

Literary Review

A review of: Mastication and Swallowing: Biological and Clinical Correlates, Edited by Barry J. Sessle and Alan G. Hannan

Shelvie A. L. McCoy

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Literary Review

Mastication and Swallowing: Biological And Clinical Correlates

Edited By Barry J. Sessle and Alan G. Hannam

University of Toronto Press

Toronto, Canada, 1976

With 17 Contributors, 194 pages, 6 tables and 28 figures

This book is a collection of papers presented at a symposium held at the University of British Columbia, Vancouver, Canada, in August, 1974. The Symposium brought together an international group of scientists actively involved in research into the clinical and biological aspects of mastication and swallowing.

Each of the five sections of the book presents an introduction by a chair-person, the papers, the ensuing discussion, and the chairperson's summary. This format is interesting because it gives the reader the benefit of the interactions of participants in the group, following each of the papers presented; thus clarifying (or further confusing) the ideas presented.

Section One attempts to place mastication and deglutition in perspective. A general physiological background for chewing and swallowing is presented and discussed. It is difficult to ascertain what point is being made or what concept the presenter wanted to convey. As brought out in the discussion, one might assume that the presenter wanted to convey the idea that the amount of development that takes place in the brain is directly related to activities of the mouth, i.e., difficulty or work involved in eating and obtaining food, diet, speech, etcetera.

The discussion which follows further complicates or confuses the issue by bringing in topics that although related or similar, are not really relevant to the paper presented, nor the discussion itself. For example, the discussion of the brain development being tied to the mouth leads to a discussion on the ability of dolphins to reproduce human speech, its brain size, and the lack of trouble eating. The discussion then turns to split brains and sidedness and speech. If one stretches his imaginative brain, one can see a relationship to the general physiological background of swallowing and chewing. Then the discussion goes on to involve the motivation of decerebrate rats to engage in eating and coitus.

The second paper presented in the section is a bit more coherent. It presents a clear and concise argument categorizing swallowing as both an airway protective reflex and an alimentary supportive reflex. The presenter then proceeds to describe the interactions between specific alimentary and respiratory tract reflexes, that is between mastication and airway maintenance, swallowing and protection of the airway, and mastication and swallowing.

The next three sections become even more specific and consider underlying mechanisms and the influence of such factors as pain and hunger on chewing and swallowing.

The section that discusses motoneurone mechanisms identifies the reflex and higher center control mechanisms involved in chewing and swallowing, but leaves the extent to which these controls operate open to question.

The fifth section is probably the saving grace of the entire publication. It consists of reports from three workshop groups. Each workshop report summarizes the deliberations of a group convened to answer a specific question.

In the preface, it is indicated that the book should be of immeasurable value to physiologists, clinicians, and specialists in dentistry allied fields, students in these areas, and dental researchers and teachers. From the point of view of this writer, the final section provides all that is necessary to accomplish this purpose. The questions: How are mastication and swallowing programmed and regulated?; Is dental occlusal harmony obligatory for muscle harmony?; and, What mechanisms contribute to the coordination of tongue movements during mastication and swallowing? and the answers as reported here, are presented in such a manner that they have appeal to and valuable information for or at least form a basis for seeking more information to the scope of the professionals indicated. This section does not require the laborious reading that is necessary for some of the papers in the earlier sections. This section could well be extracted and placed in pamphlet form for interested professionals.

This writer would recommend use of the last section as a teaching instrument for students of dentistry, research, medicine, nursing, speech pathology and oral myology, but can see little, if any, value in having them read the entire book.

Shelvie A.L. McCoy

Supervising Director of Speech
Correction and Hearing Services,
D.C. Public Schools, Washington, D.C.