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Peter Meyerhof was born in London England and spent 18 formative years in Halifax Nova Scotia. He attended Dalhousie University, where he obtained a Bachelor of Science degree with honors and a Masters of Science degree in biology. He continued in a graduate program at the University of Toronto where he was awarded a PhD for his research in the field of cell cycle control mechanisms in very early development. He pursued this work during a postdoctoral assignment at the University of California Berkeley.

A brief term as assistant professor at SUNY Buffalo convinced him that he would much rather work for himself in a better environment and have time to pursue other interests, one of these being history. Thus he put away his microscope and re-directed his career to the discipline of dentistry. He returned to California and entered the University of California San Francisco School of Dentistry where he graduated in 1989. For the last 20 years, he has been in private general practice in Sonoma, California.

Dr. Meyerhof has conducted research and published articles in the fields of biology and dental history. Other than collecting historical artifacts relating to oral hygiene, his main interests in dental history pertain to significant early American dentists and their interactions with their contemporary societies. His first book has been accepted for publication. It is the first comprehensive biography of Dr. Robert Semple, California’s most politically active dentist and his role in bringing California into the United States during the 1840s. Several aspects of this story have been presented to historical societies over the past several years.

“I am grateful for this opportunity to serve the American Academy of the History of Dentistry as your President, at this time when both the organization and myself enter our 60th year of existence. For the Academy, it is a time to reflect on our mission to encourage the study and teaching of dental history. There is little need to encourage our members to do what they already enjoy, but we can all benefit from our informative web site that now provides valuable primary source material and facilitates communication among members with common interests. Our meetings have come to provide a thoroughly enjoyable and educational experience among friends and our improved journal provides an excellent means to share our research with others.

“The past few years, under the talented leadership of our executive director Dr. David Chernin, have seen our Academy reach new heights of professionalism with unprecedented service to our members. It is now time for us to look outside our organization for growth, for recognition, and above all for collaboration with those whose interests intersect with our own. These are the requirements of a society that wishes to survive and prosper. I would very much welcome all ideas that may help us grow. This is your Academy, and should reflect your interests and goals.”
Norman W. Kingsley (1829-1913) of New York City was one of the great contributors to the early development of orthodontics and cleft palate therapy. His biographical chronology is presented, based largely on a little-known autobiography published in 1907 when he was 77 years old. Also presented is a Kingsley bibliography with key publications by and about this remarkable pioneer in orthodontics.

Norman William Kingsley, MDS, DDS h.c. (1829-1913) was one of the great contributors to the early development of orthodontics. (Figures 1-3) Kingsley traditionally has shared the sobriquet “Father of Modern Orthodontics” with another seminal figure 26 years his junior, Edward Hartley Angle.

Dr. Kingsley’s breadth of interests and skills defies any simple categorization. His personal inventory would include him being a consummate autodidact, a master of materials, an exacting clinician, a problem-based thinker, a talented artist and a man of exceptional sociability. In the 1850s, when Kingsley began “regulating” teeth in private practice, nothing was established in orthodontics. He reflected on that pioneering time 50 years later: “There were no orthodontists. We had no settled system. We were empiricists—experimenting, inventing and trying out our plans. I was devising new ways to meet every emergency.”

At age 19, young Norman was introduced to dentistry through his uncle who was a physician-dentist. He began thinking that dentistry would be an ideal career, one that would capitalize on his considerable dexterity and artistic skills.1

Correspondence: Dr. Sheldon Peck
peckslam@att.net
After a short apprenticeship, Kingsley entered dental practice with no formal degrees; only later was he awarded a master’s degree and doctor’s degree to honor his outstanding contributions. In his career, Kingsley invented many novel and useful dental instruments, appliances and methods, mostly unpatented and freely available to professionals everywhere. He developed new obturators with vulcanized soft rubber vela (“artificial palates”) which gave cleft palate patients their first chance to speak and function normally. He introduced vulcanized rubber fixed and removable inclined plane appliances that were capable of “jumping the bite” to correct what we know now as Angle Class II malocclusions— forerunners of today’s functional appliances. He aptly named his remarkable jaw changing methods “mechanical surgery”—getting the dramatic results of jaw surgery, without surgery.

Dr. Kingsley was a masterful amateur artist, creating portrait sculptures and other art works that received critical acclaim in his lifetime.

