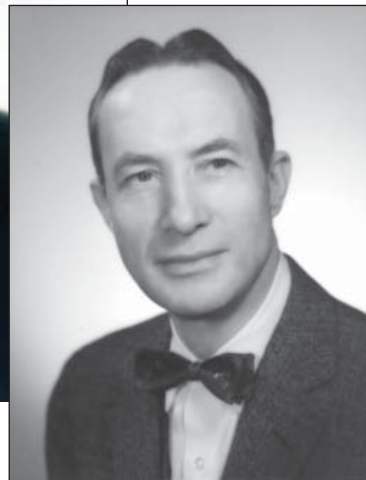


# A Century of Endodontics: From Philadelphia to Boston



Dr. Louis Grossman was instrumental in establishing the specialty of endodontics.



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**L**ouis Irwin Grossman was born in a small Ukrainian village near Odessa in 1901. A few years later, his family immigrated to Philadelphia. As a prodigious student, he graduated from the South Philadelphia High School in 1919<sup>1</sup> and recalled working from 6 to 10 p.m. during those years at the local newspaper. It was there that he learned the love of the written word and even considered a future as a journalist. However, he had been accepted at the University of Pennsylvania School of Dentistry (now known as the School of Dental Medicine) for the class of 1923.

Before the school year began, he visited the Thomas W. Evans Museum and Dental Institute on 4001 Spruce Street in Philadelphia. By chance, he noticed the well-known professor of Materia Medica and Therapeutics, Dr. Hermann Prinz, whose accent and linguistic proficiency caught Grossman's ear. Dr. Prinz would become a father figure to Dr. Grossman, urging him after graduation in 1923 to undertake further study at the University of Rostock Dental School, which was situated in a small town on the Baltic Sea, where German was the language of instruction. Dr. Grossman earned his DMD from Rostock in 1928.<sup>2</sup> His thesis surveyed the various techniques of endodontic practice taught at the dental schools in the United States.<sup>3</sup>

Penn's Dr. Joseph T. L. Appleton also took an interest in this ambitious young graduate, guiding and encouraging Dr. Grossman in his research efforts in bacteriology. Through Drs. Prinz and Appleton, Dr. Grossman met other prominent men in the dental profession. Now he would add his journalistic skills to this newfound wealth of knowledge and become a scientific exponent and writer for the fledgling specialty known as endodontia.<sup>2</sup>

Over the next 40 years, Dr. Grossman meticulously researched all phases of root canal therapy. With his knowledge of bacteriology, he was able to successfully help discredit the "focal infection theory" set in motion in 1910 by British physician William Hunter. By 1950, Dr. Grossman and others eventually put an end to the needless extraction of millions of teeth.

By the 1950s, with funding from the National Institute of Dental Research, multidisciplinary investigations into the basic sciences of bacteriology, pathology, pharmacology, and immunology contributed to a better understanding of the infected pulp and periapical pathology. Clinical observation based on considerable experience also led to a fuller understanding of problems related to failure of previously successful cases. Endodontics became the accepted treatment and the preservation of the dentition a priority for the dental profession.<sup>4</sup>

Dr. Grossman published voluminously and lectured endlessly on the topic both here and abroad, and in 1940 he wrote the first of 11 editions of *Root Canal Therapy* (later retitled *Endodontic Practice*), published by Lea & Febiger of Philadelphia. These seminal contributions occurred within Penn's Department of Oral Medicine, chaired by Lester Burket, DDS, who would go on to become dean of the Penn School of Dental Medicine. Beginning in 1953, Dr. Grossman oversaw a series of six International Conferences on Endodontics given every five years at Penn. The University Press published these as bound transactions of the events.<sup>5</sup> In 1964, Dr. Grossman initiated a postgraduate department of endodontics at Penn. Upon his mandatory retirement in 1968, the university established its first Department of Endodontics and the Louis I. Grossman Professorship in Endodontics. Former associate Seymour Oliet, DDS, occupied the first chair.<sup>6</sup> Penn later honored Dr. Grossman with a Doctor of Science degree in 1978.

## The Future of Root Canal Therapy

Realizing the need for a group of like-minded clinicians to set the stage for the future of root canal therapy, Dr. Grossman organized the Philadelphia Study Club in 1939. Two of the earliest members included his previous dental students, Drs. Israel Boris Bender and Samuel Seltzer.<sup>7</sup> This success was followed with a call for a national organization and was encouraged by both Dr. William J. Gies, founder of the International Association of Dental Research, and Dr. L. Pierce Anthony, editor of the *Journal of the American Dental Association (JADA)*.

