The American Academy of the History of Dentistry, a not-for-profit organization founded in 1951, has as its goals the following:

- Creating an authoritative body to which important questions relating to dental history could be referred for factual verification.
- Stimulating more thorough and comprehensive research in dental history, thereby extending the boundaries of dental knowledge, giving substantial support to growing professional culture.
- Increasing interest among dentists in dental history.
- Encouraging both the development of historical collections on dentistry, and the offering of adequate instruction in dental history.
- Stimulating professional discussion of the facts of dental history as an aid in solving problems in dental education and practice.
Concerning the Downsizing and Future of the American Dental Association Library

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James L. Gutmann DDS, Cert Endo, PhD (honoris causa), FICD, FACD, FADI

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Dental Trade Cards XXXVIII
Theodore P. Croll, DDS & Ben Z. Swanson, Jr., DDS, MPhil

From the Archives: Vol. 4, Nos. 3 & 4

Book Shop
Concerning the Downsizing and Future of the American Dental Association Library

This letter was sent to the Executive Leadership and Board of Trustees of the American Dental Association by the Executive Board of the American Academy of the History of Dentistry, November 2012.

We write as ADA members and Fellows of the American Academy of the History of Dentistry (AAHD). We are ardent supporters of maintaining the important status quo for the ADA Library and its services, which apparently are under attack from an economic standpoint. This attack ignores the immense value of the Library, which may be subject to drastic curtailments by order of the ADA Board of Trustees. The Board may not be in touch with either the historical roots of or the critical need for these services.

The AAHD represents over 200 Fellows who are professionals dedicated to supporting and encouraging the study, teaching and appreciation of the history of dentistry. Our organization upholds this mission in the effort to elucidate the valuable lessons of history for the contemporary dental professional. We particularly value preservation and research in this field. As in all scholarly fields, these pursuits involve books and documents of the kind that can only be found in full-service specialist libraries. In dentistry, one of the world’s most comprehensive indexed libraries is at ADA headquarters in Chicago. The Fellows of the AAHD use this valuable resource in our own work on a regular basis.

It is imperative that the ADA Library, this world-class scholarly resource, be preserved and continued. Book purchases, book loans, and skilled staffing must be maintained as essential services to meet the needs of the many people (both ADA members and non-members) who rely on this level of support.
ADA Board of Trustees Resolution
159 states that only 1% of ADA members have actually used the library’s services recently. Please remember that this 1% is likely to include people such as AAHD Fellows—those whose research, gathered with help from the ADA Library material and personnel, is published to reach and teach the other 99% of the ADA membership. Without readily available and excellent support and the deep, deep resources of the ADA Library, many of the leading thinkers and writers in dentistry today and tomorrow would be severely handicapped in their efforts to tell the story of our profession and provide a sense of pride in who we are and what our history has given to the profession and the people we serve.

Furthermore, the Library provides amazingly valuable services to dental students. Think of the dental student and specialty resident, who as ADA members would naturally seek assistance at the Library for their research inquiries, including help with literature searches on a variety of databases. Where would they turn in the absence of our full-service ADA Library, since most University libraries have also taken disastrous budget cuts in favor of programs that do not often make sense.

Surely the Board of Trustees should think with great circumspection before attempting to cripple the ADA Library, a crown jewel of American dentistry’s identity as a learned university-based profession. Educators and university leaders would agree that preserving our ADA Library is far more important in the broad view than maintaining a certain political/administrative infrastructure in the ADA.

In the 19th century, the formative era of the ADA, associations of workers and specialists were established in the trades and learned professions in order to promote essential collective and individual advancements in education, standards and benefits. We as ADA members and AAHD leaders implore you to leave the wonderful ADA Library as it is, to preserve its learned mission. If you must search to identify potential efficiencies, please seek them in the highly elastic administrative side of the ADA organization, not in the essential legacy library resources of our great association.

Sincerely,

Staci N. Gaffos, DMD
President

James L. Gutmann, DDS, FACD, FICD
Vice-President

Marc B. Ehrlich, DMD, MMSc
Secretary-Treasurer

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David A. Chernin, DMD, MLS
Executive Director
Is an Apicoectomy Ever Successful?  
If So, Under What Conditions? 
A Historical Assessment with Contemporary Overtones 

James L. Gutmann DDS, Cert Endo, PhD (honoris causa), FICD, FACD, FADI  
Professor Emeritus, Baylor College of Dentistry  
Texas A&M Health Science Center, Dallas, Texas  

This paper was presented at the 61st Annual Meeting of the American Academy of the History of Dentistry, October 9th, 2012, in Vienna, Austria

In 1921, Dr. Thomas P. Hinman of Atlanta, Georgia read a paper before the First district Dental Society in New York City that dealt with the management of infected teeth. Adherents of the theories of focal infection and elective localization advocated the extraction of teeth with necrotic pulps and particularly those with periapical lesions. In his presentation, Dr. Hinman overlooked the procedures of root amputation or apicoectomy (terms that were synonymous at that time), stating that the technique had been abandoned as a failure by oral surgeons. Dr. Hinman later claimed that he had been misunderstood, and that what he really meant was that apicoectomy is only rarely successful.

Out of this incident there appeared a lengthy symposium, with contributions from across the United States. While this debate ensued, the techniques of this procedure were being applied and evaluated in the European sector, with a number of treatises expounding on their versatility, acceptability, and applicability far beyond what was being addressed in the United States. This paper will focus on some of the unique historical perspectives from all parties, and clarify these perspectives relative to contemporary philosophies and rationales.

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"...a tooth must be seen in its connection with the entire organism and dentistry must not be considered as an independent theory which is unconnected to medicine."—Moriz Heider, 1860

In 1921, Dr. Thomas P. Hinman (Fig. 1a) of Atlanta, Georgia gave a presentation before the First District Dental Society in New York that dealt with the management of teeth with apical infections. In attendance was Dr. Rodriguez Ottolengui (Fig. 1b), Editor of the Dental Items of Interest, who indicated that he was surprised that Dr. Hinman overlooked the procedures of root amputation, or apicoectomy. Dr. Ottolengui understood Dr. Hinman to reply that root amputation had been abandoned by oral surgeons because it has proven a failure. However, “It only justice to say that since that time Dr. Hinman has declared that he was misunderstood: that what he really said was that apicoectomy is only very rarely successful.”

Since Ottolengui was prone to “journalistic research,” he chose to conduct an instructive symposium in the Dental Items of Interest, and sent a letter to prominent oral surgeons throughout the US:

Dear Doctor:

In closing his discussion of his paper before the First District Dental Society, Dr. Thomas P. Hinman, of Atlanta, Georgia, stated that he was surprised that the present writer was not aware of the fact that amputation has been abandoned by oral surgeons in this country because it has been proven that this operation is a failure, due to the fact that disease cannot be eradicated in this manner. The undersigned certainly is surprised to hear this and is writing to a number of oral surgeons in order to learn their views, He would be much indebted if you would contribute to a symposium on this subject permitting him to publish the same.

The general outline of the communication from you should touch on the following questions:

First: Do you consider apicoectomy so unpromising that is should never be resorted to?
Secondly: If it can ever be a success, will you outline the conditions under which success may be expected.
Third: Can you supply case histories, with radiographs of absolutely successful operations of this nature?

Very cordially yours,
R. Ottolengui

The respondents to Dr. Ottolengui’s invitation consisted of 14 oral surgeon/dentists with representation from all regions of the United States (Table 1). Dr. Ottolengui included their responses and dialogues in four contributions published in Dental Items of Interest in 1922.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Josef Novitsky</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Dr. Theodore Blum</td>
<td>New York City</td>
</tr>
<tr>
<td>Dr. Kurt H. Thoma</td>
<td>Boston</td>
</tr>
<tr>
<td>Dr. Carl D. Lucas</td>
<td>Indianapolis</td>
</tr>
<tr>
<td>Dr. Chalmers J. Lyons</td>
<td>Ann Arbor</td>
</tr>
<tr>
<td>Dr. Adolph Berger</td>
<td>New York City</td>
</tr>
<tr>
<td>Dr. Henry S. Dunning</td>
<td>New York City</td>
</tr>
<tr>
<td>Dr. Harold S. Vaughan</td>
<td>New York City</td>
</tr>
<tr>
<td>Dr. Joseph A. Pollia</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Maj Joseph D. Elby &amp;</td>
<td>New York City</td>
</tr>
<tr>
<td>Capt Joseph H. Jaffer</td>
<td>New York City</td>
</tr>
<tr>
<td>Dr. M. N. Federspiel</td>
<td>Milwaukee</td>
</tr>
<tr>
<td>Dr. C. Edmund Kells</td>
<td>New Orleans</td>
</tr>
</tbody>
</table>

Table 1. Respondents to Dr. Ottolengui’s Invitation
**Contribution from Dr. Novitsky**

Dr. Novisky was rather adamant in his position on this issue and indicated to the editor, “The surprising thing to me is your acknowledgement of ignorance of the proved fact that root amputations are failures.”

He proceeded to say, “Dr. Hinman may have been in error when he stated that root amputation has been abandoned. When the ‘leaders’ among dentists, through colleges which they control, still teach men to kill teeth and ‘treat’ dead ones, it is surprising that some of them should still follow the absurd practice of apicoectomy.” Needless to say, Dr. Novitsky was focusing on the issues of focal infection and elective localization which supported the removal of teeth that were diagnosed with necrotic pulps or had periapical radiolucencies, while only fools were removing pulps and attempting root canal treatment on teeth with vital, yet inflamed pulps.

Dr. Novitsky claimed that he had performed many apicoectomy procedures that could be regarded as “technically perfect,” yet found that years later, even though radiographs may have shown healing, that the bone around the resected root ends was infected… “an exhibit of radiographs, then, portraying a technically perfect operation does not necessarily prove the absence of pathologic conditions.” With this mindset he continued, “I can conceive of no conditions under which any one, after even a brief study of the matter could expect ‘success’ from apicoectomy, a practice which should be regarded as criminal by conscientious men.” In this regard, Dr. Novitsky focused on the idea that sclerotic bone that may form in an area around or adjacent to a resected root end is invariably infected, does not represent normal bone, and would be identified by “any competent pathologist…[as] myelitis.”

**Contribution from Dr. Blum**

Dr. Theodor Blum indicated that root amputation (Note: In the historical context of this era, root amputation, root resection and apicoectomy were considered as equal from a procedural standpoint; this will hold true in later discussions regarding European colleagues, primarily in Germany and Austria, where the terms *Wurzelspitzenresektion* and *Wurzelamputation* were also used interchangeably. The former German term actually refers to root tip resection and was indicated in chronic situations where there would be sufficient alveolar bone present to support the retained tooth following the surgical operation.) However, Blum did place an anatomical caveat on this opinion, noting that “ordinarily… only teeth up to and including the second bicuspid are considered.” He identified that this procedure could be most effective in dealing with chronic apical pericementitis, radicular cysts, perforations or fractures near the root apex, and teeth in which the root canal could not be accessed all the way to the apical foramen. Dr. Blum would publish his histologic findings following apicoectomy later in his career, but even in 1922 he knew the importance of achieving successful healing following this type of surgery. Blum indicated that without a good blood clot, healing was doubtful, especially in the presence of large lesions. Unknown at the time was the importance of a productive development of the blood clot to serve as the extracellular matrix for healing around the resected root end, which leads to the ingress of new cellular elements via cellular signaling and molecular biological processes.

To support his claims of success with this surgical procedure, Blum provided Ottolengui with two pieces of supporting data: one being a listing of his cases and their outcomes (Table 2); and two being the documentation of a surgical procedure within his own mouth with up to a 16 year follow-up that evidenced good healing. (Fig. 2) His comment was, “As long as we believe in root canal therapy, we cannot condemn root amputation. Root amputation is root canal therapy plus surgery of the apical region.”
Is an Apicoectomy Ever Successful? If So, Under What Conditions?
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Table 2. Dr. Blum’s case listing for root amputation treatment and outcomes.

<table>
<thead>
<tr>
<th>Condition before Operation</th>
<th>Number of Teeth Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Chronic apical periodontitis</td>
<td>42</td>
</tr>
<tr>
<td>b. Cyst (radicular)</td>
<td>8</td>
</tr>
<tr>
<td>a. One</td>
<td>28 cases</td>
</tr>
<tr>
<td>b. Two</td>
<td>19</td>
</tr>
<tr>
<td>c. Three</td>
<td>3</td>
</tr>
<tr>
<td>Masilla</td>
<td>Mandible</td>
</tr>
<tr>
<td>Central</td>
<td>26</td>
</tr>
<tr>
<td>Lateral</td>
<td>16</td>
</tr>
<tr>
<td>Cuspid</td>
<td>12</td>
</tr>
<tr>
<td>1st Bicuspid</td>
<td>5</td>
</tr>
<tr>
<td>2nd “</td>
<td>5</td>
</tr>
<tr>
<td>Root canals filled before operation</td>
<td>49 cases</td>
</tr>
<tr>
<td>“ “ during</td>
<td>1</td>
</tr>
<tr>
<td>“ “ after</td>
<td>4</td>
</tr>
<tr>
<td>“ “ with gutta percha</td>
<td>49</td>
</tr>
<tr>
<td>“ “ oxy-chloride of zinc</td>
<td>1</td>
</tr>
<tr>
<td>Apex removed with chisel</td>
<td>6</td>
</tr>
<tr>
<td>“ “ bur</td>
<td>66</td>
</tr>
<tr>
<td>“ “ chisel and bur</td>
<td>3</td>
</tr>
<tr>
<td>Wound sutured</td>
<td>26 cases</td>
</tr>
<tr>
<td>“ “ packed</td>
<td>24</td>
</tr>
<tr>
<td>Failures</td>
<td>1</td>
</tr>
<tr>
<td>Doubtful</td>
<td>1</td>
</tr>
<tr>
<td>Successful (apparently)</td>
<td>47</td>
</tr>
<tr>
<td>Lost on account of dental work performed 1½ years later</td>
<td>1</td>
</tr>
</tbody>
</table>

Fig. 2. Radiographic documentation of Dr. Blum’s own root amputation treatment and outcomes.
(Fig. 2 represents a 3-month follow-up, Fig. 3 a 13-year follow-up, and Fig. 5 a 16-year follow-up.)
Contribution from Dr. Thoma

Dr. Thoma did not agree with Dr. Hinman's statement, as Thoma indicted his cases were generally successful; in fact he indicated “9 out of 10” were a success. His claim to success was based on careful case selection and the performance of non-surgical root canal treatment first through the root. His belief was that doing treatment through the root cannot cure the problem if there is necrosis of the apical tissues. “Only surgical measures can cure that and the treatment is to prevent reinfection.”

Contribution from Dr. Lucas

Dr. Lucas was rather blunt when he started his contribution by saying, “root resection in my hands is a failure.” His focus on failure turned out to be directed toward the presence of bacteria in the site of the “regenerated bone” following surgical entry.

Radiographs as evidence postoperatively, tend to prove the operation, in many cases, a success because the bone, in “selected” cases has regenerated in the formerly radiolucent area…I made bacteriological cultures of such regenerated bone in more than a dozen cases in which bone had “regenerated,” according to radiographic evidence, and I obtained positive bacteriological growths in each case.3

Dr. Lucas indicated that many practitioners who have not accepted the radiographic evidence for success and who have “taken the trouble to confirm or disprove such evidence bacteriologically have abandoned root resection,” himself included. Furthermore, he said that while he had performed these surgical procedures “aseptically and according to a certain technique,” followed by resection and bacteriological assessment using anaerobic cultures, he was not prepared to report on his findings at the time of this symposium.