Presented here is a biographical chronology for Dr. Norman William Kingsley, based largely on his little-known autobiography published in 1907 when he was 77 years old. Also presented is a Kingsley bibliography with key publications by and about this great pioneer in orthodontics.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 26, 1829</td>
<td>Born in Stockholm, New York, to Nathaniel Kingsley and Eliza Williams Kingsley, the eldest of six children. Father’s ancestors arrive in America from England in 1634.</td>
</tr>
<tr>
<td>1833-1842</td>
<td>Spends childhood in Poultney, Vermont, and Pittsford, Vermont.</td>
</tr>
<tr>
<td>1839</td>
<td>Takes first paid job, at age 9, building the fire each morning at the schoolhouse.</td>
</tr>
<tr>
<td>June, 1842</td>
<td>Kingsley family relocates to a farm in Bradford County, Pennsylvania. Norman helps out on farm during growing season and attends school in Troy, New York, during winter.</td>
</tr>
<tr>
<td>Spring 1845</td>
<td>Takes first salaried position, at age 15, as a store clerk in Elmira, New York. Paid $50 per year plus board. Gives half to father.</td>
</tr>
<tr>
<td>1845-1847</td>
<td>While in Elmira, Kingsley develops a local reputation as an artist with wood and copper engravings.</td>
</tr>
<tr>
<td>Spring through Summer, 1850</td>
<td>Completes a six-month apprenticeship in dentistry with his uncle, Dr. Albigence W. Kingsley in Elizabeth, New Jersey.</td>
</tr>
<tr>
<td>1850</td>
<td>Marries Alma W. Shepard. The Kingsleys would have two daughters.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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<tr>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fall, 1850</td>
<td>In partnership with Dr. B. C. Leffler in Oswego, New York.</td>
</tr>
<tr>
<td>December, 1850</td>
<td>Opens own office in Oswego, New York.</td>
</tr>
<tr>
<td>Late 1851</td>
<td>Works for his uncle, A. W. Kingsley, in Elizabeth, New Jersey. Begins sculpting, emulating well-known dentist-sculptor Solyman Brown of New York City.</td>
</tr>
<tr>
<td>May, 1852</td>
<td>Goes into association with Dr. Solyman Brown in Washington Square, New York City.</td>
</tr>
<tr>
<td>Early 1853</td>
<td>Works for Dr. Charles W. Ballard at 858 Broadway, New York City; later that year, opens his own office in New York City.</td>
</tr>
<tr>
<td>May through November, 1853</td>
<td>Exhibits several sets of artificial teeth at the 1853 World’s Fair in New York City. Takes first prize for porcelain teeth.</td>
</tr>
<tr>
<td>1855</td>
<td>Exhibits artificial teeth at the Exposition Universal in Paris, France. Again wins top award.</td>
</tr>
<tr>
<td>1859</td>
<td>Treats his first cleft palate case. Devises an artificial palate of soft vulcanized rubber.</td>
</tr>
<tr>
<td>1863</td>
<td>Awarded gold medals in recognition of his achievements in cleft palate work by both the American Dental Convention in Saratoga, New York and the Odontographic Society of Philadelphia.</td>
</tr>
<tr>
<td>December, 1864</td>
<td>While touring Europe, devises an artificial palate prosthesis for general use with oral deformities.</td>
</tr>
<tr>
<td>1865-1869</td>
<td>Is one of the founders of the New York College of Dentistry [now the New York University College of Dentistry]; professor of dental art and mechanism (1866-1869); first dean of faculty (1866-1869).</td>
</tr>
<tr>
<td>1867</td>
<td>Is snubbed by the newly-founded Odontological Society of New York, years later invited to become a member.</td>
</tr>
<tr>
<td>1868</td>
<td>New York Legislature enacts a law creating the Dental Society of the State of New York; Kingsley is chosen as one of the delegates to form the state society.</td>
</tr>
<tr>
<td>1868</td>
<td>Sculpts a celebrated marble bust of Christ, now at the School of Dental Medicine, University of Pennsylvania, Philadelphia.</td>
</tr>
<tr>
<td>1869-1884</td>
<td>President of the Board of Censors [Examiners] of the Dental Society of the State of New York. Receives “Master of Dental Surgery” (M.D.S.)degree, conferred by the Board in 1869 for his superior attainments.</td>
</tr>
<tr>
<td>1871</td>
<td>Awarded honorary D.D.S. degree by Baltimore College of Dental Surgery in recognition for his innovative work in artificial palates.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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<td>--------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1878</td>
<td>Sues Dr. Kasson C. Gibson, his assistant and preceptee from 1872-7, for expropriating fees for himself that were due to Dr. Kingsley. He sought Gibson’s arrest and payment of $1000. Gibson was ultimately exonerated by court decision. (^2)</td>
</tr>
<tr>
<td>1878</td>
<td>Writes and illustrates “The Mechanism of Speech” which Kingsley considered to be his most important monograph.</td>
</tr>
<tr>
<td>1880</td>
<td>Kingsley’s classic book A Treatise on Oral Deformities as a Branch of Mechanical Surgery is published in New York.</td>
</tr>
<tr>
<td>1880</td>
<td>Elected a member of the exclusive Lotos Club of New York City. Here he befriends men of importance and celebrity, such as Whitelaw Reid, newspaper editor and future US Vice-Presidential candidate. (^3)</td>
</tr>
<tr>
<td>1881</td>
<td>German translation of Kingsley’s book is published under the title Die Anomalien der Zahnstellung und die Defecte des Gaumens.</td>
</tr>
<tr>
<td>1881</td>
<td>Reads his scholarly paper “Civilization in its Relation to the Decay of Teeth” before the 7th International Medical Congress in London.</td>
</tr>
<tr>
<td>Summer 1884</td>
<td>Sculpts a portrait bust of Hon. Whitelaw Reid, casts it in bronze and presents it to the Lotos Club in 1885, during Reid’s tenure as Club president. (^3)</td>
</tr>
<tr>
<td>1886-1887</td>
<td>Elected president of the Dental Society of the State of New York.</td>
</tr>
<tr>
<td>1888-1889</td>
<td>Due to a crippling rheumatic condition, Kingsley effectively turns over his practice to Dr. Rodrigues Ottolengui and undergoes medical treatment in Europe.</td>
</tr>
<tr>
<td>1890s-1904</td>
<td>Takes many voyages to Europe during this time to seek treatment for his recurring rheumatic disease. Begins experimenting in pyrography, the technique of artistically burning images on wood; copies twelve Rembrandt paintings on to holly-wood panels, using the variable gas-flame portable blowpipe he invented for dentistry. Retires in Warren Point, New Jersey.</td>
</tr>
<tr>
<td>1907</td>
<td>Writes a 44-page autobiography for publication in Dental Brief in six monthly installments.</td>
</tr>
<tr>
<td>1908</td>
<td>Kingsley, age 78, writes his final paper, an open “letter to the Alumni Society of the Angle School of Orthodontia,” an inspirational charge for excellence and exactness. (^1)</td>
</tr>
<tr>
<td>February 20, 1913</td>
<td>Dies in Warren Point, New Jersey, at age 83. Dr. Calvin S. Case eulogizes him as “the most ingenious man of his day.”</td>
</tr>
</tbody>
</table>
References

Unless otherwise noted:


Other References:


Kingsley Bibliography

Selected Works by Norman William Kingsley:


Kingsley NW. “Gold not the ideal filling.” *Dental Items of Interest*. 1898:651-3.


Selected Works About Norman William Kingsley


Wahl N. *Who was who in orthodontics with a selected bibliography of orthodontic history.* First Books Library, 2002:44-5.


Weinberger BW. *Orthodontics; an historical review of its origin and evolution, including an extensive bibliography of orthodontic literature up to the time of specialization.* 2 volumes. St. Louis: CV Mosby, 1926; vol.2:508-13.
Introduction

Radiographic images are two-dimensional projections of three-dimensional volumes. Dissociating the superimposed shadows and interpreting such images can be difficult. Localizing particular objects three-dimensionally is especially challenging using two-dimensional (2-D) radiographs. Three-dimensional (3-D) dental radiographic imaging enhances interpretation and is widely accepted and used in general dental practice. Radiographic 3-D imaging is not a novel idea, with roots extending as far back as dental radiography itself. Although modern dental 3-D imaging most commonly involves computed tomography (CT), the early technique of stereoradiography continues to have relevance today. This paper reviews the development of early radiographic localization techniques and follows stereoradiography to its present applications.

Brief review of dental radiographic history

On February 22, 1890, Arthur Goodspeed inadvertently created the world’s first x-ray image (of two coins), but was unaware of what he had done until he read Wilhelm Röntgen’s seminal report on x-rays in 1895. Dental radiography evolved very rapidly after Röntgen’s discovery. Only three months later, Otto Walkoff produced the first dental radiograph. Walkoff’s image required a 25 minute exposure and was not of diagnostic quality. Only one month later, Wilhelm König reduced the exposure time to 9 minutes and produced radiographs of much better diagnostic quality.

In early 1896, C. Edmund Kells read about the discovery of x-rays by Röntgen. After ordering the needed equipment and building his own x-ray machine, Kells became the first dentist in the United States to take a dental radiograph on a live patient. In July 1896, a mere eight months...
after Röntgen’s discovery of the x-ray, C. Edmund Kells demonstrated the diagnostic value of dental radiographs for the members of the Southern Dental Association in Asheville, North Carolina.4

Despite such rapid expansion of the emerging field, dentists were initially slow to adopt the use of diagnostic dental radiographs. A 1909 study found that fewer than a dozen U.S. dentists were using dental radiographs.4 Even by 1930, fewer than half of dental school graduates purchased x-ray machines when first equipping their offices.6,7 Most believed that the technique was too difficult and felt it should be left to specialists and used only in rare cases. Furthermore, at the turn of the century, electric power was also in its infancy and not universally available.

Widespread adoption of dental radiography was also slowed because few x-ray devices were available commercially. Although commercial x-ray machines were available as early as 1898, many dentists (like Dr. Kells) acquired Crookes-style x-ray tubes and built their own machines.4 In 1913, William Coolidge, of General Electric’s research laboratory, developed the hot-cathode x-ray tube, which permitted more reliable imaging.8, 9 That same year, Kodak began producing pre-packaged dental film.2 As more dental x-ray equipment was manufactured and sold commercially, dental radiography became an established diagnostic technique.

