cases manageable by general practitioners from the more complex referral cases. There is a bias to activators as treatment and retention devices and the controversial issue of functional growth stimulation is demonstrated in the affirmative (but not in all cases). However, itemising vertical, horizontal and transverse skeletal problems according to type, diagnostic principles, timing, treatment mechanisms and retention is a good teaching approach. Unfortunately, the proofing errors which pervade this book can be misleading and require some additional interpretation (for example, on page 195 Adams is misspelled Adam's and 'condylar growth site' takes on a potentially new meaning when printed as 'condylar growth size').

Chapter VIII provides a very good summary of histological responses to orthodontic forces and presents the concepts of force selection and anchorage in a simple, readily comprehended manner. Brief sections on the

orthopaedic changes to maxilla and condyles are thought-provoking and clinically interesting.

Chapter 1X is a short, but informative, discussion of adverse orthodontic effects encompassing caries, gingiva, pulp effects, devitalisation, root resorption and mandibular dysfunction. Apart from the need to carefully screen risk patients, there are no predictive techniques for avoiding these sequelae, especially root resorption.

Chapter X deals with indications for adult orthodontic treatment and presents 13 case histories which are interesting but underscore the fact that each case is different and readers will find scope for different treatment plans. Not everyone would agree with the statement that intrusion of the teeth in adults is hardly ever recommended because of the great risk of root resorption.

Chapter XI follows naturally because if adult orthodontics is limited in potential, then surgery or permanent retention are the only treatment initiatives remaining. More comment on differential diagnosis would, therefore, have been helpful and some of the surgical techniques could be questioned. However, the results presented look quite acceptable and are more than 12 months post-operative.

Chapter XII concerns congenital oro-facial clefts and concentrates on developmental and treatment aspects of cleft lip and palate. Cleidocranial dysostosis, ectodermal dysplasia, premature craniofacial synostosis, otocraniofacial syndromes, hemifacial microsomia and mandibulofacial dysostosis are also mentioned.

Overall, this reviewer has been impressed to the extent of recommending it for a required text in the orthodontic undergraduate teaching program despite its shortcomings in removable appliance systems and the many, at times distracting, proofing errors.

Wayne Sampson

*Jacobson, A. and Caulfield, P.W.*

**Introduction to Radiographic Cephalometry**

Published by Lea and Febiger (1985)

Australian Distributor: CIG Medishield (see above)

Price: \$96.75

Despite its unassuming title, this text offers not only an excellent introduction to cephalometry, but also a comprehensive and worthwhile consideration of the techniques, interpretation, and clinical application of radiographic cephalometry.

The introduction by Alex Jacobson discusses the purpose of obtaining cephalometric data as an adjunct to initial diagnosis and treatment planning.

This is followed by an excellent chapter which clearly and practically outlines the radiological considerations necessary to produce a good quality cephalogram. This chapter is thoroughly readable and covers aspects such as x-ray generators, patient positioning, films, screens, processing and film viewing.

The chapter on tracing technique and landmark identification by Page Caulfield is worthy. It covers the basic requirements of how to trace and what to trace. The descriptions of landmarks are detailed and provide the reader with a good refresher of craniofacial anatomy.

The following chapters are devoted to commonly used cephalometric analyses. These include the analyses of Downs, Steiner and Ricketts, and 'Wits' Appraisal. The landmarks used by the various authors are clearly described and defined. The graphic description of the points and planes is very useful. For example, 'mandibular plane' is defined as tangent to the lower border, or gonion to menton, or gonion to gnathion by the authors of different analyses.

An interesting chapter explains the importance of the natural head position and its value in gauging profile aesthetics.

Two less common methods of assessing cephalograms are examined. The first is the mesh diagram

which was introduced by Lucien de Coster and the second is Lysle Johnson's Template Analysis. These are techniques which graphically illustrate areas of disharmony in the craniofacial complex by relating one area to another in the same individual rather than by comparing the individual to a set of 'normal' values.

The final chapter deals with the soft tissue profile. The various methods of assessing the soft tissue profile are brought together with clinical relevance and with emphasis on interpretation.

At the back of the book is a copy of a radiograph which the reader can trace as he follows the step-by-step instructions in the text. There is also a set of templates which the reader can use to apply the superimposition techniques mentioned and to check the accuracy of his tracing technique. Matt tracing sheets are also provided.

