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Increasing interest among dentists in dental history.

Encouraging dental schools to develop historical collections on dentistry, and to offer adequate instruction in dental history.

Developing a broader understanding of the facts of dental history among the leaders in dentistry in order to aid them in their attempts in solving important problems in dental education and practice.

Stimulating more thorough and comprehensive research in dental history, thereby extending the boundaries of dental knowledge, giving substantial support to growing professional culture.

Creating an authoritative body to which important questions relating to dental history could be referred for factual verification.
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Jan Evangelista Purkyně (1787-1869): Physiologist, Literary Figure, Statesman and Pioneer Dental Morphologist

Halifax, Nova Scotia

An outstanding scientist in the classic mold, Purkyně was, in addition, a highly-regarded literary figure who made possible the enjoyment by the Czech people of many of the German classics. Honored by his contemporaries, he was elected to parliament where he struggled vainly to correct the excesses of the Hapsburg Empire. But it is as a pioneer dental histologist that he is most remembered.

Fig. 1. Portrait of Purkyně as a young professor in Silesia.

Jan Evangelista Purkyně, better known in the Anglo-Saxon world as Purkinje, is familiar to the countless generations of dental students as the physiologist who discovered “Purkinje fibers” (Fig. 1).

Less known to them is the fact that this man, who was born 200 years ago, on December 17, 1787, in the village of Libochovice near the town of Litomerice in northern Bohemia, is also the discoverer of the sweat glands of the skin; of the ganglionic cells of the cerebellum; and that his name is given to the images on the retina from the shadows of blood vessels, which are called “Purkinje’s images.” He was the one who first pointed out the importance of fingerprints in 1823.¹

He was the first to use the term ‘protoplasma’ in 1839.² His other contributions in the field of physiology are countless. However, he was neither an “ivory tower” professor nor a “mad scientist.” Purkyně was rather a well rounded human being who made many contributions to society in various other ways as well. These ranged from pedagogy to the publishing, writing and translating of poetry, to his interests in the field of natural sciences, histology, microbiology and physiology and finally to an active political life which culminated in his election to parliament.

The young Purkyně was originally destined to become a member of the Piarist Order. This Catholic group, known formally as the Patres Piarum Scholarum was founded in 1597 by a Spanish nobleman and richly endowed by Pope Innocent XII in 1690 with all of the privileges of a mendicant order. Their principal work was devoted to the education of the young, and most of their activities were concentrated in Central Europe.

In 1805 Purkyně began teaching at the Piarist grammar school in Moravia, and taught at the Piarist College in Litomyśl, Eastern Bohemia, until 1806.
Under the influence of the German philosopher, Fichte, and because of his love for the natural sciences and his desire for freedom of independent research, Purkyně realized that his true vocation lay elsewhere. He left the Piarists and began to study medicine. Already with his first scientific work published in 1818 — "Beitrage zur Kenntniss de Sehens in subjektiver Hinsicht" (Contribution to the understanding of vision from a subjective viewpoint) — his colleagues took note of him as a promising young scientist. None other than Goethe himself recommended him for the chair of physiology at the University of Wroclaw (Breslau), in Silesia, in 1822. Purkyně did not disappoint Goethe's faith in him, for in 1831 Purkyne was instrumental in founding a physiological institute at the Universitas Vidrina Vratislaviensis, the first of its kind in Silesia (Fig. 2). The Prussian government appreciated his pioneering work, and the following year, in 1832, he was given a grant to purchase the most up-to-date equipment including the best microscope available at that time in Central Europe. It came from the famous Viennese optician Simon Plössl. Later in his life, Purkyně reminisced in a letter to his colleague Wagner that not until the purchase of the new microscope was he able to undertake serious research work in histology and physiology.3

**HIS INFLUENCE ON DENTAL SCIENCE**

From the dissertations of fourteen of his graduate students during his stay at the University in Silesia which covers the period between the years of 1824-45 — there are two theses which are of particular interest to dentistry. While at the University Viadrina Vratislaviensis, Purkyně was responsible for the construction of the first microtome, an instrument designed for cutting thin sections of animal or plant tissues for study under a microscope by means of transmitted light. This new technique of slice preparation, as well as decalcification of sections, allowed him to study teeth under more ideal conditions than was heretofore possible. It was the result of two dissertations written by his students on the study of fine structure of dental tissue. These were "De penitiori dentium humanorum structura observationes" (Observations concerning the internal structure of human teeth) written under Purkyně's guidance by Meyerus Fraenkel; and second Isaak Raschkow's "Meletemata circa mammalium dentium evolutionem" (Study of the development of the teeth of mammals). Fraenkel's dissertation was publicly successfully defended on October 1, 1835 (Fig. 3). It is possible to characterize this dissertation as the first scientific work to discuss the microscopic structure of the enamel and dentin. Raschkow's dissertation was defended in 1835, on October 16. This dissertation, like Fraenkel's, brought
to light new understanding of the microscopic structure during the development of the teeth. Purkyně's research into the anatomical detail of dental tissues also influenced the Swedish anatomist Adolph Retzius.

During his stay in Silesia, Purkyně did not lose touch with the intellectual life in Prague. Not only did he contribute articles to the Journal of the Bohemian Museum, but, before leaving Prague to take his university appointment in Wroclaw, he participated in the editorial preparation of the first Czech scientific periodical, Krok (The Step), whose symbolic title was suggested to the publisher by Purkyně himself.4

In 1850, Purkyně returned to Prague to establish a physiological Institute and to become professor of physiology at the Charles University. The official opening of the Institute took place on October 6, 1851. At the beginning, the premises were in 74 Spalena Street (Fig. 4). The lecture room was large enough to hold 200 persons. The Institute had laboratories equipped for chemical and microscopic experiments; a dissecting room; and area set aside for physics; and also an area for preparing and storing specimens. Library, administrative rooms, an apartment for...
his assistant and his own study completed the physical layout. It is a sobering thought that when in our own century people are forced to retire from universities at 65 years of age, at the official opening of the Institute when he gave his inaugural lecture, Purkyně was 64 years old! Almost two more decades of fruitful work lay ahead.

Not contented to only run the Institute, Purkyně started his own scientific journal named after an ancient Slavonic goddess of life, Zíva, and in later years he participated in founding The Journal of Czech Physicians.

**HIS TRAILBLAZING SCIENTIFIC ACHIEVEMENTS**

It is not my intention to follow Purkyně's work and publications in detail. His interest and publications covered a vast scientific area. To list just a few: "A treatise on the physiology of human speech" (1837); "On the ideality of the visual field" (1837); "On the forming of eggs inside the hen's body" (1855); "On wake, sleep, dream and similar states of mind" and "On wake, its degree and transition into sleep" (1857–58); "Tests on hearing" (1859); and "On breathing" (1856). For our purpose, it is sufficient to narrow our interest to an article "On the structure of human teeth" (Fig. 5). Here, in contrast to the similar work which he published with his student, Fraenkel, Purkyně discussed in greater depth the problem whether the dentinal fibers were in reality minute canals. It was Purkyně's discovery that the basic material of human teeth was interspersed with minute canals, called canaliculi. This he was able to demonstrate on the cut sections of teeth which he stained, using his own technique of staining.

Another original idea of Purkyně's was a technique he developed for grinding preparations and which he described in minute detail. This must be included in the development of microscopic technique.

Although our interest in Purkyně is chiefly focused on his contributions to the field of stomatology, it would be a grave omission if some of his other wide ranging interests were not touched upon. His interest in the problems of education was evident already in his undergraduate years. It is not well-known that when he was an undergraduate student, he had to earn his living as a tutor. To Purkyně, education was a preparation for life and to extend one's knowledge was a duty for a teacher and a scientist. He elaborated on this theme in a speech he gave at the opening of the Industrial School in Prague on March 8, 1857. Purkyně understood how science can shape society and that scientists have an important role to play in the social life of a state. In his article published earlier, in 1839, "On railways and their indispensable usefulness in Europe" we can see his pragmatic approach to the problems and to the new challenges societies have to accommodate in the face of new scientific discoveries. It is easy to forget that there were many towns in Europe that did not want to have a railroad and whose vested interests struggled to have it built elsewhere.

**HIS POLITICAL ACTIVITY**

Purkyně knew that educated men of science can not live apart from the mainstream of society. Thus, although not a true politician, for he was too much a man of science, he felt that it was his duty to participate in the social life of the state. He was elected to the parliament of Bohemia in 1861. His essay "Austria polyglotta," published in 1867, is a surprisingly clear analysis for a scientist of the multinational problems facing the Habsburg Monarchy. Already in the middle of the 19th century, Purkyně saw the problems of a
Fig. 5. A page of illustrations from Purkyne's article "On the Structure of the Human Teeth."
multilingual empire and gave a clear warning that unless real accommoda-
tions be made and all nationalities treated equally, the future of the Habsburg
Monarchy itself would be in doubt? Purkyně strongly believed in the policy
of tolerance and understanding and, as a scientist, he strove for rational solu-
tions based on facts for all controversial issues. In this belief, unfortunately,
Purkyně was in a hopeless minority amongst the politicians. His warnings
were unheeded and 1918 saw the collapse of the Habsburg state.

HIS LITERARY AND CULTURAL ACTIVITY

Finally, one should not overlook his literary contributions and his ac-
tivity as a poet and as a translator of poetry and prose into Czech and from
Czech into German and Polish. From his many translations one must men-
tion his publication in two volumes of Friedrich Schiller's *Lyrical Poems* in
1841; the translation of Johann Wolfgang Goethe's poems as well as transla-
tion of Torquato Tasso's *Gerusalemme Liberata* (Jerusalem Delivered); Antonin
Malczewski's *Marya*, Pushkin's *Eugene Onegin* and the epigrams of the Indian
poet, Bhartrihari. It is rather difficult today to envisage Purkyně as a poet.
But in his speech given at the opening of a college in Plzen in 1865, Purkyně
himself commented that it was more than 50 years earlier — in 1807 — that
he came to Prague "as a young man and a poet." 10 Among his collection
of poems and epigrams, those written and dedicated to youth are most
notable.

HONORS, AWARDS AND TRAGEDIES

For his many contributions to society in so many various fields, society
reciprocated in rewarding him with appropriate honours. To mention just
a few: he became a correspon-
ding member of the Academie
des Sciences in Paris and a
member of the Imperial
Academy of Medicine in St.
Petersburg. He was awarded an
honorary Ph.D. degree by the
Charles University in Prague and
an honorary M.D. degree by the
University of Vienna. Purkyně
was knighted in 1868. In 1869 he
was awarded the Prussian Order
of the Red Eagle, 2nd class, and
also was awarded the Russian
Order of Saint Vladimir. A Com-
memorative Medal was minted
in honour of his 80th birthday.

However, life did not spare him
personal tragedies. During his
professorship in Silesia there was
an epidemic of cholera and both
of his daughters succumbed to
the illness. Only three years later,
in 1835, his wife died of typhoid
fever. Their three-year old son,
Emanuel and not-quite-a-year-

Fig. 6. Obituary announcement of Purkyně's death
in the *Journal of Czech Physicians* which he
helped found. Established in 1862, it is the oldest
medical periodical in the Czech language.
old Karel, who was destined to become a great painter, were left to his care.

The last two years of Purkyně's fruitful life were clouded by gradually failing health and finally he was unable to even leave his home. He died July 28, 1869 (Fig. 6), and was buried with great honours at the National cemetery at the Vysehrad Castle in Prague. The obituary notice in the Proceedings of the Royal Society of London, after summing up his unusual achievements, concluded that "happy is the pioneer who becomes a patriarch and at whose bier a grateful and sorrowing nation bows its head." 11

REFERENCES

2. ibid. p.30
3. J.E. Purkyně, Opera omnia, Tomus VI. Prague, Purkynova spolecnost, 1937. p.5
4. J.E. Purkyně, Opera omnia, Tomus VII. "Opera physiologica et morphologica in lingua Bohemica scripta," In aedibus Academiae Scientiarum Bohemoslovenicae, Prague, 1958. p.457
5. ibid. p.458
6. ibid. p.461
7. ibid. p.461
8. J.E. Purkyně, Opera omnia, Tomus X., "Opera slavica, Edenda curavit: Milan Kudera;" In aedibus Academiae Scientiarum Bohemoslovenicae, Prague, 1968, p.26

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Dental Pain in the Life and Writings of Hans Christian Andersen

— Bjarne Klausen, D.D.S.
Copenhagen, Denmark

Hans Christian Andersen, the famous Danish writer, suffered from dental pain throughout his life. Here, Andersen’s descriptions of the condition are quoted from his diary, from a fairy-tale and from his autobiography. Finally, a diagnostic attempt is made with a 120 years’ delay.

"Will you admit, then, that I'm more powerful than poetry, philosophy, mathematics and all music?” she asked. “More powerful than all those impressions in paint and in marble? I'm older than the whole lot of them. I was born near the Garden of Eden, just outside, where the wind blew and the damp toad-stools were growing. I got Eve to wear clothes in the cold weather, and Adam, too. Believe me, there was strength in the first toothache."

This horrifying portrait of dental pain was given by a person who knew the phenomenon all too well from his own life: the Danish writer, Hans Christian Andersen, world famous for his charming — and satirical — fairy-tales.

Throughout his life Andersen suffered a great deal from dental pain, and he refers to it several times in his letters and diaries, e.g.:

“December 4, 1825: Toothache, got relief late afternoon by putting ginger into my ear.”

“May 18, 1831. My teeth cause me tremendous pain; the nerves are really fine keys on which the indiscernible pressure of the air plays, and so there is concert in the teeth, now piano, now crescendo, all tunes of pain caused by changes of climate.”

“May 20, 1834: Great rheumatic toothache at night, the pain played a Miserere on my nerve-pipes.”

“June 1, 1834: Desperate rheumatic toothache, desperate pain alternately in several teeth, as if performing a symphony.”

Dental pain continued to torment Andersen the rest of his days, and on at least two prominent occasions were the author’s sufferings reflected in his literary works.
AUNTIE TOOTHACHE

In 1872, when Andersen was 67 years old and had four natural teeth left, he wrote the tale ‘Auntie Toothache’ , a true masterpiece, filled with warmth, humour and horror. In a dramatic scene of the story a young student is struck by a nocturnal attack of pain in the shape of a female apparition “Madame Toothache, her infernal Satanic Frightfulness.” She is described as follows:

“... and her appearance was frightful, even though you could hardly see more of her than her hand, that shadowy ice-cold hand with the long skinny fingers. Each of them was an instrument of torture. Thumb and first finger had forceps and screw, the second finger ended as a sharp-pointed awl, the ring finger was a gimlet and the little finger squirted mosquito poison.”

The student has poetic ambitions, but the apparition claims that great poets should suffer great pain, and proclaims:

‘I’ll compose tortures for you in every metre . . . If you will give up being a poet, never write down a single verse on paper, slate or any other kind of writing material, then I’ll leave you. But I shall come back, if you start writing.”

Fig. 2. Contemporary illustration to "Aunt Toothache" by the Danish artist Lorenz Frolich, (1820-1908).
The student, in his agony, makes a solemn promise to refrain from further poetic emissions. Strangely, Andersen almost kept that promise himself, since he only wrote one or two more fairy-tales in his life, and decided to let "Auntie Toothache" end his last collection of stories:

"November 9, 1872: In eight or ten days New Tales and Stories will appear; they may become my last stories, should I really conclude with "Auntie Toothache." She is one of the first sensations of my youth."²

Readers with interest in the symptomatology of dental pain are encouraged to read "Auntie Toothache" in its entire length. It is an outstanding description given by a sensitive patient and a rare poet.

ANDERSEN'S GREAT DAY

In his autobiography The Story of My Life, Andersen gives a detailed depiction of the greatest day of his life, December 6, 1867, when he was proclaimed "Citizen of Honour" by his native town, Odense. The poet was celebrated on several festive occasions during the day, but unfortunately the feast was more or less ruined by intolerable attacks of dental pain, starting the night before:

"I could not sleep at night. I was oppressed in body and soul. I felt pain in my breast and my teeth ached, as if to remind me, — In all your honor, you are yet a child of mortality, a worm of the dust."

Relapses occurred during the day:

"Now began the children's part. An armchair was placed for me in the middle of the hall, and two by two came gaily dressed children, who danced in a ring about me and sang their song. How happy I was, and yet — up to heaven's height man dare not exalt himself. I should and must feel that I was only a poor child of humanity bound by earthly frailty. I suffered from a dreadful toothache, which, with the heat and excitement I was in, became excessive, but I read a wonder story for the little friends."

The celebration and the pain culminated together late at night:

"I was to fulfill the prophecy which the old woman made when as a boy I left my birthplace, — Odense should be illuminated for me. I stepped to the open window; there was a blaze of light from the torches, the place was quite full of people. They sang, and I was overcome in my soul. I was physically overcome indeed, and could not enjoy this summit of fortune in my life. The toothache was intolerable; the icy air which rushed in at the window made it blaze up into a terrible pain, and in place of fully enjoying the good fortune of these minutes, which never would be repeated, I looked at the printed song to see how many verses there were to be sung before I could slip away from the torture which the cold air sent through my teeth. It was the pitch of suffering; when the flames of the torches piled together sank down, then my pain decreased. How thankful was I to God."

A DIAGNOSTIC ATTEMPT

These were Andersen's own words. But what was the actual cause of his pain? Was the Odense festival ruined by pulpitis, apical periodontitis or marginal abscess? Is it possible after 120 years to reach a diagnosis from
Andersen’s anamnestic information?

From the above description the following characteristics of Andersen’s toothache could be considered: the pain interferes with sleep, the tooth is sensitive to temperature changes, and the pain appears in attacks with relatively asymptomatic periods in between.

This information I have subjected to a computer-aided discriminant analysis based on symptoms and signs registered in 67 patients. The result was that such a combination of symptoms with 67.2% probability comes from a patient with acute pulpitis.

So, we call it pulpitis. But I have a feeling that most people suffering from this condition would find the name invented by their fellow patient Andersen more appropriate: “Madame Toothache, her Infernal Satanic Frightfulness.”

REFERENCES


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Dental Preceptorships of the 19th Century: What Were They Like?

Robert J. Bruckner, D.D.S., M.S.
J. Henry Clarke, D.M.D.
Janice S. Bruckner, B.A.
Portland, Oregon

Dentistry, medicine, law and various other professions went through periods when most practitioners were trained under a preceptorship (apprenticeship) system. There are many references to this system in books and articles devoted to dental history, but specific details of apprenticeships are not given. In a search of the literature, we were unable to find any articles that were written with the express purpose of describing dental preceptorships of the 19th Century.

How long did an apprenticeship last? What was the apprentice required to do? How adequate was the training? How much did it cost? On what basis did a preceptor accept an apprentice? How might the public know the type of training, if any, that a dentist may have received? These are some of the questions the authors were interested in pursuing and which are addressed in this paper.

Most physicians in the United States during the 1700's were trained by preceptors, although there were some who had obtained European degrees from medical schools in England or Scotland. While medical apprenticeships in the colonies were "often casual and inadequate," this far-from-perfect educational method was eventually adopted by those wishing to practice dentistry.

Among the earliest to seek instruction in the field of dentistry were Josiah Flagg and John Greenwood who, in turn, served as preceptors to other Americans. In subsequent years the number of preceptors increased, and this method of learning provided one pathway to the practice of dentistry. However, for a large period of the 1800's there was no established protocol or professional ethic to govern the entry of a person into the field of dentistry. Some practitioners may have trained with a preceptor either in America or in Europe, while others had little or no training at all. Physicians and artisans provided dental services, but so did quacks and charlatans. The first annual announcement published by the Baltimore College of Dental Surgery in 1840 portrays the situation up to that time:

Some, it is true, have overcome the difficulties encountered in the commencement of their studies . . . and established for themselves just claims to distinction. But the greater number . . . have enjoyed but limited opportunities for acquiring information . . . . It is also a fact that many totally incompetent individuals . . . have, without any kind of preparation, assumed the title of Dentists.

With the establishment of the Baltimore College of Dental Surgery and subsequent dental schools, it became possible for a limited number of individuals to attain some form of formal preparation leading to a degree in dentistry, either the Doctor of Dental Surgery, or the Doctor of Dental Medicine given at Harvard. But only a small number of individuals could receive this type of education. As late as 1901, according to Gies, of the 28,142 dentists who had begun to practice in or subsequent to 1840, 11,311 were not graduates of a dental school. For those who did not or could not attend a dental school but who sought some preparation for dental practice, an apprenticeship with a preceptor was the common choice. What, then, were these apprenticeships like?
As one would expect in a system that was essentially tutorial in nature, the arrangements between preceptor and apprentice were quite individualistic. The preceptor would be concerned with the applicant's potential as a dentist, and both would be concerned about the fee and the amount of time that the apprentice would spend in training. It was up to the preceptor to satisfy himself that "the youth possessed some inherent qualities, such as mechanical taste or ability, that would make him an apt pupil and eventually a good dentist." As one preceptor said, "... a good moral boy with fair mechanical genius ought to make a good dentist in a year or two."6

MONETARY CHARGES BY PRECEPTORS
Most practitioners of the early and mid-1800's did not readily share their knowledge or technical "secrets" with others. Therefore, an apprentice was expected to pay a sufficient sum of money so that he would not be likely to disclose to others what he had learned. One dentist recalled in his 1861 publication of reminiscences that a preceptor asked a fee of $150.00 for a total of three weeks' instruction. (At about that time an average family living in Massachusetts had an annual income of $763.00.) He refused and apprenticed himself to a preceptor who, for the same amount of money, offered a three-month program "to properly acquire a perfect knowledge of everything."6

In another instance, the preceptor's fee was "$200.00 for one year or $150.00 for two years." (sic)6 In 1820, the noted Eleazer Parmly listed preceptorship fees of $1,000.00 "For practice in London," $700.00 "In any other City in Great Britain or America" and $500.00 "For foreign practice." The fees were criticized1 by an unidentified "editor of one of our public journals" as not only being exorbitant but also responsible for most apprentices being "forced to enter the offices of men who were less qualified to instruct, or commence without any instruction at all..."12 It appears obvious that "tuition charges varied widely and were the result of each preceptor's value judgment.

In addition to their concern that professional secrets might be divulged to others, preceptors were concerned about potential competition from their students. "... Some required of the student a bond, binding himself in a large sum not to practice within a given distance of his instructor's residence; while others required the pupil to take an oath not to practice in his city, town or state."6

WHAT WAS THE COURSE OF STUDY?
Once all arrangements were made, what might the "curriculum" of an apprenticeship be like? In the early 1800's, general dental practice consisted of such functions as "extracting with the turnkey; cleaning with scrapers; separating teeth and removing caries with files; filling with tinfoil; carving artificial dentures from ivory and bone and individual artificial teeth from the teeth of cattle, and attaching the latter as well as human teeth to gold and silver plates bent to something like the required form."11

We can imagine apprentices being trained in these areas, perhaps to varying levels of skill depending on the interests, skill and expertise of the preceptor. Thus, a dentist reminiscing about his apprenticeship somewhat later in 1861 would say, "My preceptor's specialty was gold fillings, so, that while he gave attention, as all dentists at that time did, to prosthetic dentistry, he gave me no enthusiasm for it and little instruction in it."13
In general it appears that the basic educational structure or pattern of an apprenticeship resembles one that we still follow. That is, the student begins in the laboratory and gradually undertakes the treatment of patients. The progression of an English apprentice* in 1842 is described as follows: “At first he worked at the bench and then moved into the surgery and watched his sponsor at work. After three months he took over the gratis patients, and then graduated after one year to looking after the private patients when his principal was away.” As we shall see, this pattern of preparation was a common one, but as we look further at some of the details we find that apprenticeships were often a mixture of valid learning experiences in combination with rather mundane duties.

Dr. Samuel Barker recalls his apprenticeship which began in 1892 at the age of 17:

My first morning duty was to build a wood fire in the box stove. . . . My next duty was to take a water pail . . . across the street . . . and there pump a pail of water that was to be the water supply for the day. . . . Another duty was to sweep the carpets . . . for the gold dust they contained . . . In the laboratory was a large anvil on which I punched out five, ten and twenty dollar gold pieces with a wooden mallet. I then ran them through a large roller press . . . until the gold plate came out about 28 gauge and was then ready to be made into gold crowns. . . . I was soon taught how to make a dental alloy. A dime was put into a crucible and melted by means of an alcohol lamp and a mouth blowpipe which took every ounce of breath or wind I possessed. A small piece of copper was snipped from a penny and dropped into the molten silver. . . .

Another former apprentice said of his experiences:

The doctor furnished the books, Harris’ Principles and Practice of Dentistry, also Harris’ Dictionary (sic) and Tagat’s Anatomy, which I read over and studied out to the best of my ability. My work was to sweep the office, getting the furnace ready to bake continuous gum teeth, and helping to finish up gold plates. I watched the doctor closely, and sometimes got to fill a tooth or pull one . . .

A third dentist recalled that, in addition to various menial tasks that he performed, “. . . also did laboratory work and in odd moments I prepared cavities with hand excavators in extracted teeth.”

Dr. Joshua Tucker who, prior to 1840, offered what appears to be a relatively structured program, gave this description of an apprenticeship as seen from the preceptor’s perspective:

When they entered our office, then at No. 4 Hamilton Place, Boston, to lay a good foundation for a future thorough knowledge of dentistry, they were first introduced into the laboratory, handed the blow-pipe, hammer, and file, and were taught to copy, fashion, make and temper their own instruments. This was to improve their mechanical skill, and educate the hand equally with the head. They were also taught to carve and manufacture mineral teeth, and the rules and art of modelling, so as to give a natural expression to the face. Lastly, they were taught to use the instruments they had made to manipulate and pack gold foil against the walls of the dental cavity so as to completely stop exudation from within, and ingress from without, and then to restore carious teeth to health.

*Several selections from the British literature have been included in this paper. In the authors’ opinion, the references cited add both additional information and vitality. The inclusion of these references is warranted because there were parallel evolutionary changes in America’s and Britain’s dental history (see Richards, N.D., “Dentistry in England in the late 1840’s . . .” reference 14).
We insisted upon their studying at the same time the science of medicine generally.\textsuperscript{17}

In addition to the experience gained in the preceptor's office one student spoke of accompanying his preceptor on visits to outlying towns and villages to provide dental care. “... It became part of my routine duty to accompany my preceptor on these trips, and later, in an emergency, to fill the ‘appointment’ myself. The experience gained in this way was invaluable. Being thrown on my own responsibility I was taught a self-reliance that I could have gained in no other way.”\textsuperscript{16}

THE LENGTH OF PRECEPTORAL STUDIES

Just as the character and quality of an apprenticeship varied, so did its duration. Some of that variation has already been noted and is consistent with the absence of prescribed educational standards. A preceptor such as W. H. Atkinson is said to have required an apprenticeship of three years when he accepted a student.\textsuperscript{18} Another practitioner recalls that “At that time (1861) eighteen months of private pupilage was required in order to be able to matriculate in the Pennsylvania Dental College...”\textsuperscript{13} In this regard, early dental schools informally depended upon private practitioners to provide or augment the student's clinical education. By 1867, five of the six colleges that existed at that time established a uniform requirement by adopting the regulation that “two full years of pupilage with a reputable dental practitioner” were necessary in addition to “two complete courses of lectures in a dental college” if a candidate were to be entitled to “an examination for graduation with the degree of D.D.S.” The first dental program to be affiliated with a university, that of Harvard, shortly thereafter required a three-year apprenticeship.\textsuperscript{19}

A conscientious and avid learner might even wish to benefit from some specialized experience of brief duration, as we do today in our continuing education courses. This is exemplified in the delightful Reminiscences of a Dental Surgeon by Joseph Snape, L.D.S., R.C.S., published in England in 1881. The following excerpts give the flavor of this booklet:

Having received instructions in every branch of Dentistry from various practitioners, I was anxious before commencing professionally on my own account to have a lesson from Mr. DeBush — a man famous for the beauty and duration of his gold stoppings... To my great delight, DeBush acceded to my request to give me one day's instruction, for which I was to pay a fee of fifty pounds... (An agreement had been drawn up that DeBush was to show me all that was necessary and answer every question that I thought proper...)

He then described what I already knew — how the cavity must be thoroughly cleaned of all decay and otherwise prepared — “When this is done, you must push in as much golt as it can possibly holt.”

The following colloquy then took place:

“I know all that.”

“Then vat for did you give me fifty pounds?”

“I wanted to know more.”

“Vel den, when you have got as much golt as it can possibly holt you must go to work and push in twice as much more.”

“... I filled the tooth to the best of my ability and then said, “Now, sir, it is filled.” “But I told you to push in twice as much more.”... He took one very pointed [instrument] and inserted it into my stopping — then inserted a larger instrument — and in this wise one instrument after another — until the interior of the cavity seemed to be merely lined...
with a piece of thick gold foil. He then... began to fill the hollow he had thus made.

"Veil," asked De Bush, "Vat you see?"

"I see," was my reply, "that I have got my fifty pounds back." 20

Mr. DeBush, like many of the early American, French and English leaders in dental practice and dental education, envisioned dentistry in global terms. "He [DeBush] implored me not to be a common tooth drawer, or a mere tinkering constructor of artificial teeth; but to remember the teeth formed as much a part of the animal frame as any other organ — never being morbidly affected without giving rise to injurious effects of a more general character." 20

HOW ABOUT THE PRECEPTOR’S CAPABILITY?

Unfortunately, not all the preceptors were of the highest quality. In one editorial comment we read: "We know of one who has the unblushing effrontery to promise to fit them for the profession in one month — to teach them the whole art and science of dentism, both surgical and mechanical, in 26 days; and this, not requiring their constant attendance, but two hours twice or three times a week." 21

"... We do not get students [in the dental colleges] from those who should be the best preceptors. Dentists who have a good reputation and a full practice do not like to take students, and hence they mostly come from preceptors who care more about the fee than they do about the instruction of the student..." 22

Idealistic practitioners derided preceptors who abused the system and sounded the call for higher standards. "We have had enough of such pupillage, and Tom, Dick and Harry turning dentist in a night, or next thing to it... Those of us now upon the stage... owe it to the public... to our pupils as well as ourselves, to inaugurate some much-needed reforms in the matter..." 23

One could compile a long list of practitioners who were regarded most highly as teachers during the era of preceptorships. One example would be the preceptor of J. Leon Williams, Dr. E. J. Roberts, who is described as "a man of sterling qualities — thorough to the point of severity in requiring from his apprentice recitations which showed understanding of principles and accurate mechanical and operative work." 24

THE GRADING OF PRECEPTORAL TRAINING

During this century of evolutionary and revolutionary change in the emerging profession of dentistry, how — in the public interest — could the education and training of dental practitioners be documented?