**Traditional dental radiographic localization techniques**

Dentists learned that multiple radiographic images obtained from different angles provided better information to localize objects. Two dental localization techniques that use multiple angled radiographs are notable: Clark’s Rule and the Buccal Object Rule (BOR).10, 11, 12 In 1909, Clark reported a radiographic procedure for the localization of impacted teeth. He wrote:

...if we wish to ascertain [where] a buried canine is lying, three radiographs are taken: the first directly over the suspected tooth, and which we will call the central position, and another mesial to this position, while the third is taken distal of the first or central position. Each of the three radiographs must be marked immediately [after] they are taken, or confusion will arise. With the three radiographs placed in their relative position[s], we carefully note the position of each tooth shown in the central radiograph, and by comparing it with the other two the position of the buried tooth, whether it is on the palate or whether it is situated labially, can be ascertained readily with a little practice.10

Clark’s localization technique never became popular due to the number of films used and the vagueness of his instructions. In 1952, Richards proposed the BOR, which has been embraced, taught and widely used by practicing dentists.11 This rule can be applied throughout the mouth to discern the spatial relationship between two objects. The name of the rule comes from the idea that it can distinguish a more buccal object from a more lingual object. The rule is: When two different radiographs are made of a pair of objects, the image of the buccal object moves, relative to the image of the lingual object, in the same direction that the x-ray beam is directed.11

**Development of 3-D radiographic localization techniques**

Early radiography was heavily utilized for localization of impaled projectiles in military personnel. Prior to the advent of radiographs, military surgeons probed wounds with fingers and instruments to locate impaled foreign bodies. Because such projectiles often took unpredictable paths, attempts to find them by probing often proved futile.13, 14 Even with antiseptic precautions, such probing risked precipitating serious infections.13, 14

Within five months of Röntgen’s 1895 discovery, Giuseppe Alvaro used radiographs to pinpoint bullets lodged in the arms of two Italian infantrymen during the Abyssinian campaign.15 In the Spanish-American War, the new radiographic technology enhanced the localization and surgical removal of shrapnel.13, 14 However, ordinary radiographs were often not exact enough to guide operations. Surgeons needed more information regarding the size of the retained object, and its position and depth within the tissues.16
In 1898, James Mackenzie Davidson first described the “cross-thread” device for radiographically localizing foreign bodies (Fig. 1). His device used an x-ray film overlaid by a radiopaque (wire) cross. This film was then “double-exposed” with two exposures separated by a tube-shift. Then the patient was removed and the film was developed and repositioned with threads recreating the paths of the x-ray beams from the tube positions to the images of the object of interest. The intersection of the threads noted the 3-D location of the object, which could be further quantified using geometric measurements from the wire-cross grid. In 1900, William Borden reviewed the use of radiography during the Spanish-American War and noted the superior accuracy and reliability of the “cross-thread” triangulation method. S. Shanks reported that “several hundreds” of methods existed and that nearly all were variants of triangulation or Davidson’s cross-thread technique.

**Stereoscopy**

World War I further encouraged the development of localization techniques for embedded shrapnel. WWI-era radiologists (including MacKenzie Davidson) used stereoradiography, a technique similar to photographic stereoscopy, for object localization. Stereoscopy creates a 3-D illusion from a pair of 2-D photographs. These photos are taken from slightly different angles separated by a distance approximating the separation between a typical person’s eyes. The two photos then have perspective viewpoints similar to the view seen by each eye. The brain perceives a single image with the appearance of depth when these image pairs are viewed with each eye seeing only the appropriate image. A stereoscope permits such visualization by allowing each eye to see only the appropriate picture of the stereophoto pair (stereogram).

The idea of stereoscopy was actually conceived before the advent of photography. Giovanni Battista della Porta and Jacopo Chimenti da Empoli produced drawings creating binocular 3-D views in the early 1600s. In 1613, Francois d’Aguillion first coined the term “stéréoscopique”. Charles Wheatstone first described the stereoscopic visual phenomenon and a stereoscopic viewing device, the “stereoscope,” in 1838. After the invention of photography in 1839, it was possible to use photographs instead of drawings. As photography developed, so did 3-D stereoscopic photography. Henry Collen is believed to have made the first stereoscopic (calotype) photo in August 1841. Because Charles Wheatstone’s large mirror stereoscope of 1838 was not practical for use with photographs, stereoscopy languished until 1851, when David Brewster designed a simple hand-held, portable lenticular stereoscope. These viewers became popular items in Victorian drawing-rooms. In 1861, Oliver Wendell Holmes began producing affordable hand-held stereoscopes for the American market. Stereo use became ubiquitous and millions of stereograms were sold, circulated and exchanged until newspapers began reproducing photographs in the 1920s. The GAF View-Master™ is a well-known contemporary example of a stereoscope.

**Stereoradiography**

Stereoradiography is a 3-D radiographic imaging technique based on 3-D stereoscopic
photographic techniques. Stereoradiography requires two radiographic images exposed from slightly different angles and viewed with a stereoscopic viewer. Similar to photographic stereoscopy, stereoradiography provides a sense of perspective and illustrates the relationships and distances between the viewed structures.

Photographic and radiographic stereoscopy have notable differences. Photographs depict surfaces while radiographs depict the shadows of radiotransparent and radiopaque objects. The degree of radiotransparency or opacity is a function of an object’s thickness and atomic weight. In photography, the objects closest to the film are the most sharply defined. The same is true in radiography; however, because radiographs are typically viewed from the perspective of the tube-head, the objects nearest the viewer are not the most sharply defined. In photographs, objects that obscure other objects are known to be closer to the viewer. In radiography, however, an obscuring radiopaque object can be anywhere between the tube and the film. Because x-ray images are made with approximately collinear (collimated) rays, some stereoscopic distortion can occur.25

To prevent or minimize stereoradiographic distortion, Jarre and Teschendorf make five recommendations:26 1) The observation should take place at the same distance as the exposure (tube-film distance). 2) The distance of the tube shift should correspond to the interpupillary distance of the observer. 3) The central ray of each exposure should strike the film perpendicularly. 4) Each film must be viewed by the proper eye (i.e. the right tube-shift image must be viewed by the right eye). 5) The films must be viewed from the proper side (as if viewed from the tube head). Some distortion can be mitigated post-exposure with digital image rectification, or “warping.”25, 27

Jarre and Teschendorf suggested a tube shift equivalent to the viewer’s interpupillary distance or approximately 6.5 cm.26 Wu recommended a tube-shift of 6º (degrees).28

Weissleder suggested a tube shift of approximately 6º, or a distance of approximately 10% of the target-film distance.29 Ferwerda recommended a tube-shift of 1/30th of the tube-object distance, arguing that distortion becomes disturbing for angles greater than 3º.30 Because the tube-film distance is so small with dental periapical radiographs, a tube-shift of an interpupillary distance creates a wide viewing angle. Consequently, for dental applications, tube-shift distances may be reduced. O’Brien suggested a tube shift of only 3mm for dental stereoradiography.31

The first application of stereoradiography is attributed to Elihu Thomson of General Electric’s research laboratory in 1896.32 Contemporarily in 1896, Czermak and Imbert and Bertin-Sans also described stereoradiography (Fig. 2).33, 34 Later in 1896, Rémy and Contremoulins used it for vascular studies on cadavers using injected radiopaque dyes.35,36 In 1898, W.S. Hedley claimed to be the first in Britain to use and propound stereoradiography.37 Also in 1898, Howard Marsh and James Mackenzie Davidson reported the surgical removal of a bullet from a leg using stereoradiography for localization of the projectile (Fig. 3).38, 39 From 1900 on, the Belgian military physician E. Henrard also utilized...
stereoradiography. In 1901, John Hall-Edwards reported good success using stereoradiography for visualizing fractures and localizing embedded bullets. These pioneers and others contributed to the rise of stereoradiography.

Throughout the world, growing interest in the technique propelled conceptual development and manufacturing of stereoradiographic equipment. In the 1910’s, the U.S. military used the Wheatstone Illuminator. This device was a Wheatstone Stereoscopic Viewer modified with illuminated x-ray light boxes (Fig. 4). Similar models were produced using either prisms or mirrors for viewing and were manufactured by Victor; Westinghouse; Reiniger, Gebbert & Schall and Curry & Paxton. More portable lenticular radiographic stereoscopes were also used (Fig. 5).