This book is well illustrated, clear, concise and practical. It would be extremely useful to anyone who was interested in learning cephalometric techniques and yet it would be a valuable addition to the practice armamentarium of the experienced practitioner. It provides a ready reference to all aspects of clinical cephalometry as well as a comprehensive account of the commonest hard and soft tissue analyses.

Ann Elizabeth Fletcher

*Okeson, J.P.*

**Fundamentals of Occlusion and Temporomandibular Disorders**

Published by C.V. Mosby Company 1985

Australian Distributor: CIG Medishield (see above)

Price \$87.25

The resurgence of interest in the TMJ and occlusion over the past decade has seen a large number of texts come onto the market. These have varied from edited texts to those expressing personal opinions. This text belongs to the latter group and herein lies both its strength and its weakness.

The text is divided into four sections. The first relates to 'Functional Anatomy' and covers the topics of anatomy, biomechanics and neuroanatomy, physiology and occlusion. In general, these subjects are well outlined except for 'anatomy' which is covered superficially. 'Functional occlusion' contains too many generalisations and omits the relative merits of the EMG studies which are highly pertinent to this subject particularly with respect to the role of canine and group guidance and non-working interferences.

The second section attempts to cover the aetiology, identification, and examination of functional disturbances. The former is plagued with controversy which this chapter neither addresses nor clarifies. At best, it oversimplifies the issue to the point where the reader is not made aware of the multifactorial nature of the problem.

The chapters on history and examination are standard and acceptable, although the discussion on radiology is both confusing and contradictory. For example, the author states that condylar position (i.e. concentricity within the fossa) is of no diagnostic value, yet, in the following paragraph, he states that certain changes in condylar position verify an anteriorly displaced disc. To my knowledge, there is no published evidence to support these contentions.

The chapter on diagnosis incorporates Bell's classification which has, for the present, been accepted by the American Dental Association. I find this classification difficult to understand and, in relation to internal derangements, it has been outdated by current studies correlating clinical signs, arthrograms and surgical findings. In general, this section does little to address the dilemma of aetiology and diagnosis. It oversimplifies situations and fails to highlight the areas of controversy that do exist.

The third section covers treatment techniques. It introduces a large number of supportive procedures for muscular disorder including relaxation therapy, biofeedback, electrical stimulation, ultrasound, heat and cold therapies,

gentle stretching exercises, and active forceful stretching. However, this section does not adequately explain how the appropriate supportive procedure is selected for different clinical circumstances.

The chapter on splint fabrication is good, but the indications for use are based on what I consider to be inadequate diagnostic criteria. The sequence of initiating splint treatment with anterior repositioners is not discussed in sufficient detail for the inexperienced practitioner. The indications for occlusal equilibration, an irreversible procedure, are poorly presented although the technique is well demonstrated.

The fourth section relating to occlusal therapy is the best section of the text. The mechanics are well outlined. However, again the discussion is superficial. It may be of value to the beginner, but it is short of research data for the experienced practitioner.

The text contains no new material or original work. The reference lists are very short. Therefore, research data which might substantiate the many controversial topics which are raised in the text are lacking. The result is a narrow and simplistic view of the topic. The author states that 'treatment selection must be based on an accurate diagnosis and understanding of the disorder'. However, the text does not introduce the subject clearly to the student, nor does it inform him of all the possible aetiological factors. Furthermore, there is insufficient research data to provoke stimulating discussion among experienced practitioners. In comparison with a number of other texts currently available, this text has little to offer.

Jon Kozeniauskas

*Epker, B.N. & Fish, L.C.*

**Dentofacial Deformities - Integrated Orthodontic and Surgical Correction**

Published by The C.V. Mosby Company 1986

Australian Distributor : CIG Medishield (see above)

Price \$506.75

In the rapidly expanding field of dentofacial deformity correction which involves the combined expertise of the orthodontist and the orthognathic surgeon, one might expect a number of texts on this subject to have emerged by now. Yet there has been but one previous comprehensive examination of this topic in a two volume book (which has subsequently been updated with a third volume) published six years ago. The continual refinement of diagnostic, orthodontic and surgical techniques has possibly dampened enthusiasm for the publication of definitive texts that would soon be outdated.

Epker (a surgeon) and Fish (an orthodontist) have produced this two volume book which purports to deal with the details of treatment planning and treatment technique in a practical way. There are five sections: evaluation and treatment planning, Class I, II and III malocclusions and finally, asymmetries. Both authors have obviously developed a very close association in the combined management of dental and skeletal malocclusions and there is a satisfactory balance of the orthodontic aspects of treatment as well as the surgical techniques which should satisfy both specialities.