Prior to 1840 there were no formally chartered schools of dentistry, no dental journals, no dental organizations, and no laws governing dental practice in the United States. Anyone, if so inclined, could present himself to the public as a dentist. The comparable state of affairs that existed in England is reflected in this passage from a London Forceps editorial reprinted in the American Journal of Dental Science in 1845: "No one can legally practice as a surgeon who has not gone through a certain curriculum of education, produced certificates, at least of having attended lectures, and passed an examination, such as it is, at the College of Surgeons. Dentism, on the contrary, has no legal restrictions, anyone who can afford to purchase a brass plate, and a few second-hand instruments may write dentist after his name." 21

In the United States, Gies in his report listed "goldsmiths, jewelers, ivory
turners, umbrella makers, blacksmiths, mechanics, wig-makers, tinkers, engravers, barbers, and itinerant jack-of-all-trades' as practitioners of dentistry. As Chapin Harris put it: 'A little mechanical tact or dexterity is thought by some to be all that is requisite to a practitioner of dental surgery and that this could be obtained, at most, in a few weeks.'

There were several ways in which a dentist who had received some form of training and education, could be given "certification." A dental practitioner such as B. Q. Stevens, who completed his training under a preceptor in 1860, tells us that, "I received my diploma which I will read, it is short:"

To all whomsoever this may concern: I hereby certify that Dr. B. Q. Stevens, having studied mechanical and surgical dentistry with me, I cheerfully recommend him as being qualified to practice the same in a successful manner. Also recommend him as a gentleman of good moral character and worthy of the confidence and esteem of all with whom he may be associated.

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PRECEPTOR'S CERTIFICATE

New York May 4th 1846

This is to certify, that Alfred Henry Colling has pursued the study of surgical and practical dentistry in my office under my immediate instructions, and from having had opportunities of witnessing dental operations rendered by him, I with the utmost confidence and with a high degree of satisfaction recommend him to the public as being amply qualified to practice the different branches of the dental art.

Harvey Burdell, M.D.,
Dentist

362 Broadway

With the establishment of the Baltimore College of Dental Surgery in 1840 and subsequent dental colleges, it became possible as noted earlier for an individual to earn a diploma and a legitimate degree in the field of dentistry. The foundation was laid for the practice we follow today.

A third approach, intended to elevate the standards of the profession
and protect the public, was a plan developed in New York State. Statutes were adopted in 1868 that empowered the Dental Society of the State of New York, through a Board of Censors, to examine candidates for the purpose of licensure.\textsuperscript{26} The examination appears to have been a discriminating one, or perhaps the quality of the applicants was low, for in 1891, for example, thirty-one candidates were examined of whom only eight were found to be qualified.\textsuperscript{27}

Beginning in 1870, the Society was also authorized to award successful candidates a Master of Dental Surgery (M.D.S.) Degree.\textsuperscript{26} This practice came under criticism, and in 1891 the Committee on Dental Education of the American Dental Association questioned the wisdom of a state society or examining board granting diplomas. “New York grants the degree of M.D.S., which title we see used very freely at times by the holder. It would seem better to grant a simple certificate of having complied with the law, thus doing away with both diploma and titles which are used sometimes improperly.”\textsuperscript{28} In 1901, this practice was discontinued.

There was still another way in which the developing dental profession attempted to acknowledge the professional skills and accomplishments of practitioners. For many years, honorary degrees were awarded to practitioners who were judged to be meritorious whatever their training might have been. The Baltimore College of Dental Surgery followed this practice from 1841 to 1913,\textsuperscript{29} awarding 162 such degrees, and other dental schools such as the Ohio College of Dentistry also awarded honorary dental degrees. The practice eventually fell into disrepute and was discontinued.

Thus we see that there were several ways in which the fledgling profession attempted to award some sort of certificate of accomplishment.

\textbf{THE BEGINNINGS OF LICENSURE}

A parallel evolutionary development was that of licensure. In 1841, Alabama enacted a statute that provided for dental licensure following examination by “medical boards of the state” without specifying educational prerequisites.\textsuperscript{19}

The State of Kentucky in 1868 was the first to authorize the State dental association to appoint a Board of Dental Examiners with authority to examine applicants for licensure. Graduates of dental schools were permitted to be licensed without an examination. In the petition that led to the State’s law, there was the statement that “at least two years of close application to study with competent instructors” was necessary to acquire adequate knowledge and proficiency.\textsuperscript{19} On this basis, those who had received preceptorship training and did not have a degree from a dental college could be licensed by examination.

By 1899, there was a hodgepodge of state requirements for admission to dental practice which reflected the several ways in which a dental education might have been acquired. A sample of these varied requirements follows: 1) Some states required the applicant to have a diploma from a reputable school as a prerequisite to a licensing examination; 2) others required a diploma or an alternative such as three years of practice, three years of instruction (preceptorship), ten years of practice, and so forth; and 3) some states simply required a licensing examination.\textsuperscript{30}

Thus a variety of methods were developed to acknowledge a practitioner’s education and training, and to evaluate candidates for admission into practice. Eventually, there evolved the standardized procedures that we accept as commonplace today.
CONTEMPORARY FEELING ABOUT DENTAL EDUCATION

During the latter half of the 19th Century, in addition to the two coexisting methods of preparing people for dental practice — dental colleges and preceptorships — there was a third, smaller, movement for a medical specialty, the M.D. Dentist. Each had its supporters and its detractors. One practitioner of that period was quoted as saying that "he believed the colleges had lowered the grade of practical work while it had advanced that of theory."31

As a further example, the North Carolina Dental Society in 1890 resolved "that we . . . offer our protest against any college that shall discourage office pupilage before entering college . . . that we will use our influence against any college or college professor who shall thus lower the standard of dentistry, or who shall knowingly receive a pupil from our State without two years' office pupilage . . . In explanation of [the resolutions] it is necessary to state that the standard of dentistry has been greatly lowered in this State by the colleges in graduating men who have never had any previous office pupilage by a good preceptor. They do shoddy work . . ."32

On the other hand, the following criticism was made of students who entered dental school after an apprenticeship: "What [the students] had learned and felt proud of frequently turned out to be antiquated methods and procedures which were in vogue when their preceptors first entered upon the practice."35

In an 1878 report, this critical view of preceptorships was offered: " . . . when a student is prepared he should be allowed to enter college, regardless of how long he has been with a preceptor, instead of requiring that he shall have studied with a preceptor for two years; which means, in a majority of instances, that he has done the menial services of some practitioner for two years . . ."32

Another criticism, already alluded to, was that some preceptors were more interested in the student's fee than in his education.

Eventually, the number of schools increased and the diploma from a dental school offered prestige and a more direct pathway to practice. This, combined with the shortcomings of the preceptorship method such as the lack of regulation and standardization, led to the demise of preceptorships. Unfortunately, for a while, the value of a diploma led to the proliferation of diploma mills33 and other practices by some dental colleges that were less than exemplary,34,35 and dental schools ultimately came to be regulated by the adoption of educational standards and accreditation procedures.

In retrospect, we can conclude that dental preceptorships in the 19th Century, despite important shortcomings, served a useful purpose. At its best, this teaching method imparted technical and clinical skills and some amount of experience and related information commensurate with the knowledge of the times. It offered instruction before dental schools were available and it augmented the early dental schools' limited educational program as far as clinical experience was concerned.

Preceptors also served a "quality control" function. "Even after acceptance, the student held his place only tentatively, for should it appear that he was not really adapted for the work, he was discharged and the position given to another."35

Finally, the preceptor-apprentice approach to dental education played a role in the painfully slow but inevitable transition from the meager knowledge, charlatanism and limited educational opportunities prior to the 19th Century to the developing and ever-improving educational practices that
evolved in the early years of the 20th Century. In a society and a profession where, for many decades, there had been no educational standards, preceptorships were a step in the right direction.

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REFERENCES


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Alfred Moss, the Dentist Who Became a Champion Race-Car Driver

— P.R.H. Newsome, B.Ch.D., F.D.S., R.C.S., D.R.D.

Hon Kong

Alfred Moss, a successful London dental surgeon, was also a pioneering racing driver and was one of the first foreign drivers to take part in the famed Indianapolis 500 race. His son, Stirling, carries on his father’s fame as a driver.

Even though his last competitive outing in a Formula One car was over 20 years ago, it is probably fair to say that Stirling Moss is still Britain’s most famous racing driver. The reason why this should be so is not altogether clear. The man never became World Champion, and yet in the peculiar way that the British people often treat their sporting heroes, this could almost be one of the reasons why he is still held in such great affection; you just cannot help but take to somebody who finishes 2nd in the World Championship four years running!

The racing achievements of Stirling Moss are legendary; his 3 wins in the Monaco Grand Prix and his historic win in the Mille Miglia road race of 1955 being the highest peaks in a glittering and well documented career. What is probably less well known is that his father, Alfred, a London dental surgeon, was also a racing driver and was in fact one of the first British drivers to take part in the Indianapolis 500 race.

Alfred Ethelbert Moss was born in 1898. It is not altogether clear how he came to be involved in dentistry, but as was the case in other professions at that time, the rules and statutes governing its practice were not as clearly defined as they are today, and official qualifications were by no means the norm. By the time his name first appeared on the Dental Register in 1922,
Alfred had been practising dentistry for some 3 years. Yet of much greater interest to him was his newly found passion for motor racing. His first car was an AV Monocar, which was chain driven, with an air-cooled two cylinder JAP engine at the back. The Monocar was a two-seater but the seats were staggered and not side-by-side and the steering system, consisting of wires running round a bobbin, was not altogether satisfactory. Alfred found this out to his cost one day when both wires broke and he finished up in a shop window! Despite these shortcomings, Alfred considered the car to be extremely stylish and racy, and on one occasion, when he was proudly driving it down London’s exclusive Park Lane, he noticed that many people were looking at it with what he took to be admiring and envious glances. When he happened to look back and check on traffic, he discovered what they were really looking at: the engine was on fire! The lure of the track, however, was strong and he began to spend much of his time at Brooklands Surrey, soon winning what was described as a “tame” Private Competitors Handicap in the 1923 Easter Monday meeting. The car was a Sporting Crouch powered by a 4 cylinder Anzani engine, with Alfred winning the race at a speed of over 65 mph (Fig. 1). This early racing success was followed by others as he became more and more intoxicated with speed.

HIS JOURNEY TO AMERICA

In 1924 Alfred decided to try his luck in America. Ostensibly, the trip was to study the latest in American dentistry; yet his father must surely have had some doubts about the true motives when he discovered that Alfred had enrolled at the Indiana School of Dentistry, a stone’s throw away from the Indianapolis Speedway, America’s greatest motor racing circuit. Certainly the Americans themselves were in no doubt as to why he was there. Alfred, never the shrinking violet, made sure that the American press knew the real reason behind his visit with the result that his name was emblazoned across the pages of the newspapers right across the country (Fig. 2).

In spite of all this publicity, it was by no means certain that Alfred would even be entered in the big race. He had several letters of introduction from the people he had driven for back home, but these carried very little weight in the States. One letter was from the Mercedes agent in England to the Managing Director of Mercedes in America. The letter said nothing particularly helpful to Alfred’s cause and on reading it the director carelessly crushed it and threw it in the wastepaper basket, telling Alfred that he could not give him a drive for the simple reason that Mercedes was not competing at all in the States that year. Alfred saw where the letter went and immediately
a plan began to take shape in his mind. He did nothing for a few days, after which time he called again and asked if he could have the letter back, as it might come in handy. Very apologetically the Managing Director admitted that the letter had been thrown away, but if Alfred could remember what it had said his secretary would type out another copy and he would sign it. Not surprisingly, Alfred's version of the letter differed somewhat from the original. This second letter stated that the Managing Director of Mercedes (U.S.) had known Alfred for some years, that he was one of the very finest drivers in Europe, having driven for Mercedes in European races, and that any team able to acquire his services would be fortunate indeed. The plan worked just as Alfred had hoped that it would. Without having bothered to read it, this second letter was signed by the head of Mercedes in America, a very powerful and influential man indeed in the Indianapolis racing scene.

With the nonchalant air of a man able to pick and choose, Alfred considered several offers for his services, and finally arranged to drive for Louis Chevrolet and his team of Fronty-Fords. In 1920 and 1921, cars designed by Chevrolet had won the "500." Gaston Chevrolet, one of the three Chevrolet brothers, won in 1920 driving a Monroe and the following year Tommy Milton drove an 8 cylinder Frontenac to victory with Jules Ellingboe finishing third in a 4 cylinder version; to complete a very good day for Chevrolet, another straight 8 Frontenac survived to be ninth. During this period Louis was also involved in the design and production of "go-faster" equipment for the ubiquitous 4 cylinder Model T. Along with Cornelius van Ranst he designed an OHV conversion which vastly increased the performance of the "T." These conversions proved to be very popular with over 10,000 being sold over a period of years. Two "Fronty-Fords" were entered in the 1922 "500," racing with only fair success, but by the time the 1923 event came around the Fronty head had undergone much development and a Fronty-Ford, entered as a "Barber-Warnock Special," was driven by Lora "Slim" Corum to an incredible fifth position.

HIS FIRST RACE IN THE "500"

Alfred Moss, therefore, found himself in a team with a proven track record in the "500," and was entered to drive in the race in one of the three "Barber-Warnocks" (Fig. 3). The team was financed by the parent Ford company, and on one occasion the great Henry Ford came to the track to watch the cars in action. Alfred, however, was lucky to make it to the race proper. During one of the practice sessions a tyre blew on one of the bends. He hit both retaining walls, damaging the car severely, but without injury to himself. He was later told that he had been driving the car that had won the race 2 years earlier.
previously, and the tyres had not been changed since! On race day all the Barber-Warnocks finished but were soundly beaten by the all conquering 8-cylinder Duesenberg and Millers, these two teams dominating the race for several years to come. After starting 20th on the grid, Alfred finished a very creditable 16th, averaging 84 mph. The winner of the race was in fact Lora Corum by now driving for Duesenberg. The track at Indianapolis during the period was built of bricks (hence its affectionate name, "the brickyard") and the corners had to be taken very slowly. The cars had poor brakes, effective only on the back wheels, so speeds seldom passed 100 mph. All three of the stock cars finished, proving how reliable they were. The drivers themselves were extremely pleased, too, because they were paid by the number of laps completed, Alfred winning $900 in prize money. The car’s reliability was partly because Chevrolet insisted that every nut and bolt should be welded together, and this really did stop things from coming apart! (It is particularly interesting that several biographers of Stirling Moss mention that Alfred also took part in the 1925 “500.” In fact, this is not so. Neither is it true as many people think, that Alfred was the first overseas driver to participate in the race. He was preceded by several foreign drivers including three winners of the race, Jules Goux of France in 1913, Rene Thomas of France in 1914 and Dario Resta of Italy/England in 1916).

After the race Alfred signed a contract with Chevrolet to drive in dirt-track races. Although the cars were Fronty-Fords, similar to the type driven at Indianapolis, Alfred found the racing itself to be very different. The top speed of the cars was only 50 mph but, despite this apparently low speed, the racing was very spectacular. The American drivers became very adept at handling these machines and Alfred found that they could nick their front wheel between his front and rear wheels on one side and accompany him around the bends at top speed. For this reason Louis Chevrolet had warned him not to look across at any car that came alongside him during a race, “If you do, you’ll go off the track with fright!” he added. This year in Alfred’s motoring career proved to be very enjoyable. He often came up against the American Champion dirt-track driver and they would arrange beforehand, that during the race itself, Alfred would go as fast as he could, keep his eye on the track and his “adversary” would put on a demonstration of trying to pass, complete with near-crashes and fist shaking that kept the crowd in suspense. Alfred, being a foreign driver, was of course an ideal accomplice in this setup. It was inevitable that in the travelling circus atmosphere of the dirt-track circuit, Alfred, being the character he was, would have many adventures. On one occasion, following an argument over the quality of some bamboo shoots in a dish of chop-suey at Henry Chung’s Chinese restaurant, he was arrested for non-payment of a 45 cent bill. After a heated trial in which Alfred spoke in his own defence, Judge Delbert O. Wilmeth dismissed the case. As the Indianapolis Star reported at the time: “Mr. Moss, smiling with British triumph, gave the Judge 5 dollars for the police pension fund and left the court.”

A GARAGE BUSINESS ALONGSIDE DENTISTRY

All of these adventures became too much for Alfred’s father to bear, and in order to get him back to England, where presumably he could be kept under closer supervision, he offered to set him up in his own garage business. Alfred agreed, and the first of his garage concerns opened at Thornton Heath, Surrey. It must be remembered that Alfred was still involved in dentistry and when the Thornton Heath enterprise opened he had to tem-
temporarily leave the running of his dental practice and its 12 assistants to his partner. Many of the innovations he introduced into his garage were imported from America such as special jacks, cranes and cleaning sprays. His slogan “U reck ‘em; we Fetch ‘em” must also surely have come from America. It seems likely however, that the idea to use carrier pigeons on the breakdown truck to summon extra help was Alfred’s own! Now, with his own garage business, there was even more scope for Alfred to pursue his love of motor racing. He was again driving the Fronty-Ford Speedport he had become accustomed to in America. The car had a Model “T” chassis with the wheelbase cut to 7.0’ and sporting 28 x 4” tyres. The engine was the faithful Chevrolet Frontenac with 8 valve OHV head.

At the 1925 August Bank Holiday British Automobile Racing Club meeting there assembled the largest crowd at any race since the end of the First World War, and Alfred was one of the 19 entrants for the 75 mph Short Handicap. He won the race at 80.75 mph and set the best lap at 85.13 mph. Alfred, his sense of drama finely honed during his years in the States, managed to produce a spectacular finish for the large crowd which, incidentally, contained the Crown Prince of Japan. An oil pipe fractured with the result that the exhaust pipe was sprayed with oil and the flames lit up the car as it crossed the finishing line.

WITH MARRIAGE COMES A BUILD-UP OF DENTAL RESPONSIBILITY

In 1927 Alfred married. His wife, Aileen, was a racing driver herself, and a very competent one at that; she went on to win the Ladies Trials Championship in 1936 at the wheel of a 1½ litre Marendaz Special. With the extra responsibilities that go with married life and a young family (Stirling was born in 1929 and Pat, later to become an international showjumper, in 1935) Alfred began to spend less time behind the wheel of a racing car and more time in the dental surgery, building up his empire of practices to an amazing seventeen at one stage. He still took part in the occasional race at Brooklands however, and it was, no doubt, on these occasions that the young Stirling became familiar with the sight and sound of racing machinery. Stirling and Pat grew up in a “fresh-air” environment and both became exceptional horse riders at an early age. The skills they learned in equestrian competition, mental and physical co-ordination and balance, would serve them both admirably in years to come in their respective careers. Compared to his offspring, Alfred’s skills in the saddle were not quite so well developed and he decided to give up riding after a bad fall when he broke both wrists — a particularly unfortunate injury for a dentist!

It was by no means a foregone conclusion however, that

Fig. 4. Alfred (center) backed his son’s racing career wholeheartedly. Here he toasts the Mercedes team with team manager Neubauer (left) and his son, Stirling.
Stirling would become a racing driver. His father held some hopes that he would follow in his own footsteps and take up a career in dentistry. That this was not the case is history as Stirling went on to climb the highest peaks of motor racing achievement. Alfred was able to witness it all (Fig. 4), all the great moments and unfortunately all the heartbreaking ones too, certain in the knowledge that his son had achieved all and more than either of them could have ever hoped for.

Alfred Moss died on April 23rd 1972 but will long be remembered both for his pioneering spirit at the wheel and for his contribution to the dental profession.

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Oddments in Dental History:
An Unusual Case of Delayed Eruption of 100 Years Ago.

—Malvin E. Ring, D.D.S., M.L.S.
Rochester, New York

It would be impossible for today's dentist to maintain any kind of practice without the benefit of the X-ray machine. Only the foolhardy practitioner would attempt a diagnosis of anything slightly out of the ordinary without a radiographic examination. Yet the dentist — and the physician — of a century ago was not blessed with this remarkable tool. Consequently, patients suffered from pathological conditions that would be so amenable to early and effective treatment today.

An excellent case in point in this account is the mischief wrought by an unerupted 3rd molar in a woman of 62 who had been troubled by it, all unknowingly, for over a decade. The case history was written up by a physician, John S. Marshall, M.D., and was reported in the Journal of the American Medical Association, Volume 7, pages 516-517, November 6, 1886.

A SUPERIOR WISDOM TOOTH DISCHARGED FROM THE NASAL PASSAGES; WITH REMARKS.

"Mrs. B., aged 62, in October, 1884, suffered intensely from what she supposed to be 'a severe cold in the head.' The pain in the right orbital region was at times excruciating, but not more severe than she had often experienced in other portions of the face and right ear, during the previous ten years. . . .

'After a few days of discomfort, the patient made an unusually great effort to relieve the nostrils, by alternately coughing, and blowing the nose. Suddenly she felt something fall upon her tongue. Spitting the mass into the wash-bowl, she heard a clicking sound, which caused her to examine it. Imagine her surprise at finding a large right superior wisdom tooth covered with fetid pus. The relief of the facial pain was immediate, 'the cold in the head' was explained, and probably much of the 'torture' she had endured periodically for years, was also accounted for. . . .

'In the year 1854, thirty years previous to the expulsion of this 'eccentric tooth,' she had all her upper teeth removed. Wore a 'temporary set' of artificial teeth for several months, then had a 'permanent set,' on gold plate, which she wore with great comfort, for four years. Then a tumefaction appeared upon the right superior maxilla, near the tuberosity; and she jested about 'cutting a wisdom tooth.' Consulted her dentist about the 'plate.' He found that in perfect condition, and assured her there was no prospect about a tooth, and was unable to assign any satisfactory cause for the suffering. . . .

'In May, 1884, the patient suffered from an abscess in the right ear. After the abscess ruptured an unusual amount of hemorrhage from the ear occurred. . . .'

Remarks: . . . The swelling and tumefaction mentioned as having appeared at the posterior portion of the right superior maxilla about five years after the extraction of the superior teeth . . . [were] undoubtedly caused by the eruption of this tooth . . . which, taking a direction upwards and forwards, finally pierced the floor of the antrum of Highmore. . . . The tooth must, however, have remained in this position for several
years... I am of the opinion that the abscess in the ear was the result of an abscess at the roots of this tooth, which discharged its contents into the meatus, and at the same time freed the tooth from its crypt in the maxillary bone and left it loose in the antrum.

The tooth being loose finally found its way to the anterior portion of this cavity and lodged there, and by contact with its nasal wall produced ulceration of this and the inferior turbinated bone, and thus found its way into the nasal passages and into the mouth.

The slight catarrhal (?) discharge which had been so persistent for so many years was without doubt the result of the presence of the tooth in the antrum... The symptoms of the case were, however, so obscure and indefinite... as to give no indications of their real cause, and the presence of a tooth or other foreign body in the antrum was not even suspected.

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“All that mankind has done, thought, gained or been:
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Thomas Carlyle
1795 - 1881

The Eastman Dental Center is a well known dental research and educational institution. Its collection of rare and historic books, which trace the history of dentistry from the seventeenth century to the present day, has up-to-now been little known. With the award of a New York State Conservation/Preservation Discretionary Grant, the status of the institution’s archival collection has changed. The collection has been restored and thus preserved for future dental scholars. Its holdings’ records have been entered onto the national archival bibliographic data tapes so that persons will be aware of the collection’s existence.

In 1985 the New York State Library solicited applications for the award of discretionary grants for the conservation and preservation of library research materials. Provision for these grants was written into New York State Law in 1984.1 Under this law, the eleven comprehensive research libraries in New York State were each eligible to apply for a $90,000 annual grant for a five year period (paragraph 7, subdivision a).2 The provisions continued:

(7) (c) “For aid payable in the calendar year nineteen hundred eighty-five and thereafter, the commissioner shall award grants not to exceed two hundred thousand dollars in any year to agencies and libraries not eligible for funding under paragraph ‘a’ of this subdivision for the purpose of the conservation and/or preservation of unique library materials.”

The librarian of the Eastman Dental Center was excited when she heard of this grant opportunity and immediately filled out an application. The Center has a small collection of dental books, some of which are unique, and most of which are important textbooks tracing the history of dentistry. The Center was not successful in getting funding for its first application in 1985, but was encouraged to try again in 1986.

The second time around the librarian paid particular effort to do a lot of preliminary work. She and her assistant prepared a printed catalog of all the holdings in the collection. The condition of each book was noted. In addition, the library assistant checked each book’s record on the SUNY/OCLC tapes to determine whether or not another library in New York State owned the book. The librarian had already checked the dental bibliographies, among them Campbell,3 Asbell,4 and Prinz5 to verify each title and check the collation statement for completeness. In addition, the librarian interviewed several dentists knowledgeable about dental literature, including Malvin E. Ring, to ascertain the value of the books from a scholar’s point of view.
THE ORIGIN OF THE COLLECTION
The Eastman Dental Center’s second director, Dr. Basil G. Bibby, is a bibliophile. When he came to the Center in 1947, he began to collect dental books. He relates stories about buying some of the books and receiving others from local dentists throughout the years. This collection remained in its original shape, cataloged in the briefest form and housed in the back of two locked glass cabinets in the rear of the Center’s library/conference room in the old Rochester Dental Dispensary. It should be noted that Dr. Bibby is not only a world renowned dental scientist, but was also appointed by President Dwight D. Eisenhower to be a member of the Board of Regents of the National Library of Medicine. The job of the regents, at that time, was to interest Congress in a project to expand the National Library of Medicine.

THE BIBBY LIBRARY AND ITS IMPORTANCE IN THE REGION
One of the provisions of the grant was to provide information about the library and its unique resources. The Basil G. Bibby Library, named in 1978 in honor of Dr. Bibby, has the only major collection of dental research materials in New York State, east of Buffalo and north of New York City. The library currently subscribes to over one hundred and fifty dental periodicals and maintains a collection of 7,700 bound volumes, textbooks, and monographs. The library serves the faculty, postdoctoral students, and staff of the Eastman Center as well as the dental faculty and residents of the University of Rochester School of Medicine and Dentistry and local hospitals. In addition, dental health professionals from the Rochester region have access to the collection by appointment. Since the library’s reorganization in 1976, the Bibby Library has been an integral part of regional, state, and national networks of libraries. In applying for the New York State grant the librarian stressed the Bibby Library’s contribution to the library community.

RARE AND HISTORIC DENTAL BOOKS
The Eastman Dental Center has a unique collection of uncommon, important dental books. The oldest volume in the collection, Bartolomeo Eustachi’s Sanctoseverinatis libellus de dentibus, printed in 1563 in Venice, appeared only thirty-three years after the first recorded volume in dentistry, Artzney Buchlein wider allerlei Krankheiten und Gebrechen der Tzeen published in Leipzig in 1530.

The Center's collection of early works is particularly valuable since relatively few dental books were printed during the sixteenth to the eighteenth centuries, and most of those have been severely damaged or destroyed through time. This collection, now that it is fully restored, will be of value and accessible to dental scholars and historians who will be able to work with such original volumes as A practical treatise upon dentition; or, the breeding of teeth in children (John Hurlock, 1742); nouveaux elemens d'odontologie . . . (Henry de Lecluse, 1754), bound with L'art du dentiste, joint a l'Antomie de la Bouche, seemingly a 1782 edition of the same work; A treatise on the disorders and deformities of the teeth and gums (Thomas Berdmore, 1760); and The natural history of the human teeth (John Hunter, 1778), superbly illustrated with copper plates. These titles are mentioned to give a sense of the Center's superior collection which can serve as a working testament to the art and science of dentistry.

In addition to these rare volumes, the Bibby Library maintains and is
currently building, through donations, its more modern historic collection (1900-1960) of books to fill in for missing editions and worn volumes from the Center’s original library collection established in 1916. The library’s journal collection dates back to 1839 which is the date of the first published dental journal, *The American Journal of Dental Science*.

THE INSTITUTION’S COMMITMENT TO MAINTAINING ITS COLLECTION

When the librarian was drawing up building plans for the library in the new facility, she recommended that the Center build a room to store the archival collection of books and dental journals. This was approved and the books and older journals are thus kept in a separate climate-controlled room off the main reading room. They are housed in specially designed locked wood cabinets which have wire screen doors to allow for the circulation of air. The room is air conditioned and operates under a zone management heating system to control the humidity. In preparing the grant, the librarian emphasized these environmental conditions so that persons reviewing the application would realize that the Center had invested money to maintain its collection and was now looking for help to preserve and conserve its books for future scholars.

PRESERVATION AND/OR CONSERVATION

Since the library has neither the staff nor the facilities to repair or restore books in its small workroom, the librarian requested State funds to help with the restoration of the collection. Up to that point, she had been able to send eight of the library’s most valuable books to a rare book bindery. She realized that at the rate of one or two a year, preservation of the collection would take too long a time. She, therefore, applied for State funds to rebind and/or refurbish 129 books and 35 journals. The pages, for the most part, were intact, although many pages of the late nineteenth century books were foxed because of the acid paper. The books were rebound, using acid-free materials, in cloth with leather labels; a few were rebound with full leather spines. Whenever possible the book covers were kept and restored. It was agreed that several books did not need treatment at this time, and it would be better to leave them in their original bindings. Other books were left untouched but placed in protective boxes. The Bibby Library is very pleased with the condition of the collection and will do everything to maintain it in the future.

COMPLETION OF THE GRANT

The Bibby Library was most fortunate to have received this State grant. The books are now back in the library. Besides entering the holdings on the SUNY/OCLC archival computer tapes, the librarian has publicized the collection. In mid-February, the *Times-Union*, the Rochester evening newspaper, included an article on the grant and the existence of the collection. The librarian has also spoken to several library groups about the potential for receiving money from the State under the discretionary grant program.

With the completion of the grant, the librarian plans to turn next to the Center’s early twentieth century collection. Perhaps the Center might qualify
for another grant which would help with the "magic preservation" of the many pages of the important dental books which are the basis of dentistry today.

REFERENCES
2. The eleven comprehensive research libraries: Columbia University, Cornell University, New York Public Library, New York State Library, New York University, Syracuse University, University of Rochester, and the State Universities of New York at Albany, Binghamton, Buffalo, and Stony Brook.
6. The Eastman Dental Center (1965-), formerly named the Rochester Dental Dispensary (1915-1941) and the Eastman Dental Dispensary (1941-1965).

MRS. GLASER is Librarian, Basil G. Bibby Library, Eastman Dental Center, 625 Elmwood Avenue, Rochester, New York 14620. Requests for reprints should be directed to the author.