Interestingly, Dr. Lucas’ response was followed by a personal letter from Dr. Ottolengui in which he admitted that radiographic evidence is “no final proof, nevertheless it does seem to me that a series of radiographs covering a period from two to five years, and showing constant improvement, would rather contradict the argument that bacteria are harbored in that area.” At this point, Dr. Ottolengui challenged Dr. Lucas with a case that had been operated on 15 years prior and that showed good bone around the resected root end and clinically no signs or symptoms of demise. “Would you believe that after this length of time you could cut into that area and find bacteria? If not, you are bound to admit that success is possible, because one piece of positive evidence destroys ninety-nine cases of negative evidence.” In doing so, a reply from Dr. Lucas was encouraged and received. In his response to Dr. Ottolengui, Dr. Lucas indicated that he could not determine “constant seeming improvement,” and that while he had seen cases improve radiographically in less than two years, 98% of the cases checked bacteriologically resulted in positive cultures, claiming that his procurement of the apical specimens were done under strict aseptic techniques. In the remaining 2% of the specimens, he claimed the culture media “to be at fault.” In stating this position, he claimed that “I do not allow myself to become prejudiced by my individual desires and anticipations in given cases. All I am interested in is ‘proven fact,’” as opposed to biased reports that are “worse than worthless; they are malicious, misleading and criminal.” Dr. Lucas then proceeded to clarify his position with regards to the focus of this symposium in an emphatic and chiding manner:

Those fellows who proclaim certain of the profession as 100 per cent pulp vital men and radical upon the subject of devitalized or pulpless teeth, condemning such earnest men’s proven opinions, are the most extremely radical men we have in the profession. They are so extreme that they advise and permit to be preserved in their patients’ mouths pulpless which are infected, for cosmetic or mechanical advantage in mastication of food, to the utter detriment of their patients’ health, through the metastatic involvement of vital organs, such as kidney, heart, nerve, gastro-intestinal tract, etc., which hypothesis has been scientifically proven by animal inoculation in hundreds of cases, establishing the hypothesis of “Elective Localization”9 [author’s reference] of periapical bacteria. Such pseudo-
Conservatists draw their deductions solely from radiographic interpretation, and objective symptoms. Investigators, who are seeking the truth in scientific endeavor take into consideration the objective and subjective symptoms, radiographic evidence, elective localization evidence, and finally clinical evidence following surgical proceedings. Since I have been obliged to observe, in unprejudiced investigation, all of the scientific, practical, and clinical evidence, in many instances diametrically opposite to radiographic interpretation, as prima facie evidence, I have definitely decided that I would not permit a pulpless tooth which had ever been periapically infected, to remain in my mouth, or the mouths of my family or relatives.

**Contribution from Dr. Lyons**

Dr. Chalmer Lyons, in his response to the question of the value of apicoectomy/root resection, supported the concept that pathologic conditions at the end of a tooth root are frequently the primary causes of general systemic disturbances. He also acknowledged that with the present methods of root canal therapy, few of the morbid conditions found at the end of the root can be eliminated. Therefore he chose to revive the “old operation known as apicoectomy” which had been promulgated and supported by Farrar in 1884. In doing so he insisted on “four cardinal principles which must be carried out in every single case.” However, he openly admitted that there was a serious question as to the ability to sterilize and properly fill the canals in multirooted teeth and therefore this operation (apicoectomy) should not be considered for these teeth. Furthermore, if the disease process went beyond the apical third of the root, this operation should not be attempted. Root canal sterilization was proposed following the research and guidelines published by Percy Howe and Garfield Rickert, in which impregnation with metals (silver) was advocated. Sterilization of the resected root end was also to be accomplished using a metallic substance (AgNO₃) (silver nitrate) along with NaOH or KOH (sodium hydroxide or potassium hydroxide), with repeated applications “until a dense black layer of silver is deposited over the root end.”

Dr. Lyons also felt it necessary to address the issue of sclerotic bone formation in the site of the surgical procedures, as cited by previous contributors to this symposium. However, Lyons’ observations were not in accord with those of other surgeons. He acknowledged that his cases were filled “with bone quite identical to that of the normal area surrounding it” and that bone that did form was physiologically normal, with radiographic evidence for healing corroborated with macroscopic findings. In his subsequent investigations into the bacteriologic status of the healed bone, all was found to be sterile.

**Contribution from Dr. Berger**

Dr. Adolph Berger attempted in his response to clarify what had happened to the procedure of root amputation, indicating “that about seventy-five per cent of the dental surgeons in the United States have abandoned root canal work, because of the precariousness of this operation and the many failures met with.” He cited multiple and complex factors in the selection of cases to be treated which had great impact on the demise of these treatments. “...men who have become discouraged with the treatment of diseased teeth because of the large percentage of failures, have failed either in the selection of cases, i.e., in their diagnosis, their technique was faulty or they were remiss in both.”

Dr. Berger highlighted an issue that had not been addressed by previous contributors to this symposium: “In all fairness therefore, let the men

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**Lyons’ Cardinal Principles of Apical Surgery**

- Correct diagnosis of every case
- Recognition and maintenance of surgical asepsis in the operative procedure
- Elimination of the infection in the canals and tubuli and curettage of the involved area
- Sealing the exposed root end after making the resection

Table 3. Lyons’ Cardinal Principles of Apical Surgery
who so vehemently decry root amputation, state, what is their basis for condemning this operation? Has anyone taken the trouble to closely investigate a series of failures reported, and determine why they have failed?"

To the best of Dr. Berger’s knowledge, the evaluation of cause of failure following an apicoectomy procedure had not occurred, and “these vague cries of failure, must therefore be viewed with a certain amount of skepticism, since they are not founded on reliable investigation.”

Interestingly, Dr. Berger cut to the quick with his response by identifying the essence of the problem, which he claimed was that most dentists who performed these procedures did not understand:

The truth is that a number of men with no preparation, or with but a partial understanding of the requirements of this operation have grasped this means to rid themselves of troublesome cases or to escape from the irksome situation, often where this operation is absolutely contra indicated, and when they fail as fail they must, they blame it all on the operation. Many other men have failed because they would not understand that the success of the operation is greatly dependent upon thorough aseptic root canal therapy. It is common experience that when the referring dental surgeon is informed that he would have to clean out, sterilize and fill the root canal prior to the operation, the thought of retaining the tooth is at once abandoned. In many instances when a root seems to be partly filled, the unfilled portion is amputated in the hope that in this way all sources of infection may be removed.

(Author’s note: It would be a number of years before there was a universal understanding by the majority of those who practiced this procedure that the mere resection of a root end, which in essence is described by the word apicoectomy, would be insufficient to result in a successful outcome. Dr. Berger’s assessment was correct, and even though some surgeons began to place root-end fillings (amalgams), even these did not result in predictable healing in many cases, due to the persistence of infected and necrotic tissue that remained in the root canal system, or in cases in which the filling was placed in a blood- and debris-contaminated environment, resulting in metallic corrosion, material breakdown and ultimate persistent chronic to acute inflammation in the periapical tissues.)

Dr. Berger stated his position firmly on the issue of success and failure with root-end surgery: “If anyone can or should convince me that it is a hopeless operation, I would not ever practice it. It is my firm conviction, however, that a pulpless tooth is not a dead tooth, nor a foreign body, and that with appropriate root canal therapy and surgery many of these can be retained as healthful and helpful members of the individual.” (Fig. 3)

Contribution from Dr. Dunning

In his response to this invitation, Dr. Dunning did not hesitate to say, “Apicoectomy or root amputation is a useful surgical procedure for eradicating disease in and around the apex of a tooth.” However he did recognize that, “If, in order to remove all infected tissue in and around the apex of a tooth, the end of a tooth must be so extensively
Is an Apicoectomy Ever Successful? If So, Under What Conditions?
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removal as to impair its periodontal attachment the operation of apicoectomy will fail.” Dr. Dunning went so far as to cite nine important guidelines that must be adhered to for success and to determine procedural outcomes (Table 4). The practical success for this operation in careful hands was estimated by Dr. Dunning to be eighty to ninety per cent, with failures being due to case selection, poor surgical operative technique, poor postoperative treatment and poor wound drainage. In case of the latter cause for failure, Dr. Dunning warned against wound suturing, claiming that it the environment was too “dirty” to close with sutures. (Author’s note: Contemporary thought advocates careful and stable tissue positioning and suturing to achieve primary wound closure.)

Dr. Dunning addressed additional aspects of this surgical procedure indicating that periodic radiographic assessment is essential noting that “a recurrence of infection may take place”. Furthermore, he focused on the healing that took place in the periapical tissues (referred to as the pericementum by Dr. Dunning). He indicated that granulation tissue, which would become tough and fibrous, would form over the end of the resected root, followed by subsequent bone formation. The amount of bone formation would be directly related to the preservation of the pericemental tissues during the surgical procedure. As a clinical tip to enhance formation of the newly formed granulation tissue following root resection, Dr. Dunning recommended that during the root-end resection that the a “concaved saucer-like end” be shaped on the root end to stabilize the newly formed tissue (Fig. 4).

Table 4. Dunning’s cardinal principles of apical surgery.

<table>
<thead>
<tr>
<th>Dunning’s Cardinal Principles of Apical Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation is only to be performed on single-rooted teeth; in some cases multi-rooted</td>
</tr>
<tr>
<td>Surgery on maxillary teeth is more apt to be successful</td>
</tr>
<tr>
<td>Operation is not to be performed on teeth that are acutely inflamed</td>
</tr>
<tr>
<td>Operation is not remove more than one-third of the root apically to preserve periodontal support</td>
</tr>
<tr>
<td>Resected root end is to be as smooth as possible</td>
</tr>
<tr>
<td>All diseased bone must be removed</td>
</tr>
<tr>
<td>Careful postsurgical treatment must be performed to ensure healing</td>
</tr>
<tr>
<td>Postoperative care is as important as the surgery</td>
</tr>
<tr>
<td>Radiographic evaluation every few months for one to two years is essential</td>
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</tbody>
</table>

FIG. 4. Concave or saucer-shaped apical resection proposed by Dunning.
Dr. Harold S. Vaughan took a slightly different tack in his response to the questions posed by Dr. Ottolengui. “I believe the operation of root resection, when performed under aseptic precautions, is the only means of eradicating diseased periapical tissue in a large percentage of infected teeth where removal is to be avoided.” He proceeded to provide his indications and contraindications for this procedure (Table 5). He also identified that the teeth most favorable for this procedure were the maxillary and mandibular incisors and canines, with less chance for success with the rest of the dentition. The need for proper root canal treatment prior to surgery was stressed, and removal of all of the diseased periapical tissues was paramount for success. He saw no basis for the claim that bacteria persisted in the periapical tissues, “if primary union has been obtained after suture, because if bacteria were present after operation the blood clot, which is the best possible medium for bacteria growth, would promptly break down.”

Dr. Joseph Pollia’s response to this journalistic research was to address the issues of bacteria and infection.

There has always been more or less misunderstanding as to the presence of bacteria and infection. The former does not necessarily indicate the latter, although the latter presupposes the former. Now, when is the presence of bacteria an infection? When the bacteria have overcome the natural tissue defenses and produce an inflammatory response... Infection, to the dentist, is of course of extreme importance because it dictates his therapy. Infection of the teeth and tissues surrounding them becomes a serious consideration. Of prime importance is it, that the presence of bacteria be differentiated from the presence of bacteria, plus inflammatory reaction or infection.

Dr. Pollia proceeded to describe an experiment that he conducted to determine whether or not he could obtain bacterial cultures from bone that appeared radiographically normal. His findings led to the conclusion that there has been a problem in the dental profession with the misinterpretation of bacteriologic conclusions as opposed to radiographic deception.
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Contribution from Drs. Eby and Jaffer

These two oral surgeons from New York, both in the US Army, took a new and refreshing approach in their response to the questions posed by Dr. Ottolengui.

There is nothing transpiring in any phase of dentistry which is of greater importance than this tremendous problem of analyzing and classifying the truths into a final solution of the effects and treatment of dento-alveolar disorders. This final solution will mark a new era of understanding by disclosing the facts so clearly as to undermine the wide range of variations in men's minds existing in a certain sense very deplorable today...We would say, then, that ignorance in the question before us is result of a lack of knowledge in such fundamental branches of science as biology, biochemistry, histology, physiology, pathology, bacteriology with the association of internal medicine, therapeutics, surgery, etc., all of which must be intimately interwoven into a rational procedure sufficiently elastic to include within its scope the variations within each and every individual patient with who we come in contact.5

These respondents proceeded to discuss the development of teeth and their intimate relationship with the supporting periodontal tissues. Furthermore, the process of inflammation was addressed, along with the immunological status of the patient. In light of this discussion they indicated that, "In cases of periapical infections where the resistance of the individual is normal, as manifested by the absence of all constitutional disorders, more conservative methods are to be considered. The principle factor governing the retention of teeth is the possibility of rendering the tooth and adjacent structures sterile, whether accomplished by direct medication, ionic medication, root resection, or any of their combinations."5 (Author's note: Historically, ionic medication implies the performance of root canal treatment. These are the first respondents who have indicated that periapical infections may possibly be managed by nonsurgical root canal treatment as opposed to an automatic resorting to extraction or periapical surgery.) "After having seen the beautiful results obtained under various methods of therapy and technic employed by such men as Doctors Buckley, Callahan, Hinman, Johnston, Grieves, Ottolengui, Rhein, Bannister and others, we believe that complete resolution and regeneration of bone is possible in rarefied areas which have resulted from infections around the apices of teeth."5

However confident Drs. Eby and Jaffer portrayed their position on this subject, they still felt that successful root resection was limited to single-root teeth, preferably the maxillary incisors and canines. "For reasons of inaccessibility, number of roots, etc., other teeth are out of consideration."5 Furthermore, teeth planned for root resection must have had an aseptic root canal procedure. Moreover, following what appeared to be a successful surgical procedure, they rejected the "sweeping statements of radical men" regarding persistent bone infection and considered these "beautifully regenerated areas of bone as normal tissue until they are proven otherwise by a 100 per cent effective technic without contamination and by further research."5

Contribution from Dr. Federspiel

To this point in this journalistic symposium, Dr. Federspiel indicated that he had identified two diametrically opposed opinions. He also found that there was a third group of authors, who took a conciliatory attitude, and he wished to be counted among this group, "...because I believe it to be the most successful one."6

Having placed himself in this third category, Dr. Federspiel chose to address the positions promulgated by many of the previous respondents. Federspiel’s reply to Dr. Lucas: “I found that Dr. Lucas’ statement that ‘root resection in my hands is a failure’ due to the persistence of bacteria …is remarkable in view of the fact that it is contrary to my knowledge of the sterility of tissue.” “...no mention is made of the kind of micro-organisms, which were supposedly found. I am led to believe that he was confused by the saprophytic flora of the mouth, infecting the excised ‘regenerated’ bone in a secondary way.”6

Federspiel’s reply to Dr. Novitsky: “Cases of calcification of a granuloma are undoubted rare...
do not know, however, why he regrets that dentists do not understand the difference between calcification and ossification.”6 He then follows these statements with a length discourse on osseous healing.

Federspiel’s reply to Dr. Lyons: “The remarks by Dr. Chalmers J. Lyons of Ann Arbor, Michigan on the fundamental principles in root end amputation are worthy of deep consideration.”6 Subsequently, he proceeded to endorse the Lyons’ principles (Table 3).

**Contribution from Dr. Kells**

Dr. Kells’ first and only comment was to focus on the statement of Dr. Lucas that “I have definitely decided that I would not permit a pulpless tooth which had ever been periapically infected, to remain in my mouth, or the mouths of my family or relatives.”3 In response to this statement, Dr. Kells indicated he had one simple question—a question which began with a case history of an individual who had an abscessed tooth 40 years ago. Root canal treatment had been performed, and that tooth was still present in the mouth, functional and without signs or symptoms of disease. The question was, “If his preceptor had extracted this tooth forty years ago, in what respects would the man be better off today?”6 The patient was Dr. C. Edmund Kells himself!