The first section which includes the 'evaluation of the patient with a dentofacial deformity' has been covered previously in some detail in other publications and is perhaps rather repetitious. Nonetheless, several other factors such as tongue posture, speech, various scans, and muscle investigations are mentioned. The best chapter is the 'essentials of treatment planning' which covers orthodontic decision making and prediction tracings. It offers sensible advice regarding the explanation of any proposed treatment to patients. Orthodontic and surgical complications are discussed in the final part of this section and this particularly valuable contribution is well worth reading.

In all remaining sections of dentofacial deformity correction there is a format which deals with presurgical orthodontics, the surgical technique, and postsurgical

orthodontics. This is followed by a discussion of the factors which effect stability, a consideration of the age of the patient, and an examination of the nuances of orthodontic and surgical technique. Treatment alternatives are also provided where appropriate. A confident and clear protocol for the management of the more common skeletal malocclusions is evident (Class II mandibular deficiency, Class III maxillary deficiency, vertical maxillary excess etc.). This protocol is more difficult to apply where upper mid face deformities and complicated congenital or acquired asymmetries are to be managed as these cases cannot be 'pigeon-holed' readily. In these cases, the detailed descriptions given tend to leave an anecdotal impression. However, the overall approach is comprehensive and systematic and related areas such as cleft patients and other congenital deformities are included. The section dealing with the orthodontic aspects of the Class II asymmetrical patient is very good, as is the overall handling of transverse arch dimensions and occlusal plane considerations which are often ignored in the literature.

The text is set out with large margins on each page and with generous if not excess space for diagrams, tracings and photographs all of which are generally satisfactory. There is considerable repetition throughout the two volumes but this may be excused as it allows each section to provide a message independently.

References are supplied at the conclusion of each chapter but no attempt has been made to relate these to the text. Many of the orthognathic surgical procedures used today and described in this book are modifications of those published decades ago especially in the European literature. Recognition of this fact is not reflected in the bibliographies. The close integration of orthodontics and orthognathic surgery has been truly sophisticated in the United States and much is owed to the authors for organising this information for the consumption of clinicians. It is my view that this is the best presentation of the orthodontic aspects of surgical cases that is available. Although the principles of orthodontic treatment have been presented previously, an analysis of the advantages and disadvantages within the preoperative and postoperative phases of orthodontics is provided in great depth. There is also an attempt to separate surgical relapse from orthodontic relapse and this section not only highlights the shared responsibility of the surgeon and of the orthodontist in these cases, but also aids in the evaluation of reasons for compromised or unexpected results which are often not obvious.

Over the past two years, there has been an increasing interest in the use of rigid fixation to aid stability and to shorten the period of intermaxillary fixation. Alloplastic materials for contour correction and bone graft substitution are also under investigation. An entirely new set of parameters and variables for planning treatment and assessing results may be required but Epker and Fish have presented time tested treatment approaches that have been successful in their hands for the past ten to fifteen years. This combined discipline is not without its contentious issues. For example, the authors show some bias towards the use of segmental surgery when, in many situations, simpler alternatives would seem to suffice.

In summary, I would recommend this two volume book to any oral surgeon or orthodontist either as a reference for occasional perusal or as a well documented recipe for approaching a range of craniofacial deformities. It enables the surgeon to gain an understanding of the orthodontic aspects of treatment and vice-versa.

Andrew Heggie

*Shelton, D.W. & Irby, W.B.*

**Current Advances in Oral and Maxillofacial Surgery**

**Orthognathic Surgery**

The C.V. Mosby Company 1986

Australian Distributor : CIG Medishield (see above)

Price \$169.00

This book on advances in orthognathic surgery is the fifth in the 'Current Advances' series by William Irby (and David Shelton). It tackles the important contemporary area of orthognathic surgery.

There have been several texts in recent years covering most aspects of orthognathic surgery but this volume has been deliberately restricted to certain topics which are directed primarily to those in the speciality of oral and maxillofacial surgery.

There are nine chapters which examine different aspects of orthognathic surgery ranging from orthodontic considerations to anaesthesia to the more esoteric midfacial (including orbito-nasal) osteotomies.

The book has been written, for the most part, assuming that the reader has a prior knowledge of orthognathic surgery and so it would not be suitable as an initial textbook on the subject.