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Sir Jonathan Hutchinson,
The Universal Specialist: His Studies of Syphilitic Changes in the Mouth.
—Jerry J. Herschfeld, D.D.S.
Bensalem, Pennsylvania

Much of why dentistry today is recognized as a bona fide medical specialty is due in large measure to the pioneering efforts of those in other fields. Though he was not a member of the dental profession, the work and efforts of Sir Jonathan Hutchinson will long be enshrined in respectful memory by the dental profession. Hutchinson's studies on the relation of malformed teeth to inherited syphilis had a startling effect on those in and out of the dental profession.

One of a family of twelve, Hutchinson received his early education at a local school in Selby, Yorkshire, England. In 1845, he was apprenticed to surgeon-apothecary-preacher Caleb Williams and, while assisting his preceptor, began his study of the classics. In the last two years of his apprenticeship he attended lectures at the York School of Medicine and Surgery. In 1849 he proceeded to St. Bartholomew's Hospital in London where he studied under the renowned James Paget.

In 1856, after having served a clinical assistancehip at Liverpool Chest Hospital, Hutchinson hung up his shingle. By this time he had published a description of gonorrheal and luetic iritis. In 1858, reporting on the teeth associated with "hereditosyphilitic struma" he said that he had only seen girls with the "taint" and suspected that a "larger number of male Sir Jonathan Hutchinson conceptions end in abortion." In 1859 Hutchinson published his views on the diagnostic triad that now bears his name. Published in the Transactions of the Pathological Society of London, the "triad" includes interstitial keratitis, eighth nerve deafness, and the characteristic defects — hypoplasia — of the permanent incisors. These studies are perhaps the best pathological studies known to dental students and practitioners alike.

Hutchinson was perhaps the most prolific contributor to the literature of medicine of his time. He recognized several types of lupus and differentiated rheumatoid arthritis from osteoarthritis. He wrote extensively on such topics as constricted pericarditis, esophageal varices in patients with liver cirrhosis, and psittacosis. He described the peculiar facies of patients with ophthalmoplegia externa, the unequal pupils diagnostic of meningeal hemor-
Hutchinson described sarcoidosis, which he named "Mortimer's malady" after a patient, and was one of the first to attribute a cause of amblyopia to the use of tobacco. In 1904, he, along with Hastings Gilford, linked the premature senility of progeria to a pituitary lesion. Considered the "universal specialist," Hutchinson's ten volume text, *Archives of Surgery*, was, and is, considered a "museum of rare diseases."

In addition to his busy practice and teaching, Hutchinson was active in London medical affairs and many professional associations. As editor of the *British Medical Journal*, he published essays on medical reforms, hospital architecture, overpopulation, Malthusianism, and the arts. His work and over 1200 publications was so extensive that it was said that "his study was the whole of Medicine as Bacon's was the whole of Nature." Elected a fellow of the Royal Society in 1882 he was knighted in 1908. He received numerous honorary degrees from universities throughout Europe and, at the time of his death in 1913 at the age of 85, had been president of virtually every important medical society in England.

As a most versatile researcher, practitioner of medicine, consultant, teacher and author, Sir Jonathan Hutchinson ranks among the most notable luminaries of the Victorian era. His diagnostic efforts have had a profound effect on medicine and dentistry alike and has strengthened the relationship between the two modalities.

One of Hutchinson's greatest contributions to our knowledge of syphilis' rampages is his description of the screw-driver like upper central incisors with notched edges which occur in congenitally acquired cases of syphilis. Every dental student is familiar with this syndrome. But there are numerous other intra-oral manifestations of the disease that are not as well known to the dental practitioner, especially since today the use of antibiotics keeps most cases of syphilis from progressing to secondary and tertiary stages.

Nevertheless, it is his description of these sequelae that form the bulk of the chapter on syphilis in Hutchinson's book and which can be enlightening to today's dentist. The section is here reprinted from *Syphilis* by Jonathan Hutchinson, London, Cassell & Co., 1896:

**CHAPTER XXII.**

**ON SYPHILITIC AFFECTIONS OF THE MOUTH, TONGUE, AND LARYNX.**

Although I have in various parts of this work mentioned incidentally the affections of the mouth and throat which occur in syphilis, yet it seems desirable to devote a little more space to their special consideration. Amongst the earliest and most common of the secondary symptoms we have sore throat, and the part infected is almost invariably in the first instance the tonsils. The symmetrical kidney-shaped ulcers which are seen in these organs were described by Hunter. Probably very few patients who pass through syphilis wholly escape these ulcers in the tonsils. In many cases, however, they are quite painless, and in not a few they are very transitory. It has occurred to me, not unfrequently, to be assured by a patient that he had no sore throat, and yet to find on inspection that there were very definite conditions present; and yet more frequently I have had the history of sore throat given, and been unable to discover any remaining appearances. It is only, however, in the very first stage of syphilis that this spontaneous disappearance is observed. Very frequently as a parallel to what we have noticed in the skin eruptions, a much more severe form of tonsilitis follows it. In these recurrences, the inflammation spreads from the tonsils to the pillars of the fauces, and up to the base of the uvula. Extensive superficial abrasions
are produced, the margins of which are a vivid red, and the surfaces covered by a yellowish-grey secretion. This secretion rarely becomes distinctly pellicular, and the slightest attempt to scrape it off makes the surface bleed. By these features, the conditions may usually be distinguished from those of certain rare cases of chronic pellicular or diphtheritic pharyngitis which closely resemble syphilis, but are not due to it. In these latter, a thick coherent pellicle may be peeled off without causing bleeding.

The form of acute syphilitic pharyngitis which I have just described is attended with great pain on swallowing. It is often coincident with a severe attack of syphilis, as denoted by a copious rash, which to some extent resists treatment, and is, I think, often seen in patients to whom mercury has been given too vigorously at first. Its treatment is difficult, for mercury often appears to aggravate it, and it must be used with great caution.

Together with the pharyngitis, there are often seen abrasions with inflamed edges and glutinous secretion on their surfaces in the pouches of the cheeks, the lining membrane of the lips, and the commissures of the mouth. In the cheeks they are always especially marked both behind and around the last molar tooth. On the tongue, also, similar patches more or less symmetrically arranged, are often seen. In some patients the mucous membrane of the mouth suffers very severely while the skin is almost exempt. But in many, the severity of the disease is marked by extensive lesions in both structures. It is, perhaps, a good rule of practice, that when sores of unusual extent are seen in the mouth, after mercurial treatment has been tried for some time, iodide of potassium should be given in its stead. The prescriber must, however, be prepared to revert to the stronger specific after a while. The local application of solutions of chromic acid or nitrate of silver are often of great service. A certain slight amount of enlargement of the lymphatics in the back of the neck is to be expected as a consequence of the inflamed throat. But though it may persist for long, it never advances to any high degree. The absence of any severe gland affection in connection with lesions of the secondary type is one of the features in which they contrast most definitely with those of the primary class.

It is not necessary to say much as to primary chancres in the mouth. They may occur on the lips, on the tongue, in the cheeks, or on the tonsils. They are always to be distinguished from sores of the secondary class, by the circumstances that they are single, and that they are attended by large swelling of the lymphatic glands of the same side.

During the secondary stage it is not at all uncommon to witness the growth of pappilomata on the surface of the tongue, and I have already more than once mentioned them as good instances that syphilis can cause growth of normal structures, as well as ordinary inflammation. They are almost always restricted to the dorsum and posterior part of the organ. The result of this probably is, that this is the region most exempt from pressure when the tongue is at rest in the mouth.

After the attack of more or less severe pharyngitis and stomatitis which occurs in the secondary period has once passed away, it never returns in the same form. Nothing, however, is more common than for slight relapses to be witnessed, and in these the tongue is especially apt to be the part affected. A very marked difference is now observed in the liability of the two sexes, men being much more prone than women to suffer from persisting or repeatedly relapsing sores of the tongue and throat. This difference is no doubt due to the habit of smoking, the hot tobacco fumes exercising a very definite influence in localising and exciting the morbid processes. In many cases it is impossible to cure the mouth while the patient continues to smoke. Other local influences also take their share,
such as broken teeth, ill-fitting tooth plates, and amalgam stopping. Patients suffering from recurring stomatitis should be warned not to drink any beverages containing carbonic acid, and should also avoid cheese, sugar, fruits and all articles of diet which make the mouth smart.

The diseases of the tongue which are met with after the secondary period show considerable variety in their forms; in a few exceptional cases the tongue never gets well, but remains swollen and lumpy, with deep fissures, bald patches, and abrasions. These conditions are, I think, not unfrequently caused by a premature and too severe salivation. But at the same time it is to be admitted that they are often to be cured only by the steady use of mercury. A much more common affection of the tongue from syphilis is witnessed at intervals of from two to six or ten years after the occurrence of the disease, and is of the nature of superficial sclerosis. From it women and non-smokers are almost wholly exempt. It consists in the formation in the first instance of ill-defined patches on each side of the dorsum of the organ, which become smooth and of a silvery white. If the habit of smoking be continued the patches gradually indurate and thicken more, until they present dense white leathery plates, the so-called ichthyosis of the tongue. The state first described is at no stage to be considered as wholly syphilitic, and all its conditions may be produced in great perfection in those who have never suffered from the disease. It is in reality the smoker's tongue. But I do not think there can be any doubt that those who have suffered from a specific glossitis are far more prone to it than others. When the condition has advanced to sclerosis it is too late to expect any benefit from the internal use of specifics. Whilst a diffuse lumpy condition of the tongue is a very common consequence of syphilis, swellings that can be classed as true gum mata are rare. Occasionally, however, we see a well-defined swelling in the muscular substance of the organ which is of this kind. Occasionally by their hardness, gum mata may simulate malignant growths; they always, however, answer very quickly to the iodide of potassium, and the diagnosis is thus easily established. Syphilitic lesions of the tongue are at all stages, but especially that of sclerosis, very liable to take on cancerous action. It is scarcely possible to repeat this assertion too emphatically, but as I have treated it in detail in another chapter, I need not repeat here what has been there said.

In the tertiary stage of syphilis, and indeed at any period after the secondary, acute phagedaenic inflammations may occur in connection with the mouth. They are most common on the soft palate, and not unfrequently destroy it. But they may involve also the pharynx, tongue, and larynx. They are seen both in the inherited and acquired form of syphilis, but are more common in the latter. The rapid destruction of parts, the swelling and the acute inflammation present, usually denote sufficiently clearly the nature of the disease. The most vigorous treatment is necessary; iodide of potassium should be pushed, and the edges of the ulcer cauterised with the acid nitrate of mercury. As a rule, when sound healing has occurred no relapse may be feared. Destruction of the epiglottis, sclerosis of the larynx, and now and then almost entire occlusion of the pharynx, with posterior adhesions of the velum, are amongst the lamentable consequences of these attacks. They not unfrequently necessitate the performance of tracheotomy and the permanent use of the cannula.

It remains to state that herpetic affections of the throat and mouth are not by any means uncommon in connection with syphilis. They are sometimes very troublesome on account of their tendency to recur after very short intervals, and they always annoy the patient by making him think he is not cured. They may be diagnosed from other forms of syphilitic
sores, by the observation that they are never symmetrical, and are usually restricted to one side of the palate or pharynx. Although a tendency to spontaneous cure is always present, yet herpetic sores on the palate after syphilis are prone to last much longer than herpes usually does on other parts. It is doubtful whether the use of specifics does much to prevent the liability to herpes of this kind. At any rate, arsenic ought always to be given in combination with them.

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Officers of the American Academy of the History of Dentistry pictured at the 36th Annual Meeting, Las Vegas, Nevada, October 7-8, 1987. From left: Dr. H. Berton McCauley, secretary-treasurer; Dr. Jack Gottschalk, president; Dr. Arden G. Christen, immediate past-president; Mrs. Wilma Motley, vice-president; Dr. Joseph Salcetti, president-elect. Missing are Dr. Malvin E. Ring, editor and Dr. Richard A. Glenner, historian.
Once commonly regarded as an unimportant, somewhat despised occupation, dentistry was transformed during the nineteenth century into an essential and honored part of the health professions. Much of that transformation was brought about by an adopted West Virginian, Dr. Simon P. Hullihen, who lived and practiced in Wheeling. Because of his pioneering work in maxillo-facial surgery, he has come to be regarded as the founder of the modern dental specialty of oral surgery.

Simon P. Hullihen was born near Milton in Point Township, Northumberland County, Pennsylvania, on December 10, 1810. His family, on his father's side, was of Irish extraction. On his mother's it was of Dutch and English stock. The modern name Hullihen was originally Huallachain.

Dr. Hullihen's great-grandfather was a native of Ireland and his descendents, from the period of his locating in America, were farmers in Pennsylvania. His father, an invalid for many years, died after passing the meridian of life. His mother reached nearly three score years and ten.

The early educational advantages of Dr. Hullihen were limited, embracing the usual course of study at the township school, which terminated when he was sixteen years of age.

During his boyhood, when about ten years of age, he met with a painful and serious accident, which caused him to be disabled for a number of years. While playing with other boys near a lime kiln in which the fire had recently subsided, young Hullihen was pushed or fell through the opening at the top onto the hot stones at the bottom. Before he could be extricated, his feet were both severely burned, causing his confinement to bed for nearly two years. After much suffering and severe trials of patience, he was able
to stand. The injury being to his heels, he at first walked upon the balls of his feet. This then became a habit.

At an early period after his recovery, he made accurate plaster of paris casts of his feet, and which he had a last-maker copy. From these, comfortable boots were made. During his confinement, he studied the Scriptures. The religious instruction he received and unusual acquaintance with the Bible remained with him all his life.

Two years of confinement under medical treatment necessarily brought him into constant contact with many physicians, which may have given a medical bent to his mind. He extracted aching teeth for his acquaintances and soon became an expert along that line. He did the greater part of such work for the surrounding countryside, the physicians sending their patients to him.

Dr. Cabell, who occupied the chair of surgery at the University of Virginia was accustomed to illustrating to his class the necessity of the surgeon being able instantly to devise measures to meet an emergency, and cited an incident that happened to Dr. Hullihen. When Dr. Hullihen was a youth, he visited the house where several physicians were ineffectively trying to remove a fish hook from a man's throat and which was still attached to the line. As often as they loosened the hook, it would fly around, only to fasten itself anew. Dr. Hullihen bored a hole through a large bullet and passed the line through it. He pressed the bullet down against the hook with an instrument. When the hook became loose, he deftly tightened the line, thus fastening the hook into the bullet. He was then able to remove the hook.

THE EARLY DAYS OF HULLIHEN'S CAREER

To what extent his visit to the well-known surgeon, Dr. McClelland of Philadelphia, shaped his career has not been recorded. We only know that he studied for a while under him.

In 1832, Hullihen located in Canton, Ohio, where he followed the trade of silversmith. He also did the mechanical work connected with dentistry for some dentists in that city. Through this demand, he became better acquainted with dentistry and decided to practice it.

Immediately following his marriage in 1835 in Pittsburgh, he left by steamboat for Kentucky where he intended to locate. While on board he became very ill and it became necessary to leave the steamboat at Wheeling, West Virginia. Upon further acquaintance, and liking the place, he was induced to abandon his original purpose of going to Kentucky. He quietly but firmly announced his intention to practice dental, oral and general surgery as a branch of medicine. He soon met with opposition and antagonism, and suffered from the malicious attacks of jealous rivals who were envious of his success and prosperity. While suffering under unjust efforts to blacken his character and drive him from Wheeling, Dr. Hullihen attended strictly to his own business and soon advanced in popularity and public esteem.

His earliest reputation as a surgeon was acquired by an operation upon a lumberman from the Allegheny River. He repaired a double hare-lip, straightened the nose and constructed a gold palate, all of which gave the man a very respectable appearance and voice.

Dr. Hullihen was a remarkable man, a true genius, who possessed the qualities that make a great and successful surgeon. He was without a doubt the most expert oral surgeon of that time. For originality, fertility of conception and resources in general surgery, he probably had no equal.
He received the degree of Doctor of Medicine from the Medical Department of Washington College in Baltimore, Maryland. However, he never practiced general medicine, but confined his activities to dental and surgical operations.

The honorary degree of Doctor of Dental Surgery was conferred upon him by the Baltimore College of Dental Surgery in 1843.

HULLIHEN AND THE FIRST DENTAL HOSPITAL

The most prominent project of Dr. Hullihen was to establish a public hospital in Wheeling, where the sick and disabled of all classes might receive proper medical and surgical attention. He earnestly exerted himself along this line and, as a member of the City Council, he endeavored to enlist the citizens in this humane enterprise. At first, he was not successful nor was he able, during several years of effort, to secure material aid from any quarter. In the meantime, his growing reputation as dentist, surgeon and also oculist, was attracting patients from a distance. To meet the exigencies of his private practice, he established an infirmary of his own in East Wheeling. At length, with the aid of a Bishop Whelan, he established a hospital in North Wheeling under the charge of one of the religious orders of the Roman Catholic church.

A house was purchased by the Bishop for the residence of the Sisters and Dr. Hullihen supplied it with patients at once to the extent of its capacity. On March 12, 1850, a charter was obtained for The Wheeling Hospital. It is now a very large and well-equipped institution.

Benevolently inclined persons now came to his aid. Liberal expenditures by the Bishop, gentle charity of the good Sisters and the eminent skill of Drs. M.H. Houston and John Frissell, a physician and a surgeon, the hospital was a brilliant success from the beginning.

To illustrate the variety and extent of operations by Dr. Hullihen during the last ten years of his life, the records in his books show that he operated: for cataract, about 200 times; hare-lip, about 100 times; for cleft-palate, about 50 times; for cancer, about 150 times; making new noses, about 25 times; making new lips, about 50 times; making "underjaws", about 10 times; general surgery (club foot, etc.), about 200 times.

Add these to a busy practice of a successful dentist, practicing in all branches of his profession, one can realize the great energy of the man. Few have lived to accomplish as much in even a greater number of years.

HULLIHEN'S PROFESSIONAL AND ORGANIZATIONAL ACTIVITIES

Dr. Hullihen was a member of the American Society of Dental Surgeons, The Ohio County Medical Society and the Mississippi Valley Association of Dental Surgeons. Most of his papers, which he read before the Societies, were subsequently published in The American Journal of Dental Science and The Dental Register. Among them are essays entitled, "An Essay on Odontalgia" (1889); "Treatise on Hare-Lip and Its Treatment" (1844); "Report of a Case of Elongation of the Upper Jaw, with Distortion of the Face and Neck, Caused by a Burn Successfully Treated" (1849); "An Essay on Abscesses of the Jaws and Treatment" (1846); "An Essay on Cleft Palate and its Treatment" (1845); "Anesthesia"; "An Essay on Abscessed Antrum"; "Observations on Toothache"; "Dental Neuralgia"; "Forceps", and many others.
His high ideals with regard to the profession of dentistry were expressed quite well when he said, "The Dentist must carry upward the standard of his profession and plant it upon the broad platform of medical science. He must claim for himself and his profession the same respect and importance awarded to other branches of the healing arts. That too, upon the same ground — the ground of a thorough scientific education."

His widespread reputation and great success as a surgeon went far to secure recognition for the practice of dentistry as standing upon an equal footing with the practice of medicine and surgery.

*The Dental Register* was started under the auspices of the Mississippi Valley Association of Dental Surgeons in 1847, as a quarterly publication. The publishing committee were: S.P. Hullihen, Wheeling, West Virginia; R.B. Brown, St. Louis, Missouri; and James Taylor, Cincinnati, Ohio.

Dr. Hullihen invented many forms of dental and surgical instruments, among which the Hullihen compound root forceps described in the *Journal of Dental Science*, for June 1844, is the most conspicuous. His operation, known as "Hullihen's Operation of Phizodontrophy", was first advocated in 1848 and published by him in the *Philadelphia Medical Examiner*, Oct. 1852. He also performed an ingenious and successful operation for resection of the lower jaw which he described in *Bond's Dental Medicine*, 1881.

As a dentist and surgeon, Dr. Hullihen was regarded as eminently judicious and skillful. His personal appearance was attractive. He was about five feet, eight inches tall and weighed 140 pounds. His eyes were his most striking feature — large hazel brown — which revealed in a striking manner his changing thoughts.

Of a highly nervous temperament, he was nevertheless very fond of poetry and pets. Once a year, he visited his professional friends in Baltimore and Philadelphia. These visits were no doubt beneficial to his health, but also kept him in touch with the latest treatments related to his particular branch of his profession.

Dr. Hullihen was extremely generous. No sufferer ever applied to him to whom he did not respond with his open-hearted and free-handed liberality. In the prosthetic portion of his practice, in a single year, he supplied charity work amounting to $2,000. In all charitable or political causes it seemed necessary to involve Dr. Hullihen in order to secure success of the venture.

Dr. Hullihen was married in April, 1835 in Pittsburgh, Pennsylvania to Miss Elizabeth Fundenberg. Her original name was Von den Burg, a very distinguished German family who had settled in Maryland early in the eighteenth century. Five children were born to this union.

**HULLIHEN'S DEATH AT A VERY YOUNG AGE**

Dr. Hullihen died in Wheeling March 27, 1857 at the early age of 46. The cause was given as typhoid pneumonia from exposure after becoming overheated in the operating theater at Wheeling Hospital.

It was estimated that from four to six thousand inhabitants of the city and surrounding country honored his name and memory by attending his funeral. Following the announcement of his death, the medical profession of Wheeling, the Wheeling Hospital Association and the city council each called a meeting and passed resolutions of respect, testifying to Dr. Hullihen's "eminent talents, his remarkable benevolence, and his unwearied devotion to pursuits of public and private utility." A mass meeting of the citizens of Wheeling was also called at the courthouse to express profound sorrow and
grief at Dr. Hullihen's death and appreciation of his great achievements. At 
this meeting, the following resolutions were adopted:

"RESOLVED: that we have heard with profound sorrow of the death of 
Dr. Hullihen, and assembled to express the universal respect of the com-
munity for his memory. His decease in the prime of life, in the midst of an 
honorable and useful career, and in the full vigor of his rare intellect, has 
impressed us with a deep sense of the unusual calamity. By his loss we feel 
the peculiar loss of a friend, added to the general sorrow for the decease 
of a distinguished citizen.

RESOLVED: that we will erect a suitable monument for the deceased 
in testimony of our respect for his memory, and that a committee be ap-
pointed by the chairman to carry this resolution into effect."

His passing closed the career of one of the really unique and original 
characters of dentistry and surgery — a truly great man, as exemplified by 
the resolution of the medical faculty: "The eminent position which he had 
obtained by his own exertions furnished a striking illustration of how genius 
is not to be controlled by adverse circumstances."

The distinguished Alexander Campbell, founder of the church called 
"The Disciples", more familiarly, "The Campbellite Church", wrote of him 
as follows in the magazine Millemiae: "His genius, science and art, developed 
in the unprecedented and extraordinary operations performed by him in his 
profession have attracted the attention and constrained the admiration of 
the whole profession wherever he was known, from the banks of the Ohio 
to those of the Thames, from Boston to New Orleans."

Among American surgeons, he had no superior, probably no equal. In 
dentistry he was not equaled in America. He performed operations which, 
when exhibited in Great Britain, prompted certain journalists to announce 
that such operations had never been performed in Great Britain!

He was extremely humane and generous. In his hospital as well as in 
his private practice he sympathized with suffering humanity in all its forms 
and was ever ready to extend relief to the sufferer, without any other claims 
than those of common brotherhood. When a man's race is run, no higher 
eulogy can be paid him than the tribute paid to Dr. Hullihen by his fellow 
townsmen in the inscription engraved on the large marble shaft that marks 
his resting place in Mount Wood Cemetery: Erected by the citizens of Wheeling 
to the memory of one who had so lived among them that they mourned his death 
as a public calamity. On the opposite side is skillfully carved the most ap-
propriate Scriptural scene of the Good Samaritan binding up the wounds 
of the hapless trader and these words: Eminent as a surgeon, the wide fame 
of his bold, original genius was everywhere blended with the gratitude for his 
benefactions.

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author.
The Legalization of Dental Advertising in the United States

— George Soh, B.D.S., M.D.S., M.P.H.

The practice of advertising by the dental profession is said to be as old as the practice of dentistry itself in the United States. From its founding years, the dental profession has viewed the use of advertising as incongruous with professional etiquette and has made tremendous efforts to discourage it. Those who developed a profound distaste of advertising exercised their influence on state legislators to promulgate anti-advertising legislation that prohibited the use of advertising, but the degree of prohibition varied widely among the states. A segment of the pro-advertising advocates challenged the constitutionality of such state legislation and these challenges turned into long and protracted battles that ended up in the United States Supreme Court.

In the earlier years of the 20th century, the United States Supreme Court had consistently rendered decisions that prohibited advertising by the professions, such as law, medicine and dentistry. However, in the last decade, its decisions upheld the use of truthful advertising. Legal precedence that had concerned advertising by other professions bore definite implications for the dental profession as well; subsequent antitrust action by the U.S. Federal Trade Commission (FTC) confirmed that implication. Although dental professional bodies made attempts at dismantling existing prohibitions against its members after the successful imposition of antitrust action by FTC, they actually did not acquiesce; concerted political and legal initiatives were launched to challenge the authority of the FTC to regulate professional bodies. This paper attempts to chronicle the practice and control of dental advertising before it was subjected to state control; to document the events that culminated in the legalization of dental advertising, and the roles played by the judiciary and the FTC in arriving at that outcome; and to examine the dental profession's reactions to the emergence of legalized advertising.

EARLY PRACTICE AND CONTROL OF ADVERTISING

The first dental practitioners in New York, and possibly in the U.S., were James Reading and James Mills, both “tooth-drawers” practicing in 1735. However, the eminent historian, Guerini, credited Robert Woofendale, “surgeon-dentist” from London, as being the first American dentist most likely to have devoted full time to the profession. Being the first full-time dentist in a new location posed publicity problems. Woofendale decided to make known his presence and expertise through announcements in the public press in 1766, which read:

Having received instructions from the present operator for the King's teeth, performs all operations upon the teeth, gums, sockets, and palate; also fixes artificial teeth so as to escape discerning.

Early attempts to curb advertising in the dental profession did not arise until the first dental society in the U.S., the Society of Surgeon Dentists of the City and State of New York, was formed in 1834. One of the Society's doctrines was aimed at discouraging any form of advertising by its members. However, that society existed for only a few years. Its early demise once again left the dental profession without any organized interests against the prac-
tice of advertising until the formation of the American Dental Association (ADA) in 1859. Soon after that the Southern Dental Association was formed in 1869, and the two merged into the National Dental Association in 1897.

Even before the emergence of the National Dental Association, Dr. John Allen, an ardent anti-advertising advocate in the ADA, submitted to the general body the first code of ethics, with provisions on advertising, in 1865. Although the ADA's general body did not adopt the code proposed by Allen, he later became one of the 3-man committee appointed in 1866 to draw up a new code of ethics, which was subsequently adopted that same year. In essence, the new code of ethics was even more specific than the one Allen proposed, particularly in areas concerning advertising by members. It stated in Article II, Section 3:

It is unprofessional to resort to public advertisements, cards, handbills, posters or signs calling attention to peculiar styles of work, lowness of
prices, special modes of operating; or to claim superiority over neighbouring practitioners; to go from house to house to solicit or perform operations; to circulate or recommend nostrums; or to perform any other similar acts?

The code of ethics adopted by the ADA in 1866 remained fundamentally the same except for minor changes until substantive revisions resulted in the production of a new code in 1922, which itself underwent revisions in 1934, 1951, and 1964. Essentially, each succeeding code embraced the same principles as the preceding one, and the message carried in them reflected very strongly the ADA’s anti-advertising dictum until total reversal occurred in 1977, as a result of antitrust action by FTC.

ADVERTISING IN SPITE OF THE ADA CODE

To the indignation of the ADA and its affiliated societies, commercial advertising of dental services remained a common practice that carried on into this century. Among the many actively-advertising dentists in the early days was Edgar Rudolph Parker, dubbed the “father of advertising dentists.” One of his better-known slogans was: “Nervous people swear by Painless Parker.” With dentists such as Parker around, dental advertisements claiming superior quality at low prices became flagrant at the turn of the twentieth century. Daily, there was no dearth of advertisements such as these appearing in national and local newspapers:

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Fig. 2. Advertisement of around 1890 by a dentist in Auburn, New York.
My Anchor Suction Teeth Never Slip or Drop, $5 a Set Guaranteed 20 Years

One of the best known dentists in Los Angeles, Doctor Carr. Minimum Prices . . .

Teeth as low as $5. Best Set $7 . . . Not a Parlour. A private high class, up to date sanitary office . . .

Roofless Plates Guaranteed for 10 years . . . You can cough, sneeze, sing, whistle or eat corn off the cob and they never drop

The ADA could only enforce its code of ethics regarding advertising on its members and members of affiliated bodies. Although some elements of the ADA code of ethics were translated into state dental practice acts to achieve wider and more effective implementation, some dentists continued to advertise without fear of prosecution, depending on the restrictions contained in their respective state dental practice acts. Generally, most state dental practice laws forbid advertising by state-registered dentists. However, some states allowed listing of name, location, degree and office hours in telephone and professional directories, appointment and name cards, and the placing of signs on doors and windows of the office. Inevitably, as enforcement of dental practice acts constituted "state" action, variations in the provisions on advertising existed among the states. Most permitted information concerning office location and office hours, while a very few states allowed announcement of fees and methods of payment.

THROST OF THE ANTITRUST ACTION

While state and federal governments subject most other business organizations to different degrees of control by governmental or government-appointed agencies or other regulatory bodies, the dental and medical professions have been largely self-regulated. Both professions justify the privilege to be free of external control, particularly on matters relating to professionalism, by stressing: (1) an unusual degree of expertise that cannot be easily evaluated by nonprofessionals; (2) the ideology long held by laymen that professionals act responsibly with or without controls; and (3) the understanding that the profession itself will institute remedial action when
necessary. Members in the two professions have long considered any attempt by governmental agencies to regulate the professions to be an intrusion by government, and have vowed to resist vigorously any such move. Self-regulation explained the reason why noncompetitive behavior, as exemplified by state laws controlling use of advertising, remained to be protected by state dental practice acts. The profession had been able to reap some economic benefits as a result of such privileged protection. A vertically integrated (i.e., local, state, and national) organizational structure in the dental profession can act as an effective mechanism by which provider-oriented dental care policies can be propagated. This hierarchical structure ensures efficiency in the elicitation and coalescence of grassroot support, which can be transformed into political influence at various levels of government.

Central to the issue of the antitrust action lies the question of whether or not practice of "learned" professions, like dentistry and medicine, constitute commerce or trade. The dental profession has always maintained that dentistry is neither commerce nor trade. However, others who compared the mode of operation of dentistry with that of other businesses found that dental practices make use of the same form of management functions and strategies to achieve similar goals. In addition to economic activities, political lobbying to protect members' interests clearly classify a professional body alongside business establishments.