At this point in the journalist symposium, Dr. Ottolengui chose to provide his own contribution to the question at hand, even though not being an oral surgeon, his original intent was to refrain from citing his own personal experiences. Ironically, his experiences from a patient that he had seen in 1915, having performed the apicoectomy procedure, were “sufficiently interesting to excuse its insertion.” In doing so, Dr. Ottolengui focused on Dr. Lucas’ comment that he, was “not able to determine the seemingly improvement radiographically after bone has apparently regenerated in a former radiolucent area, which I have observed has occurred in such areas before two years have elapsed.”6 In response to this comment, Dr. Ottolengui indicated that:

> Whilst it is true that in successful apicoectomies the wound cavity will appear (radiographically) to have been filled with new bone within two years, nevertheless such regeneration does not indicate a static condition. Bone is constantly changing just as the soft tissue does. It is destroyed by use and replaced continuously. The probability then is that the bone examined radiographically five years after root resection is not the same bone at all as was disclosed by a radiograph made a year or two after operation. Hence, if the later radiograph shows bone as good or better than that seen two years after the operation, it follows that the new bone is functioning; that it has the ability to endure tissue destruction due to use, and to repair this in the normal manner of tissue repair. In other words it is normal bone. In still other words it is not pathologic bone, nor sclerotic bone, nor in my opinion can it be harboring bacteria as constant habitants. Perhaps it is “scar bone,” yet it serves.6

At this point in the discussion, Dr. Ottolengui makes two amazing observations, that would prove to be true 50 years later in the outcomes assessments made by other oral surgeons subsequent to determining the mode of healing and factors influencing healing following apicoectomy procedures.15 Firstly, in his observations, Dr. Ottolengui points out the fact that in performing an apicoectomy, the root length has been reduced, and:

> Hence we have a dental member with a lessened osseous support and consequently to some extent it is a lame tooth. As such it is perfectly possible that in some cases, years after operation, overuse may cause atrophic degeneration of the periodontal tissues which are not able to withstand the abnormal stresses (abnormal in proportion to the decreased root length), with the result that infection may become noticeable. In such an outcome, it is my view that we should call this a new bacterial invasion, and not an outcome of the old.6

What was being identified by Dr. Ottolengui was the fact that one of the major causes of failure following a seemly successful surgical procedure was the presence of advancing marginal periodontitis and its bacterial component.15

Secondly, he carefully described the radiolucent line seen above the resected root end, which had been interpreted by some “as an evidence of a lack of bone regeneration.” However, he offers another explanation, calling it “an outgrowth from the pericementum, which serves the purpose of separating two human tissues which are not supposed
to be in contact, viz. dentin and bone. What he is describing in the formation of a normal periodontal ligament space as the body’s approach to prevent ankylosis. Details of both of these observations were carefully detailed and documented in-depth by Rud et al. in 1972.

**The Apicoectomy in the United States vs. Europe in the Early 1900s**

While the American oral surgeons were struggling with issues surrounding the apicoectomy procedure in the early 1920s, inroads had already been made in the European sector, primarily in Germany and Austria, on all fronts from clinical techniques and applications to histological assessments and soon-to-be-published success/failure studies. In summary;

- Controversies regarding healing, infection, bone formation, radiographic interpretation, and techniques plagued the American oral surgeons *(Author’s note: the specialty of endodontics/endodontology did not exist at this time)*
- Studies in Europe, specifically Austria, were focused on histological outcomes long before this journalistic symposium by Dr. Ottolengui
- Studies specific to the challenges in the apical third of the root canal had been published also from Austria which recognized the anatomical challenges that clinicians faced
- Technique articles and text books were focused on surgical intervention in the European sector in all teeth with no limitations as to the tooth position or roots involved
- There was a larger group of authors that had been addressing root end resection and root amputation *(Wurzelspitzenresektion und Wurzelamputation)* since the late 1800s and early 1900s and detailed techniques had been published
- Teeth with necrotic pulps and periapical lesions were being retained in many sectors as opposed to the wholesale extraction which was the norm in the United States

**Early Perspectives in the United States**

Documentation exists to support the technique of Smith in 1871 in the United States as performing the first root-end resection used to manage a tooth with a necrotic pulp and surrounding alveolar abscess. Other American clinicians/authors, such as Farrar, Walker, White, Black, Younger, Rhein described techniques of managing abscessed teeth or teeth that had roots that had succumbed to periodontal disease, while Brophy and Ottolengui, himself, describing root-end resection procedures for specific clinical situations. However, the procedure was not used commonly to retain teeth, with extraction being favored, although pleas were made to minimize the extensive use of surgery and concentrate on the problem at hand as early as 1884 by visionary clinicians, such as Whitehouse: “A few moments’ consideration of the original cause of trouble at the apex of roots will enable us to realize what is required to be accomplished in the way of successful treatment. If the original cause is admitted to be irritation from decomposing pulp, its removal will in most cases effect a cure.” The historical focus of surgical attention in the United States was only too often limited to the eradication of the soft tissue surrounding the root apex, neglecting the removal of the intracanal irritants and properly sealing the apical foramen, although as it was seen in Ottolengui’s symposium there were surgeons who finally realized the importance of managing the root canal properly. *(Author’s note: the impact of this concept was monumental, as it was shown 50 years later that failure to manage the root canal prior to surgery was the most common cause for surgical failure.)* However, this was only done in conjunction with an apicoectomy procedure, as root canal procedures alone were not deemed appropriate in the presence of a periapical lesion. Sadly, for many years the course of treatment was either surgery or extraction.
In the European sector, credit for this procedure was often given to Desirabode27 in 1843, followed by Magitot28 in 1867 and Martin in 1881.29,30 Claude Martin described this technique to manage teeth with draining sinus tracts. “Cette operation cependant West pas nouvelle, car le docteur Claude Martin, notre eminent collegue, en a donne une excellente description en 1881”.29 “…est Claude Martin qui, en 1881, a inventé la resection apicale…Le père de la resection apical c’est Claude Martin.”30 However the real impetus for the development of root-end resection techniques on the European continent came in the early 1890s from Carl Partsch, a surgeon turned dentist.31-33 He was a professor at the University of Breslau, in Germany, and between the years of 1895 and 1900 was credited with the methodical development of “Wurzelspitzenresektion” or root-end resection, first under chloroform anesthesia (“Chloroformnarkose”), and later cocaine anesthesia (“Cocainanästheste”). In 1898 he supported the use of a root-end filling where indicated.32 In 1899, Partsch published a lengthy descriptive dissertation on root-end resorption associated with “chronischem Alveolarabszeß” which provided a rationale for “Wurzelspitzenresektion.”33 In 1900 Rudolph Weiser, a Viennese professor, joined Partsch to propagate these surgical methods at the Third International Dental Congress in Paris. They presented techniques in “Wurzelspitzenresektion” to manage “akutem und chronischem Alveolarabsßeß” (acute and chronic abscess), “hastnäckigen Fisteln” (persistent sinus tract or fistula), and “kleineren Zahnwurzelzysten” (small root cysts).

Partsch, in his initial surgical procedures, used a vertical incision directly over the root and packed the surgical area with iodoform (Jodoformgazetamponade) to stanch hemorrhage. This approach was common with a cyst and is similar to our present-day decompression or marsupialization and was known as the Partsch I method. Through his surgical endeavors and experiences he would ultimately be credited with the Partsch incision or semilunar incision, along with the Partsch II method of complete cyst removal followed by a form of immediate soft tissue apposition and suturing.

Between 1912 and 1921, Faulhaber and Neumann, from Germany, published multiple books that dealt with detailed anatomical concerns and guidelines for surgical entry to the root apices on both maxillary and mandibular posterior teeth,34,35 which was a far cry from what was being advocated in the United States (Figs. 5 A&B). Secondly, they provided information on aspects of surgical instruments, clinical try setups and asepsis during the apicoectomy procedure. Third, they detailed the actual surgical procedure, including soft tissue and hard tissue access, management and wound closure. Finally, they presented outcomes for these procedures.36 Details of this nature were somewhat foreign to dental professionals in the United States.

Concomitant with the clinical development of this surgical procedure and expansion of its applications in the European sector, research was being conducted on the histologic findings of teeth following apicoectomy. In particular the evaluation of healing and the tissues involved were being investigated in Austria by Bauer37,38 and Euler.39 Bauer indicated that the removal of the root tip places the amputation zone in a very different functional relationship with the surrounding tissues. Microscopically he inspected the resected root ends for cemental hypertrophy, which he felt was due to the difference in functionality for the root when the tip was removed and felt the cementum/bone interface was only an attachment, while gaps would exist in some areas between the two tissues.37 This finding would parallel Ottolengui’s observation regarding the “radiolucent line” that was interpreted as failure of the bone to heal. However, Bauer may have been in error as the gap he identified was most probably a tissue processing artifact. Bauer also identified new physiologic bone that had grown into the surgical cavity where the root tip had been removed (misinterpreted by some of the respondents as osteolysis, when contributing to the focus this symposium).

From a more enhanced histologic perspective, Bauer38 investigated the response of the resected root end, or stump as he called it,
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to the environmental tissues (today this would referred to as the extracellular matrix and the response of cellular components to stimulatory and growth factors involved in the regeneration of the apical periodontium). He noted the growth of cementum, or bone cementum as he referred to it, on the resected surfaces of the root. In so doing he referenced Thomas’ paper on the protective nature of cementum during development, noting the direct fusion of bone cement and dentin, “…an immediate fusion is made with the exposed dentin. What the preparation of the dentin for this adhesion or fusion of the tissues was one may only conjecture. The continuity of the tissues seems perfect.”

Bauer details the formation of the bone cement as one in which individual dentin chips were initially overgrown with cementum until they finally joined and together with the alveolar bone, were overgrown with a layer of osteoid as described by Gottlieb.

To support his observations, Bauer quoted Gottlieb as saying that:

“Bone cement is deposited with or without resorption on the cross-sectional root area, and is also with or without adhesions to the surrounding bone, or the dentin surface is just tolerated by the connective tissue without consequences…the bone cement that attaches itself to the root after root amputation is a product of the bone forming cells of the periosteum and fibrous tissue caused by irritation of the amputated root…apposition on one side and is absence at another site shows specific properties of the bone cement and that this is due to a functional stimulus that is casual and is not only resulting from the stimulus of chewing but also from the ratio of the crown root ratio.”

Due to this latter assessment, Gottlieb recommended the use of a protruding pin made of ivory, called a Schröder pin, (“Gottlieb macht den
Vorschlag, den aus dem Kanal in die Operationwinde hinauslaufen den Teil des Schröderschen Elfenbeinstiftes stehen…) from the root at the wound site to serve as a core for the deposition of bone cement, a bridge between the amputation site and the dentinal wall and an extension of the root, thus increasing both root strength but also stability. While the use of metallic endodontic endosseous implants have occasionally been reported in the literature over the last 60 years, the suggestion by Gottlieb, 40 years prior to the reports on metallic implants, may have been the first biologically directed, inductive-type of endodontic endosseous implant in the dental literature. Later publications by Gottlieb and Boulger would support the histologic aspect of the bone cement or cementum as it is layered on the exposed dentin.

Major reasons for the apicoectomy procedure were to remove the associated pathologic tissues around the root apex and to remove the apical portion of the root that was highly irregular and often exhibiting a vast array of accessory communications in most teeth; communications that harbored bacteria, and as are known today, biofilms. Furthermore, this irregular anatomy would be rather extensive in posterior teeth subjected to an apicoectomy, as seen in the hands of the European surgeons. To amplify this irregular root anatomy, a histological study done by Baumgartner highlighted both the multitude of canals in the apical third of the root, but also the communicating anastomoses of canals found in posterior teeth. While dentists in the United States spoke of apical accessory canals relative to root canal procedures and the need to leave them alone in teeth with vital, inflamed pulps or to try to clean them in cases of necrotic pulps, little was addressed relative to the surgical removal of these anatomical irregularities and their potential in persistent apical periodontitis.

Perspectives on Ottolengui’s Journalistic Symposium

The activity and scope of practice of the European oral surgeons were not incorporated into the interchanges that took place in the US symposium. Concomitantly, the oral surgeons in the United States were struggling with the theory of focal infection and its claims about the patient’s systemic health. In most respects, empiricism was considered as the benchmark in decision making and treatment planning. As could be seen by the diversity of the responses to Dr. Ottolengui’s original questions, the thought processes, opinions and rationales for choices were amazingly diverse across the United States. In this respect, Dr. Ottolengui both posed questions and presented his take on this literary endeavor.

• What is sclerotic bone?
• What harm does this type of bone pose for the patient?
• Correct diagnoses are essential prior to choosing an apicoectomy!
• A better understanding of radiographic information and its interpretation is essential!

While the information gleaned from this symposium was not earthshaking, it did point out a tremendous flaw in the dental educational process and threw down the gauntlet for all dental practitioners and educators in the United States. According to William J. Gies, there was a burning need to have a better understanding of the biological basis for treatment. In evaluating the dental profession in the 1920s, he found that the dental profession was driven by technological developments, which left the dentist with little ability to integrate the medical sciences into the practice of dentistry and to learn from the then-increasing amount and quality of scientific research and literature. Therefore he chose to look at dentistry and dental education from a new perspective; one that would meet the future needs of this noble profession in its service to mankind. This was his vision and his mission, and his famous document of 1926 set the wheels in motion for this to occur.
The keys to progress in dentistry are the practitioner who serves the patient directly, the teacher who instructs and trains the practitioner and the investigator who extends the knowledge on which the teaching man and most of the improvements in practice depend...Dental practice has been very progressive in the technical procedures of repair, restoration and replacement, but has been backward in the biological responsibilities of prevention and therapeutics, which cannot be fully met by dentistry until, based on an adequate system of education that will also support and stimulate the best teaching and research, it becomes the full service equivalent of an oral specialty of the practice of medicine. In attaining this remarkable mechanical and esthetic success, dentistry developed aptitudes and interests, which, by focusing concern primarily upon procedures or reparation, distracted attention from its greatest opportunities in health service. The average dental practitioner, having had a poor education in the integration of the medical sciences with clinical dentistry, finds it difficult to apply them in his practice, and to keep himself informed as to the main features of their growth and further correlation. Few dentists have had the type of education that develops the capacity and inclination for the serious and continual study of scientific literature, which the progressive practice of a profession requires. As a consequence many use antiquated methods of practice, or they uncritically or casually adopt new procedures that appeal empirically, or have nothing to commend them beyond persuasive demonstrations by salesmen or plausible advertisements by manufacturers.49

Ironically, Gies’ vision strongly echoed that of Moriz Heider 66 years previously. Waiting in the wings to bring those visions to fruition were a group of superb researchers and educators who were refugees from an ever-increasing suppressive central-European government in the late 1920s and early 1930s, and who were forced to flee their academic positions at the Vienna Medical School. Along with Gies’ directives for dental education, the presence of these academicians and researchers helped to establish and strengthen the scientific foundations of clinical dentistry in the United States. In addition to their clinical and research skills and their knowledge, the Vienna-trained dentist-scientists brought new innovative and refreshing approaches to learning, and a scientific culture of investigation which today continues to play a significant role in the development of research programs worldwide. Ironically, the forced migration of these individuals at that time resulted in new opportunities, and was a boon to dentistry in the United States. Recognition of the intellectual growth and expansion out of this conjunction of two cultures seems worthy of our attention, if only to remind us again of the value of our differences.49
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5. Ibid.; 420-428.


48. Gies WJ. Dental Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching. 1926.

The Evolution of Oral and Maxillofacial Surgery in Colombia: From the Dental School of Bogotá to Waldemar Wilhelm and His Legacy

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The evolution of the dental specialty of oral and maxillofacial surgery (OMS) in Colombia can be attributed to a myriad of altruistic, visionary leaders who paved the way for future generations. The process started with the indigenous groups who inhabited Colombia before Spanish rule, and continued with the founding of the Dental School of Bogotá in 1888 and the subsequent efforts of Waldemar Wilhelm in 1950, and consolidated with Wilhelm’s legacy and surgical descendants. This article recognizes the pioneers, analyzes the circumstances under which they worked, describes how Colombian oral and maxillofacial surgeons fought plastic surgeons for the right to be in the operating room, and details the events involved in the structuring of the different oral and maxillofacial surgery residency programs in Colombia today.

“The coward doesn’t make history.”
—Juana Julia Guzmán (1892-1975), Colombian social leader

Early Records and the Spanish Rule

The evolution of the dental specialty of oral and maxillofacial surgery (OMS) in Colombia was a labored process which started with the many indigenous peoples, such as like the Muiscas, Taironas, Zenúes, Calimas and Chibchas who settled in what is known today as Colombia. These cultures alleviated toothaches using herbs and plants such as one they called kidatu (sensitive plant, Mimosa pudica); performed extractions using wedges and stones; and drained odontogenic abscesses. The development of dentistry continued upon the arrival of Columbus in 1492, with “dentistas” and “médicos” brought from Spain. Among them was Pedro Pablo de Villamor, recognized today as the first dentist ever to practice in Colombia, in Santa Fe de Bogotá in 1564. Diego Enriques followed, practicing around 1640; as well as Miguel de Meneses, who was the first Colombian-born dentist. Other dentists who practiced around 1750 were Mateo Delgado, Nicolás de Leyva Clavijo, Vicente Román Cancino and Domingo Rotta.