There is a heavy bias towards surgical techniques with detailed discussions on various points which would probably be of interest only to oral and maxillofacial surgeons. Nevertheless, the surgical techniques are reviewed comprehensively making this text a useful contribution to the literature on orthognathic surgery.

The chapters on 'Orthognathic Surgery - the practical use of functional principles' and 'Analysis and Treatment of hemifacial microsomia' are especially instructive. These chapters are written from the standpoint of clinical experience and are backed by appropriate research documentation. In general, there are ample references for those wishing to pursue a particular topic in more detail.

Although long-term follow-up of surgical cases is desirable, in some instances this is impossible in a text presenting 'current advances'. Nevertheless, I would prefer to see longer post-treatment follow-up of those cases which had been treated by established techniques.

The quality of a few of the photographs and diagrams are less than one might expect in a text of this price although generally the text and the cases are well illustrated. Certainly the book is well presented, easy to read, and very clearly written. Although the book is quite expensive at \$169, this price is in keeping with other texts for limited reading audiences.

There may be other topics which warrant inclusion in a book on Current Advances in Orthognathic Surgery, however the book certainly deals very comprehensively with the issues which it tackles.

This is a serious text on its chosen subject and it complements the major comprehensive texts on orthognathic surgery. I believe that any practising oral and maxillofacial surgeon with an interest in orthognathic surgery would benefit from this book. Its relevance to orthodontists, however, is less directly obvious and the book would probably be best placed in the 'for reference only' category.

Kevin Ruljancich

*George, J.M., Milone, C.L., Block, M.J. & Hollister, W.G.*

**Stress Management for the Dental Team**

Lea & Febiger, Philadelphia, 1986

Australian Distributor : CIG Medishield (see above)

Price \$63.50

This timely book deals with the management of stress in a cohesive fashion for all members of the dental team.

There is a growing body of evidence suggesting increased vulnerability within the dental profession to disorders categorised as practice-related. Alarming statistics have appeared which suggest that dentists rank high in suicide statistics for all occupational groups, that coronary disease and high blood pressure are over 25% more prevalent among dentists, that dentistry has one of the highest rates of alcoholism, and that seven out of every ten dentists will die of stress-related cardiovascular disease. This important book provides information about the nature and the manifestations of stress and offers preventive and self-help programs.

The authors have divided the text into two sections. The first section deals with the general issues of stress management. It provides a broad perspective and integrates life-style, family and work. In the initial chapter 'Stress and its Consequences', the authors emphasise that 'the everyday hassles of life contribute more to overstress that leads to illness and depression than the major life changes do'. The general picture of the ramifications of stress are well presented and no previous knowledge of psychological concepts is required. This section is completed with a discussion of the general issues of stress. Relevant real-life examples are used to illustrate coping mechanisms and the problems associated with life-style and family.

The second section deals with stress in the dental office. This section is divided into six chapters which deal with the anatomy of stress in the dental office, patient stress, team-management relations, working together, and systems and time management. Each chapter is relatively self-contained and contains commonsense advice as well as more specialised guidance.

There is an Epilogue which contains a stress-control program.

This book is well presented and contains useful subheadings and tables.

The dental profession has waited a long time for such a book. It is very reasonably priced and it is highly recommended for students and practising dentists.

Jack Gerschman

*Proffit, W.R. with Fields, H.W. and Ackerman, J.L., Thomas, P.M. and Tulloch, J.F.C.*

**Contemporary Orthodontics**

Published by The C.V. Mosby Company 1986

Australian Distributor : CIG Medishield (See above)

Price \$72.50

Contemporary Orthodontics sets out to provide a comprehensive overview of orthodontics in a format useful to practitioners at all levels, to serve as an orthodontic text for dental students, and to provide 'a background against which graduate-level discussions of specific treatment techniques can begin'.

I found that this text fulfills these aims and that readers should not expect a comprehensive discourse on aspects of 'specialist' orthodontics (hardly possible in 500 or so pages) or a manual of prescriptions of treatment for particular malocclusions.

The first two sections deal with basic growth and development and include an excellent discussion of the emotional and cognitive development of children. This is useful for those working with children and adolescents in that the approach required to develop rapport and gain co-operation depends on the child's stage of emotional and cognitive development. For example, a child below the age of ten years has little capacity for abstract thinking and all instructions must be tied to concrete situations. Dental and craniofacial growth and development and the aetiology of orthodontic problems are presented clearly and concisely. There is an interesting presentation of ageing changes in the dentition and facial structures in which cephalometric change in adulthood is shown.