Dental stereoradiography demonstrates the relative positions of objects in the oral region. These spatial relationships can be seen in 3-D and the structures can be appreciated without the need for mental reconstruction of multiple 2-D images. Examples of useful dental applications include: visualizing the bucco-lingual curvatures of roots, localizing canals within roots, evaluating the relationship between mandibular third molar roots and the mandibular canal, determining the proximity of the maxillary sinus to tooth roots, assessing bony fractures, verifying the spatial orientation of impacted teeth and localizing foreign bodies.

Current 3-D radiographic imaging techniques

Today, tomography and computed tomography (CT) have largely replaced stereoradiography for 3-D imaging. Tomography is a radiographic technique that moves the x-ray source and detector relative to the patient to create a particular plane (or “slice”) in better focus than the other layers. CT, including cone-beam CT or CBCT, is the digitally-enhanced evolution of tomography. Current dental CT imaging systems provide excellent diagnostic images with planar “cuts” and can even produce simulated or “virtual” 3-D reconstructions. These digitally reconstructed virtual images provide 3-D views on a computer screen without the need for a specialized viewer.

Compared to conventional radiography, however, CT requires a relatively expensive imaging system and a higher radiation dose. Consequently, stereoradiography can be an appropriate screening tool for initial diagnostic examinations. This is especially true in dentistry, where 2-D “plain” films or 3-D stereoradiograms may be useful for screening evaluations prior to ordering dental CT scans.

Despite some advantages of stereoradiography, the doubled film cost and patient exposure, the need to use a stereoscopic viewer and the rise of CT, have limited its acceptance in clinical dental practice. More recently however, the reduced radiation exposure of digital radiographs has made the extra images taken for stereoradiography more acceptable.
Fig. 4. Wheatstone Stereoscope of James MacKenzie Davidson, made by Curry & Paxton (1898). Courtesy of BMJ.  

Fig. 5. Hand stereoscope with dental stereoradiogram

Fig. 6. Prototype dual-monitor system for dental stereoscopic viewing. Courtesy of H. Peter Wu.
Developments in digital imaging and display technologies have further renewed interest in and enhanced the capabilities of stereoradiography (Fig. 6). The technique remains studied and used academically, but no dental stereoradiography systems are commercially available.

Digital stereoradiography is currently used in medical radiology for 3-D mammography to localize lesions and for 3-D visualization of the spinal skeleton. Recently, digital 3-D radiographic imaging has become utilized by the Transportation Security Administration to screen airline baggage using real-time (live view) multi-view x-ray machines. Scans from several angles create three-dimensional images and permit quick localization of contraband. The U.S. Department of Homeland Defense is even applying this technology to screen large shipping and trucking cargo containers.

Real-time stereo viewing is not a new technique. Snow attributes its invention to Caldwell in 1902 and Mackenzie Davidson described this method in his 1916 text. Real-time stereoradiography devices employ two continuous x-ray sources 2.5 cm apart to produce a “live” stereographic dual image on a fluoroscopic screen. The images can be polarized and viewed with 3-D glasses, or the viewer’s eyes can be synchronously “shuttered” with the electric current alternating between the two x-ray sources. Today’s virtual reality glasses use similar “shuttering” to create a 3-D effect. Augmented 3-D glasses are expected to have future applications in surgery allowing the combination and assimilation of radiographs, and even CT scans and MRI images, with the surgeon’s actual vision.

Some individuals are able to “free-view” stereograms and stereoradiograms, perceiving three dimensions without the aid of a stereoscope. Various techniques have been developed to produce 3-D effects within a single image. These often involve combining left and right-eye images into a single image with differing coloration or polarization. Such images can then be viewed using colored or polarized binocular viewing filters (3-D glasses) to separate the left and right images.

Holography produces a 3-D effect within a single image and does not require any specialized viewers. In holography, each eye sees a different reconstructed image via light-interference patterns, as if viewing the imaged object at slightly different angles. Because holograms currently require several hours to produce, medical/dental applications are presently limited. Holographic methods are developing for 3-D renderings of x-ray, MRI and CT images. Three-dimensional holographic body imaging will be increasingly used for diagnosis, prosthesis creation and computer-assisted surgery.

**Author’s experimentation**

To validate the information presented in this article, this author produced photographic stereograms for viewing, both in printed format with a stereoscope and digitally on computer monitors using a reversed image and mirror. I found the 3-D effects remarkable using both techniques. The computer monitors provided exceptional image quality and size. I also produced stereoradiograms from digital dental periapical radiographs (Fig. 5). These images were also viewed using both the traditional and digital techniques. I noted surprising dimensionality in these stereo-images compared to standard dental radiographs. However, the 3-D effect is limited by the small overall depths of, and distances between, the anatomic structures.

**Conclusion**

Although dental CT imaging is presently the “state of the art”, radiographic 3-D imaging is not a novel idea. Despite its age, stereoradiography still retains relevance today. With computer-assisted enhancements, stereoradiography may hold even greater promise in the future.


Bremner Award for Pre-Doctoral Dental Students

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
2) The result of an original research effort related to dental history
3) A composition revealing an uncommon appreciation and understanding of historical items related to dentistry.

Eligibility: Contest open to all predoctoral students of dentistry in the US and Canada, including undergraduate students preparing for admission to dental school. Purpose is to encourage the student and research of the history of dentistry.

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 March 1, 2011, for the current year’s award. The winner will be announced prior to June 1, 2011, so that said winner may be in attendance at the annual meeting of the Academy.

Application: Send typed essays (in triplicate), 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 March 1, 2011.

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

Please submit papers prior to March 1, 2011.

Please direct correspondence to:

Dr. Arden G. Christen
7112 Sylvan Ridge Road
Indianapolis, IN 46240


Excellence in Education—Seasoned with a Smattering of Endodontics

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

Dr. Gutmann delivered this acceptance speech upon receiving the 2009 Hayden-Harris Award, at the 58th Annual Meeting of the American Academy of the History of Dentistry, June 12th, 2009 in Chicago, IL.

It is indeed an honor to be here today to receive this cherished academic accolade. In all honesty, I am deeply humbled by this honor and for the next few minutes I would like to share some of my thoughts and feelings that focus on educational excellence and to some extent endodontics—thoughts and feelings that have characterized and shaped my professional life to this point; a point in which the divergent rivers of one’s life seem to be coming together in a torrential, but purposeful mainstream of importance.

My first encounter with the dental specialty of endodontics was in my predoctoral dental curriculum at the Marquette School of Dentistry, Milwaukee, Wisconsin, where a Jewish dentist from Poland, a Catholic endodontist from Germany, a Lutheran endodontist from Lithuania, and an Italian dentist from Milwaukee (Dr. Ed Leone, President of the Academy of the History of Dentistry 1981-82) molded my ideas—not only about endodontics and the history of dentistry, but also about many of life’s values, dental professionalism, and career aspirations as an educator. Truly a mosaic of impacts were coupled with my staunch Germanic heritage. With each encounter, commitment was stressed; persistence was encouraged; vision and reflection were stimulated; and critical thinking was demanded. Giving back to the profession was encouraged and highlighted as a key part of being a successful dental professional. Excellence in one’s pursuits was foremost; an excellence that permeates everything one does. This prescription led to success not only in endodontics, but also in life. It was an equation that I provided to all my own past and present students. The imparting of this equation is the hallmark of one who teaches and one who can truly be called a ‘mentor.’