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Teaching OMS In Colombia: From Guillermo Vargas-Paredes to Waldemar Wilhelm

During the first decades of independence from Spain, dentistry in Colombia was practiced as it had been during colonial times: dentists would take care of dental problems, while physicians would do more complex procedures. Such was the case of Dr. Antonio Vargas-Reyes, who was born in the city of Charala on September 21, 1816, and obtained his MD in Bogotá from El Rosario Medical School. Vargas-Reyes treated oral cancer and performed extensive resections of maxillary bones. In 1879 in Bogotá, Juan David Herrera and José Uribe performed a mandibulectomy using the technique described by Broca in 1842. Among the most respected dentists during that era were Eugene Rampon (1823), Hipolite Villaret (1823), Henri Fonvielle (1825) and Augusto Pissot (1864), all of them from France. American dentists who practiced in Colombia were C. Putnam (1827), Joseph Watson ver Valen (1847), Ernest Bingley (1852) from the Baltimore Dental School, and William (Guillermo) Chambers (1856). At the end of the 19th century, Colombian dentists began to manage more complex oral and maxillofacial pathologies, thanks to the strong influence of American dentistry. In the late 1860's, Luis Carlos Capella-Rodríguez, a student from Santa Marta, enrolled in the New York Dental School, graduating in 1871. Back in Colombia, he trained Guillermo Vargas-Paredes, who in 1877 traveled to the same college to finish his formal dental education, and in 1879 returned to practice Colombia. The altruistic scientific work and contributions of Guillermo Vargas-Paredes were celebrated, and in 1988 the Federación Odontológica Colombiana (Colombian Dental Federation) recognized him as the Father of Colombian Dentistry due to his many efforts towards the consolidation of the dental profession. Not only did he organize the Sociedad Dental Colombiana (Colombian Dental Society) in 1887, but also founded Revista Dental (Dental Journal). On January 2, 1888 he founded, with other colleagues, South America's first dental college: Colegio Dental de Bogotá (Dental School of Bogotá). This institution and the many other that followed included the Dental School of Cartagena (Cartagena, 1891); Medinacelli's National Dental School (Bogotá, 1912); Martinez Olier Politechnic Institute (Cartagena, 1914); Dental School of Medellín (Medellín, 1919), Cartagena Faculty of Dentistry (Cartagena, 1920). The Colombian Dental Institute (Bogotá, 1923) had the noble task of developing the curriculum and lectures on anatomy, physiology, anesthesia, oral surgery and pathology that would contribute to the birth of OMS in Colombia.

When developing the curriculum for the Dental School of Bogotá, Guillermo Vargas-Paredes used the educational model of the American dental school from which he graduated. In the first year, general anatomy and surgery were taught by a physician, Agustín Uribe. In 1912, when Luis Antonio de Medinacelli opened his National Dental School, the college of dentistry had gained importance in the existing academic settings, and in 1913 president Carlos E. Restrepo ordered a one-year increase in the length of study of all existing dental schools across Colombia. Medinacelli took the opportunity to rearrange the curriculum, and allocated dental histology and anatomy to the first year, general anatomy and surgery for second-year students, and dental pathology at the end of the program. All three years of training included a clinic devoted exclusively to oral surgery. The Medellín Dental School, founded in 1919 by Dr. Abel Uribe-Jaramillo, not only had one of the most comprehensive dental curricula of its time, but also the most respected physicians and dentists available in the Department of Antioquia (one of the 32 geographic sections of Colombia known as departments). Uribe-Jaramillo, born in the municipality of Sonsón, studied dentistry at the Philadelphia College of Dental Surgery and in 1910 returned to Medellín, where he founded a dental society and later the first dental college in Antioquia. He devoted the majority of his time to oral surgery and anesthesiology.

On August 19, 1920 the Colombian Ministry of Public Instruction (today Ministry of Education) issued Decree 1602, which mandated that all dental curricula were to be expanded one more year for a
total of four. The Decree outlined a model for all dental schools: oral surgery and pathology would be taught in the second year of training. The second year included pathology II, dentomaxillary anomalies and oral pathology clinic. Oral surgery clinic and general anesthesia was left for the last year.7

Eventually, all private, non-university affiliated dental schools faced monetary problems that led to their gradual closure. The Dental School of Cartagena closed in 1910; Medinacelli’s National Dental School closed in 1924; Martínez Olier Politechnic Institute closed in 1926; the Dental School of Medellín and Dental School of Bogotá both shut down in 1927; Colombian Dental Institute closed in 1936 and the Cartagena Faculty of Dentistry closed in 1938.

In 1932, a major step towards the consolidation of dentistry was made when the descendants of Luis Antonio de Medinacelli agreed to donate to the Universidad Nacional de Colombia (National University of Colombia) at Bogotá all the equipment and library of the closed dental school that once belonged to their father. This enabled the creation of the first university-based dental school in Colombia, the Universidad Nacional de Colombia School of Dentistry, where the first dentists who limited their practice to oral surgery and pathology taught and developed their careers.5-8

Among the oral surgery pioneers who taught at Universidad Nacional de Colombia School of Dentistry were Alfredo Bárcenas (Fig. 1), José Vicente Plata and Jorge Conovers. Bárcenas received his DDS degree from the Dental School of Bogotá in 1908, and was an authority in oral pathology and traumatology. Plata, a dentist from the Colombian Dental Institute in 1930 and Convers, from the Paris Dental School in 1932, were national authorities in the field of oral and dentoalveolar surgery.

Other pioneers were Alberto Barriga, Jorge Antorveza and José Rezk. Both Antorveza and Rezk received their DDS degrees from Universidad Nacional de Colombia in 1940, and enhanced the oral surgery departments at Hospital San Juan de Dios and La Misericordia, intended for undergraduate dental students.6 Other professors who contributed to the development of oral surgery during its early stages were anesthesiologist Juan Marín, bacteriologist Fernando Schoenewolff (Fig. 2), oral radiologist Álvaro Delgado (Fig. 3) and orthodontist José Mayoral (Fig. 4).
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From the Dental School of Bogotá to Waldemar Wilhelm and His Legacy

In 1932, Universidad de Antioquia at Medellin opened its School of Dentistry, which was the second university-affiliated dental school in Colombia. By 1941 the surgery-exodontia department had two full-time professors, the radiology department one, and the stomatology department (which was run by a physician) one.5,9 The curriculum is outlined in Table 1.5

In 1946, eight years after the Cartagena Faculty of Dentistry had shut down, Universidad de Cartagena at Cartagena de Indias launched Colombia’s third university-based school of dentistry, opened thanks to the efforts of Dr. Wulfrán Ripoll, who organized the curriculum and taught oral surgery following the vast array of publications and methods used by his professors at Universidad Nacional de Colombia.10

During those years Colombian dentists at Universidad Nacional de Colombia, Universidad de Antioquia and Universidad de Cartagena gained much experience in all fields of oral surgery and pathology through reading, practice and teaching. Their education and training encompassed exodontia, dentoalveolar trauma, resection of odontogenic cysts, periodontal surgery, and odontogenic infections. They often spoke of oral surgery as a specialty, but the word maxillofacial was still virtually unknown.11 That was the situation at the beginning of 1950, when Waldemar Wilhelm, one of the most prominent maxillofacial surgeons of his time, arrived at Bogotá and was appointed oral surgery professor at Universidad Nacional de Colombia. Time proved this to be the most important fact in the history of OMS in this part of the world.

### Waldemar Wilhelm and the Spread of The Specialty

Traditionally, geographers have divided Colombia into five zones: Caribbean Coast, Pacific Coast, Amazonia, Orinoquia and the Andean area. Each region has its own culture and at least one major city. From the historical point of view, one must recognize that the birth of OMS in Colombia was possible thanks to those surgeons who practiced in the Andean area (Bogotá, Medellín), Caribbean

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Table 1. Dental curriculum followed at Universidad de Antioquia in the early 1940s
Coast (Cartagena) and in the Pacific Coast (Cali). The term epicenter is used in a figurative way to exalt the contributions of the most influential surgeons who practiced in these cities.10

**Epicenter of Bogotá**

Bogotá was without question the most important epicenter in the history of Colombian OMS. Since 1888, this city has continuously had at least one dental school. From 1930 to 1940, Universidad Nacional de Colombia had the most influential oral surgeons across the nation. The aforementioned Bárcenas, Plata, Convers, Barriga, Antorveza and Rezk were national authorities in all fields of oral surgery.

In early 1950 Waldemar Wilhelm arrived from Germany and was appointed OMS professor at Universidad Nacional de Colombia. Three years later, a young military dentist, Tomás García-Angulo, landed in Bogotá. García-Angulo had served in the Korean War with the Colombian Battalion, which was adjunct to the US Army. In 1957 he traveled to the United States of America, where he trained as an oral and maxillofacial surgeon. In 1957 Jaime Rubio settled in Bogotá after furthering his education in Argentina. Rubio opened an oral surgery department at Hospital Infantil Lorencita Villegas de Santos.10 In 1958 Universidad Nacional de Colombia and the Sociedad Quirúrgica de Bogotá (Bogotá Surgical Society) signed an agreement by means of which Colombia’s first oral and maxillofacial surgery department was created at Hospital San José, with Wilhelm as head.11-12

**Epicenter of Cartagena de Indias**

The epicenter of Cartagena de Indias contributed to the expansion of OMS in the Caribbean region. Two institutions must be mentioned: Universidad de Cartagena and Hospital Santa Clara. After the closure of the Cartagena Faculty of Dentistry in 1938, the Caribbean region did not have a center for the training of dentists during the next eight years. In 1946 Universidad de Cartagena opened its School of Dentistry, which started with nine professors who followed the same curriculum of the Universidad Nacional de Colombia. For oral surgery they used Vilray P. Blair’s textbook *Surgery and Diseases of the Mouth and Jaws*, published in its first edition in 1916 by the C.V. Mosby Co., St. Louis and for oral pathology they followed Thoma’s *Oral Pathology*, published in 1941, also by Mosby. Wulfrán Ripoll, who graduated as a dentist in Bogotá in 1941, served as oral surgery professor. In 1947 Ripoll traveled to New York, where he received further training in oral surgery with Harry Seldin. Upon returning he continued teaching oral surgery, dentoalveolar trauma and anesthesiology.10

In 1952 Ripoll founded at Hospital Santa Clara the first oral surgery department in the Caribbean region. Regarding the circumstances under which said department was established, he recalls: “One day Dr. Barrios, who was my patient, told me they had an interesting case at Hospital Santa Clara. There was a man whose face was swollen and they had not been able to make a diagnosis. I went to the hospital, examined him and found it was an enormous odontogenic cyst. They asked me to do the surgery, which to their surprise I did under local anesthesia. Two days later they appointed me oral surgeon”.13

**Epicenter of Medellín**

The two institutions related to the birth of OMS in Medellín were Hospital San Vicente de Paúl and Universidad de Antioquia School of Dentistry, of which the latter during the 1950s and 60s was considered “The Lighthouse of Latin America.”5 In 1944 a group of dentists interested in oral surgery invited Philadelphia dentist Herman “Doc” Hurlong, who traveled to Medellín and lectured on a wide range of surgical topics.5 Ten years later, Hospital San Vicente de Paúl, the Universidad de Antioquia affiliated-hospital, opened the Plastic, Maxillofacial and Hand Surgery Department headed by Dr. León Hernández. This department started with seven beds, an operating room, Hernández as plastic surgeon, Álvaro Londoño as hand surgeon and Jairo Isaza, Alberto Arango-Escobar and Hernán Pérez
as oral and maxillofacial surgeons. By 1979, 633 undergraduate dental students and seven dentists had done internships in this service.

On June 7, 1958 Alberto Arango-Escobar, Jorge Restrepo, Pablo Velásquez, Gustavo Ulloa and Alberto Buenaventura met at Universidad de Antioquia School of Dentistry in order to create the Sociedad Colombiana de Cirugía Dento-Maxilo-Facial (Colombian Society of Dento-Maxillo-Facial Surgery) today known as Asociación Colombiana de Cirugía Oral y Maxilofacial or ACCOMF (Colombian Association of Oral and Maxillofacial Surgery).

**Epicenter of Cali**

Cali is the most important city in the Pacific Coast of Colombia. The institution related to the birth of OMS is Hospital San Juan de Dios, and the surgeon who brought the specialty was Gustavo Ulloa, who arrived to Cali in 1947 from Universidad de Chile at Santiago, Chile, where he studied oral surgery and traumatology. Once in Cali, Ulloa realized he did not have a place to practice what he learned in Chile, thus he opened the Oral Surgery Department. In 1970 Universidad del Valle at Cali began its School of Dentistry, where Ulloa taught OMS for more than thirty years.

**The Architects**

Several oral and oral and maxillofacial surgeons were responsible for the introduction, organization, structuring, teaching, spread and consolidation of OMS in Colombia. Over the next section, a short biography of the most important surgeons during the second half of the 20th century is presented.

**Waldemar Wilhelm**

Trained as an oral and maxillofacial surgeon in Germany at Nordwestdeutschen Kieferklinik with Karl Schuchardt, Wilhelm (Fig. 5) settled in Bogotá in 1950. That year he joined Universidad Nacional de Colombia School of Dentistry and immediately introduced the principles of OMS. From 1950 to 1956 he taught oral surgery periodontology, and general anesthesia until 1953, becoming head of the Oral and Maxillofacial Surgery Division.

In 1958 the Bogotá Surgical Society and Universidad Nacional de Colombia signed an agreement by which Colombia's first OMS department was created at Hospital San José, then headed by Dr. Guillermo Fergusson. There, Waldemar Wilhelm trained the first oral and maxillofacial surgeons in Colombia: Mildardo Sepúlveda, Gabriel Anchique and Alfredo Villamarín. Other trainees were Jairo Duque, Mercedes Herrera, Yolanda Bernal (first and second female oral and maxillofacial surgeons trained in Colombia, respectively), Carlos Díaz, Juan Manuel Chiriví, Enrique Llanos and Julio Gutiérrez.

From 1978 to 1982 Wilhelm was president of the Sociedad Colombiana de Cirujanos Orales, (Colombian Society of Oral Surgeons). He actively participated in the creation of the Asociación Latinoamericana de Cirugía Bucomaxilofacial (Alacibu) (Latin American Association of Buccomaxillofacial Surgery), which was founded in Bogotá on August 31, 1962, and became its president in 1964. He was an active member of other surgical societies such as German Society of Oral and Maxillofacial Surgery, Colombian Society of Aesthetic and Reconstructive Surgery as well as Colombian Dental Federation.15

In 1968, Wilhelm became head of the Oral and Maxillofacial Surgery Department at Hospital Militar Central, a combat casualty hospital run by the Colombian Ministry of Defense, replacing Dr. Tomás García-Angulo. Wilhelm tendered his resignation in 1977. Among Wilhelm's most important writings are: Epidermis Graft in the Correction of Reduced Alveolar Bone for Prosthetic Procedures (1953), Surgical Reconstruction of the Parotid Duct (1964),
Asymmetric Positions of the Maxilla and its Surgical Treatment (1965), Surgical Correction of Mandibular Prognathism (1966) and Bone Marrow Hyperplasia (1975). Waldemar Wilhelm retired from Universidad Nacional de Colombia in the late 70’s and returned to Germany in the early 90s. He died in Herrenalb, Germany on November 17, 1994.12

Tomás García-Angulo

Born in Bogotá in 1926 and a graduate dentist from Universidad Nacional de Colombia in 1950, García-Angulo served the Colombian Army from 1952 to 1953 as part of the Mobile Army Surgical Hospital (MASH) during the Korean War. Upon returning to Colombia he joined Hospital Militar Central, where he founded the Oral Surgery Department, heading it until 1957, the year in which he traveled to the United States of America in order to further his education. From 1957 to 1959 he studied OMS at Northwestern University Medical School under the supervision of Orian Stuteville, who directed the plastic surgery residency program at Northwestern University Medical School for 17 years and was former chairman of the plastic surgery department at Cook County Hospital. From 1959 to 1961 García-Angulo was at Illinois’ Carle Hospital.

