

BOOK REVIEW

Legacy of a Longitudinal Growth Study in Central Australia. By Tasman Brown, Grant C Townsend, Sandra K Pinkerton, James R Rogers. Published in Adelaide by University of Adelaide Press, 2011. pp. 327. ISBN: 978-0-9807230-9-0, price A\$35.00, paperback. 978-0-9870730-0-6, Free, e-book PDF.

This is terrific book, detailing the important longitudinal dental and growth study in Yuendumu (1951-1971), how it came about, the logistics, the principle investigators and what knowledge has been gained. This is a readable book, with a fascinating historical account of the background to the study, the complexity and difficulty collecting longitudinal data in a remote, inhospitable region. All four authors write from direct experience, particularly Tasman Brown and Grant Townsend. The book has nine chapters and three appendices and is richly illustrated with photographs, tables and diagrams. The chapters fall into three sections and a bibliography. The first part chronicles early expeditions to the Northern Territory and the logistics of the field trips of the longitudinal study. The middle section summarises the research findings of the occlusal development and function of teeth and facial growth patterns of the Warlpiri people. The third section is about the people involved and an account of more recent outcomes and collaborations using this valuable resource of curated records. The documented list of the hundreds of publications, theses and films is a valuable reference. In addition, a useful appendix of 24 summary tables of growth variables from 5-20 years in half year intervals is provided. The book is supported by an open access electronic version.

The major strength of this book is the way it brings together the historical context, the logistic organisation of the field trips and challenges of data collection during this period. It also describes the extensive impact of this research in the understanding of dental anthropology and cranio-facial growth. These two chapters build on what must be one of the founding studies of dental anthropology in the modern era i.e. Campbell's thesis on the dentition and palate of the Australian Aboriginal (1925). The legacy of knowledge from this longitu-

dinal study in Yuendumu touches most aspects relating to the dentition and developing cranio-facial complex. The teeth of Australian Aboriginals are characterized by larger crown diameters than most other living groups and ample dental arch dimensions. Dental crown features form a characteristic Australian dental complex that includes Carabelli trait and metaconules (cusp 5) on maxillary molars, cusps 6 and 7 on mandibular molars and shovel shaped incisors. Tooth use as tools and extensive occlusal and interproximal tooth wear are also features. Mid-facial prognathism is common, with relative protrusion of the mid-facial region particularly prominent in the alveolar bone, allowing wide excursions of the mandible during mastication. Less malocclusion and tooth crowding occurs than in other populations. The longitudinal study has documented the age of eruption and exfoliation of deciduous and permanent teeth as well as facial growth. Lip and tongue pressure in relation to occlusion, lip occlusal wear, function in the worn dentition and the function of cusps have also been investigated. More recent studies document the oral health and general health in Yuendumu Aboriginals at the present time and the increasing dental caries experience as food habits changed. Human longitudinal growth studies in general and their future are discussed. These two chapters are supported by an excellent biography of publications and theses. The appendices and online access of an ebook also make this an important resource that will be valuable to anyone with an interest in dental anthropology, dental morphology or cranio-facial growth.

The only limitation of this book is that the two chapters on occlusal development and function and facial growth in the Warlpiri are too short as, in my view, they could be a volume in their own right. The only related book is about the Fells longitudinal study of human growth, maturation and body composition (Roche 1992). The Yuendumu legacy is written in a more narrative style and because of the unique timing collecting data on previous hunter-gatherers and the focus on the dentition, this book will be of particular interest to readers of *Dental Anthropology Journal*.

It is a privilege to have worked on this material and dental anthropologists the world over, owe a debt of gratitude to Campbell and Barrett as well as the authors, for collecting, documenting and curating the records that make up the physical legacy that continue to contribute to the understand-

ing of the complexities of the developing dentition and cranio-facial region.

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LITERATURE CITED

- Campbell TD. 1925. Dentition and Palate of the Australian Aboriginal. Adelaide: Univ. Adelaide.
- Roche AF. 1992. Growth, Maturation and body composition. Cambridge studies of Biological Anthropology. Cambridge University Press, Cambridge.

CORRECTION

The author would like to apologise for an error in calculating standard deviation using logistic regression in the publication of Liversidge HM. 2010. Demirjian stage tooth formation results from a large group of children. *Dental Anthropology* 23:16-24.

The standard logistic distribution has a variance of $\pi^2 \div 3$ and standard deviation of $\pi \sqrt{3}$ (Greene and Hensher 2010). This means that standard deviation values in Tables I and II are incorrect and require a correction factor. The standard deviation should be corrected by multiplying with 1.814 year.

LITERATURE CITED

- Greene WH, Hensher DA. 2010. Modeling ordered choices. A primer. Cambridge: Cambridge University Press. page 16.