Once an activity, by a professional body or otherwise, is deemed to be commercial in nature, antitrust laws can be applied whenever restraint of trade occurs. The two principal antitrust statutes are: Section 1 in the Sherman Antitrust Act, and Section 5 in the Federal Trade Commission Act. The Sherman Antitrust Act, enforced by the U.S. Justice Department, prohibits conspiracies in restraint of trade to affect prices or the flow of goods and services. The FTC Act guards against broader prohibitions of competition. Antitrust action against the professions had not been unprecedented. A decision reached on June 15, 1942, by the U.S. Court of Appeals, considered health care provided on a prepayment basis offered by Group Health Association, in the District of Columbia, to be "trade" within the interpretation of the Sherman Antitrust Act, and therefore, entitled to its protection. More recently, three U.S. Supreme Court judgements added even greater implication to that interpretation. The Goldfarb v. Virginia State Bar case involved the violation of the Sherman Act through the use of a minimum fee schedule for legal services by members of a local bar association. Chief Justice Warren Burger, when delivering the opinion, rejected Virginia State Bar's argument that professional services could be exempted from the Sherman Act because competition generated would be inconsistent with the ethos of a profession, and that profit enhancement had not been the primary goal of professional activities. In the Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council case, the U.S. Supreme Court ruled that statutory bans on advertisements of prices of prescription drugs violated the First and Fourteenth Amendment of the U.S. Constitution. Similarly, it was ruled in the Bates and O'Steen v. State Bar of Arizona case that advertising of legal services constituted "commercial" speech, which served both individual and societal interests in assuring informed and reliable decision making, and therefore, should be entitled to First Amendment protection.

It is reasonable to make the conjecture that the three legal cases paved the way for the FTC to initiate antitrust action against the medical and den-
tal professions. In fact, it came as no surprise when the FTC issued an order requiring the American Medical Association (AMA) to cease and desist from promulgating, implementing, and enforcing restraints on advertising, solicitation, and other competitive practices. At about the same time, the FTC approved an interim settlement of a similar complaint against the ADA and four of its affiliated societies involving, among other things, the prohibition of advertising by members. Under the terms of that settlement, the ADA had to agree not to restrict or declare truthful advertising by members as unethical, pending the final outcome of the FTC's actions against the AMA involving the same issues. An attempt by the AMA to petition against the FTC's order failed. The final order from the FTC to the ADA came soon after; in that order the ADA was to:

1. Desist from restricting, regulating, impeding, declaring unethical, interfering with, or advising against the advertising or publishing of prices, terms of conditions, or other information on the availability of dentists' services or facilities;

2. Desist from inducing, urging, encouraging, or assisting any dentist or any organization to take any actions that prohibit advertising;

3. Inform each constituent or component society by first class mail, the relevant details contained in the final order;

4. Remove within 90 days, any official statements that prohibit truthful advertising;

5. Require as a condition of affiliation that affiliated societies adhere to the provisions contained in the Order; and terminate for a period of one year its affiliation with any society within 120 days after learning of any violation of the provisions in the Order.

Prior to the initiation, and subsequent success of antitrust action by the FTC, commercial advertising by members had been strongly disapproved under the guidelines issued by the ADA. Reflecting its strong sentiments on the use of advertising, the Principles of Ethics, under Section 12 of Article VII of the Constitution of the ADA issued in 1977, states:

Advertising reflects adversely on the dentist who employs it and lowers the public esteem of the dental profession. The dentist has the obligation of advancing his reputation for fidelity, judgement, and skill solely through his professional services to his patients and to society. The use of advertising in any form to solicit patients is inconsistent with this obligation.

Despite its firm stand against advertising by dentists in general, and members in particular, the ADA had been responsive in studying the implications of new developments in the application of antitrust laws to other professions. The year in which the Goldfarb v. Virginia State Bar case appeared, the ADA House of Delegates directed its Council on Judicial Procedures, Constitution and Bylaws to re-evaluate the section of Principles of Ethics, pertaining to its vulnerability to similar legal action. In 1977, the ADA general body approved guidelines on the definition of routine services for the purpose of dental advertising. At the same time it passed resolutions calling affiliates to cease any disciplinary proceedings against any member who advertised services and fees for routine dental procedures, and to accept for membership dentists who advertised. The ADA House of Delegates, in 1978, voted to amend the ADA Principles of Ethics on advertising to the following:
bill (S. 1714) in a fresh offensive to curb the FTC's authority over the professions. Undoubtedly, new bills will continue to be proposed, and disposed, until one that is adequate in restraining undesirable regulatory authority of the FTC is passed, or perhaps, until the ADA and AMA exhaust their resources or interests in seeking legislative solutions.

CONCLUSION

The process of legalization of advertising in the U.S. has been a tumultuous one for everyone concerned: the regulators, the regulated, the legislature, and even the judiciary whose decisions expedited the metamorphosis of legalized advertising for the professions. Legalized advertising, still in its infancy, has left a number of issues and questions unanswered. Of those, the benefits of advertising to advertising dentists, as well as to consumers, remain to be studied more empirically; and the problems created by the introduction of advertising need to be examined, particularly those relating to protection of consumers.

It is difficult to predict what the future holds for the practice of dental advertising in the U.S., and the influence it will have on dental professions in other countries. Looking at recent developments, many professional dental organizations in the U.S. have launched ambitious plans for institutional advertising. Among the other advantages of institutional advertising would be the lessened likelihood of deviant behavior so often encountered with advertising by individuals; besides, keeping flouters in check can be a monumental task. Although it has often been claimed that what happens in the U.S. today will soon happen elsewhere tomorrow, it will not be possible to show a cause-effect relationship. Nonetheless, it is interesting to note that across the Atlantic, a move by Britain's Office of Fair Trading (OFT) resulted in the relaxation of restrictions on dental advertising by the General Dental Council (GDC) in 1985. Although the events leading to the removal of restrictions had been less dramatic and protracted, the ideological justification advanced by the OFT bore great similarity to that by the FTC in the U.S. i.e., that restricting dissemination of information to the public on the availability of dental services hinders competition.

Removal of proscriptions on dental advertising in the U.S. leaves much to the imagination and, perhaps, discretion of dentists who wish to advertise their services either individually or collectively. With the number of patient visits decreasing (as reported in many places), many may find advertising a tempting proposition. Already, empirical surveys show more favorable attitudinal changes towards the use of dental advertising among dentists, and a greater number now report using advertising. Conceivably, dentists will initiate the use of, or continue to use, advertising so long as the ends justify the means — in the U.S. or elsewhere.

REFERENCES


43. U.S. Congress. Senate. *A Bill to Amend the FTC Act to Protect the Legislative and Regulatory Authority of the State Legislatures, and for Other Purposes.* S. 1984, 97th Congress, 1st session., 1981.


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Gerarde’s Herbal Revisited

—Max Geshwind, D.D.S.

Jamaica, New York

Gerarde’s Herbal is unique in having enjoyed a popularity measured in centuries, not just years and decades. In Tudor times it was equally at home in a physician’s or layman’s residence. At the time of Elizabeth the First’s reign in England most dental ailments were treated in the home with home or folk remedies. Where a physician was available, his treatment was not much more sophisticated than the herbal concoctions enumerated in Gerarde. There were also the irregulars who practiced some form of ‘dentistry’, either herbal, tooth drawing, or charlatanism, such as pretending to expel worms from the tooth or mouth of a hapless patient. These irregulars were referred to in the most uncomplimentary terms by medical writers of the day.

Keep in mind that the Renaissance in learning was late in reaching England, as was the art of printing which was so intimately tied up with the Renaissance. On the continent the first dental books appeared in Germany in 1530. This is not surprising since printing from movable type, in the west, originated there. This first dental book, Zene Arztney, went through over a dozen editions before the end of the century. By 1557 Martinez in Spain produced a dental book. Eustachius is Italy produced one in 1563, Hemard in France in 1582. It was not until 1685, or more than a century later, that the first English dental book by Allen appeared. Before 1685 the only source books of dental knowledge for the English were Herbals, medical books, or ‘foreigne’ books. As for availability, the foreign language or Latin books were available only to learned physicians who owned or borrowed copies. Even Allen’s book in English does not seem to have been widely known or available in the British Isles.

Herbals, and most especially Gerarde’s, printed in English and in legible Roman type, were widely available and popular in Tudor England. Earlier English Herbals and medical books were printed in ‘Black Letter’, a much less readable type, or in ‘Latine’ or other ‘Foreign tongue’. Perhaps that is why Gerarde enjoyed so much more popularity than the Herbals of Lyte or Turner, which preceded his. These earlier works were done in ‘Black Letter’. Wyndham Blanton, in his classical account of medicine in early Virginia, reports that Gerarde’s book was brought over by many an early Virginia physician as part of his medical reference library. Agnes Arber, in her Herbals, Their Origin and Evolution, recounts that she “… was once told by a man who was born in 1842 that, during his boyhood in Bedfordshire, he was acquainted with a cottager who treated ailments of her neighbors with the help of a copy of Gerarde’s Herbal.” Gerarde influenced William Shakespeare (1564-1616) and Elizabeth Tudor (1533-1603), his contemporaries. A distillation of excerpts from the Herbal was published in England in 1927 and reprinted in the fifties. Dover books reprinted a paperback edition of the second edition of Johnson’s revision in the mid 1980’s in America.

My copy of Gerarde announces on its title page, “The Herball or Generall Historie of Plantes. Gathered by John Gerarde of London by John Norton 1597.” The colophon at the end informs us that it was “Imprinted at London
by Edm. Bollifant for Bonham and John Norton MDXCVII." It is a tremendous folio of 1392 pages adorned with 1800 woodcut illustrations and an index of 33 unnumbered pages. The title page is engraved in a complex ornate style representing iconographically many themes and ideas suggested by the author. The style is described as 'emblematical'. A detailed description and analysis of it is given in a paper by Margery Corbett in J. Soc. Bibliphy. Nat. Hist., 8 (3): 223-238, 1977.

John Gerard or Gerarde (he embellished his name with a final "e" for the title page of Herbal) was a Barber-Surgeon Herbalist who had a renowned garden in Holborn. His fame is from this Herbal which bears his name. It seems that Norton, the publisher, had commissioned a Dr. Priest to translate the herbal of Dodoens. Priest died before completing the work. Gerarde completed the job and it was published by Norton. Gerarde has been criticized for not giving ample credit to Priest and Dodoens. This has not in the least detracted from the popularity of this work, a popularity it has enjoyed for centuries. To this day it is a joy to read. It is full of English folk-lore and folk remedies of the day and a treasure house of herb-lore from Dioscorides and Galen to Mesue and the medieval herbalists and physicians. The charm of the language must be read to be enjoyed. In 1632 Thomas Johnson, a well known London apothecary and botanist, revised the Herbal, and it was embellished with 2766 woodcut illustrations previously used for botanical books by Plantin and reissued as the second edition.

Here are some samples from the original 1597 edition referring to the teeth, mouth, and gums. This can give us an idea of the state of the art in Tudor England.

For toothache: spelled variously.

Sneezewort of Austrich:—The juice mixed with vinegar and holden in the mouth easeth the paine of Toothache.

Staves aker:—The seede boiled in vinegar, and holden in the mouth, asswageth the tooth ache.

Sweet Marjerome:—easeth the toothach being chawed in the mouth.

Marigold:—Fuchsius writeth, that if the mouth be washed with the juice of it, it helpeth the toothach.

Ivie:—Dioscorides sayeth, take five of the berries beaten small and made hot in a pomegranate rind with Oil of Roses and dropped into the eare, does ease the toothach.

Colocynthis:—Being boiled in vinegar, and the teeth washed therewith, it is a remedie for the toothach, as Mesues teacheth.

Crowfoote or Spearewoort:—Many do use to tie a little of the herbe stamped with salt unto any of the fingers against the paine of the teeth, which medicine seldom faileth, for it causeth greater paine in the finger than was in the tooth, by means whereof, the greater paine taketh away the lesser.

Here are a few remedies for filling hollow teeth:

Summach:—There issueth out of the shrub a gum, which being put into the hollowness of the teeth, taketh away the paine, as Dioscorides writeth.

Cajous (Cashews):—The oile of the fruit is hot and dry in the fourth degree it hath also caustic and corrosive qualitie, — and easeth the paine of the teeth, being put in the hollowness thereof.
Spurge:—The juice or milke is good to stop the hollow teeth being put into them warily, so that you touch neither gums nor any of the other teeth in the mouth with the said medicine.

Here follow a few more herbal remedies for assorted dental problems from loose teeth and bleeding gums, and teeth set on edge, to cleaning the teeth and sweetening the breath.

Purslane:—being chewed it is good for the teeth that are set on edge or astonied. — The leaves eaten rawe, taketh away the paine of the teeth, and fasten them; and it is good for teeth that are set on edge with eating sharpe things.

Strawberries:—the decoction thereof strengthens the gums and fastens the teeth.

Elecampane:—as Plinie teacheth: who also writeth in his twentie booke and first chapter, the same being chewed fasting, dost fasten teeth.

Aristolochia:—The round Aristolochia doth beautifie, cleanse, and fasten teeth, if they are often froted or rubbed with the powder thereof.

Lantana:—The decoction of the leaves of Lantana is very good to be gargled in the mouth against all swellings and inflamation thereof, against the Scurvie and other diseases of the gums, and fasten loose teeth.

Masticke:—infused in Rose water, is excellent to wash the mouth withall, to fasten loose teeth, and to comfort the jawes.

The same spread upon a piece of Leather or velvet, and laide plaisterwise upon the temples, staith the rheume from falling into the jawes and teeth, and easeth the paine thereof.

Toothpick Chervil:—The hard Quills whereon the seeds did grow are good to cleanse the teeth and gums, and doe easily take away all filth and baggage sticking in them, without any hurt unto the gums, as followeth after many other Toothpics, and leaveth a green sent or favour in the mouth.

My favorite in all of Gerarde is on page 284. It concerns the herb Henbane. It reads:

The roote boiled in vinegar and some holden in the mouth, easeth the paine of the teeth. The seede is used by mountibancke toothdrawers which runne about the country, for to cause woormes come forth of mens teeth by burning it in a chafing dish with coles, the partie holding his mouth over the fume thereof; but some craftie companions to gaine money convey small lute strings into the water, perswading the patient that those small creeping beasts came out of his mouth or other parts, which he intends to ease.
What Is It?

Alex Peck, Antique Scientifica
Post Office Box 710
Charleston, IL 61920

This little item would have been found in every dentist's office from about the middle of the last century until about the third decade of this one. It is made of steel and is about four inches long by about one and a half inches wide. It bears eight graduated holes which gradually increase in size and which are numbered from one to eight. It is stamped with the name of the manufacturer, J. D. Chevalier, a prominent dental instrument maker of the mid-19th century.

Who wants to venture a guess as to this item's purpose?

Now to last issue's poser: it was an ivory nipple shield to protect a nursing mother from her child's teeth. In fact the scratch marks showing on the shield we pictured were made by some child's incisors.

One of our members, Dr. Max Geshwind, made a positive identification:

The item illustrated in the "What Is It" column in the October 1987 issue of the Bulletin is undoubtedly a "nipple shield."

These shields were used by nursing mothers to protect their nipples from the trauma of nursing children who had a few anterior teeth already erupted and who continued to nurse, causing sore nipples.

Early medical supply catalogs displayed nipple shields of metal, ivory, ceramic, glass and later of plastic. Some of these shields were quite complex, with a shield such as you show attached to a small outlet tube, which itself was attached to a larger rubber tube which ended in a nipples of rubber.

These nipple shields are still in use today for nursing mothers with sore nipples and are available at medical supply houses. Of course, breast-feeding is given only "lip service" by today's physician.

Dentists, however, have long been interested in breast-feeding as a preventative of dental problems in the future. I refer you to the book Myofunctional Therapy in Dental Practice by Daniel Garliner for a more complete handling of the subject.

Elizabeth Bennion in her recent book Antique Medical Instruments carried the following photograph and identified the nipple shields (from left to right) as: silver, 1809; silver, 1901; glass, 1840; a rare 'treen' type, 1800.
Since 1796, a continual flow of hand-colored sheets containing images of everyday life in France in the 19th century, and illustrated short stories have been published by the house of Pellerin in Epinal, France. These detailed pictures with composite images have been known as the "Imagerie d’Epinal" and are probably the forerunner of what now appears in newspapers as comic strips. Pictures such as these were an important source of entertainment in the 19th century. Purchased for a few sous, they were traded among friends and passed from household to household. Similar pictures, although mostly caricatures done in a different style, were employed for the same purpose in Great Britain during the same era.

The picture, which is drawn and colored in a rather primitive hand, demonstrates the typical scene of the itinerant dentist in central Europe in the 19th century. In this instance, there are two toothpullers working together on separate patients on a makeshift stage. There is a small roof on the platform, with many teeth strung up about the canopy to emphasize the work that is being performed. The dentists are using very primitive instruments, including a sword, for their operations and the patients seem to be reeling from the effects of the work. A box containing bottles and jars of medicaments sits on the stage. The entertainment that was employed to distract from the screams and sufferings of the victims here is performed by a bugler and a man in a top hat playing a music box. Several spectators appear to be milling about the stage area.

(Collection: Musee des Arts et Traditions Populaires, Paris, France.)


BULLETIN OF THE HISTORY OF DENTISTRY, VOL. 36, NO. 1, APRIL, 1988 58
NOTES & QUERIES
FURTHER DISCUSSION REGARDING DISCOVERY OF THE TURBINE HANDPIECE

Your editor has received a communication from Dr. Robert J. Nelsen taking strong exception to the conclusions reached by the editor in his article in the October 1987 issue of the Bulletin of the History of Dentistry. In that article it was claimed that Dr. J.P. Walsh of New Zealand was entitled to the credit for discovery since his patent for an air-driven handpiece was applied for as early as 1949.

Dr. Nelsen, who is recognized as the developer of the Turbo-jet, the first commercially successful high-speed turbine handpiece, has submitted the following data in support of his claim to priority of invention: a letter from Dr. Walsh congratulating Dr. Nelsen on his achievement; a letter from the late Dr. Harold Hillenbrand, Executive Director Emeritus of the American Dental Association commenting on Dr. Walsh's lauding of Nelsen's contribution; and a letter from Dr. J.M. Robinson of New Zealand who also had tackled the problem of constructing a workable air-turbine but had given up.

Dr. Nelsen states: "Dr. Ring mistakenly attributes to Walsh the development of a usable turbine contra-angle handpiece when actually (1953) Walsh had failed to do so by his own admission. . . . Note that his statement of failure is dated 10 December 1953, just two months after Nelsen's September 1953 publication in the Journal of the American Dental Association of the first clinically usable turbine contra-angle handpiece while he was a Research Associate in the American Dental Association Program at the National Bureau of Standards. (Nelsen, RJ; Pelander, CR and Kumpala, JW "Hydraulic Turbine Contra-angle Handpiece, J.A.D.A., 47:324, September, 1953.)

The Bulletin, in the interest of accuracy, should bring this significant information regarding Walsh's personal admission of failure to the attention of its readers and correct the misleading implications in the story by Dr. Ring." Although the conclusions reached by Dr. Ring in the earlier article are strictly his own and do not represent endorsement of them by the American Academy of the History of Dentistry, it was felt that it would be most beneficial to present the evidence submitted by Dr. Nelsen so that the record may be more complete.
Dr. Robert J. Nelson,
National Bureau of Standards,
WASHINGTON D.C.
U.S.A.

Dear Dr. Nelson,

I would like to cordially congratulate you and your co-workers on the success you have achieved with the hydraulic high speed contra-angle handpiece as reported in the September issue of the J.A.D.A.

As you know, we have been working on this problem for over five years and I was confident that somebody somewhere would eventually overcome the considerable engineering difficulties. All along I had the feeling that the United States would be the country that would get there first.

Now I would like very much to receive about half-a-dozen reprints of your article to send to various people in the British Commonwealth who either failed to produce an effective handpiece for me or else told me it was impossible anyway. The impossible has been achieved. I would also be very grateful if you could let me know if it is possible for us to purchase the equipment described in your article or any improved model that you have made since. We are anxious to continue the clinical work on the high speed drill which I am firmly convinced is a great contribution to dental progress.

Once again my cordial congratulations and good wishes for your continued success.

Yours sincerely,

J.P. Walsh
Dean

The letter from Dr. Hillenbrand follows:

January 25, 1954

Dr. Robert J. Nelsen
American Dental Association Research Fellowship
National Bureau of Standards
Washington 25, D.C.

Dear Bob:

Thanks for your recent letter which arrived while I was having a brief holiday. I would like to congratulate you on the very complimentary comment which you received from Dean Walsh. I had the pleasure of meeting him in Ireland in 1952, and came to know that he is highly critical of some of our efforts in this country. So far as I know, your work is among the very little which has received his unstinted praise.

Cordially,

Harold Hillenbrand, D.D.S.
Secretary
The text of the letter from Dr. Robinson reads:

Dr. Robert J. Nelsen
National Bureau of Standards
Washington, D.C.
U.S.A.

Dear Doctor Nelsen:

It has been in my mind for the past year to write to you regarding your article in the A.D.A. Journal of September 1953, in which you describe a hydraulic turbine contra-angle handpiece. It has taken me a year to get around to it.

My reason for writing to you is that I have been very interested in the development of high speed cutting instruments for some years. Back in 1948 I was playing around with the idea of a high speed handpiece driven by compressed air, in fact I went so far as to design one, somewhat similar to yours, on which I took out a provisional patent. After running into insuperable difficulties in the matter of lubrication and cooling, I allowed the patent to lapse and returned to wishful thinking. On reading your excellent article my immediate reaction was why the heck didn't I think of that.

I would like to know what progress you have made with this handpiece. I would like very much to be able to get hold of one, if such is possible, the handpiece alone would be all that I would need as I could have the pump unit made up here. I was sufficiently impressed with the results I obtained with a very cumbersome industrial air turbine (the de Soutter) that I feel convinced of the future application of high speeds in dental cutting instruments.

I would be most grateful for your assistance in this matter. My dental practice is mainly conservative dentistry and I am most anxious to be able to progress in the manner of cavity preparation.

With sincere good wishes and greetings from "down under".

Sincerely yours,
J.M. Robinson
Dental Surgeon
Commercial Buildings, The Square
Palmerston North, New Zealand

An additional communication was received from Dr. Otto Francke of Stockholm, former editor of the Swedish Dental Journal and one of that country's leading dental historians. In 1981 the Bulletin published an article by Dr. Francke about Dr. Ivor Norlen, also of Sweden, who had patented a turbine handpiece in 1948. This air-driven instrument could reach a speed of 70,000 rpm but its motive force was transmitted through a series of gears to the handpiece head which held the bur. In this respect it differed from Nelsen's Turbo-Jet in that the latter was the first true all-turbine (gearless) instrument.

Dr. Francke takes issue with the article by Dr. Ring because no mention is made in it of Norlen's contribution. "When my article about him was published," Dr. Francke writes, "Ivor Norlen had just left active practice. Unfortunately, only a very short time was given him before he died. However, I sent a photocopy to his wife of the page in your book Dentistry — An Illustrated History with your remarks about him."

Needless to say, Dr. Norlen was one of a long line of contributors to the development of a true air-driven turbine handpiece. In the previous article by Dr. Ring no intention was meant that the contributions of these other pioneers was in any way diminished.
GLEANINGS ABOUT DENTISTRY FROM THE WORLD OF LITERATURE
— Eugene W. Feldman, D.M.D.
Lewistown, Pennsylvania

The following communication was received from Dr. Eugene W. Feldman, a member of the American Academy of the History of Dentistry. Dr. Feldman retired from the active practice of orthodontics and is at present a member of the Pennsylvania Humanities Council and a member of the Board of Directors of the Museum of Art of the Pennsylvania State University. Dr. Feldman writes:

Enclosed are two possible contributions from my general reading. I’ve always been deeply interested in music and literature. I much prefer listening to music or playing it (my instrument is the piano), infrequently reading about it, though I’ve read many books on the subject over a lifetime. Bertrand Russell had been one of the great teachers in my life via his books; his last work was the three-volume autobiography from which I’ve quoted the enclosed anecdote. He was not at all reticent about naming the women with whom he had affairs during his long life and “grading” his performances. For such “outrageous” disclosures some British reviewers took him to task.

In The Book of Musical Anecdotes, Norman Lebrecht writes about Giacomo Meyerbeer, the German-born opera composer, (1791-1864). Of the mezzo-soprano Pauline Viardot he writes: “[She] had a disfiguring front tooth which somewhat protruded. She had been cast for the part of Fides in the Prophete, and several of her intimés begged her to have it out, without success. At one of the final rehearsals Meyerbeer came to her and said that with infinite regret he must take the part away from her unless she had the offending incisor removed. This was too much for her; out it came, and she sent it to the composer. After the first performance, Meyerbeer came round to her room and presented her with a bracelet in the centre of which was a white enamel set in precious stones; the white enamel was the front tooth.”

Bertrand Russell’s (1872-1970) marriage to Alys Pearsall Smith in 1902 was a miserable one in his eyes, nine years of sexual unfulfillment. In 1911 he fell deeply in love with Ottoline Morrell, the wife of his friend Philip Morrell, whose campaign for parliament he was supporting. It was with Ottoline that Russell could finally express his passionate desires. Soon after their initial meeting they became lovers; this lasted until 1916. Russell divorced Alys in 1911.

At the beginning of his affair with Ottoline, Russell wrote: “. . . We got through the winter with only one serious disagreement, arising out of the fact that I denounced her for being religious. Gradually, however, I became increasingly turbulent, because I felt that she did not care for me as much as I cared for her. There were moments when this feeling disappeared entirely, and I think that often what was really [her] ill-health appeared to me as indifference, but this was certainly not always the case. I was suffering from pyorrhea although I did not know it, and this caused my breath to be offensive, which also I did not know. She could not bring herself to mention it, and it was only after I had discovered the trouble and had it cured, that she let me know how much it had affected her.” The ill-health referred to above was the terrible headaches that frequently assailed Ottoline.

In 1914, Russell lectured in American universities, Michigan, Chicago and Harvard. He returned to England by boat. But he had met a young woman in Chicago and had fallen in love with her. Though she was married, he
had had a brief affair with her while he was teaching in Chicago. He planned to marry her when a divorce could be obtained and she was to travel to England after its decree. "On the boat I wrote to Ottoline telling her what had occurred. My letter crossed one from her, saying that she wished our relations henceforth to be platonic. My news and the fact that in America I had been cured of pyorrhea caused her to change her mind. Ottoline could still, when she chose, be a lover so delightful that to leave her seemed impossible, but for a long time past she had seldom been at her best with me. I returned to England in June, and found her in London. We took to going to Burnham Beeches every Tuesday for the day. The last of these expeditions was on the day on which Austria declared war on Serbia. Ottoline was at her best."

Though he never married Ottoline, they remained friends. He did not marry the American woman, whom he did not name, even though she had traveled to England accompanied by her father. "The shock of the war killed my passion for her."

Russell does not speak of the treatment procedures for his pyorrhea, but its presence and the consequences appeared to deeply affect his relationship with Ottoline.

REFERENCES


THE HAYDEN-HARRIS AWARD PRESENTATION

LAS VEGAS, NEVADA, OCTOBER 8, 1987

(The Hayden-Harris Award was set up by the American Academy of the History of Dentistry to honor those individuals who have made singular and noteworthy contributions to the advancement of the scholarship of dental history. The 1987 award winner is associate dean of the University of Southern California and professor of community dentistry. He is the author of a number of books dealing with the contributions made by black dentists to their nation and their profession including Afro-Americans and Dentistry: Sequence and Consequence of Events; Charles Edwin Bentley: A Model For All Times; and the most recent, highly acclaimed The Hillenbrand Era: Organized Dentistry's Glanzperiode. In addition, Dr. Dummett served as president of the Academy and has been an indefatigable worker in the struggle to make dentists cognizant of their fine heritage.

Presenting the Award to Dr. Dummett was Dr. Maynard K. Hine, himself a former Hayden-Harris Awardee and Chancellor-emeritus of Indiana University-Purdue University).

REMARKS BY DR. MAYNARD K. HINE

In 1963, when our good friend Gardner P.H. Foley was president of this Academy, he recommended in his presidential address that an award be given each year by the Academy to recognize and honor an individual for meritorious contributions to dental history and to this Academy and such an award has been given almost every year since 1967.

No one seems to know for certain why Horace Hayden and Chapin A. Harris were selected as the name for this award. Their contributions to dentistry in dental education, dental practice and dental societies are well known,
of course. In the early nineteenth century both were outstanding leaders in all aspects of dentistry. Chapin Harris was instrumental in establishing the American Journal of Dental Science in 1839 and his book, The Principles and Practice of Dentistry, was the leading American dental text for half a century. Dr. Horace Hayden conceived the first national dental society, The American Society of Dental Surgeons and he served as its first president from 1840 till his death in 1844. Although there were other dentists in the early years of this country worthy of recognition — Parmly, Baker, Greenwood and Woofendale, for example, Hayden-Harris is a euphonious title, better than Hayden-Greenwood or Harris-Parmly; and both Hayden and Harris rightly do deserve recognition.

Today we are honoring my long time colleague, Dr. Clifton O. Dummett, professor of dentistry at the University of Southern California in Los Angeles, and I'm pleased to have the privilege of presenting him with the Hayden-Harris Award.

I found it almost impossible to prepare a brief summary of his impressive C.V. “Clif” has had a long, active, and successful series of careers which has had him into many fields related to dentistry.

He was born in Georgetown, British Guiana in 1919 — but judging by his accomplishments, it should have been about 1900! He came to the United States in 1936, attended Howard University and then Roosevelt University in Chicago where he received a Bachelor of Science Degree. He received his dental degree and a Master of Science in Dentistry degree from Northwestern University Dental School and in 1947 a Master of Public Health degree from the University of Michigan. In 1976 he was given an honorary Doctor of Science Degree by Northwestern University. He is a diplomate of the American Board of Periodontology and the American Board of Oral Medicine and taught oral pathology, endodontics, periodontics, oral medicine and preventive dentistry. In 1947, Dr. Dummett was appointed Dean of Meharry’s School of Dentistry and was the youngest dental dean in the U.S. at that time and up to today.

Dr. Dummett then accepted an appointment as Chief of Dental Service of the Veterans Administration in Tuskegee, Alabama, where he started the first residency in periodontics in the U.S. as well as a residency in oral surgery and a rotating dental internship program.