Returning to Colombia in 1962, he resumed his position as chair at Hospital Militar Central, heading the OMS department, and designed a three-year, full-time OMS residency program, which commenced in 1963 with Jorge Vidal from La Guajira and Guido Cano from Bolivia.10 In 1966 he was appointed professor at Pontificia Universidad Javeriana Medical School and in 1968 tendered his resignation from Hospital Militar Central (being replaced by Waldemar Wilhelm) in order to become Academic Dean of the School of Dentistry at Pontificia Universidad Javeriana. An active surgeon and professor, he founded the OMS department at Clínica de la Policía. He died in Miami, Florida on July 6, 2006.10

Alberto Arango-Escobar

Alberto Arango-Escobar graduated from Universidad de Antioquia School of Dentistry in 1952 and studied oral and maxillofacial surgery at Hospital Universitario San Vicente de Paúl under the supervision of León Hernández, a renowned plastic surgeon who directed the plastic surgery residency program at Universidad de Antioquia Medical School during the fifties and sixties. In 1958 he founded, along with other five colleagues, the Colombian Society of Dento-Maxillo-Facial Surgery, becoming its first president. Arango-Escobar devoted his life to the Universidad de Antioquia School of Dentistry, where he lectured on oral surgery for more than twenty years.10

Gustavo Ulloa

Born in Cali in 1921, Gustavo Ulloa graduated from Universidad de Chile Dental School in 1947 and later completed his oral surgery training at Universidad de Chile’s Institute of Traumatology. A founding member of the Colombian Society of Dento-Maxillo-Facial Surgery, he became president in 1962. Ulloa spent his professional life at both Hospital San Juan de Dios and Universidad del Valle School of Dentistry.10

Jorge Restrepo

Dentist from Universidad de Antioquia School of Dentistry in 1952, Restrepo was an OMS resident at Hospital Universitario San Vicente de Paúl from 1954 to 1957, training with León Hernández. He was among the surgeons who organized the Colombian Society of Dento-Maxillo-Facial Surgery, becoming its first treasurer, and president from 1966 to 1969. He taught oral surgery at Universidad de Antioquia until 1979.10
The Evolution of Oral and Maxillofacial Surgery in Colombia
From the Dental School of Bogotá to Waldemar Wilhelm and His Legacy

Jairo Isaza

Jairo Isaza, obtained his DDS degree from Universidad de Antioquia in 1946, and was a tireless researcher in biomedical sciences and surgery. Trained as an oral and maxillofacial surgeon with Dr. Hernández at Hospital Universitario San Vicente de Paúl, he became president of the Colombian Society of Oral Surgeons from 1961 to 1962.5 Isaza is credited for writing the society’s bylaws and designing its first logo.

Alberto Buenaventura

Born in Cali, Alberto Buenaventura obtained his DDS degree from Universidad de Antioquia in 1951. He was part of the group that organized the Colombian Society of Dento-Maxillo-Facial Surgery in the city of Medellín, becoming president from 1975 to 1978.10

Wulfrán Ripoll

Wulfrán Ripoll (Fig. 6) was born in Cartagena de Indias in 1918, graduated from Universidad Nacional de Colombia in 1941 and received his oral surgery training along with Harry Seldin in New York. In 1952 he opened the Oral Surgery Department at Cartagena’s Hospital Santa Clara and joined Universidad de Cartagena School of Dentistry, where he was oral surgery professor, dean in 1972 and president of the university in 1976.13

Álvaro Bustamante

Álvaro Bustamante studied dentistry at Universidad de Cartagena and OMS at Universidad de Puerto Rico in San Juan, PR. He taught anatomy and oral surgery at Universidad de Cartagena for more than twenty-five years. He also served as a boxing ringside physician and referee.10

Pablo Velásquez

Graduating in 1948 from Universidad de Antioquia, Velásquez also trained with Hernández at Hospital Universitario San Vicente de Paúl, from 1954 to 1957. He was also part of the group that organized the Colombian Society of Dento-Maxillo-Facial Surgery. From 1970 to 1971 he served as president of the Antioquia Dental Association.10

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Alfredo Villamarín

Alfredo Villamarín graduated as a dentist from Universidad Nacional de Colombia and in 1958 entered the OMS residency program headed by Waldemar Wilhelm at Hospital San José. Upon finishing the program, three years later, he joined the Universidad de Cartagena School of Dentistry, where he lectured on oral and maxillofacial surgery, anesthesia, anatomy and oral physiology.10

Jaime Rubio

Jaime Rubio obtained his DDS degree from Universidad de Buenos Aires in Argentina. He studied OMS at Buenos Aires’ Hospital Fernández in 1957. Upon returning to Colombia, he worked at Hospital Infantil Lorencita Villegas de Santos and Clínica de Marly, where he worked along with other surgeons such as Tomás García-Angulo, Jairo Duque, Manuel Torres and Clara Inés Ardila. A two-time president of the Colombian Society of Oral Surgeons, he lectured extensively on pediatric trauma and maxillofacial surgery, cleft lip and palate and TMJ disorders.10

Álvaro Bustamante

Álvaro Bustamante studied dentistry at Universidad de Cartagena and OMS at Universidad de Puerto Rico in San Juan, PR. He taught anatomy and oral surgery at Universidad de Cartagena for more than twenty-five years. He also served as a boxing ringside physician and referee.10
**Luis Alberto Campos**

A superb clinician, surgeon and researcher, Campos (Fig. 7) is the last surgeon counted as an OMS founder in Colombia. He was the most influential Colombian oral and maxillofacial surgeon at the end of the 20th century. He taught maxillofacial surgery at *Universidad Nacional de Colombia, Pontificia Universidad Javeriana, Colegio Odontológico Colombiano* and founded the OMS residency program at *Universidad El Bosque*.\(^{16}\) He also founded several oral and maxillofacial surgery departments, among them those at *Clínica San Pedro Claver, Hospital La Misericordia, San Juan de Dios* and *Hospital Universitario Clínica San Rafael*. He served three times as president of the Colombian Society of Oral Surgeons.\(^{17}\)

**Colombian Association of Oral and Maxillofacial Surgery**

The history of the *Asociación Colombiana de Cirugía Oral y Maxilofacial* began on June 7, 1958 when Alberto Arango-Escobar, Jorge Restrepo, Pablo Velásquez, Gustavo Ulloa and Alberto Buenaventura met at the *Universidad de Antioquia* School of Dentistry in Medellín in order to create an association of oral and maxillofacial surgeons. They named it Colombian Society of Dento-Maxillo-Facial Surgery.\(^{17}\) Three years later, from August 12 to 15, 1961 the Society organized in the city of Paipa the First Colombian Congress on Oral Surgery. It was a productive meeting where oral surgeons got to know each other, exchanged experiences and shared knowledge. They took the opportunity to reorganize the Society and to rename it. The new name was *Sociedad Colombiana de Cirujanos Orales* (Colombian Society of Oral Surgeons). Dr. Jairo Isaza was elected president.

From a historical point of view, three points in time can be identified in today’s Colombian Association of Oral and Maxillofacial Surgery.\(^{17}\) They are:

- **Creation**: Occurred in 1958 when Alberto Arango-Escobar, Gustavo Ulloa, Alberto Buenaventura, Pablo Velásquez and Jorge Restrepo organized the Colombian Society of Dento-Maxillo-Facial Surgery.

<table>
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<th>Term</th>
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<tbody>
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<tr>
<td>Gustavo Ulloa</td>
<td>1962-63</td>
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<td>1963-65</td>
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<td>Jaime Rubio</td>
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<td>Waldemar Wilhelm</td>
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<td>Luis Alberto Campos</td>
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<td>Jaime Rodríguez</td>
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<td>Daniel Rey</td>
<td>2009-2011</td>
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<td>Diego Esquivel</td>
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Table 2. Presidents of the Colombian Association of Oral and Maxillofacial Surgery
The Evolution of Oral and Maxillofacial Surgery in Colombia
From the Dental School of Bogotá to Waldemar Wilhelm and His Legacy

• **Organization**: Commenced in 1961 at the First Colombian Congress on Oral Surgery. During this reunion the Society adopted a new name: the Colombian Society of Oral Surgeons. Among the new members were Héctor Restrepo, Iván González, León Hernández, Waldemar Wilhelm, Jaime Ordóñez, Alfonso Estefan, Alejandro Hakim, Jaime Rubio, Tomás García-Angulo, Gabriel Anchique, Miguel Amezquita, Jaime Álvarez, Mildardo Sepúlveda, Víctor Ramón Hoyos, Alfredo Villamarín and Jairo Isaza.

• **Consolidation**: Began in the early 1980’s when a new name was chosen: Colombian Society of Oral and Maxillofacial Surgery. In the late 1990’s it became the Colombian Association of Oral and Maxillofacial Surgery.

Table 2 shows the 18 presidents of the Association.

### Oral and Maxillofacial Surgeons vs. Plastic Surgeons

During the 1960s, 1970s and 1980s, most Colombian oral and maxillofacial surgeons had to fight plastic surgeons for the right to be in the operating room. Dr. Juan Manuel Chiriví, a former resident of Waldemar Wilhelm during the early 1970s, put it this way:

The very fact that dentists may enter the O.R. was seen as a threat by most physicians. We had to defend the specialty and the right we dentists have to manage the gnathic system, and not just teeth. We stated that oral and maxillofacial surgery was that specialty of dentistry that dealt with the diseases of the mouth and its associated parts. As you can see, this was a wide, ambitious concept. Its interpretation among physicians generated jealousy and doubts. They were concerned about our scientific preparation and believed we lacked the basic knowledge to do surgical procedures in the mouth and its related parts.

In 1963, Felipe Coiffman, then president of the Colombian Society of Plastic Surgery, sent a letter to Enrique Lleras, director of the Instituto Colombiano de los Seguros Sociales (ISS) (Colombian Institute of Social Security), where he stated:

We [plastic surgeons] do not believe that dentists, given the circumstances under which this professionals are trained in Colombia, are in the scientific capacity to take care of maxillofacial cases. Taking care of these patients require, without question, medical knowledge. We do not conceive how professionals, that most probably do not know how to take blood pressure, or to put aesthetic stitches in the face, or a tracheotomy, or to solve a cardiopulmonary event, or to diagnose a cerebral problem or a fracture, can attend these patients from the mere dental point of view.

Dr. Sergio Mejía, an eminent professor who taught periodontology at Universidad de Antioquia, in an paper entitled The Academic Masters, which appeared in a magazine called El Informador, replied:

The extreme jealousy of some physicians should lead them to study such affirmations (regarding the integral attention of the patients) if they can put aside haughtiness and use logic to conclude that the dentist, acting as the physician of the mouth, is at the same level of any medical specialist, even though Colombian laws do not recognize it. Fortunately we officially knew the academic position of the majority and extra officially that of a minority who necessarily will triumph because reasons, evolutions and comprehends that the socialization of dentistry humanized physicians by throwing them down from the false Olympus to where patients’ excessive gratitude and ignorance had put them.

This opposition to dentists and in particular OMS was very strong in Bogotá and Medellín, but in other cities, such as Cartagena, Cali, Barranquilla and Monteria, physicians and plastic surgeons helped maxillofacial surgeons with dental background. Egberto Gracia, the first oral surgeon who practiced in Monteria, states: “physicians helped us. When we had difficult TMJ cases, orthopedic surgeons were our allies. The same thing can be said about anesthesiologists, who were always ready to anesthetize our patients.”

Gustavo Ulloa recalls: “here in Cali we did not have to fight plastic surgeons. On the contrary, they were very helpful. I taught oral and maxillofacial surgery at Universidad del Valle and directed the oral and maxillofacial surgery division at Hospital San Juan de Dios and physicians always helped us and we helped them. We were friends.”
It was not until the early 1980s that the Colombian government started to pay attention to the fight between physicians and dentists. As a matter of fact, in April 1983 Víctor Montes, then president of the Asociación Colombiana de Facultades de Odontología (ACFO) (Colombian Association of Dental Schools), asked the Colombian Society of Oral and Maxillofacial Surgery to prepare a dossier that could be used as support to present a legal defense before the government regarding the right of dentists to take care of OMS cases. In a letter signed in Bogotá on April 19, 1983, Dr. Manuel Torres, then president of the Colombian Society of Oral and Maxillofacial Surgeons, answered:

Dentistry in Colombia is regulated by the Dental Practice Act (Ley (law) 10, 1962) which defines dentistry as the application of means and knowledge for the diagnosis, prognosis, prevention and treatment of diseases, defects and malformations related to teeth, its supporting tissues and other structures of the mouth related to them...Today none of the Colombian dental schools offers an oral and maxillofacial surgery specialty program and the country urgently needs to increase the amount of them.21

From 1958 to 1983 Colombian dentists received their OMS training in three main hospitals: Hospital San José and Hospital Militar Central in Bogotá, and Hospital Universitario San Vicente de Paúl in Medellín. This situation started to change on October 10, 1980 due to Decree 2725, which gave to Colombian universities the exclusive right to train medical personnel. In the spring of 1983 Dr. Torres sent another letter, this time to Mauricio González, director of the Higher Education Branch of the Instituto Colombiano para el Fomento de la Educación Superior (ICFES) (Colombian Institute for the Promotion of Superior Education), where he asked about the validity of certificates given by hospitals. ICFES's Internal Memorandum 1816, released on June 11, 1983 signed by Galo Burbano, stated that: “Oral and Maxillofacial Surgery certificates issued by hospitals before October 10th can be legalized by passing an examination administered by a recognized university having a medical school.”21

On August 21, 1984 Luis Alberto Campos, then president of the Colombian Society of Oral and Maxillofacial Surgery, stated: “The Colombian Society of Oral and Maxillofacial Surgery is pleased to inform its members that the Colombian Government, by means of Decree 139 of May 31, 1984 has recognized the Oral and Maxillofacial Surgery specialty and has given permit to Universidad Militar Nueva Granada to issue certificates in Oral and Maxillofacial Surgery. This is the result of a specialty program designed by and to dentists at Hospital Militar”.21

Training Surgeons

The training of oral surgeons in Colombia started in 1888 at the Dental School of Bogotá and the similar institutions founded in Medellín, Cartagena and Bogotá at the end of the 19th century. In 1958, when Wilhelm opened the oral and maxillofacial surgery residency program at Hospital San José, Colombia already had a myriad of well-respected oral surgeons. In 1963 Tomás García-Angulo opened at Hospital Militar Colombia's second OMS residency program. In the mid-eighties this program was taken by Universidad Militar Nueva Granada, becoming Colombia's first OMS residency program offered by an university.

This program started with Dr. Manuel Torres as director and Enrique Amador as scientific coordinator. Nowadays there are seven fully-accredited OMS residency programs across the nation and three in oral surgery. Table 3 summarizes Colombian universities offering different surgical residency programs.

During the last decade Colombian OMS programs have gained an outstanding reputation among Latin American dentists. Currently Colombian universities train students from Venezuela, Mexico, El Salvador, Costa Rica, Aruba, Nicaragua, Honduras, Panama, Ecuador and Bolivia, becoming the third country with the largest majority of international residents in Latin America, just behind Mexico and Brazil.
Meetings, Research and Writing

Colombian oral and maxillofacial surgeons have been meeting for more than fifty years. The seed was planted from August 12-15, 1961 when the Colombian Society of Dento-Maxillo-Facial Surgery organized in the city of Paipa the First Colombian Congress on Oral Surgery. Since then Colombian surgeons have been meeting, exchanging ideas and learning from the world’s most respected surgeons such as Eduard Hinds, 1963; Harry Archer, 1971; John Kent, 1987; Robert Walker and James Quinn, 1989; Kurt Friedman, 1991; William Bell, 1993; Ronald Schnider and Uwe Frohberg, 2001; Takao Kimura, 2002; Marcelo Figari, 2003; George Anastassov, 2011 and James Hupp, 2012.

Research and scientific writing, on the other hand, are still projects-in-waiting. According to researchers Dora Cardona and Martha Fonseca in their key work about dental research in Colombia: “The diffusion of journals released by the different dental schools has not overcome discussion in scientific communities because our dental scientific community is incipient, there is insufficient time and opportunity to debate on the theoretical positions adopted by researchers, and the feedback needed to discuss the many aspects related to scientific production has been lacking.”

Regarding the production of scientific papers, which at some extent comes as a consequence of research, the situation is about the same. Although dental books and journals have been published in Colombia since 1849 (*Odontotecnia u observaciones sobre la estructura, fisiología, anatomía y enfermedades de los dientes* by American dentist Joseph Watson ver Valen) and *Dental Journal* (launched by Guillermo Vargas-Paredes), journals and books devoted exclusively to OMS had to wait more than fifty years. If fact, the *Colombian Journal of Oral and Maxillofacial Surgery*, formerly known as *Revista Odontológica Maxilofacial* (Fig. 8) was not released until October 1986 and, even today, the Colombian Association of Oral and Maxillofacial Surgery struggles to put a volume together, mainly due to financial problems and lack of sufficient papers being submitted. The first OMS book in Colombia, *Tratamiento de las fracturas mandibulares* (Fig. 9) released in 1992, was written by Gustavo Ulloa and Pedro Sarmiento.