The third section deals with diagnosis and treatment planning from the 'diagnostic database' to the development of a 'problem list' and a final plan. The analysis of diagnostic records is thorough and there is a good selection of analyses for study casts and cephalogram.

The chapters on treatment planning emphasise a method of placing the patient's orthodontic problems in priority order. This method should assist the non-specialist in distinguishing straightforward from complex situations and in developing a long-term treatment plan. Growth modification, V.T.O.s, and surgical correction are outlined in Chapter 8.

Section IV covers biomechanics and mechanics and the strengths and limitations of the edgewise, straight-wire, Begg and lingual appliances. The section on fixed and

removable appliances is introductory and is meant to serve as an adjunct to clinical instruction.

Treatment in the mixed and permanent dentitions has been separated for the sake of clarity and this may give the false impression that 'early' treatment is being advocated for all the problems discussed when, in fact, Fields (who wrote this section) points out that, while 'interceptive' treatment can be used in selected cases to reduce the severity of the problems, it is rarely adequate on its own.

The division into skeletal and non-skeletal problems is very useful and a welcome emphasis is placed on diagnosis, timing, and monitoring of progress. In the chapters on fixed appliance treatment in the permanent dentition, a 'straight-wire' type of appliance is usually assumed. The different clinical responses with archwires for use with .018 and .022 slot sizes is discussed as is sliding versus loop mechanics with a brief note on the Begg appliance. Proffit et al suggest that light round arches are placed after the finishing stage for a few weeks to allow settling of 'arch-bound' teeth and that vertical elastics are used if required. This is said to obviate the use of a positioner.

Section VIII covers orthodontic treatment for adults both as an adjunct to restorative and periodontal treatment and as a corrective procedure for untreated malocclusion. The chapter on adjunctive treatment is aimed at the general practitioner using fixed appliances for procedures such as uprighting of posterior teeth, extrusion of teeth with subgingival defects, and alignment of teeth with minor malpositioning. Tulloch (who wrote this chapter) suggests that, if treatment is envisaged to take more than six months, the case is most likely to be too complex for adjunctive procedures alone.

The last two chapters are devoted to special considerations in the fields of comprehensive treatment of adults and of orthognathic surgery. A useful framework is provided for further study in these two fields which form an increasing proportion of our work.

The clinical cases, while not lavishly illustrated, appear to be well treated and of moderate difficulty. Extensive use is made of line drawings which are well placed and the use of red print enables cephalometric changes to be clearly visible while avoiding the expense of full colour. The paper quality is satisfactory for the individual reader but not for extensive use in a library and this is probably another feature which has kept the price of this text within reach of students.

The lists of references throughout are too limited and I would have preferred to see more articles suggested for further reading, perhaps with the more important works annotated for the neophyte.

Contemporary Orthodontics has the advantage for students of orthodontics in Australia of having an underlying philosophy which fits in with Australian orthodontists' perceptions of goals and appropriate mechanics commensurate with the standard of treatment which is generally expected in the community.

This text is among the best of its type and I would highly commend it.

Judith Lewis

type normally employed in the construction of orthodontic attachments.

The SEM was used to examine stainless steel surfaces which had been treated with various etching solutions under different etching conditions. The bond strength between composite resin and etched stainless steel was tested under both tensile and shear loads. The etch pattern produced and the composite resin/metal bond strength were found to be dependent upon both the composition and the crystallographic orientation of the alloy.

Numerous studies have shown that the weak link in orthodontic bonding is the resin/attachment base interface. In this study in vitro testing showed that an experimental, electrolytically etched attachment, bonded to etched enamel with composite resin, was significantly stronger than was a conventional, commercially-available, mesh-based attachment. Further research in this area should focus on selection of alloys of suitable composition and crystallographic orientation and on refinement of the etching technique.

## THESIS ABSTRACTS

*Curtain, J.L.*

### **Electrolytic etching of stainless steel and its use for orthodontic bonding**

Melbourne, M.D.Sc. (1985)

Electronic etching technology has been successfully employed in the construction of 'Maryland' bridges where a non-precious cast alloy is etched to produce a microroughened surface to which composite resin will bond.

The aim of this study was to investigate whether this same technology could be applied to stainless steel of the