He was also Chief of Periodontics and Oral Medicine and Base Preventive Dentistry Officer at Elmendorf Air Force Base in Anchorage, Alaska. Among other honors he received the Certificate of Merit of the Air Force Systems Command and retired from the military in 1979 after 24 year of service. He was always an innovative pioneer.

Of course, he is a Fellow of the American College of Dentists as well as the International College of Dentists; a member of the American Public Health Association, the American Association for the Advancement of Science of which he has been Chairman of the Dental Section.

Dr. Dummett also established a fine record as an author. He was editor of the Journal of the National Dental Association for 22 years; editor of the American Association of Dental Editors, and served on several editorial boards and committees. He is the author of numerous articles on a wide range of subjects, as well as several noteworthy books.

This list of Dr. Dummett’s activities could be easily expanded. It is pointless however, to repeat all of his accomplishments. Suffice it to say, he has been an outstanding leader in all the assignments he has accepted, and
he deserves all the recognition it is possible to bestow upon him. I want to add that he is always a cooperative, enthusiastic gentleman, dedicated to advancing the art and science of dentistry in every way possible. I have always admired Dr. Dummett and I consider him to be a personal friend.

Finally, Dr. Dummett has long been a devoted supporter of dental history. He has written extensively in this field, including a masterpiece entitled *The Hillenbrand Era*. Dr. Malvin Ring wrote in his review of this fine book:

> Once in a great while an historian comes along who captures the essence and spirit of an era in such a way that the reader can wholly sense the drama and excitement of the period. And when the historian is a dental historian, we have a bonus! Such a historian is Clifford O. Dummett, who in conjunction with his wife Lois, wrote this wonderful book... Dr. and Mrs. Dummett have compiled a legacy that is not only interesting and easy to read, but one which every scholar of dental history who is interested in the important years of 1940 to 1980 will find indispensable.

Dr. Dummett has been active in this Academy of the History of Dentistry, serving on many of its committees and as president in 1982-83. It is entirely fitting — and in fact, overdue — that Clifton O. Dummett be given the Academy’s highest honor — The Hayden-Harris Award.

**REMARKS OF DR. CLIFTON O. DUMMETT**

I am indebted to Dr. Maynard Hine for that magnificent introduction. We go back a long way, and there are many other things for which my wife Lois and I extend to him our gratitude, especially for the excellent dental education afforded our son at Indiana University. Dr. Hine has always been one of dentistry’s most honored administrators, and a true and consistent gentleman. For his many contributions, all of us are in his debt. Thank you again, Maynard!

President Christen, officers and members of the AAHD, I am profoundly thankful and touched by this recognition. It is indeed a noteworthy honor to be chosen for approval by the American Academy of the History of Dentistry. With your gracious permission, I would like to take a few minutes to indicate why this award has special import to me.

I am impressed, albeit negatively, that so many of our young dentists and even more of today’s dental students know little or nothing about Horace H. Hayden (1768-1844) and Chapin A. Harris (1806-1860). Furthermore, they could not care less.

We in the Academy are conversant with the accomplishments of these exceptional American dentists. We recite Hayden’s ancestry from early New England settlers; his introduction to dentistry by John Greenwood; his early practice in New York and his migration to Baltimore; his practice in Annapolis and Frederick; his contributions to medical literature; his association with physicians in the medical society through licensure by the Maryland Medical and Chirurgical Faculty; his formation of the American Society of Dental Surgeons; and his establishment of dental education as part of the medical curriculum.

Harris’s benefactions are no less familiar to us, and we proclaim his New York birth of English ancestry; his early training in medicine and in dental surgery by his brother John, and his early practice in Ohio; his wanderings
and eventual establishment in Baltimore; his extraordinary productivity of scientific publications; his monumental *Principles and Practice of Dental Surgery*; his establishment, along with others, of a separate journal for dentistry, *The American Journal of Dental Science*, the world's first dental periodical; and along with Hayden, the founding of the first dental college in the world — the Baltimore College of Dental Surgery — with Hayden as the first professor of dental physiology and President of the College, and Harris as the first professor of practical dentistry and Dean of the College.

These two American dental patrons are oftimes called the architects of today's advanced technological and educational dental curricula. Nevertheless, they are seldom given even a nod of recognition by present and future representatives of this honorable profession. The absence of their prompt name recognition is indeed a hapless derogation. It is as much a sign of the times as is the lack in reflex identification of the names Greene Vardiman Black, Alfred Civilion Fones, William John Gies, Frederick S. McKay, Willoughby D. Miller, William T.G. Morton, William H. Taggart, and Horace Wells — to cite just a few of America's dental giants.

Why are our younger colleagues not sufficiently knowledgeable about the contributions of those who have done so much to establish dentistry's foundations, and foster its development? The reason is that young professionals have not really studied dental history, dental ethics, and health professional morality. They have not been taught that these elements are also important to patient care. And so they are insensitive to history's functions of unravelling the secrets of dentistry's cultural past, of encouraging the pursuit of dental knowledge, and of solving problems in medico-dental self-discovery.

It is important to be knowledgeable about dentistry's virtues as well as its vices. We tend to exaggerate the former, while minimizing the latter, and this often leads to a misreading of dentistry's strengths and its weaknesses. Ignorance and misrepresentation are the greatest obstacles to solid professional progress. They allow us to repeat past transgressions and relive ethical lapses.

Dental students have not been exposed to dentistry's romances — the compelling and intriguing accounts of its formative years, its ethics, its moral excellence, and its gruelling battles for a place in the galaxy of professions devoted to achieving human health and well-being. Consequently, there is little knowledge of the tribulations, and less respect for the triumphs of our pioneering luminaries. This neglect has been evident for a long time. The predicament has been encouraged by dentistry's obsessive preoccupations with mechanics and technology. Today, that negligence is even more pervasive, contending with cantankerous curriculum committees, competing with a callous commercialism, and combatting a multitude of Machiavellian marketings of dental commodities.

I believe that a major share of the blame for the subjugation of dental history and ethics must be placed squarely at the feet of dental education itself — DENTAL EDUCATION — the very discipline for which Hayden and Harris strove valiantly, vigorously, indefatigably, and successfully.

It seems to me that if academic dental education will not, then dental historians must undertake the onus of a vigorous mission to restore history and ethics to their rightful places in modern dentistry.

Yesterday's successful workshop is a step in the right direction. We in the Academy and dentistry in general are beholden to Arden Christen and Peter Pronych for arranging that outstanding workshop.
I look upon this Academy and its programs as the custodians of dentistry's dignity, and therefore with the American Academy of the History of Dentistry rests the herculean tasks of renovation, restoration, and renaissance. There are already established precedents to accomplish this enterprise, and they are prominently portrayed among the Academy's goals. I call to your attention particularly goals 2 and 3:

**Goal 2** encourages dental schools to develop historical collections on dentistry and to offer adequate instruction in dental history.

**Goal 3** insists that leaders in dentistry should develop a broader understanding of the facts of dental history in order to assist them in efforts to solve important problems in dental education and practice.

The procedural solutions are all there — well expressed and stimulating. We must get busy.

I am happy that our new vice-president is a lady whose competence I have always admired. Wilma Motley's kind, considerate and gentle disposition is buttressed by the strength and resolve to guard dentistry's dignity, and restore professional historicity.

I fervently believe that Horace Hayden and Chapin Harris would be delighted to know that their heroic efforts are valued and extolled nearly a century and a half after they plowed the paths to dental professional respectability. As one of their devotees, I am especially honored to be the 1987 Hayden-Harris Award recipient. Dentistry is indebted to the Academy for establishing this Award in honor of Doctors Hayden and Harris, thereby creating an avenue for the enduring recognition of their illustrious names in perpetuity.

**NEW GERMAN DENTAL HISTORY BOOK**

In the North Sea, to the north of the city of Hamburg, Germany, lies the island of Fehmarn. A small island with a population scarcely greater than 10,000, it nevertheless has had a thriving dental profession for many years. The history of dentistry in that localized area has now been documented in a fine, albeit small, book entitled Von Bohnhasen und Zahnartisten, written by a young dentist, Dr. Ulrich Lohse, who lives and practices in the small city of Burg auf Fehmarn.

Dr. Lohse, who is a member of the American Academy of the History of Dentistry, explains the odd words which make up the title of his book: "Bohnhasen is an unusual word that you hardly will find in a typical German-English dictionary. In order to work as a craftsman in Germany until about 1870 you had to be a member of a corporation or guild. Up until 1880 certain barbers and surgeons formed themselves into corporations. Those who worked in these professions without having the proper skills and without being members of the corporation were known as Bohnhasen. The word Zahnartist is a funny one, also. Dental practitioners who lacked academic training were not allowed to call themselves Zahnarzt (dentist). So they invented words that sounded similar such as Zahnkunstler (dental artist) or Zahnartist. In the modern sense the word Artist has a meaning such as acrobat. The joke, thus, results from two words which really don't fit together never-
theless being used together. The word Zahnartist was very popular around
the turn-of-the-century but is today almost forgotten."

The book, which is written in German contains many photographs of
early dental practitioners who plied their trade and in later years followed
their profession on the island. It is also enriched by reproductions of early
dental advertisements gleaned from the author's personal collection. The
book may be gotten for $20.00 postpaid from:

Dr. Ulrich Lohse
Bahnhofstrasse 29
Burg auf Fehmarn 2448
West Germany

INQUIRY MADE CONCERNING EARLY DENTAL INSTRUMENTS

Dr. Audrey B. Davis, Curator of the Medical Sciences Division of the Na-
tional Museum of American History of the Smithsonian Institution is mak-
ing a search for old dental instruments and has appealed to our Academy
for help. Her letter follows:

In am interested in compiling a list of dental keys and other early
dental instuments which were manufactured in the U.S. Recently a key
came to my attention which appears to have been made circa 1800 and
it is marked with maker and owner's names. If enough instruments are
made known to me I would like to publish a history and brief article on
these items. Perhaps the Bulletin's readers could respond if they know
of such equipment.

Sincerely yours,
Audrey B. Davis, Ph.D.

Any of our readers who has such instruments or knows of them can com-
municate this information to Dr. Davis by writing to her at the National

THE SCARCITY OF GOLD

Gold has been universally accepted as the most precious of precious
metals since King Croesus of Lydia issued the first gold money in the sixth
century B.C. In case you were wondering why, consider this: Along with
its beauty, gold has remained a very scarce metal. Even though it has been
eagerly sought for thousands of years, all the gold ever mined in the past
6,000 years could be melted down into one cube 18 yards on each side. Gold
mining also takes effort: It takes three tons of mined gold ore to produce
a single one-ounce gold coin.
To the Editor:

Thank you for the latest issue of the Bulletin. As usual, I devoured it; I am interested in everything in it.

This last number (October, 1987) was of particular interest to me since it contained Dr. R. A. Cohen's response to my query about Matheus de Gradibus. I am also grateful to you for inserting my request for unbound numbers of the American Journal of Dental Science.

Not only have I gotten a lot of material on de Gradibus, but I also tracked down the first edition of his Practica, which is one of the first medical texts with a considerable section on dentistry.

The Pierpont Morgan Library in New York City has a copy of this very rare 1st edition, printed in Pavia in 1472. This is very early, even for medical incunabula. I got a set of microfilm of Volume I from the Morgan Library and am now trying to get some help in translating the Latin.

Most sincerely,
Max Geshwind, D.D.S.
184-14 Midland Parkway
Jamaica, NY 11432

To the Editor:

On behalf of the International Circuit Courses of the American Prosthodontic Society, we want to express our deep appreciation for the excellent book review on International Circuit Courses, The First Twenty Years in your October publication.

Thank you for your recommendation to read the book and also for your kind words of congratulations in your letter.

Our very best regards and we send best wishes for a Happy Holiday Season.

Sincerely yours,
Howard J. Harvey, D.D.S.
Executive Director
To the Editor:

Thank you again for the plug in the October issue of the Bulletin regarding our campaign to secure a commemorative stamp honoring Horace Wells. Coincidentally, the Journal of the Connecticut State Dental Society devoted three pages to the subject. (Vol. 61, No. 4, October, 1987.)

We’re still in hot pursuit of this commemorative stamp. One of the Academy’s Japanese members, Dr. Sen Nakahara, has taken our petition form, created the “Petition Cooperation Society for H. Wells Commemorative Stamp” and has mailed it out all over Japan!

I also enclose the following letter I recently received from the Honorable Lowell Weicker, United States Senator from Connecticut:

United States Senate
WASHINGTON, DC 20510
Leonard E Menczer, DDS, MPH
The Historical Museum of Medicine and Dentistry
230 Scarborough Street
Hartford, Connecticut 06105

Dear Dr. Menczer:

Enclosed you will find a response from the United States Postal Service to my most recent letter in your behalf concerning the issuance of a stamp to commemorate Dr. Horace Wells for his work in anesthesia.

I am happy to learn that this proposal will be presented to the Stamp Advisory Committee for reconsideration at a future meeting. I hope this information is helpful to you in regard to your efforts in this matter.

If it may be of any further assistance, please feel free to get in touch with my Hartford office.

Kind regards,
Lowell Weicker, Jr.
United States Senator

I do hope the holiday season and the New Year bring only good things to you and yours and to the whole world as well!

Sincerely,
Leonard F. Menczer, D.D.S.

To the Editor:

Mr. William E. Winburn, Jr., a tax consultant who collects antique dental instruments and advertises in the Antique Gazette, sent me your name. I had seen his ad in a recent copy of the Antique Gazette and sent him the enclosed picture.

I am a tool collector (woodworking tools) but have this primitive collection of swedges that my father picked up in Connecticut thirty years ago at an auction. I don’t know much about them but did show them to a professor at the University of Louisville Dental School this week who said they were an exceptionally nice set. The primitive scribed block has seventy-five bored holes with a double ended swedge in each hole.

I entered this in the Kentucky State Fair under medical instruments and won a blue ribbon two years ago. I think that there is probably a better home for them in someone’s collection — preferably a person or museum that collects dental tools. It seems to me that this is a very secret society since I never see any advertising or other requests for antique dental equipment. Certainly those high paid professionals must be interested in preserving their past. Maybe there is some place that I can advertise this collection? How do I find out their value?

Col. Jo Brendel
726 Fairhill Drive
Louisville, KY 40207
To the Editor:

I was so pleased to receive the October, 1987, issue of the Bulletin of the History of Dentistry and to read in it your excellent article “The True Discoverer of the Dental Air Turbine Handpiece: Sir John Walsh of New Zealand.”

I have forwarded a copy to Sir John and know that he will be delighted with this recognition by the community of dental historians.

I will also forward a copy of the article to the editor of the Australian Dental Journal as he may wish to mention it.

Yours sincerely,

R. R. Stephens, Emeritus Professor
Dental School
University of Queensland
Brisbane, Australia

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MAKING MARKS

No two conventions of teeth behave alike.
Some chatter, grip, or slash. Others strike.
Thirty-two counters measure out our breath.
What other course for words but past the teeth?
The human body holds them at its height
Better to speak with, but the worse to bite.

Teeth hold the resonance for speech and song,
Which cannot rise past tunelessness for long
Unless teeth govern them to soar and lilt—
To pierce with love, or hate up to the hilt.
Smiling, though soft in cheek, is hard in bone,
And sounds make words by trickling over stone
To give the tongue an edge to call its own.

Sounds are the stuff, yet letters are the knives
In each man’s voice, the shape of what survives.
Dry bones alone can live, though fossilized
Forever. Let my words be recognized
As mine by the wear of their bite. They classify
The being that they once were brandished by
And the abrasives they were sharpened with.
This way he gnawed his life and grinned his death.

—By Peter Davison (Appearing first in the New Yorker magazine.)

Submitted by Bernard S. Moskow, D.D.S.
Ridgewood, New Jersey

71
When George Washington was on his deathbed, suffering from what appears to have been a peri-tonsillar abscess, he sent first for his bleeder who relieved him of fourteen ounces of the precious fluid. Feeling no better he then sent for his physician who called in two additional renowned medical practitioners. In addition to the purgings, vomitings and blistering that they subjected the poor man to, they drew, over a period of hours, sixty additional ounces of blood! Robbed of the strength to fight the infection by the loss of almost two and a half quarts of blood, Washington expired.

This is a good example of the illogicality and ignorance which accompanied the practice of medicine in the 1700's. And while medicine was stumbling around in a morass of archaic superstition and irrationality, dentistry was putting itself onto a foundation of rationality in treating oral disease. Nevertheless, the masses of the people were most severely affected by the ministrations of the medical men whose treatment rose but slightly higher than that of the hordes of uneducated and often illiterate charlatans who preyed on the people of every western nation.

*The Age of Agony* is a marvelous retelling of the exploits of both the medical men and the quacks in the 18th century Europe. The author has a felicity for the English language and the picture he paints with his words is both fascinating and chilling. The son of a British physician, Guy Williams has a wonderful eye for detail and a fine understanding of the nature of medical practice, then and now.

He begins his book naturally enough with the horrendous tales of wholesale bloodletting and then goes on to deal in extensive fashion with an array of other topics including the perils of pregnancy and childbirth, the devastations wrought by childhood diseases, and the incredible and abominable conditions in the hospitals of the period, the miserable treatment of the insane, the deplorable state of medical care for the armed forces, and ends with a harrowing description of the plight of older citizens in this "enlightened" world of only two centuries ago.
The use of all these devastating adjectives to describe the state of medicine during this era is not mere hyperbole. Conditions were far bleaker than any of us imagine and it would be over a hundred years before medicine would begin the upward climb to where it would be firmly rooted on a scientific foundation and to the point where it would truly be aiding mankind to enjoy a longer, happier and healthier life.

This progress to a sound and rational practice is discussed in Williams’ second book The Age of Miracles which is sub-titled “Medicine and Surgery in the Nineteenth Century.” Nevertheless, the book begins with an exposition of some of the pioneers of the 18th century who laid the groundwork for progress in spite of the benighted attitudes to which they were subject and which still had an effect on their thinking. First among these is the great John Hunter who did so much to advance not only surgery but also dental morphology with his exceptional book The Natural History of the Human Teeth.

Hunter had as pupils several who became among the best known physicians and surgeons of the day including Sir Astley Cooper. But these men might not have been able to learn as much as they did had it not been for the supply of cadavers for teaching purposes made readily available by the “body snatchers.” Williams recounts in detail the harrowing stories associated with this practice, often accompanied by murder where already dead bodies were impossible to obtain. But by 1832 the whole unsavory business was done away with when Parliament passed the Anatomy Act which allowed properly licensed medical practitioners access to cadavers given up by legally-constituted guardians of the corpses.

The author has a long and detailed story of the discovery and development of anesthesia and in this I find I must fault him. After a fine discussion of the work of Humphry Davy and Thomas Beddoes (neither of them physicians) in laying the groundwork for anesthesia, Williams then assigns credit for the discovery to Crawford Long, the obscure medical man from Georgia who didn’t make known his use of ether in surgery till almost four years after Horace Wells’ ill-fated demonstration. Questioned as to why he didn’t let the medical community know of his use of ether earlier, Long replied that he didn’t think it important enough.

In order to be considered the discoverer of a new technique it is essential that the individual satisfy three requirements: he (or she) discover something new; be aware of the fact that he has discovered something new and important; and communicate his discovery to others. Of all the claimants to the title of discoverer of anesthesia, only the dentist Horace Wells, of Hartford, Connecticut, satisfies all the criteria. Yet the author glosses over Wells’ monumental contribution making in the process a very inaccurate assessment when he claims that Wells was “thoroughly discredited.” Both the American Dental Association and the American Medical Association have formally gone on record declaring that to Horace Wells is due recognition as the discoverer of anesthesia. Mr. Williams’ bias against dentists goes a step further with a totally uncalled for slander against William Morton who gave the world ether anesthesia. The author decries Morton’s attempt to keep the nature of his anesthetic agent a secret, a practice followed by a great number of physicians of that era who patented medicines and therapeutic devices. But Williams invests physicians with the halo of righteousness when he says: “To be fair to Morton, he was not, properly speaking, a medical man, and therefore he would probably see no ethical reason for making his great discovery generally available . . .” In other words, this was behavior
to be expected of a dentist but not a physician! However, to be truthful about
the situation, when the staff of Massachusetts General Hospital refused to
allow Morton to administer his "Letheon" a second time without divulging
its contents, Morton very gladly and freely explained what they were.

This apparent anti-dentist bias aside (and it does crop up in the earlier
book Age of Agony, too, where dentists are referred to as "common
toothdrawers") both books are fascinating studies of the healing arts during
a turbulent and exciting period of their development. They are geared for
the lay person, but even the scholar and historian can derive much pleasure
and satisfaction from them. The author's excellent writing style assures that!

—Reviewed by Malvin E. Ring, D.D.S.
Rochester, New York

Cancer: The Misguided Cell. By David M. Prescott and Abraham S. Flexer. 349

In this the second edition of this work, the cancer incident rates, death
rates and five year survival rates are brought up to date. New findings are
included and new interpretations are presented derived from results by
laboratory scientists, doctors and epidemiologists. Some cancer data has
changed substantially in the three years since the first edition; others have
not. Cancer still strikes one American in four, but the death rate now ex-
ceeds one in five and stands at 22%. This translates into a difference be-
tween 420,000 cancer deaths in 1982 and 472,000 cancer deaths in 1986.

Lung cancer claims more lives each year and, in 1985, was the leading
fatal cancer among women in the United States, surpassing breast cancer.
The death rate from melanoma doubles every 16 years in the United States
and Europe. Decreases continue in deaths from stomach and uterine cancer.

The effectiveness of treatment is less clear since cancer still kills more
than half its victims. The most common cancer-causing agents that need to
be avoided are in cigarette packages and on dinner plates. Changes in life
style can substantially reduce the incidence of cancer, and is the subject of
an entire chapter. Much of this information forms the basis of the final
chapter: the political aspects of preventing cancer.

This is an extremely interesting book that is written for professionals,
college undergraduates and laypersons alike. It presents a guide to the scien-
tific basis for preventing cancer through personal actions and through political
actions.

A section on cancer-related services provides helpful information to both
the individuals associated with cancer diagnosis and treatment, and for those
individuals that have developed one of the many types of cancer.

—Reviewed by Lloyd E. Church, D.D.S., Ph.D.
Associate Clinical Professor of Surgery
George Washington University Medical Center
Washington, D.C.

Stranger in New Mexico: A Doctor's Journey, 1951-1986. By J. Peter Voute. 221

Changes in the delivery of health care in post-World War II Holland caus-
ed at least some of the physicians of that country to question their ability
to continue to practice medicine there. The author of this well written book of reminiscences was one of these.

Dr. J. Peter Voute had been in general practice before the outbreak of the war, and spent at least part of the war in the resistance movement. After peace was restored he was one of the physicians sent to Indonesia in a public health team to try to solve some of the public health problems for that country and the Dutch people who had survived.

On his return to Holland, Dr. Voute became more and more dissatisfied with the health care situation in Holland, and at the invitation of an expatriated physician friend, visited New Mexico. After this visit Dr. Voute moved his family to the small town of Eunice, New Mexico where he stayed for several years after passing the state board examination. Then, in an effort to improve living conditions for his family, he moved first to Hagerman and next to Las Cruces. Finally, in preparation for semi-retirement, the family moved to Santa Fe where Dr. Voute entered the field of public health.

The story of the family and the practice of medicine is told with humor but with realism. Times were not all happy, and some were downright worrisome. Why didn't the customs officers allow the family to leave their ship briefly at Mobile? Would their oldest son survive the plane crash of his military reconnaissance plane? Would he be scarred both psychologically and physically for the remainder of his life? Some experiences, when considered in retrospect, were fun. Why did the ferris wheel stop with the doctor and his children in the seat at the top of the swaying wheel? Some incidents were puzzling, such as watching their girls playing in the band at ball games the parents did not understand.

Dr. Voute reports on the changes in the family, but more especially the changes in life in New Mexico brought about by the installation of the nuclear facility at Los Alamos, government legislation concerning the Indians, and the whole world situation. This book is recommended for anyone who wants a "good read" which is also a thought provoking read, and which presents a view of contemporary social history.

—Reviewed by Aletha Kowitz, M.A.
Director, Bureau of Library Services
American Dental Association
Chicago, Illinois


Dr. Robert M. Goldwyn is a plastic surgeon in Boston and the head of the Division of Plastic Surgery at the Beth Israel Hospital in Boston. He is also the editor of the well known journal, _Plastic and Reconstructive Surgery_. He is a successful plastic surgeon who is apparently primarily involved in cosmetic surgery. A very realistic person, he explains at great length that he neither is nor does he believe in plastic surgeons as "Doctor Pygmalions." Because of his position and his experience he is well qualified to write a book on his experiences. He does it in the form of a discussion of one day in the life of a plastic surgeon starting with his hospital rounds, continuing with his private practice routine, and ending with a few surgical cases at the hospital.

Goldwyn's father was a psychiatrist and his wife is a psychiatric social worker at McLean Hospital, an affiliate of Harvard Medical School. When
he first started medical school Goldwyn contemplated the possibility of going into psychiatry, but later opted for plastic surgery instead. He kept some interest in psychiatry, however, and the book has many comments on the psychological aspects of the profession and the evaluation of psychological problems of his patients. As stated on page 57, "You can easily admit going to a dentist, and others will support you and perhaps admire your courage. Seeing a plastic surgeon however, is like going to a psychiatrist. It may be the last thing you will tell your friends . . .".

The book is well written and easy to follow. It is apparently not written for the professional, because some explanations given are neither correct nor necessary if the reader is acquainted with medicine. On page 52 Goldwyn states "that patients with absence or partial development of the vagina have gonads of the opposite sex and are hermaphrodites." This obviously is an oversimplification. Patients with testicular feminization are not hermaphrodites, and I am sure Goldwyn is aware of this, but the book is written for people who are not aware of the different possibilities and a long discussion would be confusing and unnecessary.

As a plastic surgeon Goldwyn expected to perform the entire spectrum of reconstructive and cosmetic surgery. However, over the years he has ended up doing esthetic surgery and few reconstructive cases. He, therefore, discusses the problems associated with these types of surgery, the psychological problems, the false expectations, and the unrealistic demands as well as the pleasures of a job well done. For example, he states that he no longer does much pediatric surgery such as cleft lip and palate or surgery of craniofacial malformations, referring these patients to other surgeons. Apparently most of Goldwyn's patients are women, and the types of reconstructive surgery associated with mastectomies and face lifts are discussed. It would be interesting to know why there are so few male patients asking Goldwyn for face lifts. Goldwyn is of the opinion that "obsession with looks begins early for women. As small girls, they are likely to identify with their mothers who may be overly conscious of their bodies." There is no psychological discussion of male needs for facial reconstruction, rhinoplasty or face lifts.

This book discusses only the types of surgery Goldwyn does most, and does not discuss the field per se. However, it describes many types of plastic surgery and would make good reading for people contemplating this type of surgery. Since Goldwyn is enthusiastic about his specialty the book is positive about the benefits of such treatment. It would also make excellent reading for young persons who are considering this specialty and would like to know more about it.

Reviewed by Hannelore T. Loevy, C.D., M.S., Ph.D.
Prof. Clinical Pediatric Dentistry
Department of Pediatric Dentistry
College of Dentistry
University of Illinois at Chicago


The year 1983 marked the two hundredth anniversary of the death of William Hunter, renowned anatomist, lecturer in surgery, author of the ac-
claimed atlas of the pregnant uterus. He achieved a position of public esteem through his refined ways and courtly disposition and eventually became the leading obstetrician of London. He brought his younger brother John (destined to achieve preeminence in surgery and rate the title “Father of Modern Surgery”) to London to study under him. And when John showed an interest and inclination for dentistry (his first great work was *The Natural History of the Human Teeth*) older brother William strongly disapproved, so much so that the brothers stopped speaking and were estranged even until William's death.

Nevertheless, William Hunter had a profound influence on the development of surgical practice during his lifetime, an influence that is only now being fully realized, overshadowed as he was by John. He built the famous anatomic theater and museum in Great Windmill Street in London, where the best anatomists and surgeons of the day were taught. And when he died he left his museum worth 100,000 pounds as a gift to the city of Glasgow.

In commemoration of the anniversary of Hunter’s death the Wellcome Institute for the History of Medicine in London in 1983 sponsored an international symposium treating with the medical world of Hunter’s day. The essays in this volume are revised versions of papers given at that meeting. The end result is a fascinating volume, at once a great contribution to medical historical scholarship as well as a fascinating study to read and peruse.

The essayists were among the world’s most renowned historians of the field from Great Britain, Canada, West Germany and France. Starting with a first chapter by one of the book’s editors on the life of Hunter the essays deal with every aspect of medical practice during the eighteenth century. It was during this century that medicine — and dentistry — began to take on the forms they bear today. Up to that time education in the field was haphazard and in a state of flux. The lines between medicine and surgery — which for centuries had been distinct — were becoming blurred with surgeons attending medical schools to round out an education that had been primarily one of apprenticeship. The chapter on the role of apprenticeship in that century is particularly fascinating. It was written by Joan Lane, a research fellow at the University of Warwick who teaches a course on the social history of medicine in England. Miss Lane has used extensive primary sources including letters and diaries to build the picture of what life was like for a “surgeon-apothecary” apprentice.

The surgeon-apothecary is one of the eighteenth century’s most interesting examples of personal and professional upward social mobility and of steadily enhanced status, not only in London, where the ‘surgeon princes’ had always prospered, but also in the English provinces, where their houses, marriages and affluence were worthy of contemporary comment.

It was in just such a milieu that many of the prominent dentists of the time, including the most flamboyant of them all, Martin van Butchell, flourished, enjoying a status equivalent to that of the prominent surgeons. For many of the dentists who achieved prominence began their careers as surgeons. As the author points out, “a provincial apprentice surgeon's tasks were to roll pills and paint bottles in the dispensary before progressing to tooth extraction.”

The remaining chapters deal with medical examination in other forms — the hospital and medical school — as well as in other lands. Several of the most interesting concern the work of both John Hunter and William Hunter on evolution and human development, an interest that held these men for all of their lives. The author characterizes their contributions as “...
changing the climate of opinion in that period of transformation in the most basic fabric of the knowledge of living beings."

The last portion of the book deals with "the pleasures of procreation." Here are outlined the earliest theories of conception and the way these beliefs were fashioned by the rigid religious strictures of the times. In addition several selections deal with man-midwifery (the beginnings of the modern obstetrician) and the methods of managing deliveries.

The book is an excellent adjunct to our knowledge of that fascinating period. It is well put together, printed on fine coated stock and copiously footnoted (although these can be a nuisance since they tend to distract the reader). However, it is well recommended to anyone who wishes to learn more about the origin of medical and dental practice.