The reasons behind this lack of interest in research and writing have not been elucidated, and currently there are no available studies regarding this matter. In the recent years, however, the Oral and Maxillofacial Surgery residency program at *Universidad El Bosque* has led a process whose main objective is to increase the amount of papers published on high-impact-factor journals. As
a consequence of said policy, professors and residents have been able to place their products in journals such as the *British Journal of Oral and Maxillofacial Surgery*, *Journal of Oral and Maxillofacial Surgery* and the *International Journal of Oral and Maxillofacial Surgery*.

Appendix 1 (page 34) summarizes the history of OMS in Colombia.

**Epilogue**

Juana Julia Guzmán (1892-1975) was a maid who acted as a social leader from 1915 to 1930. She spent much of her life in Monteria, a city located in northern Colombia, where she worked for female rights, opposing those who wanted to abuse workers. Her detractors used countless derogatory adjectives to undermine her. But Juana remained calm, only replying: “The coward doesn’t make history.” She died poor, but none of the aristocrats who attacked her became timeless after their earthly lives. The story of Juana Julia Guzmán teaches us that no matter how small one may be, history is always willing to vindicate those who have the courage to fight and endure, until the last vestiges of one’s inferior status have been transcended.

The history of OMS in Colombia is the history of audacious men who took Juana’s motto very seriously. It is the history of courageous surgeons who paved the way for those who practice OMS today. It is amazing to note how a specialty with such humble origins has grown to the point that its presence in hospitals, clinics, universities and society is not only unquestionable, but also requested by the surgical descendants of those who once wanted us out of the academic world.

The society where we live in today is different from the times of Convers, Rezk, Wilhelm, García-Angulo, Ulloa, Arango-Escobar, Ripoll, Villamarín and Campos. The challenges they faced are not the same challenges surgeons face today; nor those our students will face tomorrow. Today’s surgeons enjoy freedom and respect thanks to the work of their mentors, and today they devote their time to different issues. The industriousness and example set by the pioneers of OMS in Colombia will continue to provide the guidance and impetus to explore challenging issues and solve problems for future generations in the growth of this dental specialty.
The life and work of Dr. Wilhelm was reconstructed in part thanks to my German colleagues Wolfgang Busch, Hans-Jürgen Hering and Mathias Ball. Thanks also to my sister Glenna, who was in charge of the artwork.

References


### Appendix I: Timeline of Major Events in the History of Oral and Maxillofacial Surgery in Colombia

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888-1923</td>
<td>- Foundation of the first dental schools: Dental School of Bogotá (1888), Dental School of Cartagena (1891), Medinacelli’s National Dental School (1912), Martínez Olier Politechnic Institute (1914), Dental School of Medellin (1919), Cartagena Faculty of Dentistry (1920), Colombian Dental Institute (1923). During these years no dentist limited his practice to oral surgery.</td>
</tr>
<tr>
<td>1913</td>
<td>- First report of a research on oral surgery: Dr. Leonidas Gómez of Medellin presents <em>A case of a painless dental extraction of a molar under the influence of hypnosis.</em></td>
</tr>
<tr>
<td>1930-1940</td>
<td>- Jorge Antorveza, Alfredo Bárcenas, Alberto Barriga, Jorge Convers, José Vicente Plata and José Rezk become the first dentists to limit their practice to oral surgery.</td>
</tr>
</tbody>
</table>
| 1947 | - *Universidad de Cartagena* sends professor Wulfran Ripoll to New York in order to receive training in oral surgery with Harry Seldin.  
- Gustavo Ulloa, who studied oral surgery in Chile, settles in Cali. |
| 1950 | - Waldemar Wilhelm settles in Bogotá and joins *Universidad Nacional de Colombia* to teach OMS.  
- Gustavo Ulloa, who studied oral surgery in Chile, settles in Cali. |
| 1952-1953 | - Tomás García-Angulo serves in the Korean War with the MASH. |
| 1953 | - Tomás García-Angulo returns to Colombia and opens the oral surgery department at *Hospital Militar Central*. |
| 1954 | - *Hospital Universitario San Vicente de Paúl* at Medellin opens the plastic, maxillofacial and hand surgery department where dentists Alberto Arango-Escobar, Jairo Isaza, Pablo Velásquez and Alberto Buenaventura receive special OMS training with León Hernández. |
| 1957 | - Tomás García-Angulo travel to the USA for training in OMS.  
- Jaime Rubio arrives from Argentina. |
- *Universidad Nacional de Colombia* and the Bogotá Surgical Society open the oral and maxillofacial surgery department at *Hospital San José*.  
- Wilhelm trains the first oral and maxillofacial surgeons in Colombia: Mildardo Sepúlveda, Gabriel Anchique and Alfredo Villamarín. |
| 1961 | - From August 12 to 15, the Colombian Society of Dento-Maxillo-Facial Surgery organizes in the city of Paipa the First Colombian Congress on Oral Surgery. During the meeting, the Society adopts a new name: Colombian Society of Oral Surgeons.  
- Alfredo Villamarín, Mildardo Sepúlveda and Gabriel Anchique become the first oral and maxillofacial surgeons trained in Colombia. |
### The Evolution of Oral and Maxillofacial Surgery in Colombia

**From the Dental School of Bogotá to Waldemar Wilhelm and His Legacy**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>1961-1962</td>
<td>• European surgeons Hinds, Hessler, Schuchardt, Eschler, Korkhaus and Gillies visit Colombia.</td>
</tr>
</tbody>
</table>
| 1962 | • Tomás García-Angulo returns to Colombia.  
• Alfredo Villamarían settles in Cartagena and joins *Universidad de Cartagena*, where he teaches maxillofacial surgery.  
• Colombian President Alberto Lleras opens *Hospital Militar Central*.  
• On August 31st the Latin American Association of Oral Surgery (*Alacibú*) is founded in Bogotá. |
| 1963 | • The Colombian Society of Plastic Surgeons, headed by Felipe Coiffman, tries to ban dentists from practicing maxillofacial surgery.  
• *Hospital Militar Central* opens an OMS residency program. Its first residents are Jorge Vidal and Guido Cano.  
• *Hospital San Juan de Dios* opens a maxillofacial surgery department under the direction of Tomás García-Angulo. |
| 1964 | • On December 4, the Colombian Association of Dental Schools (*ACFO*) recognizes Waldemar Wilhelm as oral surgeon. |
| 1978 | • Waldemar Wilhelm tenders his resignation from *Hospital San José*, and is succeeded by his former resident, Dr. Mildardo Sepúlveda. |
| 1984 | • The Colombian Goverment recognizes OMS as a field of dentistry by means of Decree 139, May 31st.  
• *Universidad Militar Nueva Granada* opens the first university-based OMS residency program.  
• *Hospital Universitario San Vicente de Paúl* at Medellin opens the Stomatology Department under the direction of José Luis Lopera. This department is later transformed into the Oral and Maxillofacial Surgery Department. |
| 1986 | • The journal *Odontológica Maxilofacial* is launched. |
| 1992 | • *Tratamiento de las fracturas mandibulares*, the first book on OMS written in Colombia, is published. |
| 2002 | • *Universidad El Bosque* at Bogotá develops a policy whose main objective is to publish scientific papers in high-impact-factor journals. As a consequence of said policy, articles written by professors and residents begin to appear in such periodicals as the *Journal of Oral and Maxillofacial Surgery*, *British Journal of Oral and Maxillofacial Surgery*, and *International Journal of Oral and Maxillofacial Surgery*. |
| 2005-2012 | • Colombia becomes the Latin American country with the third-largest number of international residents, behind Mexico and Brazil. |
Teeth and their pathologies are frequent themes in classical music. The teeth have inspired popular songwriters such as Thomas Crecquillon, Carl Loewe, Amilcare Ponchielli & Christian Sinding; as well as composers whose works are still played all over the world, such as Robert Schumann and Jacques Offenbach. This paper examines several selections in which the inspiring theme is the teeth and the pain they can cause, from the suffering of toothache, to the happier occasion of a baby’s first tooth.

**Introduction**

Musicians from each era, from Mozart to Cole Porter have composed pieces in which the teeth and/or dentists (often improvised ones) are the main characters. Six of these compositions are presented here which cover a timespan ranging from the 16th to the 20th century, the authors of which are very diverse from one another both in wit and inspiration.

**Thomas Crecquillon and “Alix avoit aux dens la male rage”**

In 1538, the French-speaking Flemish composer Thomas Crecquillon was appointed Capellmeister and Composer of the Court by Emperor Charles V. He was a rather enigmatic personality, born somewhere between 1505 and 1515, and whose death, probably due to the plague, occurred in 1557. Crecquillon composed numerous motets and 13 masses, along with more than 200 chansons among which one for four singers (contralto, tenor, baritone and bass), three violas, and flute entitled “Alix avoit aux dents la male rage” (“Alice had a violent toothache”) in which the young Alice’s toothache is replaced by a heartache after her beloved arrives.

The text is in Old French:

*Alix avoit aux dens la male rage,*
*et ne pouvoit ce grant mal plus souffrir.*
*Son amy vint qui a peu de langage,*
*incontinent la promist de guerir,*
disant “Je sçay tous le maux que tu sens; rage d’amour passe le mal des dens.”

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The English translation is:6

Alice had a violent toothache
and could no longer suffer this great pain;
her lover came and with few words
promised to cure her immediately,
saying: “I know all the pain that you feel;
the passion of love overcomes the toothache.”

The remarkable grace of the melody has
inspired various transcriptions, among which the
most famous are those for harpsichord, presented
in “Tabulaturbuch” of 1571 by Elias Nikolaus
Ammerbach (1530-1597 - CD Naxos 8.570335, Glen
Wilson, Harpsichord 2007) and by Girolamo Dalla
Casa (1584), for lute.

Schumann and Burns: “Zahnweh”
and “Address to
Toothache”

The work of Romantic composer
Robert Schumann
(Fig. 1), arose not
only from his unique passion and intimate
sentiments, of
delicate and sensual
impetus7,8—but also
from his lifelong
dedication to art
and love which
ended in tragic
madness.9 In
1846, Schumann
composed, referring to lyrics by the Scottish
poet Robert Burns (Fig. 2), a compilation
of five lieder which made up his Op. 55.
The second piece of the compilation is entitled “Zahnweh” (“Toothache”) and is a
mixed choir (soprano, contralto, tenor and
bass), in which the description of a terrible
toothache ends in a violent complaint
against the detractors of his beloved country
land—an ending surprising only those who
are not aware of the untameable love of the “Bard
of Scotland”10 for his country.11 The piece, to be
played “with humour” according to Schumann’s
instructions, is musically-speaking “a path of great
intervals, generally decreasing but at times also in
crescendo.”12 The lied as a whole, albeit with a noble
and arioso trend, may not be immediately to the
liking of an audience who is not used to this type of
music; however the very original lyrics are a poetic
description of the most intense toothache ever
experienced.

The original Scotish lyrics by Robert Burns
of “Address To The Toothache”:

My curse upon your venom’d stang,  
That shoots my tortur’d gums along,  
An’ thro’ my lug gies mony a twang,  
Wi’ gnawing vengeance,  
Tearing my nerves wi’ bitter pang,  
Like racking engines!  
When fevers burn, or argues freezes, 
Rheumatics gnaw, or colics squeezes,  
Our neibor’s sympathy can ease us,  
Wi’ pitying moan;  
But thee-thou hell o’ a’ diseases- 
Aye mocks our groan.  
Adown my beard the slavers trickle  
I throw the wee stools o’er the mickle,  
While round the fire the giglets keckle,  
To see me loup,  
While, raving mad, I wish a heckle 
Were in their doup!  
In a’ the numerous human dools,  
Ill hairsts, daft bargains, cutty stools,  
Or worthy frien’s rak’d i’ the mools,  
Sad sight to see!  
The tricks o’ knaves, or fash o’fools,  
Thou bear’st the gree!  
Where’er that place be priests ca’ hell,  
Where a’ the tones o’ misery yell,  
An’ ranked plagues their numbers tell,  
In dreadfu’ raw,  
Thou, Toothache, surely bear’st the bell,  
Amang them a’!  
O thou grim, mischief-making chiel,  
That gars the notes o’ discord squeel,  
Till daft mankind aft dance a reel  
In gore, a shoe-thick,  
Gie a’ the faes o’ Scotland’s weal  
A townmond’s toothache!
The modern English version:13

My curse upon your venom sting,
That shoots my tortured gums along,
And through my ear gives many a twinge
With gnawing vengeance,
Tearing my nerves with bitter pang,
Like racking engines!
All down my beard the drools trickle,
I throw the little stools over the mickle,
While round the fire the children cackle
To see me leap,
And raving mad, I wish a
Heckling comb
Were in their backside!
When fevers burn, or ague freezes,
Rheumatics gnaw, or colic squeezes,
Our neighbors sympathize to ease us
With pitying moan;
But you! You hell of all diseases,
They mocks our groan!
Of all the numerous human woes
Bad harvests, stupid bargains, cutty-stools,
Or worthy friends laid in the crumbling earth,
Sad sight to see!
The tricks of knaves, or annoyance of fools
You bears the prize!
Where ever that place be priests call Hell,
Where all the tones of misery yell,
And ranked plagues their numbers tell
In dreadful row,
You, Toothache, surely bears the bell
Among them all!
O you grim, mischief-making chap,
That makes the notes of discord squeal,
Till humankind often dances a reel
In gore a shoe-thick,
Give all the foes of Scotland’s well
A twelve months toothache!

Among the versions available, the following
is worth noting on the CD “R. Schumann - An
die Sterne – Weltliche Chormusik I – Carus-Verlag
Stuttgart, 2006.”

Loewe and Claudius: “Der Zahn”

Johann Carl Gottfried Loewe (Fig. 3) German
composer, orchestra director and baritone, was
very renowned in his times above all for being the
author of lieder14-16 written between 1850 and 1860.
Unfortunately, neither the dates nor the catalogue
number are known of the lied entitled “Der Zahn”
(“The tooth”). It is not the typical complaint of a
toothache: the lyrics by Matthias Claudius
(Fig. 4), a German poet famous also by the
name of Asmus is very funny. Claudius epically
emphasizes little Alessandro’s first tooth,
which is highlighted by the initial trend of the
lied and then by the hymn of Loewe’s music.
The German
lyrics are as follows:

Die Sessel schleudre’ ich her und hin,
Um’s Feuer tanzt mit lust’gem Sinn
Die kleine Brut,
ein Schwarm von Hummeln,
Ach! Ich bin Wahnsinn und Wut!
Von allen Plagen auf der Welt,
Misstratner Ernte, wenig Geld,
Der Schurken Zanft, Die Netze stellt
Mit List und Fleiss
Und dem, was Freud’ uns sonst vergällt,
trägt du den Preis! O Schweifelhaupt im
Glutpalast, Der du die Qual geboren hast,
Und willst, dass Nebel und Morast
Auf Erden weh’,
Gib jedem, der Alt-Schottland hasst,
Ein Jahr dein Weh!

The German lyrics, by Wilhelm Gerhard,
used by Schumann for “Zahnweh” is actually, the
literal translation of the Burns’s:

Wie du mit gift’gem Stachel fast
Die Kiefern mir zerrissen hast
Mein Ohr durchdröhnet ohne Rast
Dein Marterstich.
Du bist der Nerven Pein und Last:
Fluch über dich! Stellt Fiebers Glut und Frost sich ein,
Zwickt’s hier und dort in Mark und Bein, Mitleid
und trost wird uns verleih’n Des Nachbar’s Herz;
Du aber fügst zu Höllenpein
Noch Spöttes Schmerz! Mir rieselt’s eiskalt über’s Kinn,

Fig. 3. Johann Carl Gottfried Loewe
1796–1869
Victoria! Victoria!
der kleine weiße Zahn ist da.
Victoria! Victoria!
der weiße Zahn ist da.
Du Mutter komm,
und Groß und Klein
im Hause kommt und kukt hinein,
Und seht den hellen
weißen Schein.
Der Zahn soll Alexander heissen.
"Du liebes Kind!
Gott halt' ihn dir gesund,
Und geb' dir Zähne mehr in deinen
kleinen Mund
Und immer was dafür zu beissen!"