When notified that W. Clyde Davis, DDS, a dentist from Lincoln, Nebraska, was also interested in a similar organiza-

tion, Dr. Grossman invited him to serve on an organizing committee of the American Root Therapy Association. The gathering would coincide with the Chicago Dental Society meeting, and an announcement would be placed in *JADA*. Nineteen dentists from various sections of the country met at the Palmer House Hotel in Chicago on January 23, 1943, for the purpose of organizing a society for the study of root canal therapy. After a spirited discussion, they voted to name it the American Association of Endodontists (AAE).<sup>8</sup>

Twenty-one years later, endodontics was accepted by the American Dental Association as a recognized specialty. The American Board of Endodontics was incorporated in 1956, was recognized and approved by the Council on Dental Education in 1957, and gave its first examinations in 1965.<sup>9</sup> The board became a reality due to the work of Dr. George Stewart, Dr. Grossman's former associate at Penn, and Dr. Jacob Freedland of North Carolina.<sup>10</sup>

As the pioneering moment in endodontic history began to wane with its acceptance as a specialty, the founders began to prepare for the next generation of postdoctoral students, educators, and researchers. These early leaders convened for a Workshop on Advanced Education in Endodontics given at the Forsyth Den-

tal Center in Boston in October 1966. Two of the organizers were Drs. Louis Grossman and Ralph Sommer.

As president-elect of the American Dental Association, Dr. F. Darl Ostrander of the University of Michigan was instrumental in the passage of the specialty status for endodontics. Along with Dr. Sommer, he was a seminal figure in endodontic education. In his paper, "The Past, Present, and Future of the Practice of Endodontics," Dr. Ostrander noted: "It is abundantly clear that the future of endodontics depends on expanded and greatly improved teaching at all levels of dental education and research in endodontics and related areas. If these goals can be accomplished, it seems logical to expect that the techniques required for therapy will become simplified. This condition should allow the general practitioner to treat successfully a larger number of endodontic cases and should make possible greatly expanded care by the endodontic specialist."<sup>11</sup>

## The Boston Legacy

Back in 1878, the Pennsylvania College of Dental Surgery, a proprietary school, morphed into the Dental Department at the University of Pennsylvania.<sup>12</sup> Seventy years later, a hospital-based dental school dedicated solely to graduate den-



The Thomas W. Evans Museum and Dental Institute was completed in 1915 and would become home to the University of Pennsylvania School of Dentistry.

tistry was in the process of crystallizing in Boston. The venture would be grounded on a sound biological rationale with close cooperation between dental medicine and total health. It was led by Henry M. Goldman, DMD, a 1935 graduate of Harvard Dental School who returned from the service in 1945, where he had served as the first chief of the dental pathology section at the Armed Forces Institute of Pathology for the United States Army.<sup>13</sup>

Harvard Dental School transformed itself into the Harvard School of Dental Medicine in 1942. The university envisioned a small group of dental scientists with an additional degree (MD or PhD), who would train the students to become future educators and researchers. It used the Johns Hopkins Medical School model from 1883 as its working standard.<sup>14</sup> Dr. Goldman, not having advanced degrees, did not find a place in this new paradigm. However, a prominent physician, Dr. Jacob Fine from the Beth Israel Hospital staff, invited him to use its small dental clinic as a teaching facility.

During 1946, Dr. Goldman began his association with the faculty of the University of Pennsylvania by joining Drs. Lester Burket, LeRoy Ennis, and E. Howell Smith on the Ivory Cross expedition to Holland. The purpose of this venture was to bring new dental knowledge to countries that had suffered under the Nazi regime. Dr. Goldman had known Dr. Burket, an oral pathologist, during the mid- to late 1930s while Dr. Burket was acquiring his medical degree from Yale University. The trip introduced the young Harvard graduate to both the international education and the worldwide travel that would become essential components in establishing the future school.<sup>13</sup>

As the Beth Israel dental clinic grew, Dr. Goldman took a number of yearlong residents in periodontics. One of the earliest was Dr. David Walter Cohen, a recent graduate of the Penn dental school. Dr. Cohen returned to Penn in 1951, was named head of the first Department of Periodontics in 1956, and was named dean in 1972. Through the efforts of Dean Burket, the Beth Israel Hospital program established official links with the Penn dental school by creating a unique two-year postgraduate program in periodontology with Dr. Goldman as its director. The didactic year was spent at the Penn Graduate School of Medi-