Mentor was the name given by Homer to the person to whom Odysseus entrusted his household and his son Telemachus when he left Ithaca to fight the Trojans. The eponymous word mentor came to mean ‘trusted friend and counselor’ but it also refers (from its Latin origins) to “one who thinks,” and is contrasted with monitor or “one who admonishes or warns.” The latter role is surely inappropriate for a positive learning environment: the type of environment that is demanded in today’s professional schools of law, medicine, and dentistry. Despite its enigmatic and elusive nature, mentorship must be the

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hallmark of dental graduate education, the *sine qua non* of achievement at the highest possible level, and it is by this hallmark and its salient ramifications that I have attempted to impart knowledge, critical thinking, commitment, vision and excellence to my students and colleagues over many years. Earlier this year, I was awarded a Professorship Emeritus at my last academic post; a culmination of 27 years of full-time teaching—and learning, I might add.

There is a small college in the United States in Union, New Jersey called Kean College. Their motto, composed by John Cotton Dana, reads, “Who dares to teach must never cease to learn.” “*Docendo dicimus*” (in Latin, “we learn by teaching”). Yes, the Professor learns by teaching. He or she learns and experiences so much more in this role than a student can ever imagine: not from books and manuscripts, not from unique cases and impossible diagnoses—but from life and the relationships that it affords those who choose to teach as a vocation. Sir William Osler, a famous physician at Johns Hopkins Medical School in Baltimore, Maryland in the mid 1800s, described one of many aspects of the Professor that transcends mere knowledge and experience:

Change is the very marrow of his existence—a new set of students every year, a new set of assistants, a new set of associations every few years to replace those called off to other fields—in any active department there is no constancy, no stability in the human surroundings. And in this there is an element of sadness. A man comes into one's life for a few years and you become attached to him, interested in his work and in his welfare and perhaps you grow to love him as a son and then off he goes—it must be as bad as having a daughter married—leaving you with a bruised heart.¹

I have many of those bruises from the 27 years of full-time teaching. We Professors learn and endure so much more than that found in books, historical accounts or scientific works; and it is these experiences that we must also share with our students and our colleagues, throughout the pains of their learning process. Was it not Aeschylus who said in the first book of his *Oresteia* trilogy, *Agamemnon*, “He who learns must suffer?”²

Over the last 30 years, the demands have been great as the explosion of knowledge and technology in dentistry & endodontics has been overwhelming; yet too many never developed a true appreciation for the lessons of history, even during this short time period. Maybe Aristotle knew that we as endodontists would be faced with this dilemma one day, when he wisely remarked that we should not expect greater precision in defining a subject than the subject itself allows. This same mistake of not heeding the lessons of history is being made world-wide in many other aspects of life—aspects that threaten the quality of life and our very existence on this planet.

Yet it is not so much what yesterday or today brings—it is challenges that tomorrow will bring; the ones that both the educator and practitioner of the future will face, and with them challenges to the capabilities of academicians to continue to be mentors in the truest sense of the word. Because as science and technology change, so too will human relationships, politics, world pressures, and the expectations of future generations of professors. Sadly, however, the twilight of the “Professor” as we have known it may very well be upon us in dentistry and dental education. With more and more schools moving towards a faculty clinical track, there are fewer and fewer true academics who seek knowledge,
through research, and impart that knowledge using proven principles of pedagogy. In essence, we may be reverting to archaic approaches of education in clinical dentistry, namely, the heuristic (“let’s try this, shall we?”), the pragmatic (“increased profit”), the pedagogic (“that’s the way I was taught”), the empirical (“it seems to work, so let’s continue”), and even the traditional (“I’ve been doing it this way for 30 years.”).

To change this trend will require a global rethinking and undertaking on the part of our profession to ensure that the provision of care for our patients will be based on making an accurate diagnosis, performing optimum treatment, and monitoring of the patient to ensure a successful outcome. To do this we must keep up to date with current information, have a system for properly evaluating it, and use this knowledge to help make treatment decisions to improve the likelihood of successful outcomes. This will require the use of an evidenced-based approach throughout dentistry. This need is probably best summed up by T. S. Eliot, when he said, “Where is the wisdom we have lost in knowledge and where is the knowledge that we have lost in information?” Dentistry and endodontics suffer from these losses, much to our dismay. The fulfillment of the need for evidence-based clinical directives has already begun in some areas of medicine and dentistry, and its ultimate fruition will support the goals of dentistry in the new millennium. It will allow us to restructure our curricula and clinical programs, to achieve on a predictable basis the goal of excellence. This will be possible only if we have not lost the “Professor,” “The Mentor,” as we have known him or her to be in our educational experiences.

The challenge we face as professionals is that we are all called to excellence in everything we do: in practicing, in teaching, in guiding our young people to reach within themselves and discover a yet-unknown strength, a yet-unknown passion; and it is how well we stimulate this passion and the greatness of the response to it that will determine the fate of generations to come. Oliver Wendell Holmes, in his Memorial Day Address in 1884 said, “I think that, as life is action and passion, it is required of a man that he should share his passion and action of his time, at peril of being judged not having lived.” According to Leonardo da Vinci, “Intellectual passion drives our sensuality.” Hegel, the German philosopher in his 1832 Philosophy of History, affirmed absolutely that nothing great in the world has been accomplished without passion. Oswald Spengler, another German philosopher, remarks that we are all, each one of us, born in a certain time, a certain society, a certain family; that we arrive in the world with a certain cultural tradition; that this is our fate, and with this fact, everything else is pretty much determined. To a certain extent, of course, this is true. The time, place, and circumstances or our birth are the given factors of our specific situation; how we meet them and what we make out of these circumstances and of ourselves, however, are the measure of our achievement and our worth, and that measure will be elevated or decreased by our level of passion for what we do and what we choose not to do. To echo Plato, in his book The Republic, “The direction in which education starts a man will determine his future life.” It is this passion that has kept me going these many years. A passion that was seeded by my parents, nurtured by my formative teachers, awakened by my caring professors, supported and tolerated by my loving wife, children, friends and students.

In closing let me cite a few sentences from And Quiet Flows the Don a book written by the Russian Nobel Literature Laureate Mikhail Aleksandrovich Sholokhov in 1934. “When swept out of its normal channel, life scatters into innumerable streams. It is difficult to foresee which it will take in its treacherous and winding course. Where today it flows in shallows, like a rivulet over sandbanks, so shallow that the shoals are visible, tomorrow it will flow richly and fully.” For me, today, here in Chicago, with distinguished leaders, historians, colleagues, friends and loved ones, today is that tomorrow; and as my life has flowed richly and fully, and in accepting this honor here today, I trust that my accomplishments and contributions to dentistry and its history have truly prompted this accolade. Thank you.
References


5. da Vinci L. Ibid.


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Dr. Howard Riley Raper (1886-1978) was an early oral health pioneer and dental roentgenology faculty member of the Indiana Dental College (IDC) who single-handedly introduced key concepts in radiology to dentistry. Due to his efforts, IDC became in 1910-11 the first dental school to have a regular course in dental radiology. Virtually all American dental schools soon added this subject to their regular curriculum. Raper’s text, *Elementary and Dental Radiography* (1913) became the first comprehensive student textbook of dental X-ray diagnosis. In his 1933 Blue Book entitled, *The New Aim in the Care of the Teeth*, Raper elaborated upon his mission to prevent caries, by comparing the insidious damages of tooth decay with the threat of insect-borne disease.

In May 1909, Raper purchased a second-hand medical x-ray coil for two-hundred dollars and adapted it for dental use.5 At this time, and for several more years, dental x-ray machines were not yet on the market. Under his guidance, during the 1909-1910 academic year, the IDC became the first school of dentistry to provide students with a regular course in dental radiology.10 Subsequently, through the National Institute of Dental Pedagogics (the forerunner of the present American Association of Dental Schools), he successfully campaigned to include radiology in their regular curriculum.
institutions.5,7,12

In 1915, Dr. Raper became one of the first American dentists to open a private practice in dental radiography. In this professional setting, he produced radiographs for other dentists, who would pay him 50 cents per single-view X-ray film. Before 1925, dental patients rarely received full mouth dental X-rays.12

In 1913, Raper authored the first edition of *Elementary and Dental Radiography*.10-11 This textbook was incorporated into the Indiana Dental College curriculum in 1915. A second edition was issued in 1917.