Victoria! Victoria!
The little white tooth has come out!
Victoria! Victoria!
The little tooth has come out!
Mother! come!
Everyone in the house
Large and small!
come and peer in
And see the bright, white shine!
The tooth shall be called Alexander.
"Dear child! My God keep it healthy for you,
And give you more teeth in your tiny mouth,
As well as plenty to chew with them!"

**Offenbach: “Ah! J’ai mal aux dents”**

In 1869 at the Theatre Bouffes Parisiens in Paris, an *Opéra-bouffe* with C. Nuitter and E. Trefèu’s lyrics was played for the first time, with the music of the famous French-German composer Jacques Offenbach. (Fig. 5) (Offenbach is best known as the author of popular operetta “La Belle Hélène” or “Orphée aux Enfers,” which includes the famous galop known as the “Can-Can”). This comic work, “La Princesse de Trébizonde” (Fig. 6) is synonymous with the Parisian lifestyle of the “Belle Époque”.\(^{18-21}\)

It is a delightful operetta in three acts, with the following plot: in the first act, a company of tumblers, composed of Cabriolo and his daughters Zanetta and Regina, offers, along with his exhibitions, a collection of wax statues. Among them, the most beautiful is the “Princess of Trebizond.”

Unfortunately, Zanetta breaks the princess’s nose and to make up for this, replaces the ‘statue’ with herself. Young Prince Raphael, having paid the admission fee with a raffle ticket, sees the motionless “Princess” Zanetta and falls in love with her—but is taken away by his tutor. The tumblers discover that they have won the raffle, and the prize is a castle!

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**Fig. 4. Matthias Claudius**

1740–1815

**Fig. 5. Jacques Offenbach**

1819-1880

**Fig. 6. A poster for Offenbach’s Opéra-bouffe “La Princesse de Trébizonde”**
In the second act, the life of the tumblers in the castle is boring until the reigning Prince of the land, Prince Casimir (Raphael’s father) arrives unexpectedly during hunting season. Raphael recognizes Zanetta, and convinces his father Casimir to buy all the wax statues. Raphael also plies Cabriolo and his daughters with gold and medals, to go live with him in his castle.

In the third act, Raphael and Zanetta swear true love to each other, but Prince Casimir begins to think that his son is tricking him. The entire ninth scene is dominated by the aria “Ah! J’ai mal aux dents” (Fig. 8), chanted to the rhythm of a slow waltz, in which the young Prince feigns a toothache to avoid going hunting and instead meet Zanetta in secret. Prince Casimir pretends to leave to go hunting, but returns unexpectedly and surprises the two lovers while they are kissing. The father had hoped the son would marry a royal princess, but his wrath is rapidly neutralized by Raphael. The son reveals that he knows that his own late mother (Casimir’s wife), had also belonged to a company of tumblers! Faced with this evidence and his own memories, Casimir is moved and gives the couple his blessing to marry.

Despite its beauty, there is only one available recording of this operetta, a 1972 version played by the Orchestra and Choir of the ORTF (French Radio television) directed by Marcel Cariven. (There also exists an extremely rare Russian version from 1956). In the 1972 version, the role of prince Raphael is played by the French tenor Aimè Doniat who gives an interpretation of “Ah! J’ai mal aux dents!” which is enriched with virtuoso high notes carried out with pure nonchalance. The piece, and the entire charming third act, are undoubtedly at the highest level of Offenbach’s production. Its verve is able to capture the heart of even the listener who is less fond of opera. The original French lyrics are as follows:

**Raphael (Se tenant la joue):** Ah! Ah!
**Chorus:** Il a mal aux dents?
**Raphael:** Ah! Ah!
**Chorus:** Il a mal aux dents?
**Raphael:** Ah! Ah! J’ai mal aux dents
Ah! ça m’élance
Ah! J’ai mal aux dents
Ah! Quel tourment! Quelle souffrance

**Ah! J’ai mal aux dents**
**Ah! ça m’élance!**
**Ah, si je l’osais, de rage je mordrai, de rage je mordrai!**
**Ah, quel triste état**
**Papa, ça me bat**
**Papa, papa ça me bat**
**Ah! C’est trop souffrir!**
**Est-il un elixir pour me guérir?**
**Ah! Rien est égal a ce mal infernal**
**Chorus:** Ah! C’est trop souffrir!
**Est-il un elixir pour le guérir? Ah!**
**Raphael:** Rien est égal a ce mal infernal!
**Ah! J’ai mal aux dents**
**Ah! ça m’agace**
**Ah! Je ne puis aller in chasse**
**Ah! J’ai mal aux dents**
**Ah! ça m’agace!**
**Ah, je ne veux pas du dentiste en tout cas!**
**Je ne le demande pas!**
**Il faudrait tâcher, il faudrait tâcher de guérir sans arracher!**
**Ah! C’est trop souffrir!**
**Est-il un elixir pour me guérir?**
**Ah! Rien est égal a ce mal infernal**
**Chorus:** Ah! C’est trop souffrir! Est-il un elixir pour le guérir? Ah!
**Raphael** Rien est égal a ce mal infernal!

The literal translation in English is:

**Raphael (his hand to his cheek):** Ah! Ah!
**Chorus:** Do you have a toothache?
**Raphael:** Ah! Ah!
**Chorus:** Do you have a toothache?
**Raphael:** Ah! Ah! I have a toothache
Ah! It is a stabbing pain!
Ah! What a toothache
Ah! It’s pure torture! How I suffer!
Ah! What a toothache
Ah! It is a stabbing pain! Ah, if I could I would bite myself, for the pain I would bite myself!
Ah, what shape I am in
Father it hurts
Father, Father, it hurts
Ah! It’s too painful! Isn’t there a cure for me? Ah!
There is nothing worse than this hell!
**Chorus:** Ah, it’s too painful! Is there no cure for him? Ah!
**Raphael** There is nothing worse than this hell!
**Raphael:** Ah! What a toothache
Ah! It is pure torture
Ah! What a toothache
Ah! I can’t go hunting
Ah! What a toothache
Ah! This is pure torture!
Ah, I do not want to see a dentist!
I do not ask for one!
I need to, I need to heal without pulling it out!
Ah, it’s too painful! Is there no cure?
Ah! Nothing is worse than this hell
Chorus: Ah, it’s too painful! Is there no cure? Ah!
Raphael: Nothing is worse than this hell!

**Ponchielli, Ghislanzoni and the Aria Buffa “Dolor di denti”**

In 1873, the Italian composer Amilcare Ponchielli (Fig. 7) and the poet-librettist Antonio Ghislanzoni (Fig. 8) created a humorous aria for piano and baritone entitled “The toothache.” (Fig. 9). It is a comical piece of brilliant music, with quick and farcical lyrics. Only in the conclusion of the piece is the final chant is supported by the melody, which is sustained for a few seconds in a passionate voice. This passion marks Ponchielli, the most famous Italian opera composer between Verdi and Puccini, his pupil in Milan.22-24 It is almost certain that Ponchielli and Ghislanzoni, who was a great professional baritone, performed the aria together for the delight of a selected audience in several parlours in Milan.

In the piece, the protagonist has a toothache which he claims is more painful than death, and enables one to see at night not only the stars but also the sun. He negatively describes the various the odontological procedures he has been compelled to undergo. He tells how he was treated with fetid creosote, with a temporary filling and a permanent one in amalgam, but is still in so much pain that he requests an extraction. A friar tooth-puller arrives, whom he prays to not make him suffer too much with a tooth-key. After some hesitation, the poor man undergoes tooth extraction, only resulting in a series of tooth fractures. Exasperated, he exclaims against his teeth, the key and the friar and concludes by stating that a toothache is worse than death.

Ghislanzoni, who was also the librettist of *Aïda* by Verdi, uses layman’s terminology such as *stuccare* (temporary filling), *impiombare* (reconstruct a tooth with a amalgam filling), *tenaglie* (extraction tool); but he also shows some knowledge of the profession of a dentist when he talks about the *chiave* (tooth key) a common extraction tool of the 1700-1800s, and *Creuzot* (creosote), essential oil which was commonly used as a painkiller for pulpitis. A friar comes in to pull out the tooth—in Italy, until the first decades
of the 1900s, friars (especially those of the hospital orders) would often be in charge of minor surgery and dental extractions. There is only one recording of this piece on CD (Opus-Supraphon n° SU 39382, entitled “Il Parlatore eterno ed altre arie e romanze,” 1989), though it is not readily available, in which the famous Italian baritone M° Armando Ariostini gives a very humorous interpretation of very high vocal quality.

The original text of “Dolor di denti” is the following:

Chi provato ha il mal dei denti,
ben può dir che il morir,
al confronto sarà nulla
incidenti, incidenti
meglio la morte che il mal di denti!
Chi nel buio della notte
veder vuole stelle e sole
al Signor si raccomandi
che gli mandi, incidenti,
questa sollazzo che è il mal di denti!
Col Creuzot m’hanno appestato,
m’han stuccato, impiombato,
via buffoni, via canaglie,
Le tanaglie, le tanaglie!
Accidenti, accidenti!
Fuori, fuori strappate,
non v’o più denti!
Dio! La chiave! Santo frate,
santo frate, deh!, badate
non mi fate soffrir troppo!
Men che nulla, men che nulla!
State fermo...eccomi...si.
badate...si...sto fermo
Crac! Ah!
Dio! Che gioia!
Fermo al posto....Patatrac! Ah!
Dio che boia! Accidenti!
alle chiavi ai frati ai denti!
Meglio la morte che il mal di denti!
Accidenti ai frati, ai denti...

The English translation:

Whoever has experienced a toothache,
can well say that death,
will be nothing compared to—
damn, damn!
Better death than a toothache!
Who in the dark of the night
wants to see the stars and the sun
then pray to the Lord
who sends him—damn!—
this entertainment which is the toothache!

Sinding and “Röschen biß den Apfel an”

Christian August Sinding (Fig. 10), a Norwegian composer of a German school, was a pivotal member of the late Romantic period. He was known above all for his lied and for his piece for piano from which emerges the passionate “Rustle of Spring,” op.32 n° 3. In Sinding’s “Alte Weisen” (“Old Songs,” composed between 1882 and 1885, but published in 1890), in which six pieces are collected with lyrics by Gottfried Keller, piece number 4 entitled “Röschen biß den Apfel an” for piano and soprano is of interest to the field of dentistry. Here also, it is not a toothache described but rather the misadventures of young Rose who, as she bites into an apple, loses a baby tooth and cries inconsolably.

The music—sweet but melancholic—yields a sort of lullaby. The piece is included on the CD “Christian Sinding Songs” (Bodil Arnesen soprano/Erling Ragnar Eriksen, Piano. Naxos 8.553905).

The lyrics are originally in German and are as follows:
Röschen biß den Apfel an,  
Und zu ihrem Schrecken  
Brach und blieb ein Perlenzahn  
In demselben stecken.  
Und das gute Kind vergaß  
Seine Morgenlieder;  
Tränen ohne Unterlaß  
Perlten nun hernieder.

The English translation is:27  
Little Rose bit into an apple,  
and to her horror  
a pearly tooth broke and was left  
where she had bitten.  
And the good child forgot  
her morning songs;  
A constant stream of pearly tears  
now flow forth.”

References


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**2013 BREMNER AWARD FOR DENTAL STUDENTS (PRE/POST-DOCTORAL)**

A certificate, $500 cash prize and up to $500 travel and related expenses will be awarded to the winning unpublished essay on:

1) A subject relevant to the history of dentistry
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**Eligibility:** Contest open to all pre-doctoral students of dentistry in the US and Canada, including undergraduate students preparing for admission to dental school. Entries must be original essays, not more than 5,000 words, on a subject relevant to dental history.

**Selection:** A special committee of the Academy will judge all entries received prior to July 1, 2013, for the current year’s award. The winner will be announced prior to September 1, 2013, so that said winner may be in attendance at the annual meeting of the Academy.

**Application:** Submit essays via e-mail attachment to the addresses below in Microsoft Word format following the Instructions for Authors for the *Journal of the History of Dentistry*, along with a statement of authenticity by the Dean or responsible faculty, by July 1, 2013.

The Award is presented at the annual meeting of the American Academy of the History of Dentistry.

**Please submit papers prior to July 1, 2013.**

**Please direct all correspondence to both these e-mail addresses:**
Dr. Arden G. Christen: achristen@histden.org
Ms. Zoe E. Piel: zoe@histden.org
Instructions to Authors

The Journal of the History of Dentistry (JHD) is the official publication of the American Academy of the History of Dentistry (AAHD). Address all manuscripts and related correspondence to: David A. Chernin, DMD, MLS, Editor, Journal of the History of Dentistry, 284 Harvard St., Brookline, MA 02446 USA. Email: editor@histden.org. Note that email is the preferred means of correspondence concerning the JHD.

Correspondence

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Manuscripts to be written in English (American spelling preferred) and should be original material that has not been submitted for publication elsewhere. Manuscripts previously published in any part or form in another publication are considered at the discretion of the Editor. The Editor will acknowledge receipt of the submitted manuscript, with notification of rejection, or of the manuscript’s submission for review. At the conclusion of the review procedure, the author(s) will be notified of 1) acceptance, 2) need for revision, or 3) rejection. Upon acceptance, all rights to the manuscript must be transferred to the AAHD. Each listed author must agree that the AAHD holds proprietary rights in the accepted manuscript including all copyrights. Author(s) must sign a letter of transmittal to the JHD. No material published in the JHD may be reproduced elsewhere without the express written permission of the Editor prior to reproduction. The paper becomes the exclusive property of the AAHD when accepted for publication.

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The following instructions are necessary to minimize JHD formatting expenses to the AAHD and to ensure a uniform, professional editorial style throughout each issue and continuity from issue to issue. The preferred medium for manuscript submission is as a Microsoft (MS) Word® document (with a .doc or .docx extension) along with high-resolution electronic images of related figures (if any) attached to an e-mail message addressed to editor@histden.org. Alternatively, the paper can be submitted as a MS Word document on a CD or USB flash drive along with electronic images. Manuscripts should be submitted in the Times New Roman typeface. Authors should retain copies of all materials submitted. All pages, including the Title Page and Table and Figure legends, are to be numbered consecutively in the bottom right-hand corner. For clarity of presentation, logical subheadings should be used wherever possible. The last elements of the text should appear in the following sequence: Acknowledgements, References, Bibliographic Works Cited, and Bibliography. Papers with references in footnotes on individual pages will be returned to the author(s) for revision prior to receiving further consideration.

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The first page should list the title of the manuscript with the first letters of the main words capitalized. The title should not have more than ten words. This is followed by the name(s) of author(s), including first name(s), academic degree(s), the institutional affiliation of each author, and a short title of not more than 45 characters. In instances of multiple-authorship, indicate the author and address designated to receive correspondence. The first page should also include reference to any grant support information that requires acknowledgement, and whether the paper is based on a thesis submitted as a requirement for an advanced degree program.

Abstracts

The second page should contain an abstract of no more than 200 words. This abstract should be factual and summarize reason(s) for the study, the main findings, and the principal conclusions. Include four to eight keywords for indexing purposes.

References

References should be listed at the end of the paper, typed, double-spaced, and numbered sequentially. When citing a reference in the text, follow these examples: Smith and Jones found...
Collectors’ Corner

Samuel Wexler, DDS

The American Cabinet Company in Two Rivers, Wisconsin was one of the premier dental cabinetmakers. Their buildings are still standing, but the cabinet division is long gone. From my understanding, they started out in the 1880’s as a maker of wooden printing type and type cabinets.

The cabinet pictured belonged to a Dr. LaMar W. Harris, who practiced dentistry in downtown Chicago. He was a prosthodontist and an active member in the Prosthetic Society, and belonged to the group that in the 1930s first used acrylics in denture construction. The cabinet is ideal for someone who practiced prosthetics: the front compartment pulls out for denture trays, and the side wings open to hold forceps. The top was one of the first to have full-width medicine chest areas which would become popular from the 1910s through the 1930s.