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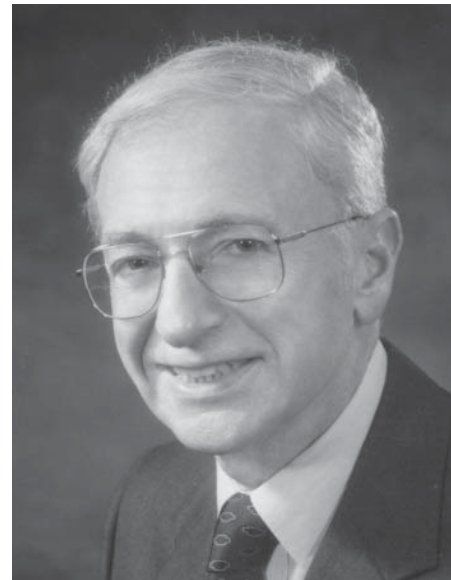


**Dr. David Walter Cohen**

cine and the clinical year at the Reisman Clinic at Beth Israel.<sup>13</sup> Under this format, Dr. Goldman's students earned certificates of distinction from a major university and became eligible to earn a master's degree and potential diplomate status from the American Board of Periodontists.

On the advice of Dr. Philip Shupack, a classmate who trained in periodontics at Beth Israel, Herbert Schilder, DDS, a young graduate of New York University Dental School who was serving a two-year Army commitment in Aberdeen, Maryland, called upon Dr. Goldman at the Beth Israel clinic in 1955. Dr. Goldman advised and directed the aspiring endodontist to seek additional training at the University of Pennsylvania with Dr. Grossman and then to return to Beth Israel. Even though Dr. Grossman had not yet formed an official postdoctoral program, he invited Dr. Schilder to attend his short courses while still in the military.<sup>15</sup>

Dr. Cohen, who was also a lecturer in periodontics at Temple Dental School beginning in 1953, was familiar with the one-year residency program in endodontics at that school. The Department of Endodontics at Temple had been established in 1948 by Dr. Morton Amsterdam and a fellow Penn dental school graduate. With the 1954 death of Tufts endodontist Dr. Bernard Berg, Dr. Goldman needed a new clinician. At a continuing education course, Drs. Cohen and Schilder discussed the latter's future as a root canal therapist. Since there was no official postdoctoral program at Penn,



**Dr. Herbert Schilder**

Dr. Cohen called Dr. Amsterdam, who, after interviewing Dr. Schilder, offered him the endodontic residency at Temple. Dr. Schilder would also have the opportunity to complement his education with Dr. Grossman through Penn's yearlong short courses. Dr. Amsterdam impressed upon Dr. Schilder the need to attend and actively participate in the yearly meetings. The latter planned to return to Boston, where his wife had attended Wellesley College.<sup>16</sup>

Upon completion of Dr. Schilder's year in Philadelphia in 1956, Dr. Goldman secured office space at 53 Bay State Road in Boston so that Dr. Schilder could open a private practice. Dr. Goldman also offered him a teaching position at the Reisman Clinic at Beth Israel. The nucleus for the future Boston University School of Graduate Dentistry was now in place.

As a role model, Dr. Goldman urged his staff to publish, lecture here and abroad, and teach. The purpose was to develop a more advanced institution that would benefit the profession. As Dr. Schilder became more experienced, he became an advocate of specialty education within the AAE, where he served as president in 1985, as well as in the ADA, where he held the office of first vice president in 1990. Unlike Dr. Goldman, who was known for publishing numerous texts (many with Dr. Cohen), Dr. Schilder, out of deference to Dr. Grossman, never wrote a textbook on endodontics.

By 1958, Dr. Schilder was head of the endodontic section of the department of stomatology at Boston University

School of Medicine and accepted his first postdoctoral student, Dr. Cyril Gaum, in 1960.<sup>17</sup> In 1963, Dr. Schilder became a founder, associate professor, and chair of the Department of Endodontics at the School of Graduate Dentistry at Boston University.

Dr. Bernard Berg's earlier work with chloropercha had piqued Dr. Schilder's curiosity.<sup>18</sup> Over the next several years, Dr. Schilder gradually developed a warm gutta-percha technique employing Kerr sealer and vertical compaction to obturate the root canal system; this technique influenced the profession and changed the face of modern endodontics. The triad of cleaning, shaping, and filling took on new meaning.<sup>19</sup> Schilder eventually retired from teaching in April 2003.