Because of the immense impact ancient Egyptian culture had on the development of western civilization, the collection of early Egyptian artifacts, and the study of its costumes, religion and history has long fascinated the Western world. Few aspects of ancient Egypt have been discussed more than the mummification procedures and care taken with its dead.

Attempts to develop good preservation processes for the dead were probably started in Egypt around 3,000 BC but the most skillful techniques were in use during Dynasty XXI (1069-945 BC). New techniques were developed not only to preserve the body but also to reproduce the actual body contours and features of the persons when alive. From Dynasty XXII onward, the standards of mummification gradually declined and, at the time of the Ptolemaic Period (332-30 BC), less attention was paid to the body and its preservation.

Collections of well-preserved mummies have been an integral part of most museums in which Egyptology is studied. The Manchester Museum in England has a fine collection of Egyptian antiquities, among them several mummies. Several periods and mummification techniques are represented in this collection, allowing for the study of techniques as well as Egyptian history. In 1906, two of the mummies of the Manchester Museum were unwrapped. The mummies, known as "The Two Brothers" were the oldest in the Museum's collection and probably dated to around 1900 BC.

In 1975, the Manchester team started unwrapping yet another mummy, known as no. 1770. Not much information was available on this mummy since the records did not specify the exact location where it was found. Dr. Rosalind David, Egyptologist and Director of the mummy research project of the Manchester Museum, was in charge of the investigative team which included anthropologists, histologists, electron microscopists, and dentists, among others.

The detailed description of the unwrapping of the mummy makes very interesting reading. This particular mummy turned out to be a very unusual one, because modern dating processes showed that there was a major difference in bone age and wrapping age. The Carbon 14 dating showed a difference of about 1000 years between the bones and bandages, indicating that
a rewrapping had taken place at a later age. Since modern techniques allow a more detailed evaluation of mummification and the wrappings of the Manchester Museum mummy were subjected to several different chemical and histological examinations, these tests (chemical extractions, spectometry, gas-liquid chromatography, histological study of some tissue remnants) are described and analyzed.

While many X-ray examinations of mummies have been done, in this particular case, it was possible to investigate a human mummy before and after unwrapping. This was a rare scientific opportunity. Dr. David also had considerable material on other mummies available for comparative studies.

Dental age was determined based on development of the third molars and on molar root formation. The age of the person was probably 13 or 14 years. Reconstruction attempts, based on facial bone characteristics, were attempted and are described in general terms.

The book has a large number of black and white photographs. There are also some color photographs which, however, are generally of poor quality. The book has an extensive index but no references are provided. The book is not intended as a specialized report, rather it is meant for the generalist. Since the explanations are kept very simple, the book is also easy reading for younger persons interested in Egyptology and for people who are not acquainted with the subject.

This is a fascinating book. For those interested in the latest methods of identification, this book will provide more than adequate information.

—Reviewed by Hannelore T. Loevy, C.D., M.S., Ph.D.
Professor, Clinical Pediatric Dentistry
The University of Illinois at Chicago
College of Dentistry


This is one of a series of medical malpractice books, the others dealing with medicine and pharmacy. Every dentist who is associated with a practice to any degree or relationship whatever, should obtain and read this text very carefully. It tells you another side of the story — why lawyers assist in malpractice proceedings against you, the dentist. It is written by a dentist educated in the law as it relates to dentistry, and presents information not before given in such detail.

The reasons patients elect to sue their dentist are presented in a manner that cannot be misunderstood. Nine chapters summarize the subject, with each then being discussed in detail. “Regulating the Dental Profession” is the beginning chapter. Second is “Areas of Dental Malpractice and How to Recognize Them.” The remaining areas then cover the topics Prefiling, Evaluation, Drafting the Pleadings, Discovery, Rules and Technics, Types of Settlement, Standard of Care, Expert Witnesses, The Trial. It is thus possible to see what other people think of the dental profession and of the many ways one can get oneself into many types of legal difficulties in the course of dental treatment.

There are many obvious omissions in this text, but there is more than enough material present to alert every dentist to check all of his professional activities as well as his non-professional activities. One may very well be on a collision course with oneself and one’s practice from a legal standpoint.
This text presents very good reading and also very important information for everyone associated with dentistry. The legal language is easy to understand and the presentation of the various forms used in practice is an education in itself. This is a top priority book for everyone related to the practice of dentistry.

—Reviewed by Lloyd E. Church, D.D.S., Ph.D. 
Associate Clinical Professor of Surgery 
The George Washington Medical Center 
Washington, D.C.

To Be Old and Sad. By Nathan Billig. x+114 pages, $21.95, Lexington, MA, 

According to the author of this short and easy-to-read book, depression is the single most common psychological disorder to affect persons of all ages. He disputes the fact that persons must suffer with the disorder and rejects the notion that older persons, especially, cannot be treated.

To Be Old and Sad points out the signs and symptoms of depression; what should be done for the person with depression, whether or not he or she wants treatment; medications which may cause depression; why depression is frequently misdiagnosed; the treatments which are available; and the differences between depression and the much more devastating disorders such as Alzheimer's and Parkinson's.

Dr. Billig notes that depression has a set of symptoms which are disabling and which interfere with functioning in social or occupational settings. He believes that it strikes about 20% of the population over 65 years of age, that it requires assessment of a large number of factors before an accurate diagnosis can be made, and that diagnosis can be made only after all physical causes of depression have been considered and treated. He insists that depression is the most treatable of human disorders in all ages but is too frequently left untreated.

The book is divided into seven chapters which are introduced by a Preface and summed up in an Afterword. Discussions of the topics in the various chapters are illustrated with short case histories from the practice of the author, with name changes to preserve anonymity of the patients.

The book is interesting and will probably be useful to the person who may himself be depressed or who has concern or responsibility for someone who is depressed. The emphasis, however, is on the older person with depression. To quote Dr. Billig: " 'Getting Old' cannot be treated, the disorder of depression can. It is worth making the effort." The only disappointment in reading the book is the very limited number of references suggested for further reading. The person who would read this present volume would probably want to do further reading, and the list of readings is far too limited.

—Reviewed by Aletha Kowitz, M.A. 
Director, Bureau of Library Services 
American Dental Association 
Chicago, Illinois
The purpose of this book is to describe the type of medical teaching that took place in Dr. Dock's Department of Internal Medicine at the University of Michigan in Ann Arbor at the turn of the century. Dr. Dock had a stenographer present at the clinic where he worked with his students and assistants, and a total of 16 volumes of notes was accumulated for the period of 1899 to 1908. These notes were studied and summarized by Davenport to describe diagnosis and treatment provided at the clinic.

The book is not only a description of George Dock's teaching of internal medicine but also a history of the College of Medicine at Ann Arbor. The activities of Dr. Dock are described in context with his time and with many references pointing to the activities of many other faculty members, friends as well as non-friends of Dr. Dock. The book is divided into 17 chapters, and all chapters are concise and written in a style easy to follow.

Students attending Dr. Dock's clinical demonstrations were in the 4th year of a 4-year medical course. All were supposed to have satisfied rigidly specified requirements. Some students had even graduated from college. Dr. Dock and his chief assistant also gave lectures in internal medicine to the 3rd year students and once a week conducted a diagnostic clinic for 3rd year students.

Between 1899 and 1908 there were 67 to 104 students in the 4th year class, 8 to 17 of whom were women. The class was divided into sections of 5 to 6 students who stayed on the wards for 2 weeks. A patient was directly assigned to a student for care and daily visits which might include home visits. Histories were to be finished within 24 hours and the complete work-up to be handed in as soon as possible. To encourage good work, students handing in the best reports were excused from the June final examination. Dock had a well equipped laboratory for clinical chemistry, but 4th year students could use it only on exceptional occasions.

Dr. Dock stayed at Ann Arbor for 17 years and during this time saw a great variety of disease conditions which he discussed with his students. Many of his opinions are reproduced in this book. Many different types of diseases were available to students for study even though Ann Arbor was a town of only 20,000. Unfortunately, no pediatric patients were available at the hospital and so pediatrics had to be learned from textbooks.

Dr. Dock emphasized bedside manner, and some of the comments he made about it are reproduced. The manner of taking a patient history was also emphasized. In general, Dr. Dock was a conservative internist, careful about the effects of surgery. He had been a student of Osler and quoted him often. Dr. Dock was a great proponent of autopsies to study the cause of death and discussed with students how to get family permits. However, despite Dr. Dock's ideas, very few autopsies were performed in his hospital.

Dr. Dock also had some ideas about dentistry. He was able to recognize periodontal disease and remarked, "I understand it has been suggested that dentists ought to be doctors . . . I would suggest that all doctors had better become dentists . . . unless the doctor has both points of view, he may, in fact very often does, overlook a very important part of the body."

At the end of each academic year Dr. Dock talked about setting up a practice and getting along with colleagues, about medical ethics and etiquette.
In 1908 George Dock left Michigan for Tulane University, apparently attracted by a better clinical pathological laboratory, among other inducements.

This book is not only an evaluation of George Dock's teaching but also of the practice of medicine in Ann Arbor at the turn of the century. It describes Vaughan's experience with typhoid fever; the establishment of the pathology laboratory by Wartjom; the practice of radiology by Willey and other topics. The book is easy to read and understand, and is recommended to those interested in the history of medicine in the Midwest at the turn of the century.

—Reviewed by Hannelore T. Loevy, C.D., M.S., Ph.D.
Professor of Clinical Pediatric Dentistry
Department of Pediatric Dentistry
College of Dentistry
University of Illinois at Chicago

Forensics Used To Identify Custer's Last Scout

Using forensic techniques, archaeologists determined that bones and teeth found at the site of Custer's last stand in Montana were those of a mixed-blood person who was between 35- and 40-years-old, and who smoked a pipe. Michel "Mitch" Boyer, who had a French father and a Sioux mother, was the only person in Lt. Col. Custer's command who fits that description. Boyer was the cavalry leader's scout and interpreter. To substantiate the identification, archaeologists used TV cameras to superimpose a picture of the bones onto the only known photo of Boyer.

The upper jawbone was found by a tourist and more bone fragments were found when the Little Bighorn site was excavated in 1984 as part of a battlefield survey. A bullet also was found, along with buttons from civilian clothes, which the nonuniformed Boyer would have been wearing.

—New York State Dental Journal,

Left to right: Dr. Richard A. Glenner, Dr. Audrey B. Davis, Dr. Carol E. Martin, Dr. J. Henry Clarke.

Dr. William J. Carter presenting one of the Bremner Essay Awards to Ms. Elizabeth C. Walsh of Lincoln, Nebraska.

Left to right: Dr. Maynard K. Hine, Dr. Raphael Escoe, Dr. H. Berton McCauley, Col. Bruce A. Matis, Dr. Harris Silverstein.

All photographs courtesy of Dr. Edward F. Leone, West Allis, Wisconsin.
NOTICE TO CONTRIBUTORS

Contributions, which may deal with any aspect of dental history or bibliography, are invited. The maximum length for original articles is about 5000 words. Manuscripts should be typewritten, with double spacing and wide margins. Only one copy need be submitted. Please consult former issues as to both literary style preferred as well as method of listing references. All references should be as complete as possible and contain the name(s) and initial(s) of the author(s) and the full title of the paper or book. Citations of periodical articles should include name of journal, year, volume number and complete pagination, in that order. For books cited, the city of publication, publisher, date and full pagination are to be given. All photographs which are intended to accompany articles must be black-and-white glossy prints no smaller than 3x5 inches. Photographs will be returned only if so requested.

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

Increasing interest among dentists in dental history.

Encouraging dental schools to develop historical collections on dentistry, and to offer adequate instruction in dental history.

Developing a broader understanding of the facts of dental history among the leaders in dentistry in order to aid them in their attempts in solving important problems in dental education and practice.

Stimulating more thorough and comprehensive research in dental history, thereby extending the boundaries of dental knowledge, giving substantial support to growing professional culture.

Creating an authoritative body to which important questions relating to dental history could be referred for factual verification.
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A Word of Farewell

This issue of the Bulletin marks the last under my editorship. With it I will have completed twenty-one years as editor of the principal magazine devoted to dental history in the entire world, and the only one in the English language.

My decision to relinquish the editor’s chair came after much deliberation. It has been an exciting twenty-one years during which time our Bulletin has grown from a small typewriter-offset publication to a handsome, printed, journal, one that can hold its own among the most prestigious journals in the health sciences. The introduction of feature after feature — such as “What Is It?”, “The Antique Book Collector’s Corner,” “Book Reviews,” “Classics in Dental History,” “Dentistry in Folk Art,” Poetry and the Dentist,” and “Oddments in Dental History” — have all added immeasurably to the interest quotient of the magazine and have attracted warm support from our readers. On the whole the magazine now enjoys an excellent reputation world-wide as the authoritative journal concerned with the fascinating history of the dental profession and the many adjunct fields associated with it such as dental hygiene and dental laboratory technology.

Why am I leaving? There are many projects I wish to pursue, papers I want to write, another book I wish to see published. And it is impossible to do these things while bearing the responsibility for seeing the Bulletin published — both timely and well.

As a result of being editor I have made many wonderful friends during these past twenty-one years, both in this country and many foreign ones and I hope that these friendships will continue for many more years.

I want to take this opportunity to especially thank the many people who have worked with me on the Bulletin and without whom it would have been impossible to create such an exciting publication. So my deepest thanks go out to Drs. Lloyd E. Church, Jerry J. Herschfeld, Bernard S. Moskow, Max
Geshwind, Robert Sproull; to Professor Gardner Foley and to Mr. Alex Peck for their continuing efforts in putting together their respective features. A warm and special thanks to Dr. J. Henry Clarke and Miss Aletha Kowitz for their wonderful work as Circulation Managers. To the remaining member of the Editorial Board — Dr. Milton B. Asbell — go my thanks for his sage advice and guidance over the years. In addition, I would like to thank all of the reviewers and consultants who gave of their time and expertise in reading and commenting on manuscripts submitted for publication. Lastly, I am truly grateful to the hundreds of authors whose manuscripts we were fortunate to have received and whose writings not only advanced the cause of dental history and its body of knowledge, but gave our journal its raison d'être.

As of this writing my successor has not yet been elected. However, I am confident that under the new editor’s leadership the Bulletin will go forward as the leading scholarly vehicle in this wonderful world of dental history.

Editor
The Bulletin of the History of Dentistry
Concerning Archigenes and Galen:
Correcting an Historical Error

—Dr. Alexander Tsoukanelis

The two great physicians of Classical times, Archigenes and Galen, have long been characterized as Romans. The author points out that, on the contrary, they lived their entire lives as Greeks. And it is to Greek medicine, rather than Roman, that the world owes such a debt.

I decided to put these thoughts to paper after reading the article “Dental Treatment in the Stone Age” by Pia Bennike (Bull. Hist. Dent., Vol. 34, No. 2, 1986). In that article Ms. Bennike characterized the notable physicians, Archigenes and Galen, as Romans.

Contrary to popular opinion they were not Romans but Greeks, and this flagrant historical error has been repeated by both earlier and later authors and historians. It is an error committed even by C. Kohn who edited the complete works of Galen in 22 volumes under the title Claudii Galen Opera Omni (Leipzig, 1821-1823). The error was also perpetuated by the great Daremberg in his translation of this epic work into French; by the noted medical historian, Castiglioni, and by others.

According to reputable and well-known sources such as Pliny and other Roman authors, the Romans were without the services of physicians from the 7th century, B.C. It was Pliny who, in the 1st century wrote: “The Roman people for more than 600 years were not without medical art but were without physicians.”

Freeborn Romans considered it beneath their station to become physicians. It would have been humiliating for a Roman to have worn the toga and at the same time maintain an establishment as a physician, to care for injured servants or to sell erotic philters to the prostitutes who abounded in the Rome of those days.

On the contrary, Romans preferred to busy themselves with learning, with oratory, and with strengthening the body, this latter being accomplished often in army camps, as Cato and other eminent Romans described their lives.

When rich Romans did not send their children to Athens to be educated (as happened with three generations of the family of Marcus Tulius Cicero) they engaged either Greek slaves or Greek freedmen as pedagogues — or
teachers — of their young. The children were taught reading, writing, grammar, arithmetic, history and, not least, obedience. The education of the Roman child was so severe and oppressive that the same word was used for both “obedience” and “pupil.”

It is well known that the famous Greek Stoic philosopher, Epictetus (120-30 B.C.) who taught in Rome for many years, had been a freed slave. Additionally, Nero, Nerva and Trajan received much of their learning from the works of Epictetus.

ARCHIGENES

Archigenes was born in Apameia, Syria. His father was a renowned Greek physician and pharmacologist who had studied medicine with the Greek, Agavinos of Sparta, in the Peloponesus.

It was with Agavinos that the son, too, studied and became a staunch follower of the “intellectuals.” He achieved distinction during the reign of the emperor Trajan (98-117 A.D.) and died at the age of 64. He was the author of many works, most of them concerning medicine. However, most of his writings are lost to us, the titles alone having survived.

It is important to stress that in those years all official documents, theses, diplomas, etc. were written in Greek. This was because Latin — as Cicero himself complained — was poor, rough and lacking in the nuances and richness which the Greek language possessed. Greek allowed for a much richer expression and portrayal of ideas and concepts.

Consequently, the fact that Archigenes passed a large part of his life in Rome where he distinguished himself as an outstanding physician, is not sufficient reason to classify him as a Roman.

GALEN

Cl. Galinos, as the Romans knew him, was born in the year 131 in the Greek colony of Pergamum in Asia Minor, in the area of present-day Turkey. Pergamum was an all-Greek city known since the 5th century B.C. as an intellectual center noted for its philosophers and artists. It was there, too, that Galen died in the year 201.

The name Claudius which was given to Galen by later historians is erroneous, and this error was unwittingly repeated by Ms. Bennike in her article cited earlier. In actuality, the prefix Cl. affixed before his name, and which has erroneously been interpreted as the abbreviation for Claudius, actually stood for Clarrisimus, an honorary title signifying “very glorious.” It was frequently prefixed to the names of eminent persons, much as is the word “honorable” in our day.

Galen — whose Greek name “Galinos” derives from the Greek word for “calm” — was the son of the famous Greek architect, Nicon, who, in addition to being a wealthy nobleman, was a member of the Senate of the Kingdom of Pergamos.

Nicon was distinguished for his upright and ethical behavior, for his good judgment and his judicious intellect. He was recognized as an expert in several sciences, among them mathematics, astronomy and logic, and it was into these fields that he initiated his son, Galen. He also taught him from the works of Plato and Aristotle, and these became the bases of Galen’s medical philosophies. (In contrast to his father, his mother, Xanthippe, was a very capricious woman and so hot-headed that it is reported that when she became angry she bit her servants!)
Galen began his medical studies at the age of 17 or 18 at the medical school at Pergamum. He had as teachers the famous anatomist Satyros; the noted followers of the Hippocratic school, Stratonikos and Aishrion; and the pharmacologist Ennios.

His progress in his medical studies was so rapid that he was considered to be a fully qualified physician at the age of 22.

Inheriting a large fortune from his father, Galen pursued further medical studies in Smyrna (present-day Izmir, Turkey) under the well-known Pelops and the Platonic philosopher Alvinos. From there he traveled to Corinth (in the Peloponnesus) where he continued his studies with Ailianos and Nomitianos, and with whom he traveled all over the Mediterranean area visiting Egypt, Crete, Cyprus, Palestine, Syria, the Greek mainland, Thrace and Macedonia.

After these journeys he traveled again to various cities in Asia Minor and then went to Alexandria which at that time was a brilliant center of medical learning. There he devoted himself assiduously to further medical studies under the anatomist Irakleianos and the “methodist” Ioulianos, as well as several other notable teachers.

After completing his studies there, and now a mature physician at the age of 28, he returned to his native Pergamum where he began medical practice and secured vital surgical experience at the school of the Monomachs.

His stay in Pergamum was not a happy one, however, for the citizens wanted to draft him into political life as a successor to his father. Galen was unhappy with the domestic strife, diversions and disorder that surrounded him and so, at the age of 32, he sought refuge in Rome. There his brilliance as a physician was quickly recognized and he launched on his illustrious career.

In the last years of his life he became very embittered and decided to leave Rome. Perhaps contributing to his decision to leave was the fact that the beautiful large villa he had built there burned to the ground along with his outstanding library. Additionally, his life was made bitter by the fierce attacks launched against him by his fellow physicians whom he had accused openly of being imposters and of being overly hungry for money.
So he returned once again to his native Pergamum, which at that time was in the throes of the plague. He threw himself into the fight against the contagion, but he, himself, was stricken and died there in his paternal home (a building which had been preserved up to the 13th century).

So, after all, we must be careful to distinguish these two famous medical men as Greek physicians and not as Romans. We must not forget that all of the education the Romans received was at the hands of Greek savants, most of whom had been brought to Rome as slaves after the Romans burned Corinth in 146 B.C. In a similar fashion, the Roman general Sulla ravaged Athens, decimated its population and robbed it of its artistic treasures. This led the Roman poet, Horace, to say in truth:

GREACIA CAPTA FERUM, VICTOREM CEPIT
ET ARTES INTULIT AGRESTITATIO.

DR. TSOUKANELIS is the author of the excellent book XPYSO IOBHALIO ("Golden Jubilee") published in Athens in 1984, which recounts his experiences during fifty years of dental practice in Greece. His address is One Mourouri Street, 106 74 Athens, Greece. Requests for reprints should be made directly to the author.
In a Lighter Vein:  
Dental Appreciation Month

—Robert E. Horseman, D.D.S.  
Whittier, California

Little known or little remembered happenings in dentistry in days past are here recounted  
with tongue firmly embedded in cheek!

This is Dental Appreciation Month although you'd never know it from the lay press. The media have given it the same attention accorded to the late, lamented Millard Fillmore Day which never got off the ground either. However, within the profession, Dental Appreciation Month is still alive and serving to remind us each year of the people and events that make dentistry such an exciting and fulfilling life. Some facts gleaned from this year's Appreciation Month:

—Thomas E. Dewey, who ran an unsuccessful presidential race against Harry Truman in 1948, lost because of a diastema between his upper right centrals which he attempted to hide with a large mustache. Plagued since early childhood when he was often compared with Alfred E. Neuman of Mad Magazine, Dewey elected to postpone fixing his gap until 1982 when diastema closure would become de rigueur. Unfortunately, he died in 1971 before this plan could be implemented.

—A bill that would make possession of a diastema a misdemeanor — except during the last two days of October — has been stalled in Committee, but proponents of the bill have announced the availability of bumper stickers and buttons with the customary red bar slashing diagonally over a representation of upper anteriors with centrals agap. Dentists aggrieved over some patients' unconcern with their diastemas, patients who, in fact, flaunt them, cheer this announcement and vow to not give up the fight until this affront to aesthetics is wiped from the earth.

—A goat named Clifford residing on a small farm outside Wilkes-Barre, Pennsylvania, has been discovered to have an insatiable appetite for Ticonium. Unlike dogs who disdain anything without acrylic saddles, preferably bi-lateral distal extensions, Clifford goes for the Ticonium castings, but will take Nobilium in a pinch although his owner states it gives him, Clifford, gas.
—A dentist in Carlton, Ohio was fined $50 and court costs in 1883 for leaving the rugae off a denture he had made. The plaintiff claimed he had trouble with his sibilants which resulted in his being called “Percy” by his peer group. He also ran afoul of Ohio laws which made lisping in a public place a felony punishable by hanging.

—This month marks the 100th anniversary honoring the flight of Rupert Icarus, DDS, of Dihedral, Maine. Icarus made quite a splash in 1888 when he launched himself from the second story of his office/home wearing a pair of wings he had constructed from rice paper and sticky wax. Predictably, as he neared the sun, the sticky wax softened and he augured in, destroying whatever chance he had of becoming an ADA Life Member.

—Because of his early experiments with the Roentgen Ray, during which he claimed he could “see right through human flesh,” Dr. Heinrich Blaupunkt was declared a warlock by the Town Council of Salem, Massachusetts. He was saved from buring at the stake when it was revealed that he was the only dentist in town. Elected secretary-treasurer of a local coven, Blaupunkt rose rapidly in the ranks, becoming a delegate to the whole Northeastern Regional Coven until his untimely death at age 89 when his broom collided with a carriage which had run a red light.

—Finesa Otterbein, dental assistant to Seymour B. Paddleford, DDS, of Apollonia, Wisconsin, became in 1951, the first dental assistant to disengage a patient’s entire tongue from its moorings with her high-velocity vacuum tip. Ms. Otterbein later modestly denied that there was anything special in her feat, but the tongue, with an appropriate plaque now resides in the Archives of the Harvard Medical School.

—Although Dr. Robert J. Nelsen is generally recognized as the inventor of the first commercially successful high-speed handpiece, little is known about some earlier experiments done by Santos M. Gerbil, DDS, of Ptarmigan Falls, New Mexico, during 1946-47. Dr. Gerbil had come into possession of an Allison engine from a war surplus P-40 during one of his forays into a local Goodwill Store. He subsequently coupled this to a rather large compressor he had “liberated” from a Nazi submarine base at Bremerhaven during his tour there with the Occupation Forces and assembled a crude handpiece capable of 1,700,000 r.p.m. Gerbil estimated he could prepare a full-mouth rehab case with his new handpiece in just a little over 3½ minutes. “Trust me,” he chided his apprehensive patient. “I’m a doctor.” Fortunately, or unfortunately, as the case may be, in a pre-op test a blade from the turbine flew off, knocking a hole 4 by 6 feet in the side of his operatory.

Promising, should he remain implacable, to clap the darbies on him and cart him off to the local Bastille, authorities in Ptarmigan Falls finally persuaded Dr. Gerbil to abandon his attempts, otherwise the history of the high-speed handpiece would be quite another story from the one we know.

DR. HORSEMAN is an associate editor of the Journal of the California State Dental Association and a frequent contributor of fascinating and funny articles to that periodical. He is also a member of the American Academy of the History of Dentistry. His address is 9209 South Colima Road, #3500, Whittier, CA 90605. Requests for reprints should be directed to the author.
The Two Crises That Faced
President Truman: Korean and Dental

—James M. Mixson, D.M.D.
Kansas City, Missouri

A severe crisis faced the Nation in 1950. Yet the Chief Executive never faltered in attending to his dental needs — procedures that would have daunted most others! A study of the President’s diary and other records reveal the unusual situation.

On June 24, 1950, President Harry S. Truman received word while on vacation at his home in Independence, Missouri, that North Korean troops had invaded the southern Republic of Korea. The next six weeks were exceedingly trying and grave for the Truman presidency. The South Korean position rapidly deteriorated in the wake of the North Korean advances. By June 28, Seoul had fallen. Truman was unhesitating in his resolve to halt communist aggression and had made the fateful decision to commit U.S. ground forces in Asia by June 30. Although described as a police action, the U.S. clearly was going to war. The President sent an urgent message to Congress on July 19, citing the need for more men, equipment, and supplies to be sent to General MacArthur. An additional 10 billion dollars in aid was needed to stop the relentless North Korean advance. On that same day an enemy assault on Taejon routed the 24th Division and by July 26, 1950, the American predicament was so serious that General Walker, commander of all United States ground forces in Korea, asked General MacArthur for permission to move the Eighth Army headquarters from the central mountains to the seaport at Pusan in case emergency evacuation was needed.

During July, 1950, in the midst of this crisis President Truman underwent a three week dental treatment marathon that would have challenged even the most cooperative patient. From July 8 to July 28, 1950, he had two 3-unit bridges, 4 single unit crowns, and a silicate filling replaced.

Beginning on July 8, Truman had a series of twelve dental appointments that continued through the 28th of July. Most of these appointments took...
place later in the afternoon with Dr. George H. Moulton, a staff dentist from the Walter Reed Army Hospital and Dental Clinic. From Army dental records the following treatment sequence was obtained:

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<th>Date</th>
<th>Procedures</th>
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<td>July 8</td>
<td>1. Oral Examination. Defective crown on tooth #7 and distal silicate on tooth #8 were noted.</td>
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<tr>
<td></td>
<td>2. Preparation of ¾ crown for bridge abutment #3.</td>
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<tr>
<td>July 9</td>
<td>1. Preparation of ¾ crown for bridge abutment #5.</td>
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<tr>
<td></td>
<td>2. Impressions of teeth #3 and #5.</td>
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<td>July 11</td>
<td>1. Try-in of ¾ crowns on teeth #3 and #5.</td>
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<tr>
<td></td>
<td>2. Impression for pontic #4.</td>
</tr>
<tr>
<td>July 14</td>
<td>1. Insertion of fixed bridge #3 to #5.</td>
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<tr>
<td></td>
<td>3. Impression of tooth #13.</td>
</tr>
<tr>
<td>July 15</td>
<td>1. Full crown abutment preparation for abutment #31 to replace defective bridge #29 to #31.</td>
</tr>
<tr>
<td>July 16</td>
<td>1. Insertion of crown on tooth #13.</td>
</tr>
<tr>
<td></td>
<td>2. Preparation of ¾ crown for bridge abutment #29.</td>
</tr>
<tr>
<td></td>
<td>3. Impression of teeth #29 and #31.</td>
</tr>
<tr>
<td>July 18</td>
<td>1. Try-in of crowns on teeth #29 and #31.</td>
</tr>
<tr>
<td></td>
<td>2. Impression for pontic #30.</td>
</tr>
<tr>
<td>July 20</td>
<td>1. Insertion of fixed bridge #29 to #31.</td>
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<tr>
<td></td>
<td>2. Full crown preparation for tooth #19.</td>
</tr>
<tr>
<td></td>
<td>3. Impression of tooth #19.</td>
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<tr>
<td>July 24</td>
<td>1. Insertion of full crown on tooth #19.</td>
</tr>
<tr>
<td></td>
<td>2. Preparation of open-faced crown on tooth #7.</td>
</tr>
<tr>
<td></td>
<td>3. Impression of tooth #7.</td>
</tr>
<tr>
<td>July 25</td>
<td>1. Preparation of ¾ crown to replace defective crown on tooth #18.</td>
</tr>
<tr>
<td></td>
<td>2. Impression of tooth #18.</td>
</tr>
<tr>
<td></td>
<td>3. Try-in crown on tooth #7.</td>
</tr>
<tr>
<td></td>
<td>4. Replace defective distal silicate on tooth #8.</td>
</tr>
<tr>
<td>July 26</td>
<td>1. Insertion of open-faced crown on tooth #7.</td>
</tr>
<tr>
<td>July 28</td>
<td>1. Insertion of ¾ crown on tooth #18.</td>
</tr>
<tr>
<td></td>
<td>2. Prophy.</td>
</tr>
</tbody>
</table>

Certainly this schedule must have been as strenuous on Dr. Moulton as on President Truman since the records show that the dentist also waxed and carved all these fixed prostheses. We know from previous Army records that President Truman had the fixed bridges on the maxillary and mandibular right at least since 1930. Also, with references in the dental charts to defective crowns, apparently most of the treatment done in July, 1950 was replacement of previous restorations. Figure 1 gives a visual summary of the dental services performed.
President Truman had two 3 unit bridges, 4 single unit crowns and silicate filling replaced two weeks after the beginning of the Korean war from July 8 to July 28, 1950, as shown on this Dental Corps chart.