Dr. Harris and his wife offered to sell me the cabinet in the early 1970s. At the time, I thought they were asking for too much. Little did I know then how hard it really was to find the antiques of dentistry, nor how valuable they would become. I was so impressed with this model of cabinet when I saw it again in the 1990s at our national dental museum that I decided to pursue it. I still had the original letter from Dr. Harris. I called and talked to his wife. She still had the cabinet although Dr. Harris had passed away. She agreed to sell it since she needed money to help her grandson go to law school. So, twenty years later, I got the cabinet, though for much more than the original asking price. It’s one of my favorite cabinets. I guess the moral of the story is, never give up—and save all your correspondence, you never know when you might need it!

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Dental Postcards LII

“It’s my gum, chum!”

This unused lithographic English postcard (ca. 1938) portrays a highly perturbed dentist towering over his frightened little patient. The dentist tightly grips the child’s right hand and holds up a wad of chewing gum in a most accusatory manner. The little fellow, caught in a serious bind, does his best to diffuse his dilemma with a quick confession, blustering out, “It’s my gum, chum!”

Although the dental office depicted in this drawing has features reminiscent of the late 1930’s, the sparse dental equipment and instruments lack authenticity. The dental cabinet is awkward in appearance and no dental light system is available to illuminate the oral cavity.

This card was produced by Raphael Tuck & Sons. In 1893, this distinguished English printing house was granted a Royal Warrant by Her Majesty Queen Victoria, a distinction which continued until Queen Elizabeth II ascended the throne in 1952.

In the early 1900’s, Tuck and Sons had 15,000 postcard designs in print. They also established an American branch at 122 Fifth Avenue, New York City, in addition to those they had founded in London and Paris.

On December 29, 1940, during one of the most devastating air raids of World War II, Raphael House in London was totally destroyed, and with it countless original postcards and records.

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achriste@iupui.edu
Innovative trade card printers offered their chromolithographic wares in various forms. Standard rectangular cards were the norm. Other cards were die-cut into innumerable shapes and designs, and some were embossed, with images rising up from the surface of the card. Some trade cards were functional: Ink blotters are known from the era, as well as sewing cards with inch rulers marked out along the edges. So-called “metamorphic cards” had folds or bends that made for word games or picture puzzles.

Another common variation was the bookmark advertising trade card. Although any appropriately-sized trade card could serve as a bookmark, certain cards were made specifically for that purpose. Bookmark cards could be rectangular; others were diecut. Some had blank reverse sides and many had advertising text on the reverse of the card.

The six dentistry bookmark cards pictured here are typical of those from the last third of the 19th century.

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From the Archives: Vol. 4, Nos. 3 & 4

UNIVERSITY OF LOUISVILLE SCHOOL OF DENTISTRY

The January 1956 issue of Journal of the Kentucky State Dental Association is dedicated to the University of Louisville School of Dentistry and contains, in addition to several descriptive accounts, an article on the history of that school by Robert L. Sprau, 8:15-18.

EFFECTS OF NECROPHAGOUS WORMS ON ANCIENT SKULLS

Stomatologia (Athens), 12:105-122, July-August, 1955 publishes an article by G. Daskouli on "Wood Worms in Greece from Ancient Times to the Present." It deals with the destructive effects of necrophagous worms on teeth.

DENTAL HISTORY IN THE NETHERLANDS

A request from the editor for information regarding activities in the field of dental history at the University of Utrecht has elicited the following from F. E. R. deMaar, tandarts at the Hague:

"In 1948 there was no activity at all as regards dental history, though it had been the wish of the Curators of the University that all faculties should devote attention to the history of their particular branch of science. These historical collections were joined in a foundation called 'The Utrecht University Museum.' The Museum possesses inter alia one of the three largest historical collections of microscopes of the world. As I have always been interested in antiques and historical specimens, I proposed to the Curators of the University that I should organise a historical dental museum. The next issue of the Dental Delineator will contain the first annual report of our Dental Museum. I shall of course send you a copy and I trust you will see that I have so far been very successful in my search up and down the country. I am now Curator of this Museum and I devote all my spare time to it. Occasionally I give a lecture about the history of dentistry. I am a member of the Society for the History of Science and of the Netherlands Society for the Promotion of Dentistry."

A HISTORICAL PARADOX?

QUANTITATIVE DENTAL HISTORY

A great deal of historical scholarship has been devoted to the establishment of priorities in regard to dental practice, discovery, and invention. Very often the earliest occurrence is of slight importance because the innovation is little employed or little known and therefore, for a long time, has scarcely any effect upon the development of practice and knowledge. It is much more important in most cases to determine to what extent a new procedure was practiced and when it became routine.

This information is difficult to obtain since most of the early practitioners give little indication of the extent of their operations. One of the few exceptions is furnished by Vittorio Cornelio concerning whom mention was made in the last issue of the Bulletin. For ten years from 1813 to 1822 Cornelio published an annual report of his dental practice. A summary of his detailed inventory for the year 1817 shows the practice of dentistry to be probably quite different from what most readers of dental historical literature would suppose. Here is the summary:

Prophylastic treatments 0
Fillings 20
Prosthesis (dentures, crowns) 180
Orthodontic operations 33
Surgical operations (including 47 extractions) 173
Peridental treatments 18
Therapeutic treatments (including 100 toothache cures) 122
Luxations treated 7

Total 553

It will be observed that the filling of teeth was a rather unusual operation and that surgery, prosthesis, and toothache treatments constituted most of the practice. It is unlikely that filling operations became important until well into the 19th century. But more quantitative information from the practice of numerous dentists should be collected, if possible.

ETIOLOGIES OF PERIODONTAL DISEASE

H. Euler (Deutsche Zahnärztliche Zeitschrift 10:249-257 Feb. 15, 1955) traces the concept of the etiology of periodontal disease as time changes ("Die Auffassung von der Parodontose-Etiologie im Wandel der Zeit").

ERA OF CONSTITUENT SOCIETY CENTENNIALS

In the next three decades, more than half of the state and territorial dental societies will celebrate the hundredth anniversary of their foundation. Four were established by 1860; 18, between 1861 and 1870; and 9, between 1871 and 1880.
WHEN WAS AMALGAM FIRST USED FOR FILLING TEETH?

Curt Proskauer calls attention to an article in Chinese listed in Current Work in the History of Medicine, July-September 1955. (The Wellcome History of Medicine Library) p. 99, No. 12, as follows:


This claim, if true, is interesting, but as with other respects in which the Asians have anticipated the Western World in the technics of dentistry, there is no reason to expect that the introduction of amalgam into dental practice early in the nineteenth century was in any wise inherited from previous Oriental use. The same lack of a known relation exists with regard to the toothbrush present in China many centuries before found in Europe and full dentures without springs in Japan as early as the sixteenth century.

THREE HISTORICAL ARTICLES IN DENTAL ECHO

Dental Echo for February 1955 includes the three following articles of historical interest:


"Dr. h. c. Zahnarzt Wilhelm Herbst (1842-1917)" (25:11-13)

"Instrumentenfibel" (25:13-21) (Primer of Instruments)

This article gives the development of various types of extraction instruments.

DEATH OF GEORGE SARTON

George Sarton, the most distinguished historian of science, died March 22. He was professor of the history of science at Harvard University, author of several well-known works in that field, and editor of the journals Isis and Osiris, devoted to the history of science. Professor Sarton would have completed his seventy-second year August 31 of this year.

REMINISCENCES OF EARLY VIRGINIA DENTIST

The Peninsula Dental Society (Newport News, Va.) held its fall meeting in honor of Dr. Carter Perkins who died in 1926 at the age of 94. In addition to some biographical notes, an article by Dr. Perkins, which appeared in the Daily Press and
Times Herald of Newport News in 1907, was republished in the Bulletin of the Virginia State Dental Association 33:18-24 March 1956. The article entitled "Dentistry Fifty-Seven Years Ago" gave Dr. Perkins' recollections of dentistry as practiced when he entered the profession in 1852.

THE MICHIGAN CENTENARY

The centennial issue of the Journal of the Michigan State Dental Association (February 1956) contains a number of articles on the history of dentistry in that commonwealth. Marcus L. Ward contributes two articles. One, entitled "100 Years of Continuous Existence", (38:34-40) is a critical study of the claims of Michigan and of contesting states for the honor of being the oldest continuously existing state dental society. The second article by Dr. Ward is "Development of Dentistry in Michigan" (38:41-51).

Rene Rochon's article (38:52-61) concerns "Dental Education in Detroit." Russell W. Bunting writes on "Dental Education at the University of Michigan" (38:62-76). Fred Wertheimer contributes "Public Health Dentistry in Michigan" (38:77-83) and Kenneth A. Easlick takes a look into the future in "Beyond the Horizon" (38:84-99).

HISTORY OF DENTISTRY IN ARKANSAS

The projected history of dentistry in Arkansas is apparently well on its way to publication. Recently the History Committee, of which Dr. F. W. Dietrich is chairman, issued a tentative outline of the book advertised for $10.00. The book is being compiled by F. W. Whiteside of Camden, Arkansas.

In the Arkansas Dental Journal (27:19-20 March 1956) Dr. Dietrich has contributed two short biographies of "Pioneer Dentists of Fayetteville"; namely, Charles Richardson (d. 1925) and James R. Southworth (c. 1856-1929).

CAREER OF DR. FREDERICK S. MCKAY

A sketch of the life and contributions to dental science of Dr. Frederick S. McKay appears in Journal of the Colorado State Dental Association 34:8-11 March 1956. His pioneer field studies of mottled enamel have been among the most important in the investigation of fluorine in water supplies and dental fluorosis.

NAVY DENTAL CORPS

The Naval Dental Corps News in its issues of January 11 and 18 continues the historical resume begun in November. These numbers of the bulletin deal with "Dental Technician Schools--1925 to 1955" and "Dental Officer Training from 1919 to 1945."
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The impressive Appendix lists every ADA annual session site, all former presidents, secretaries, executive directors and other notables of the organization.

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Tom Brown: Victorian Middlesbrough Dentist
by Dr. Anthony Brown

This biography combines “family, dental, social and local history” in telling the story of Tom Brown’s determination and ingenuity in achieving professional and economic success in the late 19th century. The inclusion of numerous images (photographed, developed and printed by Tom Brown himself), and annotations blended throughout provide additional insight into the subject’s social and cultural milieu. In addition, the author has been able to accurately describe dental practice during this period, with its emphasis on the so-called “mechanical dentistry” provided by dentists prior to the expansion and integration of the commercial dental laboratory system in the twentieth century.

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The Toothpick and its History

by Dr. Hans Sachs
Translated by Anna C. Souchuk, PhD
Published by Steven Potashnick, DDS
Soft cover, 51 pages, 86 illustrations

There have been a number of English language articles about the toothpick. J. Menzies Campbell’s 1952 paper (Campbell JM. Toothpicks and toothbrushes. Dent Items of Interest. 1952;74: 295-305.) is of particular note. However, Der Zahnstocher und Seine Geschichte eine kulturgeschichtlich-kunstgeschichtliche studie (The Toothpick and its History: A cultural-historical and arts and crafts study) remains the premier reference resource. We must congratulate Dr. Potashnick for the time, effort and cost in providing this English translation.

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A Guide to Bone Toothbrushes of the 19th and Early 20th Centuries

by Dr. Barbara E. Mattick
While this book’s primary audience is archeologists, the subject of toothbrushes is intimately connected to our profession. A valuable reference source has been provided to those with an interest in collecting bone toothbrushes, and for anyone with an interest in dental history. Dr. Mattick has assembled, in a useable and well-visualized monograph, essential information for identifying such material. The basis of this book is derived from research for her master’s thesis in anthropology, which proved that “bone toothbrushes are excellent dating tools for historical archaeologists.”

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A Sourcebook of Dental Medicine

Being a Documentary History of Dentistry and Stomatology from the Earliest Times to the Middle of the Twentieth Century.

by Gerald Shklar, DDS, MS
& David A. Chernin, DMD, MLS
864 pages, hardcover

The aim of this book is to make available to the profession of Dental Medicine and other interested parties the extensive literature of the past dealing with the diagnosis, description, causes, treatment and prevention of oral diseases. Drs. Shklar and Chernin are presenting the original texts concerning the diagnosis and management of oral diseases ranging from ancient Egypt through the world of the 20th Century.

Many of the basic texts of the past have already been translated into English, French and German from the original Sanskrit, Greek, Latin and Arabic. However, a number of important texts have never before been translated into English. The authors are presenting all these materials to the English-reading professionals in medicine and dental medicine in this 864-page reference book.

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Intriguing and Eccentric Characters & Stories from the World of Dentistry

by Arden G. Christen, DDS, MSD, MA
& Joan A. Christen, BGS, MA

In this 230-page book, the authors have glimpsed into the lives of 32 dental characters: professionals who range from the noble to the bizarre. Introducing this work is a chapter on one of the most memorable and controversial characters of all time, Dr. Painless Parker (1872-1952). All of these fascinating individuals have left indelible marks on their chosen profession. The stories from this collection may be inspiring or infuriating, ingenious or absurd, credible or questionable—but seldom are they dull.

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Limericks With A Smile:
Dental, Oral and Facial Limericks of Yesterday and Today

by Joan A. Christen, BGS, MA
& Arden G. Christen, DDS, MSD, MA

The authors have compiled 188 previously-published limericks related to dental, oral and facial themes; plus they offer an additional 384 personally-composed limericks. The humorous verses in this collection are at once bawdy, whimsical, ludicrous and cynical, and though simple in format, they communicate in few words their strong, sometimes paradoxical message. 159 pages with complete index.

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A Little Treatise on the Teeth:
The First Authoritative Book on Dentistry (1563)

by Bartholomæus Eustachius
Edited by David A. Chernin, DMD, MLS
& Gerald Shklar, DDS, MS

This volume presents the first direct English translation from the original Latin Libellus De Dentibus, and maintains the Latin and English texts on facing pages. His conceptual advances concerning tooth development and function were further buttressed by detailed plates of the musculature of the face, floor of the mouth, the neck, the tongue, and the roots and crowns of the teeth. In addition to giving us the first clear description of the dental pulp and root canal, Eustachius also conceived of the periodontal membrane as a gomphosis. Eustachius’ observations are an illuminating precursor to 21st-century medical science, and still represent a timely and relevant reference for any practicing dentist.

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Flower of Remedies Against the Toothache
by M. Arnauld Gilles, Operator for the Aches of the Teeth

The first French text on dentistry and the diseases of the teeth. This work was published in 1621, more than 100 years before Pierre Fauchard’s classic work Le Chirurgien Dentiste. Re-discovered by Dr. Jacques R. Foure, who translated the work into English, he has provided us with an insight into the clinical treatments that were available in early 17th century France. M. Arnauld Gilles was a Parisian dental practitioner who was fully recognized by the state licensing authorities as “Operator for the Ache in the Teeth.”

The printing of the book has the left-hand pages as an exact facsimile of the original French text, with the English translation on the right facing page.

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Painless Parker: A Dental Renegade’s Fight to Make Advertising Ethical

By Arden G. Christen and Peter M. Pronych

Throughout his professional life, Painless Parker—a self-promoting dental crusader and patient advocate—sought to gain respectability from the profession of which he was a member. Instead, he was rejected by his colleagues because he used the unacceptable practice of advertising blatantly to the public. The ultraconservative Profession of Dentistry regarded Painless as an outlaw, a renegade, a fraud, a charlatan, a quack, a scoundrel, a thorn in the side, and above all else—unprofessional. However, Painless may have been years ahead of his time as he can be credited with pioneering many innovative practices now accepted by modern dentistry. He developed and perfected the concept of group dental practice. As he stated, “You (the dentist) have to be organized, systematized, capitalized, advertised, standardized and specialized.” This 491 page book tells Painless’ story as he wanted it told: from his perspective, using many of his own words.

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A History of Dentistry in the US Army to World War II

By John M. Hyson, Jr., Joseph W.A. Whitehorne & John T. Greenwood
890 pages hardcover

Dental health has been a core requirement for soldiers since the earliest military history. When the muzzle-loading rifle made strong teeth critical to the operation of weapons, dentistry as a profession did not yet exist to assure this element of soldier fitness. This book documents the reciprocal influence of the maturation of the dental profession, and establishment of Army dental care programs. The theme of symbiosis of civilian and Army dentistry defines this period of dentistry’s history, in this well-illustrated volume, written by three accomplished historians. The project took over ten years and was initiated and supported by the Office of the Chief of the U.S. Army Dental Corps, and sustained during the tenures of five of the men who occupied that position.

$79
Use the search function where the subject, title, first author (Hyson), Stock Number (008-023-00137-5) or ISBN (9780160821592) can be entered to locate the book.
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