In a tribute to Dr. Schilder upon his death in 2006, Dr. Joseph Williams wrote of his teacher, partner, and longtime friend: "He was 'The Professor' to hundreds of graduate students and thousands of dentists around the country and the world. . . . Herb Schilder changed the stature of modern endodontics for the better. Patient care, results of treatment, education of practitioners, and understanding of the specialty have all benefited from his influence. Herb's genius was his ability to articulate very complicated concepts and techniques into easily understood vernacular."<sup>20</sup>

In 1999, Jeffrey W. Hutter, a graduate of the Penn dental school, assumed the mantle as the first Herbert Schilder Chair in Endodontics at Boston University. Dr. Hutter spent his professional career in the Navy, culminating as chair and director of postdoctoral endodontics at the Naval Dental School in Bethesda, Maryland. In 2008, he became dean and the first Spencer N. Frankl Professor in Dental Medicine at Boston University's Goldman School of Dental Medicine. During 2009, Dr. Hutter appointed George Huang, DDS, MSD, DSc, a Taiwan native and former student of Dr. Schilder, as the second Herbert Schilder Chair in Endodontics.<sup>21</sup>

### Summary

While Dr. Grossman was in Rostock with a letter of introduction from Dr. Prinz, he visited several distinguished dentists in Berlin. One was the aged Dr. Otto Walkoff, who, with the help of a physicist while in Wurzburg, was the first dentist to

capture the image of a tooth soon after the discovery of radiology by Roentgen in 1895. At his home, Dr. Walkoff passed the X-ray tube head that had taken the historic film to Dr. Grossman, who then held this treasured artifact in his hands.<sup>2</sup> This transfer of culture from Germany to the United States marked the beginning of modern endodontics. Similarly, when Dr. Goldman gave Dr. Schilder his backing by sending him to study under Dr. Grossman at the University of Pennsylvania, the progress of endodontic excellence moved forward, ensuring a Century of Endodontics. ■

### References

- Grossman LI. Curriculum vitae. *J Endodont.* 1982;8:55.
- Editorial. Dr. Louis I. Grossman—the father of endodontics. *J Endodont.* 1984;10(4):170.
- Asbell M. A century of dentistry: a history of the University of Pennsylvania School of Dental Medicine. The Trustees of the University of Pennsylvania; 1977. p. 132.
- Cohen S, Burns R. Pathways of the pulp. 3rd ed. St. Louis (MO): Mosby; 1983. p. 1.
- Grossman LI. Curriculum vitae. *J Endodont.* 1982;8:56.
- Delany JJ, Adams B. From cradle to cutting edge. *Penn Dent Jour.* University of Pennsylvania School of Dental Medicine. 2007;4(1):3-5.
- Grossman LI. History of the Philadelphia root canal study club: 1939. *J Endodont.* 1982;8:S41-42.

- Grossman LI. American Association of Endodontists: birth in 1943. *J Endodont.* 1982;8:S43-45.
- Grossman LI. Endodontics 1776-1976: a bicentennial history against the background of general dentistry. *JADA.* 1976;93:87.
- Bender IB. Comments. 40th anniversary of the Penn postdoctoral endodontics. Video biography. Philadelphia (PA); 1989.
- Ostrander FD. The practice of endodontics: past, present, and future. *J Dent Ed.* 1967;31(3):388.
- Asbell M. A century of dentistry, a history of the University of Pennsylvania School of Dental Medicine. The Trustees of the University of Pennsylvania; 1977. p. 11-18.
- Cohen DW. A tribute to Henry M. Goldman, DMD. *Compendium.* 1994;18:S657-660.
- Chesney AM. The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine: a chronicle: early years, 1867-1893. Baltimore (MD): Johns Hopkins Press; 1943. p. 1:viii-ix.
- Schilder H. Video biography. Goldman School of Graduate Dentistry, Boston; 1991.
- Cohen DW, Amsterdam M. In memoriam. *J Endodont.* 2006;32(4):382.
- Millstein C. Defining a specialty. *J Mass Dent Soc.* 1995;44(2):16-17, 33.
- Berg B. Endodontic management of multi-rooted teeth. *Oral Surg Oral Med Oral Path.* 1953;6:3.
- Schilder H. Filling root canals in three dimensions. *Dental clinics of North America.* Philadelphia (PA): W.B. Saunders; 1967; p. 723-724.
- Williams J. Remembering "The Professor." *J Mass Dent Soc.* 2006;55(2):16-17.
- Hutter, JW. Biographical statement. February 2010.



**The Henry M. Goldman School of Dental Medicine building at 100 East Newton Street in Boston**