During that same year, Dr. Raper was diagnosed with tuberculosis. Shortly thereafter, he moved to Albuquerque, New Mexico, where the climate was believed to be healthier for sufferers of lung disease.11-13 In 1956, he received an honorary Doctor of Laws degree from the University of New Mexico.6,7 He resided in this city until his death in 1978.

In 1925, in collaboration with the Eastman Kodak Company, Dr. Raper introduced the interproximal bite-wing film packet, the X-ray examination, and the Raper Angle Meter. All three of these innovative developments quickly received worldwide acceptance as effective tools in the diagnosis and treatment of dental caries.12

**“Prevention of Toothache” Campaign**

In describing himself as a “publicist of dental health education for the public.”6-7 Despite a perhaps clumsy self-definition, his intentions and goals were crystal clear. As a public health servant, he sought to meet each patient’s needs by providing accurate information on dental disease, and affordable, ethical dental treatment.

Between 1915 and 1916, a small group of advertising dentists decided to form the Modern Ethical Dental Association.8 Although many average citizens viewed their objectives as laudable, Dr. Raper believed otherwise. In several blistering lectures, entitled “The Difference Between Good and Bad Dentistry,” he used a large collection of lantern slides to expose these dentists as fraudulent quacks who falsely claimed to be “painless,” and who produced, in his opinion, “poor work.” Shortly after Dr. Raper’s lectures, the Indianapolis Better Business Bureau withdrew its support for the Modern Ethical Dental Association, and this bogus organization soon faded out of existence.

In his 1926 textbook,1 Raper states with pride that “I have, in the past, advocated a publicity campaign to spread the slogan, ‘Never let your teeth AKE [sic].’ The prevention of caries is something to strive for; (but) the prevention of toothache is something to do.” Raper further explained his reasoning:6

I suspect that maybe I have talked more about toothache than anybody else. If I have, one reason is that I have had so little competition...[because] the fact that the dental profession has placed so much emphasis on the presently unattainable goal of preventing all dental caries that the realistic and attainable goal of preventing virtually all toothache by timely diagnosis and treatment of dental caries is seldom even mentioned in dental health education material or elsewhere...Ninety-five per cent, or more, of people still have varying numbers of cavities, in spite of our strenuous efforts at prevention.

In short, Raper stressed the attainable goal of preventing toothache and loss of teeth by treating dental caries with restorations, instead of the unattainable goal of achieving total caries prevention.7

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*Fig. 1. Dr. Howard Riley Raper.*3
Through his numerous publications, Dr. Raper was highly effective in promulgating his novel ideas. His booklet, “How To Prevent Toothache,” was based on his article that first appeared in *Hygeia* in 1932. Even as late as 1974, The Eastman Kodak Company continued to sponsor mass distribution of the booklet, making millions of copies available to the American public.9,6

**Mosquitoes, Flies and Tooth Decay**

In 1933, Dr. Raper wrote a 62-page “Little Blue Book”* #1728, entitled *New Aim in the Care of Teeth*. This pocket-sized work, based on his 1932 article entitled “A New Aim in Dentistry,” had been published the previous year in *Dental Items of Interest*.15 Additionally, he made an intriguing transparency (lantern slide) depicting a mosquito and a household fly superimposed on a decayed molar tooth (Fig. 2). Although the Blue Book gives a description of the drawing, it does not include the illustration itself, and the creator of this artistic rendition remains unknown.

In the early decades of the 20th century, health professionals frequently implicated endodontically-treated or periodontally-involved teeth as being a source of oral infection. The notion was also advanced that dental infections could lead to a wide variety of systemic diseases, including appendicitis, arthritis, endocarditis, nephritis, osteomyelitis, pneumonia, septicemia and rheumatism. By the 1920s, this theory, which later came to be known as the “focal infection hysteria,” stimulated an unfortunate orgy of unnecessary extractions.

In accordance with Dr. Raper’s then-current thinking about the focal infection theory, the analogy between the fly, mosquito and tooth was thus explained:15

Not too many years ago, people who lived in yellow fever belts were not afraid of mosquitoes. They let mosquitoes bite them and they died of yellow fever. Likewise, not so many years ago, people were not afraid of the ordinary housefly. They let it crawl on their food during typhoid fever epidemics and many people died of this disease. Today, people are not afraid of cavities in their teeth. They know that the cavities are there and they do not have them treated, i.e., filled.

When it is realized that cavities in teeth are dangerous, although they seem innocent enough, like flies and mosquitoes, then we will be afraid of them and have them filled as a means of protection against diseases of the heart, kidneys, eyes and other vital parts of the body.

As long as a fly was only a fly and a mosquito was only a mosquito, there was no occasion to be afraid of them. As long as a cavity in a tooth is only a hole in a tooth, there is no reason to be afraid of it. But when it is recognized for what it is, a disease headed for the inside of the body, then, like the fly and the mosquito, it takes on a new importance, we see new and good reasons for fearing it and protecting ourselves against it.

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*“Little Blue Books” were a series of miniature books, printed on cheap paper, stapled and bound with a blue paper cover. The Haldeman-Julius Publishing Company of Girard, Kansas began producing them in 1919. By 1949, over 300 million had been sold. When Dr. Raper died in 1978, he willed all of his slides, books, equipment, and manuscripts to the Indiana University School of Dentistry. Among these materials are his Little Blue Book and corresponding black-and-white projection slide, produced by the Chicago Transparency Company (Figure 2).
References


Attendees of the 59th Annual Meeting of the American Academy of the History of Dentistry, with outgoing Dean Lawrence Goldblatt, in front of Indiana University Dental School:

**Front row, left to right:** Dr. Charles Millstein; Dr. Marc Ehrlich; Dean Lawrence Goldblatt; Dr. Samuel Wexler; Dr. Peter Meyerhof; Dr. Sheldon Peck

**Second Row:** Ms. Shannon O’Dell; Ms. Dawn McInnis; Dr. Stanton Harn; Mr. James McDonald

**Third Row:** Dr. D. Keith Savage; Mr. John Woods; Dr. George Bause; Ms. Andrea Matlak

**Fourth Row:** Dr. Staci Gaffos; Dr. David Matthews; Dr. Arden Christen; Ms. Mary Kreinbring
Dental Trade Cards XXX

Theodore P. Croll, DDS
& Ben Z. Swanson, Jr., DDS, MPhil

John and Cochran Fleming of Pittsburgh produced Dr. C. McLane’s Liver Pills, Vermifuge, Crudofrorm, Mikado Cologne and Kidd’s Cough Syrup (Fig. 1). The Fleming Brothers also manufactured Ivory Polish for the Teeth (Fig. 2). This “Delicious preparation” not only beautified and preserved teeth, but also perfumed the breath, eliminating the need for “cachous” (pill or lozenge for sweetening the breath).

The Fleming Brothers understood that images of children and beautiful women, especially celebrities, made trade cards attractive and drew attention to advertised products. These celebrity Ivory Polish cards (see inset, page **) feature Adelina Patti, Frances Folsom Cleveland, Lotta Crabtree, and Lillie Langtry.

Adela Juana Maria Patti (1843-1919) came from a family of opera singers and is among the most famous sopranos of all time. Giuseppe Verdi called her the greatest vocalist he had ever heard.