It is interesting to speculate why major reconstructive dentistry was done with such rapidity during the stressful period at the beginning of the Korean conflict. As previously noted, the dental care provided was routine replacement of defective restorations, rather than a response to a serious dental emergency that demanded immediate attention regardless of current affairs of state. A plausible explanation would be that the treatment was rendered to safeguard the Commander-in-Chief’s dental and physical health as war began in Korea. Although the antibiotic, penicillin, had been present since the early 1940’s, a serious dental infection would still be health threatening. Whether this rigorous schedule was kept at the President’s insistence or Dr. Moulton’s or from another source is not known; but, clearly, Truman must have been the ideal patient he was reported to have been. At that time only belt-driven, slow and medium speed handpieces were available. Only once, during the preparation of a 3/4 crown of tooth #29, was anesthesia noted in the chart. And with the technique of taking an additional impression for a fixed bridge pontic at the try-in stage of the abutment retainers, Truman would have had at least eight impressions taken in this three week period.

Perhaps it is only coincidence that President Truman underwent this major dental treatment two weeks after the beginning of the Korean War. However, this sudden initiation in treatment seven months after a defective bridge was first noted and at the beginning of a war that was viewed as a communist threat not only to Asia but to Europe and the world suggests otherwise. And the rapidity with which such difficult dental treatment was done points to the possibility that the United States Army Dental Corps was insuring the Commander-in-Chief’s dental health preparedness at a time when the nation was going to war.

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REFERENCES


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Dental Therapists in Canada: A Revolution in Dental Care for Natives

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The dental therapist concept in Canada has a short but unique history that illustrates how difficult it is to introduce a new type of dental auxiliary to the dental profession. The programme is the only one of its kind in North America, tailored specifically to the needs of Canada's native Indian and Inuit populations residing on reserves and Crown Land. Although surrounded by controversy in the past, the dental therapy programme has flourished and as a result, approximately sixty therapists (¼ of whom are Native) are presently providing basic dental treatment for approximately 60,000 Natives living on reserves. It is hoped that eventually, enough therapists will be available to provide basic dental care for all 200,000 of Canada's Inuits and native Indians still living on reserves or Crown Land.

The idea to train dental therapists was born when it was recognized that native Indians and Inuits living in remote and isolated areas in northern Canada had very limited or no access to dental treatment. Some communities had never had the services of a dentist; consequently, the inhabitants suffered from considerable dental disease. In other communities, a dentist would be available for such a short time that only emergency treatment, consisting mostly of extractions, could be rendered. If persons such as dental therapists could be trained to provide basic dental care and teach prevention, the rampant dental disease among Canada's natives could be brought under control. In addition, if such persons trained to provide these services were native Indians or Inuits, they would be less likely to quit their jobs and "go home" because they would be working in their native environment and would be used to the lesser than ideal working conditions. The solution to the problem, with the blessing of the Department of Health and Welfare, was the dental therapist.

What is a dental therapist? Often confused with a dental hygienist or a dental nurse, a dental therapist is, in fact, neither of these, although he or she is qualified to perform duties that are similar to those of the dental nurse or hygienist. Duties performed by the dental therapist are carried out according to a written treatment plan that is prescribed by a supervising dentist. These duties are listed in Appendix 1. All procedures are completely standardized so that the quality of the work is consistently high. It must be stressed that before a dental therapist can perform any work (excluding emergency treatment), the supervising dentist must provide a detailed treatment plan, outlining what work is to be performed and in what sequence. The amount and type of work completed by dental therapists is carefully monitored.

Up until the end of the 1980-1981 academic year, all dental therapists were trained at the School of Dental Therapy located in Fort Smith, Northwest Territories. The School had a capacity to graduate approximately thirteen students every year, after they had completed the two-year training course, although the number of graduates was often less because some students dropped out of the programme each year.

The training of a dental therapist is unique in that if a student is not able or ready to complete the course in two years, tutorial classes and extra time is allowed so that the student can graduate. An excellent staff-student ratio of one dentist to five students enables the instructors to identify problem
areas promptly and arrange for extra help if the student needs it. Applicants to the School need not have had any previous experience and it is preferable that they have completed Grade 12, although this is not absolutely necessary. For potential applicants who require upgrading, such a programme can be arranged before entering the School.

Both men and women who have applied to the School in the past ranged in age from the late teens to the early thirties. Successful candidates possessed such qualities as motivation, industriousness, emotional maturity, perseverance, intellectual competence, as well as other traits that have made them suitable for a career in dental therapy. Qualified status Indians and Inuits are encouraged to apply to the School but other interested applicants from all over Canada are also welcome to apply to the programme. All training costs, including tuition fees, books, dental equipment and uniforms are paid by the Federal Government. Residence and subsistence costs are also paid by the Federal Government but only to native candidates.

The curriculum at the School is tailored specifically to the dental therapy programme. In some respects, it appears similar to that of a dental school. The subjects fall into three categories:

1. Basic Sciences
   a) General and Dental Histology
   b) General Anatomy and Physiology
   c) General Pathology

2. Dental Sciences
   a) Microbiology and Asepsis
   b) Dental Morphology
   c) Development of Occlusion
   d) Head and Neck Anatomy
   e) Oral Pathology

3. Clinical Dentistry
   a) Restorative Dentistry
   b) Patient Charting
   c) Dental Materials
   d) Equipment Comprehension and Maintenance
   e) Field Programme and Policy
   f) Local Anesthesia
   g) Medical and Dental Emergencies
   h) Oral Surgery
   i) Periodontics
   j) Preventive Dentistry, Cariology, Public Speaking
   k) Dental Radiology
   l) Applied Dentistry
   m) Tutorial, Library and Clinic Periods

In terms of total hours, the most time is devoted to restorative (clinical) dentistry. This subject received fifty hours of lecture and 670 hours of clinic time in the first year and 1,230 hours of clinic time in the second year. By the time a dental therapist graduates, he or she will have spent almost four times as much time as an undergraduate dental student spends on the subject of restorative dentistry. The reason for the emphasis on restorative work is evident when one considers that a great portion of a dental therapist’s time is spent restoring teeth using silver amalgam or a composite resin.

Upon graduation, dental therapists receive a Diploma of Dental Therapy from the School and must then pay a registration fee and apply for a license
to practise. Since the provincial dental associations do not recognize dental therapists, all therapists register in the Northwest Territories where they are legally recognized by the Northwest Territories Regional Government. Licensed therapists, when working in any of the reserves in the provinces or territories, are also recognized by the Medical Services Branch. The license must be renewed annually.

In order to make dental care available to a large number of people in scattered settlements, it is necessary for dental therapists to be able to move their equipment from one community to another with ease. To simplify moving, all equipment, including the dental chair, X-ray unit and compressor are completely standardized and portable and can be safely packed for shipping.

The "road to success" of the dental therapist movement has not been a smooth one. Criticized by many and blessed by few, dental therapists are only now beginning to be recognized as a type of dental auxiliary that has much to offer, especially to those people who previously had not had the benefit of regular dental care. Only by examining the roots of its history, can one fully appreciate dental therapy's genuine plea for acceptance by the dental profession.

HISTORY OF THE DENTAL THERAPIST MOVEMENT

The concept of creating a new type of auxiliary came about very informally in the early 1970's. Using the New Zealand dental nurse as a model, but with many modifications, the Canadian dental therapist was created. One major difference between the two was that the dental therapist would treat both children and adults and, out of necessity, be able to serve many communities, each for a specified amount of time. Portable dental equipment, set up in less than ideal conditions, did not deter applicants for admission into the programme.

One of the first problems in establishing the dental therapy programme was to decide where dental therapists would be trained. Eventually, Fort Smith, located close to the N.W.T- Alberta border, was chosen as the site for the first School of Dental Therapy. In September, 1972, the Medical Services Branch of the Department of National Health and Welfare, in conjunction with the Faculty of Dentistry of the University of Toronto, opened the School and the first class of dental therapists began its two-year training programme. Dr. K.W. Davey was, and still is, the director of the School. Instructors from the University of Toronto as well as from other areas were brought to Fort Smith to teach. The first class, consisting of eight students, graduated in 1974; the graduates were then stationed in such areas as Frobisher Bay, Baker Lake, Spence Bay and Fort Simpson. Clinics were set up in schools and nursing stations. Graduates of later years practised in provinces other than the Northwest Territories and today dental therapists are employed in every province in Canada except Ontario and Quebec because these two provinces feel they have sufficient manpower to provide dental care for their inhabitants.

OBJECTIONS BY THE DENTAL PROFESSION

Soon after the dental therapy programme started, the provincial dental associations voiced their disapproval, stating that only qualified dentists should be allowed to work in a patient's mouth. Although the dental associations had a valid point, no qualified dentists were available in the remote northern regions of Canada. By having dental therapists available, dental
care became available in these areas. No danger of low-quality dentistry existed because dental therapists were supervised by licensed dentists and only performed limited dental services which they were thoroughly trained to do. Standardization of all procedures insured that high-quality work was performed. Another objection voiced by provincial dental associations was that dental therapists were taking work away from dentists because many of the therapist's duties overlapped those of a dentist. However, under the programme many more natives were examined than ever before, and as a result, many procedures beyond the scope of the therapists' training were then referred to dentists. The therapists, through their efforts, especially via the preventive programme, raised the dental IQ of Canada's natives who, instead of waiting for severe pain before seeking treatment, were now making regular visits to dental clinics and private dental offices. Dentists would always be needed because a dentist had to examine the patient and prescribe the treatment plan before the dental therapist could begin to work.

HOW A SIMILAR PROGRAMME FUNCTIONED

The need for dental care in remote regions was demonstrated in a report by Dr. K.W. Davey in his Article “Dental Care in the Sioux Lookout Project”, published in 1971. Located in northwestern Ontario and populated mostly by Indians, Sioux Lookout was in need of dental services. To facilitate delivery of dental care, a dental clinic was constructed in the base hospital and was manned by Dr. Robert McGinn. Two full-time field dentists were available to work away from the base hospital. Portable dental equipment, similar to that used by dental therapists today, was employed. In Dr. Davey’s article, he stated:

This concept may eventually involve the training of Indians to cope with some of their urgent dental needs as rampant dental disease is still a problem in those remote areas and affects almost 100 percent of the Indian population.

Sioux Lookout was an ideal location in which a dental therapist could work. The government expressed great interest in establishing a health care program for Canadian Indians and Eskimos, and in 1973, Dr. K.C. Titley published a progress report regarding the Sioux Lookout Project. Since the inception of the Project in 1970, the number of extractions decreased while the number of restorations increased. Restorative services provided there were similar to those which dental therapists perform today. Another article published in 1973 by J.A. Hargreaves and K.C. Titley stated that despite having had dental care available in Sioux Lookout, caries experience among children was still high, indicating a need for a comprehensive preventive programme. Whatever the reason for the lack of a preventive programme, the results of Dr. Titley’s survey indicated that more manpower was needed at Sioux Lookout. The same situation probably existed in other remote areas of Canada as well.

THE THERAPISTS' SCHOOL IS RELOCATED

In the late 1970’s, the subject of relocating the School of Dental Therapy arose because of a lack of patients for teaching purposes. Previously, people from Fort Smith and surrounding areas came to the School for dental treatment. Eventually, the demand for basic dental treatment diminished so that the students were not getting adequate clinical experience. Because of preventive efforts, the dental health of the population had progressed to the point
that very few stainless steel crowns were needed and often only very simple amalgam restorations were performed by students. In order to overcome the patient shortage, staff and students were forced to pack their equipment and go into the field to find suitable teaching patients. It was also felt that the number of qualified candidates applying to the programme from N.W.T. and Yukon regions was limited and that future candidates from other parts of Canada might be reluctant to move to Fort Smith for training, and the number of graduates from the programme would diminish; furthermore, the quality of the work performed would deteriorate. The only alternative was to relocate the School in an area that had a greater pool of patients and was capable of attracting qualified candidates to the programme.

Relocation of the School met with strong opposition from various sources. The town of Fort Smith was very unhappy at the prospect of losing the School and the prestige it brought to the area. The provincial dental associations were opposed to placing the School in their provinces because they still did not support the dental therapy concept. Sites such as Thunder Bay in Ontario, Prince Rupert in British Columbia and a possible site somewhere in Alberta were considered. At one time, the Wascana Institute of Applied Arts and Sciences in Regina, where the Saskatchewan dental nurses are trained, was considered. The site was rejected on the grounds that the dental therapist programme was unique and wanted its own identity. Finally, Prince Albert, located in the province of Saskatchewan, was chosen. The reason Prince Albert was chosen may be attributed to the fact that Saskatchewan already had a programme similar to that of dental therapy (the dental nurse programme). The new facility allows for larger classes and therefore, more graduates, perhaps twelve or thirteen per year.

The decision to place the School in Prince Albert was made only after numerous delays and debate. During these delays, the School in Fort Smith was faced with such an acute shortage of patients that staff and students had to travel to areas as far away as Labrador in search of patients. As a result, the instructors were forced to be away from their families for four to five months at a time. Instructors began to resign and the School was then faced with a shortage of teaching staff.

The School finally closed its doors on September 1, 1981, obliging the government to choose a new site. By January 1983, a permanent facility was found to accommodate the new School of Dental Therapy.

NEW OPPOSITION FROM ORGANIZED DENTISTRY

In January 1980, the Board of Directors of the Alberta Dental Association (ADA) asked the Attorney General to investigate the activities of the dental therapists practising in the provinces and sent RCMP officers to question the therapists in the field. The ADA wanted to be certain that the therapists were operating only on Crown Land or reserves and that they were qualified to perform their services and that only those services specified by the Federal Government were being performed. This investigation lasted only three or four months and no charges of any kind were placed.

In December 1980, the Canadian Dental Association (CDA), the Medical Services Branch, the provincial dental associations and Native representatives held a meeting in Ottawa to discuss dental therapists. The CDA was opposed to dental therapists and felt that by operating in the provinces, the therapists were working illegally because they were not licensed in the provinces. The CDA also felt that "all irreversible therapeutic dental acts or ser-
vices must be rendered only by a licensed dentist”. The provincial dental associations also felt that their respective provinces had enough dental manpower to service all their inhabitants, including native Indians and Inuits living on reserves and that therefore, dental therapists were not needed. The Medical Services Branch emphasized however that these people needed more care than a dentist could offer in a two to three week period a few times a year. The Medical Services Branch agreed to relocate the therapists to more remote regions but maintained that the School would not be closed. Plans to expand or relocate the School had previously been delayed until this meeting was held.

In the months following the meeting, the provincial dental associations endeavored to prove that there was no need for dental therapists due to a surplus of dentists but to date this has not been demonstrated. The Alberta Dental Association has invited dentists to treat natives on Federal reserves; only about sixty dentists responded. When these dentists were informed about the actual working conditions, the list of those interested decreased considerably. Unfortunately, a very small number of private practising dentists want to work on reserves.

Despite the confrontation, dental therapists continue to work on reserves and serve the natives. A newsletter, published periodically, keeps the therapists abreast of what is happening at the School and contains information about the staff and staff changes, directives, current information about new techniques and other interesting articles.

The dental therapists are optimistic regarding the future. They recently formed an Association of Dental Therapists which has been approved in Ottawa and which has been incorporated.

What does the future hold for the dental therapy concept? This is a difficult question to answer at the present time. Because so many of Canada's native Indian and Inuit populations depend on their services, dental therapists will continue in their efforts to treat and prevent dental disease.

APPENDIX 1
SERVICES PERFORMED BY DENTAL THERAPISTS
1. Charting the patient’s dental case history and complete charting of the treatment Master Card, when instructed to do so by a dentist.
2. Exposing and developing dental radiographs.
3. Making radiographic diagnoses of dental caries. (Dental therapists are not expected to diagnose abnormal conditions; only to recognize that a problem exists that should be referred to a qualified dentist. The dental therapist can diagnose caries and treat it even if the supervising dentist did not include it in the treatment plan because diagnostic radiographs were not available at the time of the initial diagnosis.)
4. Administering local anesthetic using infiltration and mandibular nerve block techniques.
5. Application and removal of the rubber dam. (The use of the rubber dam is compulsory for operative procedures.)
6. Restorative treatment:
   a) the use of silver amalgam and composite resin, including the acid etch technique.
   b) the placement of pins as necessary in amalgam and composite resin restorations.
   c) the placement of stainless steel crowns on deciduous molars.
   d) finishing and polishing restorations.
   e) performing vital pulpotomies for deciduous teeth.
f) opening into the tooth pulp to relieve symptoms of acute irreversible pulpitis.

7. Performing uncomplicated extraction of deciduous and permanent teeth. (This does not include soft tissue surgery or removal of bone; sutures may be placed if necessary. Dental therapists are also taught how to treat surgical and postsurgical complications such as root fracture, the control of hemorrhage and the treatment of dry sockets. Therapists may not prescribe drugs.)

8. In the case of a dental emergency, dental therapists are trained to alleviate pain according to the guidelines of training at the School of Dental Therapy and can do so without a treatment plan from a supervising dentist.

9. Periodontal treatment:
   a) charting periodontal pockets
   b) performing supra and subgingival scaling
   c) cleaning and polishing teeth
   d) treating periodontal emergencies according to the guidelines at the School of Dental Therapy. This includes irrigation for pericoronitis and non-surgical treatment for periodontal abscesses.

10. Conducting a preventive dental health programme by:
    a) educating the patient via individual chairside oral hygiene instruction, classroom presentations and discussions with parents, teachers and/or organizations.
    b) treating the patient. This can include prophylaxis and application of topical fluoride solutions. Therapists also conduct self-prophy and fluoride application or mouth rinse programmes with school children. Great emphasis is placed on the preventive aspect of a dental therapist's work.

11. Providing a referral service to qualified dentists for procedures that are beyond the scope of training of dental therapists. Therapists do this by taking alginate impressions and pouring study casts for the supervising or consulting dentist, maintaining the referral lists in a special manual for this purpose and advising the supervising dentist concerning possible requirements for space maintainers. Dental therapists may not place space maintainers; they must refer these cases to the supervising dentist or a private practitioner.

12. Maintaining accurate and up-to-date dental case history records including work already completed and work still to be done in the future. This enables Medical Services to determine how much and what type of work has been done in clinics across Canada.

13. Servicing and maintaining the standardized equipment provided by Medical Services. Therapists are also taught how to pack and unpack equipment properly so as to avoid any unnecessary damage.

REFERENCES


School of Dental Therapy, Medical Services, Health and Welfare Canada, Curriculum, A Picture Summary of the Programme, Services Dental Therapists are Trained to Provide.


Minutes of the meeting of the Medical Services Branch and the Canadian Dental Association, December 12, 1980, Ottawa.

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(This paper, in a slightly modified form, was the 2nd place winner of the 1982 Bremner Essay Award competition, conducted annually by the American Academy of the History of Dentistry, in the dental schools of the United States and Canada.)

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Oddments in Dental History:
Jack London as Dentist

—Malvin E. Ring, D.D.S., M.L.S.
Rochester, New York

Jack London, the great author who had risen from a life of poverty and deprivation to a position during his lifetime as America's foremost literary figure, determined to set out on a 7-year voyage around the world. Behind this grandiose plan was the desire to capture in words the exotic lives of the various peoples of the world as well as to make some money from his reportage.

To this end London commissioned the building of one of the most elaborate ships of its time. Christened the Snark, completion always seemed farther away as delay after delay drained London's diminishing fortune.

Tremendous publicity attended the building of the ship: Cosmopolitan paid a thousand dollar advance for articles about the voyage. Newspapers reported daily on the progress of the shipbuilding. People all over the San Francisco Bay area were making bets over when London would finally sail. Woman's Home Companion, upset because Cosmopolitan beat it with an article about the intended voyage of the Snark, went so far as to demand an article from London on South Sea aborigines even before he left San Francisco harbor!

Irving Stone, in Sailor on Horseback, his definitive biography of Jack London, writes:

So well had the voyage of the Snark been publicized by the newspapers and magazines that he received thousands of letters from all over the country, the writers pleading to be taken along. Ninety percent were willing to work in any capacity, and ninety-nine percent were willing to work without pay. Physicians, surgeons, and dentists in large numbers offered to come along without pay...

Because of his militant adherence to Socialism, the Socialist Voice of Oakland, California, bade him a mixed farewell:

Goodbye, Jack, goodbye! The Snark, flying the red flag, weighed anchor April 22, and Jack London and his wife are now at sea. Roosevelt will be glad to know there is one less "undesirable citizen" in the country. To us Comrade London's departure is a source both of congratulations and regret. London goes into a field of wider usefulness to the cause of socialism, and we are glad. Our only regret is that we shall miss his cheering personal contact...

Unfortunately, the voyage begun with such high hopes in April, 1907, was cut short prematurely because of illness. Soon after setting sail, London developed skin ulcers and yaws which was followed by a terrible siege of malaria which kept him flat on his back for weeks. By September 1908 he was in constant pain, victim of a strange disease which no one could diagnose. Too sick to continue on the Snark, he ended up in a hospital in Sydney, Australia, where his affliction baffled the specialists.

Finally, recognizing the impossibility of continuing the adventurous journey, London dispatched a friend to the Solomon Islands to bring the Snark back to Sydney where she was sold at auction for $3,000, a tiny fraction of the fortune London had poured into the ship.

On July 23, 1909, two and a quarter years after he had set sail with such enthusiasm for a round-the-world voyage, London landed in San Francisco.
His health was ruined, he was heavily in debt and deeply discouraged. Nevertheless, out of the experience came a fascinating account of the voyage, *The Cruise of the Snark*. It is from Chapter XVII entitled “The Amateur M.D.” that the following selection is taken:

When we sailed from San Francisco on the *Snark* I knew as much about sickness as the Admiral of the Swiss Navy knows about salt water

I did not know anything about dentistry, but a friend fitted me out with forceps and similar weapons, and in Honolulu I picked up a book upon teeth. Also, in that sub-tropical city I managed to get hold of a skull, from which I extracted the teeth swiftly and painlessly. Thus equipped, I was ready, though not exactly eager, to tackle any tooth that got in my way. It was in Nuku Liva, in the Marquesas, that my first case presented itself in the shape of a little, old Chinese. The first thing I did was to get the buck fever, and I leave it to any fair-minded person if buck fever, with its attendant heart-palpitations and arm-tremblings, is the right condition for a man to be in who is endeavoring to pose as an old hand at the business. I did not fool the aged Chinaman. He was as frightened as I and a bit more shaky. I almost forgot to be frightened in the fear that he would bolt. I swear, if he had tried to, that I would have tripped him up and sat on him until calmness and reason returned.

I wanted that tooth. Also, Martin wanted a snapshot of me getting it. Likewise Charmian got her camera. Then the procession started. We were stopping at what had been the club-house when Stevenson was in the Marquesas on the *Casco*. On the veranda, where he had passed so many pleasant hours, the light was not good — for snapshots, I mean. I led on into the garden, a chair in one hand, the other hand filled with forceps of various sorts, my knees knocking together disgracefully. The poor old Chinaman came second, and he was shaking, too. Charmian and Martin brought up the rear, armed with Kodaks. We dived under the avocado trees, threaded our way through the cocoanut palms, and came on a spot that satisfied Martin’s photographic eye.

I looked at the tooth, and then discovered that I could not remember anything about teeth I had pulled from the skull five months previously. Did it have one prong? two prongs? or three prongs? What was left of the part that showed appeared very crumbly, and I knew that I should have to take hold of the tooth deep down in the gum. It was very necessary that I should know how many prongs that tooth had. Back to the house I went for the book on teeth. The poor old victim looked like photographs I had seen of fellow countrymen of his, criminals, on their knees, waiting for the stroke of the beheading sword.

“Don’t let him get away,” I cautioned to Martin. “I want that tooth.”

“I sure won’t,” he replied with enthusiasm, from behind his camera.

“I want that photograph.”

For the first time I felt sorry for the Chinaman. Though the book did not tell me anything about pulling teeth, it was all right, for on one page I found drawings of all the teeth, including their prongs and how they were set in the jaw. Then came the pursuit of the forceps. I had seven pairs, but was in doubt as to which pair I should use. I did not want any mistake. As I turned the hardware over with rattle and clang, the poor victim began to lose his grip and to turn a greenish yellow around the gills. He complained about the sun, but that was necessary for the photograph, and he had to stand it. I fitted the forceps around the tooth, and the patient shivered and began to wilt.

“Ready?” I called to Martin.

“All ready,” he answered.
I gave a pull. Ye gods! The tooth was loose! Out it came on the instant. I was jubilant as I held it aloft in the forceps.

“Put it back, please, oh, put it back,” Martin pleaded. “You were too quick for me.”

And the poor old Chinaman sat there while I put the tooth back and pulled over. Martin snapped the camera. The deed was done. Elation? Pride? No hunter was ever prouder of his first pronged buck than I was of that three-pronged tooth. I did it! I did it! With my own hands and a pair of forceps I did it, to say nothing of the forgotten memories of the dead man’s skull.

My next case was a Tahitian sailor. He was a small man, in a state of collapse from long days and nights of jumping toothache. I lanced the gums first. I didn’t know how to lance them, but I lanced them just the same. It was a long pull and a strong pull. The man was a hero. He groaned and moaned, and I thought he was going to faint. But he kept his mouth open and let me pull. And then it came.

After that I was ready to meet all comers — just the proper state of mind for a Waterloo. And it came. Its name was Tomi. He was a strapping giant of a heathen with a bad reputation. He was addicted to deeds of violence. Among other things he had beaten two of his wives to death with his fists. His father and mother had been naked cannibals. When he sat down and I put the forceps into his mouth, he was nearly as tall as I was standing up. Big men, prone to violence, very often have a streak of fat in their make-up, so I was doubtful of him. Charmian grabbed one arm and Warren grabbed the other. Then the tug of war began. The instant the forceps closed down on the tooth, his jaws closed down on the forceps. Also, both his hands flew up and gripped my pulling hand. I held on, and he held on. Charmian and Warren held on. We wrestled all about the shop.

It was three against one, and my hold on an aching tooth was certainly a foul one; but in spite of the handicap he got away with us. The forceps slipped off, banging and grinding along against his upper teeth with a nerve-scraping sound. Out of his mouth flew the forceps, and he rose up in the air with a blood-curdling yell. The three of us fell back. We expected to be massacred. But that howling savage of sanguinary reputation sank back in the chair. He held his head in both his hands, and groaned and groaned and groaned. Nor would he listen to reason. I was a quack. My painless tooth-extraction was a delusion and a snare and a low advertising dodge. I was so anxious to get that tooth that I was almost ready to bribe him. But that went against my professional pride and I let him depart with the tooth still intact, the only case on record up to date of failure on my part when once I had got a grip. Since then I have never let a tooth go by me. Only the other day I volunteered to beat up three days to windward to pull a woman missionary’s tooth. I expect, before the voyage of the Snark is finished, to be doing bridge work and putting on gold crowns.
The Movement for Independent Practice of Dental Hygienists: From Evolution to Revolution.

—Wilma Motley, R.D.H.
Northridge, California

A movement has developed among some segments of the dental hygiene profession for independent practice, free of supervision by dentists. This article traces the roots of this drive, showing that from the beginning, there has been confusion as to just what duties were proper to the hygienist.

I wish there were a time to begin my story by tracing the growth of oral hygiene from 1843, but interesting as it is, the story is too long for now. My presentation is limited to an historical overview of the evolution of dental hygienists who have moved from satisfaction with subservience into today's world of women's equality where some of them seek independence from the dental profession. I am unable to include any philosophical thoughts or to tie in past events with the present. I am not expressing unsupported opinions, but I will show you statements made by leaders of both professions and will highlight documented facts related to the growth and development of their attitudes and expectations. This, I believe, will show you that 75 years ago there were many pros and cons related to dental hygienists, and that many of them still exist. However, there have been some changes in emphasis.

Over the years since the 1840's dentistry made enormous progress in its knowledge, education and practice, and, as a result, utilization of auxiliaries became a necessity. As soon as there were regulations, some dentists expressed fears that untrained persons would attempt to perform dental functions. At that time, these fears were probably self-serving as much as they were a concern for the patient. Others saw the operating auxiliary as a positive adjunct to their offices; a means to offer preventive services to more patients, or to allow themselves to be relieved from performing certain treatments.

Even though women in the earlier years customarily assumed an inferior status and accepted what they were told to do without question, this period also saw the initiation of trends in the awakening of dental hygiene to its potential. As always, there were individual dentists and dental hygienists with future vision who introduced new ideas which became the bases for eventual major advances.

ORIGIN OF THE DENTAL HYGIENIST

Before the existence of the first dental nurse was documented, dentistry talked about utilizing "sub-specialists." These sub-specialists might have been called preceptorial students or new graduates. Dr. M.W. Kingsley thought they could fill deciduous teeth and take charge of "regulating" cases. Dr. F.W. Low suggested they go from house to house to polish patients' teeth with a flannel rag. Dr. C.M. Wright said they could polish the teeth and massage the gums, and by 1903 Dr. M.L. Rhein proposed that dental nurses be employed and that they "clean, polish and medicate the dental territory only under the prescription of the attending dentist." On the other hand, many dentists believed that allowing even prophylaxis would "... lead to gross inroads into the very life of dentistry."
Dental nurses were being preceptorally trained by well known dentists of the times, and utilized in their offices in the 1890s and early 1900s. Drs. Robin Adair, M.L. Rhein, W. George Ebersole and Olin Kirkwood were proponents of this new dental auxiliary, and Dymple B. Johnson stated that she had performed these functions since 1893. She suggested a school for dental nurses and outlined entrance requirements which she felt should include "an independent income sufficient to allow two years of study."

Albert H. Stevenson, D.D.S., secretary of the Oral Hygiene Committee of the New York State Dental Society, said, "legislate her into existence or not, she will come, and before long, as have come all the good things we now enjoy, from necessity." H.S. Seip, president of the Pennsylvania Dental Association, in 1914, recommended changing dental laws to provide for licensing the dental nurse; A.H. Merritt said the dental nurse was an "innovation that has been made necessary by the evolution of dentistry. It is in the line of progress and will prevail; progress has always been made in the face of opposition." Dental nurses will be of inestimable benefit to the public, our patients and the uplift of our profession," was T.P. Hyatt's comment.