 Twenty-one-year-old Frances Folsom (1864-1947) married forty-nine-year-old President Grover Cleveland, in the Blue Room of the White House on June 2nd, 1886. She was First Lady from 1886 to 1889, and also from 1893 to 1897. Mrs. Cleveland was known as a gracious and charming White House hostess and drew much media interest.

 Lotta, born Charlotte Mignon Crabtree (1847-1924), was a popular entertainer at the end of the 19th century whose fame brought her fortune and the moniker “The Nation’s Darling.”

Lillie Langtry (1853-1929) was born Emilie Charlotte Le Breton, on the island of Jersey off the southern coast of England. Known as “The Jersey Lily,” she was a renowned beauty. Besides a career as an actress and much high-society cavorting in England and the United States, Lily was involved in wine production and thoroughbred horse racing. Langtry was one of the first to use her celebrity status for commercial endorsements, marketing her name and face to sell soaps, cosmetics and products such as Ivory Polish. As a result, her name became ubiquitous to the point of oversaturation, and there was an inevitable backlash. The Trix Manufacturing Company of Rochester, New York, makers of Trix Breath Perfume (Fig. 4), mocked Langtry with an image of a corpulent, basket-toting “New Jersey Lillie.”

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Lithograph, circa mid-1880s. 5 3/4th x 3 3/4th inches.
Above, from left to right: Adelina Patti (1843-1919), Frances Folsom Cleveland (1864-1947), Lotta Crabtree (1847-1924) and Lillie Langtry (1853-1929).

A less-complimentary reaction to Ms. Langtry’s product endorsements.
The dentist said, "You need a plate, If I were you, I wouldn’t wait." But what he meant to say was this, Your case fills me with joyful bliss, For brother, I can see you are About to pay for my new car!  

3 3/8th x 5 3/8th inches
This novelty mutoscope exhibit card portrays a bespectacled, balding dentist gleefully studying the oral radiographs of his patient, who is seated in the dental chair. The well-dressed and apparently well-heeled gentlemen looks confused and worried, as the delighted, double-dealing dentist informs the old fellow that he needs a “plate” without delay. The patient, however, suspects that necessity might not be the true basis for his treatment plan. The inaccurately depicted dental equipment is strictly a figment of the artist’s imagination.

Mutoscope cards, manufactured by multiple companies from 1921 to 1971, covered more than 14,000 cultural themes. Slightly smaller than conventional postcards, though almost twice as thick and typically single-sided, they were sold from coin-operated vending machines in penny arcades, amusement parks, movie theaters and elsewhere. In recent years, they have become recognized as collectibles. This particular card was issued in 1948 by the Exhibit Supply Company, 4218 West Lake Street, Chicago, Illinois.
Obituary: Dr. Malvin E. Ring
Editor Emeritus, Journal of the History of Dentistry

Dr. Malvin Ring passed away on April 08, 2010. Dr. Ring was known internationally as a premier dental historian, who understood the value of incorporating the discipline of Library Science into the art and science of dentistry. An individual ahead of his time, in 1970 Dr. Ring added to his education a masters degree in Library and Informational Science. This academic pursuit preceded by decades the current trend of “dental informatics.”

Recently, Mal (he did not like formality) explained to me that his decision to apply his then-newly-acquired expertise into the field of dental history resulted from his concern for the continuing evaporation of the “humanities” in dental education. His ability to combine his passion and excitement for history in order to advance this underserved and vital component of dental education became, in his words, “a lifelong pursuit”. Combining his world travels, engaging personality and passion for his chosen field, he advanced a professional awareness of dentistry’s historical roots. His tireless and altruistic endeavors elevated the American Academy of the History of Dentistry (AAHD) as the world’s foremost organization supporting the study of the history of dentistry.

In 1969, after the unexpected death of Dr. Donald Washburn, Mal was appointed editor of the current Journal’s predecessor, the Bulletin of the History of Dentistry. Under his nineteen years as editor, Mal nurtured and expanded the scope of our Academy’s literature. When he retired in 1989 and was succeeded by Dr. Hannelore T. Loevy, she penned her first editorial, entitled “Thank you, Mal.” She included these observations: “Under Mal’s leadership the Bulletin has grown to the status it enjoys today as the leading dental history publication in the world. The excellence that characterizes the publication is the result of the painstaking and thorough efforts which characterize Mal’s work.”

Mal advocated for an independent assessment of both dentistry’s successes and failures. He was exceptionally skilled at uncovering through his mining of our literature (both dental and non-dental) the forgotten accomplishments of dentists and dentistry’s contributions to our culture and society. While those of us who knew him well will especially remember a warm, engaging and supportive colleague with an encyclopedic memory, future generations will associate Mal Ring’s name with his extensive, authoritative and invaluable contributions to the dental literature.

On behalf of the Academy, I want to extend sincere condolences to Mal’s wife Hilda, Rochester, NY, and his son, Hilary, Port Washington, NY; daughter, Susan Ring, Providence, RI; 2 step-daughters, Sharon Stiller, Rochester, NY, and Susan Stiller, Pueblo, CO, and a step-son, Jerome Stiller, Denver, CO; along with his loving grandchildren, Holly, Jillian, Sierra, Ariel and Alex; sister, Deena Dunn, Los Angeles, CA.

We have lost a treasured colleague and friend.

—David A. Chernin, DMD, MLS
Editor, Journal of the History of Dentistry
150 Years of the American Dental Association: A Pictorial History, 1859-2009

published by the American Dental Association
color, hardcover, 200 pages

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For 15 generations, the American Dental Association has been recognized as the world’s largest and oldest national association within the profession. This new 200-page, full-color hardcover book explores the rich 150-year history of the ADA. The text and rare photographs offer a valuable resource for the dental historian and the dentist’s personal library. Additionally, it may offer an interesting read for patients in the reception room. Its 300 historical photographs, many of which are especially intriguing, were principally taken from the archives of the ADA.

This newly-minted gem begins its story on August 3rd and 4th, 1859, when twenty-six dentists founded the ADA at Niagara Falls New York. From that event forward, it traces the organization’s steady, upward professional development to the ADA’s 150th anniversary in June, 2009, when the membership had reached 157,000. The impressive Appendix lists every ADA annual session site, all former presidents, secretaries, executive directors and other notables of the organization. Additionally, ADA research medal recipients are recognized. Also included is an exhaustive index and helpful historical timelines which demonstrate how US dentists have practiced throughout the past 150 years.

We highly recommend this comprehensively detailed book for your library shelf, and we credit those whose combined untiring efforts created it.
From the Archives: Vol. 2, Nos. 11 & 12

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November 1954

BULLETIN OF THE HISTORY OF DENTISTRY

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ANNUAL MEETING OF A.A.H.D.

The third annual meeting of the American Academy of the History of Dentistry was held, as scheduled, November 5, at the McAllister Hotel, Miami. John E. Gurley was chosen president-elect, and William H. Hodgkin was installed as president. The other incumbent officers were retained; namely, Harold L. Faggart as secretary; Milton B. Asbell as vice-president; and G. B. Denton as editor. Three honorary members were elected: J. Mannies Campbell of Scotland; Frederick C. Waite of Cleveland; and L. Pierce Anthony of Chicago.

The papers in the morning program were presented before the Academy as listed in the September issue of the Bulletin. The dinner speaker, not previously announced in the Bulletin, was Charlton J. Tabu, chairman of the history department of the University of Miami. Under the title "Florida is different", he presented an interesting narrative of the obstacles which had to be overcome in the progress of that commonwealth.

PROCEEDINGS OF FIRST NATIONAL DENTAL ORGANIZATION

The most important feature of the Academy meeting was the announcement made by Van L. Dalton, chairman of the research committee, that the original manuscript Minute Book of the American Society of Dental Surgeons is in the Research Library of the Children's Hospital in Cincinnati. These minutes, extending from 1840 to 1856, are significant since they give a complete record of the first dental society of national pretensions throughout its existence.

A thorough study of this document has not yet been made, but from information furnished by Dr. Dalton, it is possible to give some external facts with regard to the physical features of the manuscript and its history. The Minute Book is a leather bound volume of 322 pages 8 by 12 inches in size, well preserved, with the words "American Society of Dental Surgeons" stamped on the cover.

Since the American Society of Dental Surgeons was in many respects associated with the past—all of its seventeen meetings with the exception of one, the fifteenth which took place in Cincinnati in 1855, being held in that part of the country—it may seem strange that the official record of its proceedings found its way into the possession of a Midwestern city institution. Several of the mem-
bers of the Society were also members of the Mississippi Valley Association of Dental Surgeons founded in 1844. Therefore, the latter organization was probably looked upon as the natural repository for these minutes when the American Society disbanded in 1856, and this volume probably remained with the Mississippi Valley Association until that organization also discontinued in 1896. It passed into the hands of H. T. Smith, many years dean of the Ohio College of Dental Surgery in Cincinnati until the school was closed in 1926. Dr. Smith bequeathed his library, including this Minute Book, to the Research Library of the Children's Hospital, where it now reposes.

The American Journal of Dental Science published reports of the annual meetings of the American Society of Dental Surgeons throughout the latter's existence. A thorough collation of the Minute Book with these reports has not been completed, but a casual comparison of extracts furnished by Dr. Dalton with the summaries in the Journal indicates that the manuscript includes passages and actions of the Society not previously known to dental historians.

The document is available for study by interested persons at the library of the Children's Hospital.

NEW HONORS FOR AN HONORARY MEMBER

P/ In addition to being elected an honorary member of the A.A.H.D. at the last meeting, Dr. J. Menzies Campbell will soon receive the distinction of Honorary Fellow in Dental Surgery of the Royal College of Surgeons of Edinburgh in recognition of his contributions to dental history. Dr. Campbell is also an honorary member of La Société française de l'histoire de l'art dentaire. As reported earlier in the Bulletin, Dr. Campbell was unable to be present and receive the degree of Doctor of Laws from the University of Toronto in 1952.

An account of Dr. Campbell's library and museum is published in the November issue of J.A.D.A., p. 751, in the "News from Great Britain". Recently, he has presented to the library and museum of Baltimore College of Dental Surgery two items relating to the life of Eleazer Gidney, who is remembered as the dentist who lent his excellent dental library to the editors of the American Journal of Dental Science in 1839. The items presented are 1) plans for Gidney's wooden pulp machinary for making paper and 2) a volume of poems by Eleazer's son Richard, published in 1857.

THE EARLY USE OF NITROUS OXIDE ANESTHESIA

P/ In a number largely devoted to nitrous oxide anesthesia in dentistry, Medicine Illustrated (8:419-428 July 1954) includes an article by Frank Coleman on "The History of Nitrous Oxide Anesthesia". Interesting illustrations accompany the article.
THIRD EDITION OF BRENNER'S HISTORY

E/ The new edition of M. D. K. Brenner's The Story of Dentistry, just now off the press, is somewhat enlarged but not rewritten. Most of the new material is to be found interpolated in chapters appearing in the second edition (1946), but five entirely new chapters have been added at the end of the book. One is a history of oral hygiene; another, a sketch of British dentistry including the National Health Service; the third, an account of Fonzi's invention of individual porcelain denture teeth; the fourth, on L. S. Parmly, one of the American pioneer dentists; and the last, a comment on dental laboratories.

The new chapters occupy about fifty pages of the volume, and the total increase over the second edition amounts to about seventy pages. There are various other changes in the new edition, by way of omission and correction. The new volume is printed in larger and more easily readable type.

OKLAHOMA AND PRIORITY IN STATE DENTAL HISTORIES

E/ The Oklahoma State Dental Society is accepting advance orders for the history of the profession in that state, which will shortly appear under the title, Open Wider, Please. The publicity for the volume claims that this work "is the first narrative of any state's dental history".

Dr. E. E. Haverstick has challenged this claim. His letter to Dr. Summer A. Russman reads in part as follows:

You will find on page 563 of the History of Dentistry in Missouri, published in 1938, a list of the State Histories that have been written. Several state histories have been published since The History of Dentistry in Missouri, in 1938.

The History of Dentistry in Missouri, pages 477-562 contains a list of all dentists who taught or practiced in Missouri.

Perhaps the Oklahoma claim is based on the word "narrative", for some of the earlier state histories are largely in the nature of materials for a "story" of the profession rather than a narrative.

Among the state histories of dentistry or histories of state dental societies that have been published separately are the following:
Historical Booklet of the Illinois State Dental Society, Chicago 1914.


Other state histories which have appeared separately in printed, mimeographed, or typed form are the following:

Dow, Thomas D. History of the Michigan State Dental Society. n.d.

Irwin, Alphonso. History of the New Jersey State Dental Society. 1909. (probably reprinted from Items of Interest.)


Several other states have completed or nearly completed the compilation of material for a history. Some of these states are Florida, Delaware, Texas, Alabama.

The Oklahoma history was written by J. Stanley Clark, Ph.D., a professional historian. The subscription price is $10, and orders should be sent to Sumner A. Russman, D.D.S., 809 Medical Arts Bldg., Oklahoma City, Oklahoma.

IN MEMORY OF MAIMONIDES

This year marks the 750th anniversary of the death of the famous Maimonides (Rabbi Moses Ben Maimon) born in 1135, whose versatility extended from theology and philosophy to medicine. Maimonides wrote casually of some matters of interest to the history of dentistry.

A commemorative meeting was held at the Howard Dittrick Museum of Historical Medicine, Cleveland, December 13. George Sarton, the historian of science of Harvard University, was the principal speaker. Henry and Ida Schuman, booksellers of New York, have issued an interesting folder, with historical notes and greetings, in memory of Maimonides.
Book Shop

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.

Copies are available ($79) from the US Government Printing Office (http://bookstore.gpo.gov). 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. PDF file version will be available for download by May 2009 at the publisher’s website (The Borden Institute).

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

One of the greatest anatomists of all time, Eustachius’ major studies remained unknown until their eventual Dutch translation and publication in 1714. Eustachius contributed substantially to the development of dental science. His conceptual advances concerning tooth development and function, based on anatomical dissections, 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.

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. Eustachius’ observations are an illuminating precursor to 21st-century medical science, and still represent a timely and relevant reference for any practicing dentist.


Intriguing and Eccentric Characters & Stories from the World of Dentistry

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

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.

Price: $20, postage paid. Available from: Dr. Arden G. Christen, 7112 Sylvan Ridge Road, Indianapolis, IN 46240-3541 (US check only)

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.

Price: $20, postage paid. Available from: Dr. Arden G. Christen, 7112 Sylvan Ridge Road, Indianapolis, IN 46240-3541 (US check only)
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.

Price: $90. Available from: Maro Publications
Maro Pub. Ltd., P.O. Box 145, Waban, MA 02468
www.maropub.com

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. This work is known to exist in only two locations. 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. Prior to Fauchard, it was generally believed that any dentistry was performed by traveling mountebanks, charlatans and quacks. 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. The work is divided into six chapters such as "How the teeth come and what is a tooth," "The cause of the pain of the teeth," "Why and what are the considerations to draw the teeth and which is necessary to pull them."

Maro Pub. Ltd., P.O. Box 145, Waban, MA 02468
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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.

Price: $25, postage paid. Available from:
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