Dr. C.M. Wright had already given a great deal of thought to women performing prophylactic services and had outlined a course of study for such training. He had been a faculty member of the Ohio College of Dental Surgery and had urged it to arrange such a course which began with the 1910-1911 session. Dr. Jack Gottschalk provided me with new information about these classes, and now I know there were at least four graduating classes. I knew the names of the nine women who were graduated in 1914. I have the names and a photograph of the 1916 graduating class, which included Dr. Flora Haag, superintendent of courses for dental nurses. I have been told that none of them was ever allowed to practice as a dental nurse. Although the college faculty must have believed in the value of formally trained dental nurses, Ohio dentists were violently opposed to them and defeated the legislation which would have licensed them. Two of these ladies did continue their education and became dentists. Strangely enough, Dr. Flora Haag, before she became superintendent of courses for dental nurses, opposed use of nurses to perform prophylaxis as she believed it was a proper speciality for women dentists.

THE PIONEERING WORK OF DR. A. C. FONES

Alfred Civilion Fones carefully trained his dental assistant, Irene Newman, to meticulously and regularly scale and polish the teeth of his patients and at the same time educate them in home care procedures. In 1907 he persuaded the Connecticut Board of Dental Examiners to permit women to clean teeth, and the law was so amended. In 1915 another amendment was enacted defining the field of operation, and in 1917 the first dental hygiene licensing examination was given in Connecticut; Irene Newman became the first licensed dental hygienist. All states licensed dental hygienists by 1951.

In a paper given in 1911, Fones urged dentists to perform these treatments periodically to ensure that the dental hygienist (a term he coined) was being thorough in her work. He also said that if the dentist did not do this periodically, he would become the assistant and patients would consult the hygienist as to the condition of their mouths, calling on the dentist for repair work only.
Fones came to believe that patient care and education should begin at an early age, in the schools, with trained personnel who would scale and polish the children's teeth, teach them the principles of mouth hygiene, nutrition and good health practices. These new hygienists worked in schools, often with equipment set up in hallways.

When Fones had convinced the Bridgeport board of education that his dental clinic project should be implemented, he planned the courses to train the women necessary to staff it. Then he persuaded well known dentists and physicians to lecture to classes held in a part of his office building. These lectures became the basis for the first dental hygiene textbook, *Mouth Hygiene*, which Fones edited. Fones always believed that if the dental hygiene profession were to prosper and to gain respectability and permanence, its education belonged under the aegis of dental schools within the framework of established universities. Graduates of Fones' courses were eagerly employed by schools and private practitioners, and were soon sought by hospitals, industrial clinics and public health systems.

**EARLY OPPOSITION TO DENTAL HYGIENE PRACTICE**

By 1913 some dentists saw prevention as a threat to their livelihood, and in 1920 Dr. Rose Coxen said she thought dental hygienists should be restricted to schools and charitable institutions and not be allowed in private offices. She said that a woman entering the field should take "... the whole course, or not at all, thereby fitting herself to be a truly useful member rather than a mere tool in the machinery of dentistry."

By 1916 three states had amended their dental practice laws to license the dental hygienist. The American Dental Association approved these changes, and, in 1922, the House of Delegates accepted a model bill. In 1928 President Roscoe Volland suggested work be started to provide a uniform course for dental hygienists. However, no action was taken for another twenty years.

In 1923 a dentist publicly warned against the dental hygienist starting an office by herself as an infraction of the law. Periodically the necessity of licensure of the dental hygienist has been debated, and as far back as 1917 when the first dental hygiene license was issued, many dentists fought against licensure, arguing that registration or certification of these new dental auxiliaries was adequate.

**BEGINNINGS OF AGITATION FOR PRIVATE PRACTICE**

1923 also saw the founding of the American Dental Hygienists Association under the sponsorship of the American Dental Association. A group of dental hygienists attending was photographed for the *Cleveland Press* and the caption stated that they were qualified to do extracting, cleaning and examining, one of them being quoted as saying, "we are almost dentists."

Although the dental nurse/hygienist was originally trained to perform preventive services, she was admittedly relieving the dentist of functions he found boring, tedious and financially unproductive. However, Samuel Rabkin, writing in the *Journal of the ADHA* in 1931, said that dental hygienists could fill positions in schools, infirmaries and industrial activities as well.

Some dental hygienists were reluctant to increase their responsibilities beyond their basic education. An ADHA member in 1932 wrote to the *Journal* asking about instructing the patient on diet, and received a reply to "... only discuss diet and its relation to teeth. Her field is dental prophylaxis
and anything pertaining to pathology or physical conditions should be referred to the dentist in charge or the family physician."\textsuperscript{22}

Laws and their language differed greatly from state to state varying from permission to "clean teeth," to "clean only the exposed surfaces," or to "clean directly beneath the free margin of the gums." "Exposed surfaces of the teeth" had more than one interpretation, but it was not an openly discussed subject in dental hygiene classes and that was how it was taught to my class. At least one state allowed her (men were specifically excluded by law from becoming hygienists until 1965) to polish overhanging margins of fillings or uneveness of enamel for the prevention of caries.\textsuperscript{23}

A provocative classified advertisement in the \textit{New York Times} for 1935 was placed by a dentist who offered an operating room available for an established dental hygienist who "positively must have own independent practice." He had many answers, but not from dental hygienists. Other dentists feared what their fellow practitioners would allow dental hygienists to do as much as they feared the dental hygienist herself. A storm of protest arose, but there appears to be no record of the outcome.\textsuperscript{24}

One after another, states without dental hygiene licensure laws adopted them. Pertinent to expanded functions of this auxiliary, and the fears of dentists, a bill allowing dental hygienists to practice in New Jersey was twice defeated, the second time because dental hygienists had been found filling teeth during the noon hour.\textsuperscript{25}

Margaret Bailey stressed standardization of curriculum in her 1937 presidential address saying, "please do not misunderstand me — I do not believe that, as dental hygienists, we can bring about these changes — but we can collect the necessary data and lay it before the dental profession."\textsuperscript{26}

\textbf{WHAT SERVICES WERE HYGIENISTS PERFORMING?}

Although the first formally trained dental hygienists were primarily meant to be educators to school children, a 1938-39 survey made by the \textit{ADHA} found that most dental hygienists were in private offices even though schools and public health positions paid more. Less than 10% of the respondents said their duties were limited to prophylaxis; 90% performed secretarial duties, exposed and developed X-rays; 65% doubled as dental assistants; and 12% assisted with administration of nitrous oxide, with some being responsible for the whole procedure. In addition, 90% throught their training was inadequate for the work required of them.\textsuperscript{27}

Most dental hygienists of that time did not appear to have very high aspirations for themselves, and President Celia Perry said, "in the field of scientific effort, the association has taken a secondary role . . . the dental hygienists were created to serve the dental profession, and we have looked to them for leadership and guidance in erecting a procedure for the promotion of the science of dental hygiene. . . . To think of producing scientists is very improbable, but we should promote an understanding of scientific procedure."\textsuperscript{28} Although this was a realistic assumption in 1940, it does not hold true today.

\textbf{THE MOVE TO EXPAND HYGIENISTS’ DUTIES}

As a means of providing more dental care to children, Dr. John Oppie McCall, of New York, suggested in 1944 that dental hygienists be trained to treat children, under supervision and " . . . to fill shallow cavities which do not involve the pulp." New York dental hygienists immediately adopted a
resolution stating that they wanted to perform only the services included in the present law. In order to quell some of the concerns of dentistry, a new ADHA policy stated that dental hygiene “precludes services other than those in present laws governing the practice of dental hygiene in the various states in which the dental hygienist is licensed.” This policy statement was sent by the ADHA to dental deans, and Dr. H.E. Friesell, dean of the University of Pittsburgh, replied:

... the principal argument of those who have objected to the dental hygienists since the beginning has been that sometime, when the hygienists get strong enough, they will want to do certain limited kinds of operative dentistry, which will mean gradual extension and difficulties at every point. When thoughtless people like Owre and McCall make a proposal of this kind, if you look into the matter closely enough, you will find that it is not for the benefit of the public or the hygienists but for their own pocketbooks.29

The ADHA Committee on Education of the Dental Hygienist developed curriculum standards and submitted them to the ADA's Committee on the Education of the Dental Hygienist in 1945; in February, 1947, the ADA approved standards for a two year course for schools of dental hygiene. By 1950 all programs were a minimum of two years, and at least three schools offered a baccalaureate degree. Accreditation began in 1952.

Toward the end of the decade Frances Stoll saw no need for dental hygienists to move into the restorative dentistry field, nor did the ADHA approve. She also said dental hygienists should not use fluorides until further research proved such applications were harmless.30

Based on a two month survey and evaluation of the system of dental care for children in New Zealand by Dr. Allen O. Grubbel, secretary of the Council on Dental Health, the ADA went on record as opposing “... any plan in the United States designed to permit or authorize persons with less training than that required of dentists to render intra-oral operative, surgical or prosthetic dental services.”31
One of the early experiments of the expansion of functions of the dental hygienist was attempted by the Massachusetts legislature when it passed a bill in 1949 to allow dental hygienists to be trained to perform "minor dental operations." The ADA immediately protested this action saying that it threatened the health and welfare of the public.

The following year, 1950, the ADA House of Delegates urged training programs for expansion of functions in spite of a published statement which said "... that dentistry would be irrevocably injured by an invasion of dental practice by dental hygienists."

One group discussion in the 1953 Michigan workshop considered "to what extent should the duties of dental auxiliaries be expanded?" Proposed expansion included "prophylaxis, radiography, examining and charting, education of the patient, medicaments and treatments such as fluoride, desensitization, sedative treatment, topical anesthesia and packs, mechanical operations such as polishing of restorations, removal of overhangs, smoothing rough edges of teeth, impressions for study models, cementing facings and pontics and minor adjustments on prosthetic appliances... with minor exceptions, there was no attempt to divert the hygienist from her primary function — the prevention of oral disease."

A special committee of the ADHA in 1954 initiated an aptitude test for candidates entering the study of dental hygiene, which was followed by an achievement test for graduating students in 1958. The National Board Examination in 1962 was partially based on these two tests.

The first published statement by a dental hygienist that the profession should have some measure of autonomy was made by March Fong Eu in her 1957 president's message, saying that dental hygienists were suffering from "taxation without representation." Through its state boards, she said, dentistry completely controlled dental hygiene. She urged the ADHA to think of its growth and then take part in its destiny. This message triggered the following ADHA policy statement: "At the present time, and in consideration of the legal fact that the practice of dental hygiene is ancillary to the profession of dentistry in every respect, the ADHA is satisfied with the present status of representation and wishes to express appreciation for the past and present trust of organized dentistry." However, the movement for independence and expansion of duties had begun.

THE ADA BEGINS DELIBERATIONS OVER EXPANDED DUTIES

The supplemental report of the ADHA executive secretary in 1960 included extensive information on the possibility of expanding duties for dental auxiliaries. Under pressure, the ADA urged qualified educational institutions to undertake carefully designed programs of experimentation and research to determine the role of auxiliaries as part of the dental health team in order to serve more people. The Council on Dental Education was requested to approve and review these programs to ensure that they were consistent with policies of the profession and would allow for orderly changes in existing statutes. This was later changed to specify accredited dental schools and Federal dental services as qualified experimental settings.

The 1957 Survey of Dentistry recommended that the dental profession initiate studies to develop and expand the duties of auxiliary personnel, and the 1961 Conference on Criteria for Evaluating Functions of Auxiliary Personnel studied proposed duties for dental hygienists. The conference closed with recommendations for implementation of experimental programs. The 1962
“Future Dental Manpower” workshop listed operations which might be delegated to dental hygienists and dental assistants, but no recommendations were made on the extension of services.

A questionnaire was prepared by the ADHA Committee on Professional Trends to determine what responsibilities dental hygienists were currently undertaking and their attitudes toward other responsibilities; to arouse interest in the problem of expanded duties and to highlight problems related to expansion of functions. Forty-four percent of those receiving the questionnaire returned it. In addition to these actions and recommendations, the American Association of Dental Schools' Committee on Expansion of Duties of the Dental Hygienist recommended that the dental profession conduct studies designed to develop and expand the duties of the dental hygienist. It believed changes in state dental practice acts should not be specific as in the past, but be broad in their interpretation.

When the results of the questionnaire were tabulated, one list showed professional duties performed and the percent of dental hygienists performing them. Another list was of duties which 57% of dental hygienists never perform, and duties dental hygienists thought should be performed by them. Preventive services were favored; only 13% believed dental hygienists should place restorative material in cavities.

THE ADHA OPPOSES INDEPENDENT PRACTICE.

The ADHA's next step was to adopt definitions of dental hygiene practice, outlining clinical, educational and community services. A special task force appointed in 1967 determined that dental hygiene continued to center on prevention, education and therapeutic services, having expanded in depth, not breadth. The committee asked for no major changes in dental hygiene practice and education, but for increased responsibilities in areas in which the dental hygienist is already qualified. It also recommended that experimental studies relating to functions of the dental hygienist be undertaken. The ADHA revised its definition of dental hygiene practice, not asking for expanded functions, but asking that state laws use positive terms and emphasize the functions which cannot be performed by any person other than the dentist or dental hygienist.

At the 1967 annual session the ADA, with ADHA support, recommended that the listing of duties be eliminated from dental practice acts and that the professional competence and judgment of the dentist be relied on in delegating functions to dental auxiliaries. The ADHA further urged that dental hygiene functions not be delegated to any other auxiliary until structured research showed those functions could be taught effectively in order to maintain standards. It was recognized that the Association needed to develop strong, reasonable policies on the current issues of expansion of duties, licensure and continuing education. And where something was opposed, reasonable alternatives had to be suggested.

WAS DENTAL HYGIENE TRULY A PROFESSION?

In the fall of 1969 President Patricia McLean addressed the ADHA House of Delegates on the crisis facing dental hygiene, saying the profession was at a crossroads, pointing out that dental hygiene is not truly a profession. Among the roadblocks the Association would encounter in reaching that goal were that "the profession does not set and enforce standards for the selection, preparation, licensure and practice of its practitioners," and that the
profession lacked “sound social and economic policies for its practitioners.”

An old history of the ADHA stated that the ADA had passed a resolution recognizing dental hygiene as a profession. Naturally dental hygienists wanted to rely on this statement, but a thorough search of records cannot document it. Statements made by dental hygienists may have implied this granting of status. However, it is known that being a profession is an earned status recognized by others, and is not granted by edict. Some later legal situations have decreed that dental hygiene is a profession, and it is commonly called one.

The ADHA executive committee in 1970 thought a position statement necessary for changing dental practice acts or revising rules and regulations, should be drafted. That same year, the Inter-Agency Committee on Auxiliaries was convened by the ADA Council on Dental Education. A primary concern was the establishment of effective experimental programs on the utilization of dental hygienists and dental assistants. Definitive guidelines were not developed but some basic points of consensus were reached. A second meeting of the committee was more productive; it identified studies needed regarding expanded utilization of auxiliaries; functions to be assigned to specific auxiliaries; types of educational programs needed. A policy statement was drafted concerning regulatory standards and the evaluation of the teaching of expanded functions. A complete report was published in the May-June 1974 issue of the Journal of the ADHA.

SOME INNOVATIONS ARE INTRODUCED

Massachusetts again became a leader and revised its dental practice act to allow dental students to become certified to practice dental hygiene after meeting specific criteria. The ADHA was concurrently evaluating the training and use of military trained dental auxiliaries and the House of Delegates supported delegation of additional duties to qualified dental hygienists and dental assistants based on effective and meaningful education, evaluation and regulation.

The University of Iowa received funds in 1972 from the USPHS and the W.K. Kellogg Foundation to establish an experimental program with a modified and expanded dental hygiene curriculum. Selected dental hygiene students successfully completed the program but Iowa did not sanction their utilization outside the dental school setting.

Dental hygienists were not accepted by all countries but international recognition was given to past-president Kay Gandy who spoke on “the future of the operating auxiliary in the United states” at the 1972 FDI meeting. “I am certain,” said she, “that the operating dental auxiliary will work outside the confining walls of a dental office; she will serve those remote rural areas which cannot support the services of a full time dental practitioner. . . . Through mobile dental clinics, the operating dental auxiliary will bring preventive and restorative care to a population which has always had to do without.”

In the early 1970s the ADHA became more concerned with its identity and pondered whether it is a separate profession, a complete profession, and, if not, can it become a complete profession? Additional questions were: who are we, what can we do and where do we want to go? These were signs of the times as women sought new roles and equality. Seminars on leadership and assertiveness were offered to board members and later extended to district officers and constituents. The ADHA moved into the political/legal
arena, expressed opinions and successfully met the challenge of dental hygiene education in those states still accepting preceptoral training as qualification. It also assisted in placing dental hygienists on state boards of dentistry.

In my keynote address at the ADHA's 50th anniversary in 1973, I spoke about completeness and separateness of a profession: "A separate profession must be complete within itself; it can function independently of any other group. Perhaps it does not perform as efficiently when unsupported, but well enough to serve the public's needs in a competent manner. It is essential that a separate profession educate and regulate itself... completeness as a profession, without separateness, can become a realistic goal of dental hygiene."

The impact of the Survey of Dentistry and its recommendations had created new interest in dental auxiliaries and expanding their functions to meet predicted manpower needs. The dental hygiene profession sought increased responsibilities and more in-depth education for areas already in curricula, and was seeking active participation in legal areas affecting the profession. By 1977 the education of the dental hygienist had been increased in subject matter and in depth. And although dental practice acts were not being changed to allow expanding functions of the dental hygienist, the Association was taking a broader view of the scope of dental hygiene practice. It was examining alternative practice settings which would include the dental hygienist as a primary care provider of preventive services. The ADHA House of Delegates adopted supporting resolutions to meet the health care needs of the public in accordance with state dental and dental hygiene practice acts. It also supported alternative methods of practice, in a variety of settings, which would enable the dental hygienist to become a primary care provider of preventive services.

SPLIT BETWEEN ADA AND ADHA ON PRIMARY CARE

Obviously the ADA was not pleased with this attitude and it adopted a resolution stating that dental hygienists are auxiliaries of the dental profession and that they must work only under the direct or indirect supervision of a dentist in settings under the jurisdiction and supervision of a dentist.

The ADHA Committee on Governmental Relations in 1978 issued a position paper, "Placing Dental Hygiene in Perspective," which was concerned with directions in health care; an analysis of the current situation; dental hygiene's role in the delivery system; and a proposed plan of action. It was planned to present a proposal for the development of a separate dental hygiene practitioner to the ADA, hoping that the ADA and the ADHA would agree in principle on the concept. Formal liaison was established, and a working group with the title "role and relationships of dental hygienists and dentists," was set up. An open hearing was held during the 1979 ADA/ADHA annual meetings. The draft statement had served as a catalyst to draw the two associations together.

Another ADA council had been preparing an official association definition of primary care but this did not include the role of the dental hygienists. The ADHA then adopted resolutions giving its definitions which included the dental hygienist as a primary care provider of dental hygiene services, and directed a study to "investigate the concept of dental hygienists providing dental hygiene care directly to the public and functioning independently as licensed professionals." Another resolution stated that the dental hygienist
was capable of providing dental hygiene services without supervision. The ultimate question was should there be deregulation or delicensure? Why license someone who must work under supervision? If the ADHA supported supervision it would be taking a position that would support delicensure.

During 1981-1982 ADHA policies concerning practice settings, supervision and remuneration were reviewed. Relations with the ADA had been deteriorating, and a meeting between the presidents and presidents-elect of the two associations was arranged. The ADA interpreted the ADHA policy statements as a move toward independent practice by dental hygienists, and stated that the ADA would work toward solving the issues, but only when the ADHA stated that it did not seek to separate dentistry and dental hygiene.

Proposals and counter proposals were considered and the ADHA refused such unilateral action and said that new definitions of supervision and an acceptable resolution of the employer-employee relationship must be mutually agreed on. Feelings ran high, but dialogue was continued. The ADA then set up open hearings in various parts of the country so that opinions could be expressed. The ADHA presented its five-point plan in 1982; the ADA agreed to three of these points, but did not want to become involved in the issue of dental hygienists on state boards of dental examiners nor would it agree to a moratorium on opposition to independent practice.

LEGAL ACTION AGAINST INDEPENDENT PRACTITIONERS

In the meantime, legal actions against dental hygienists in three states were being monitored. North Carolina cited a dental hygienist for practicing without a supervising dentist; Colorado cited two dental hygienists, who shared an office, for practicing without supervision; and Pennsylvania cited a dental hygienist for contempt of court for practicing after her license was revoked for practicing without supervision. A California dental hygienist, however, had successfully established her right to practice dental hygiene as an independent contractor. The irony is that men were originally prevented from becoming dental hygienists because it was feared they would be bolder than women and would be inclined to perform dental services illegally; however, it was the women who first attempted to be more independent.

The 1982 ADHA House of Delegates supported the pursuit of greater representation in the accreditation process and self-regulation for the profession. At the same time that the ADHA was seeking more autonomy and a broader scope of practice it was also preparing for these increased responsibilities by developing peer review and quality assurance criteria and guidelines; increasing educational and continuing education requirements; offering faculty and curriculum planning workshops; and actively encouraging research.

Strained relationships between dentistry and dental hygiene have continued, and many dental hygienists have become increasingly assertive, some of them aggressive. Independent practice of the dental hygienist has become a reality in Colorado, although this action of the state legislature has brought about litigation. Dental specialty groups, as well as the ADA, are adopting policy statements reemphasizing that the dental hygienist is an auxiliary to dentistry, and urging states to adopt more stringent regulations which would allow the practice of dental hygiene only under the direct supervision of a dentist.
DENTISTS AND HYGIENISTS — FRIENDS OR FOES?

Dr. Dale Redig has called this struggle a war and asks dentists which side of this war they are on. Dean Paul Goldhaber, at the Harvard School of Dental Medicine alumni program in April of this year, challenged his listeners to “decide whether dental hygienists are friends or foes.” Dr. John Hein, in his speech on that occasion, said, “I see the nature of the present controversy between dental hygienists and dentists to be that of a revolution and not a war.” A wiser observation, I believe. After an objective evaluation of the anxieties of both professions his conclusion is that we will watch a modern version of a Greek tragedy unfold and that “there should be no war. There should be no foes.”

REFERENCES

8. Ibid.
9. Ibid.
11. Ibid.
18. Ibid, 6 (9):3.

(This paper, in a slightly modified form, was presented at the 36th annual meeting of the American Academy of the History of Dentistry, Las Vegas, Nevada, October 8, 1987.)

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Poetry and the Dentist

ON A PAINTED LADY WITH ILL TEETH
—By Edmund Waller

Were men so dull they could not see
That Lyce painted,—should they flee,
Like simple birds, into a net
So grossly woven and ill set,—
Her own teeth would undo the knot,
And let all go that she had got.

Those teeth fair Lyce must not show
If she would bite; her lovers, though
Like birds they stoop at seeming grapes,
Are disabused when first she gapes;
The rotten bones discovered there
Show 'tis a painted sepulchre.


From the collection of Prof. Gardner P. F. Foley, Baltimore, Maryland
With the ever increasing threat of infection dominating the world of medicine and dentistry, it is incumbent on each and every one of us to adhere to the strictest guidelines available to insure the safest and cleanest surroundings for everyone whom we treat.

The basis for today’s sterilization techniques goes back to the mid 1800’s when an English surgeon became the first to provide a solution to the problems of wound infection following surgical operations. The work of Dr. Joseph Lister made possible the tremendous advances in surgery that would subsequently affect each and every medical modality from that time to the present.

Joseph Lister, the fourth of seven children, was born on April 5, 1827, in Upton, a small village near London, England. He received his B.A., and then, in 1852, his medical degree from the University College, London. Lister subsequently became assistant to a leading surgeon, Prof. James Syme of the University of Edinburgh. In 1860, Lister was appointed Regius Professor at the University of Glasgow. It was there that he found mortality following surgical procedures even higher than in Edinburgh. At that time surgery was the last resort since it was believed that “surgical diseases” would frequently kill the patients in a hospital ward. These diseases were usually blamed on miasmas (gases) which supposedly hovered about hospitals and caused wounds to rot.

About this time, Louis Pasteur was diligently at work unraveling the secrets of bacterial life. Pasteur’s fermentation experiments helped demolish the “spontaneous generation” theory and proved, among other things, that microbes cause decay. Struck by the implications of Pasteur’s revelations, Lister set about to apply these ideas to wound infection. He argued that if putrefaction is always due to bacterial development, this must apply to living as well as to dead tissue. Subsequently the putrefactive changes which occur in wounds after operations on a human being, from which blood poisoning often follows, might be prevented absolutely if the injured surfaces could be kept free from germs of decay.

Hoping to accomplish this result, Lister began experimenting with drugs which would kill the bacteria without injuring the patient. He used carbolic acid in several cases of compound fractures, fractures which would generally become infected and necessitate amputation. With the completion of these experiments Lister achieved great success and in 1867 published “On the Antiseptic Principle in the Practice of Surgery” (reprinted here). His
method was not readily adopted for the most part due to opposition to the germ theory. When, in 1871, the French surgeon Alphonse Guerin conceived the idea of dressing wounds with cotton in hopes of keeping germs from entering them, he was quite unaware that a British contemporary had preceded him by a full decade in this effort at prevention. Lister's successes, however, could not be ignored and were officially recognized by the Royal Society of London in 1880 and the French Academy of Science in 1881.

In 1883, Lister was made a baronet by Queen Victoria and was awarded scientific honors from all over the world. He died on Feb. 10, 1912.

Within a few years of Lister's work, antiseptic surgery put an end to surgical diseases. This was the birth of modern scientific surgery. Later the antiseptic method was replaced by the aseptic method, the emphasis shifting from killing germs to keeping them from entering wounds. It was, however, in the World War, where asepsis was no longer possible, that the method first introduced by Lister was finally vindicated. The aseptic method has been, in many respects, a great advance over the older antiseptic method; however, since it is based upon absolutely the same recognition of causes, it is only an improvement in technique. The benefits of Lister's studies and those derived from them are incalculable. The success which medicine enjoys today owes a tremendous debt to those studies and to that British surgeon's perseverance. More than any other person, Joseph Lister was responsible for "opening the gates of mercy to mankind."

The following selection, here somewhat abbreviated, appeared in the British medical journal The Lancet for September 21, 1867. It was based on a paper which Lister delivered before the British Medical Association in Dublin on August 9, 1867.

ON THE ANTISEPTIC PRINCIPLE IN THE PRACTICE OF SURGERY

By Joseph Lister, Esq., F.R.S.
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In the course of an extended investigation into the nature of inflammation, and the healthy and morbid conditions of the blood in relation to it, I arrived, several years ago, at the conclusion that the essential cause of suppuration in wounds is decomposition, brought about by the influence of the atmosphere upon blood or serum retained within them, and, in the case of contused wounds, upon portions of tissue destroyed by the violence of the injury.

To prevent the occurrence of suppuration, with all its attendant risks, was an object manifestly desirable; but till lately apparently unattainable, since it seemed hopeless to attempt to exclude the oxygen, which was universally regarded as the agent by which putrefaction was effected. But when it had been shown by the researches of Pasteur that the septic property of the atmosphere depended, not on the oxygen or any gaseous constituent, but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles . . .

The material which I have employed is carbolic or phenic acid, a volatile organic compound which appears to exercise a peculiarly destructive influence upon low forms of life, and hence is the most powerful antiseptic with which we are at present acquainted.

The first class of cases to which I applied it was that of compound fractures, in which the effects of decomposition of the injured part were especially striking and pernicious. The results have been such as to
establish conclusively the great principle, that all the local inflammatory mischief and general febrile disturbance which follow severe injuries are due to the irritating and poisoning influence of decomposing blood or sloughs. For these evils are entirely avoided by the antiseptic treatment, so that limbs which otherwise would be unhesitatingly condemned to amputation may be retained with confidence of the best results.

In conducting the treatment, the first object must be the destruction of any septic germs which may have been introduced into the wound, either at the moment of the accident or during the time which has since elapsed. This is done by introducing the acid of full strength into all accessible recesses of the wound by means of a piece of rag held in dressing forceps and dipped in the liquid. This I did not venture to do in the earlier cases; but experience has shown that the compound which carbolic acid forms with the blood, and also any portions of tissue killed by its caustic action, including even parts of the bone, are disposed of by absorption and organization, provided they are afterwards kept from decomposing. We are thus enabled to employ the antiseptic treatment efficiently at a period after the occurrence of the injury at which it would otherwise probably fail. Thus I have now under my care in the Glasgow Infirmary a boy who was admitted with compound fracture of the leg as late as eight and a half hours after the accident, in whom nevertheless all local and constitutional disturbance was avoided by means of carbolic acid, and the bones were firmly united five weeks after his admission . . .

I cannot, however, expect my professional brethren to follow my advice blindly in such a matter, and therefore I feel it necessary to place before them, as shortly as I can, some pathological principles, intimately connected not only with the point we are immediately considering, but with the whole subject of this paper.

If a perfectly healthy granulating sore be well washed and covered with a plate of clean metal, such as block tin, fitting its surface pretty accurately, and overlapping the surrounding skin an inch or so in every direction, and retained in position by adhesive plaster and a bandage, it will be found on removing it after twenty-four or forty-eight hours, that
little or nothing that can be called pus is present, merely a little transparent fluid, while at the same time there is an entire absence of the unpleasant odour invariably perceived when water-dressing is changed. Here the clean metallic surface presenting no recesses, like those of porous lint, for the septic germs to develop in, the fluid exuding from the surface of the granulations has flowed away undecomposed, and the result is absence of suppuration. This simple experiment illustrates the important fact, that granulations have no inherent tendency to form pus, but do so only when subjected to a preternatural stimulus. Further, it shows that the mere contact of a foreign body does not of itself stimulate granulations to suppurate; whereas the presence of decomposing organic material does. These truths are even more strikingly exemplified by the fact, which I have elsewhere recorded, that a piece of dead bone, free from decomposition, may not only fail to induce the granulations around it to suppurate, but may actually be absorbed by them; whereas a bit of dead bone soaked with putrid pus infallibly induces suppuration in its vicinity . . .

I left behind me in Glasgow a boy, thirteen years of age, who between three and four weeks previously met with a most severe injury to the left arm, which he got entangled in a machine at a fair. There was a wound six inches long and three inches broad, and the skin was very extensively undermined beyond its limits, while the soft parts generally were so much lacerated that a pair of dressing forceps introduced at the wound, and pushed directly upwards, appeared beneath the skin at the opposite aspect of the limb. From this wound several tags of muscle were hanging, and among them there was one consisting of about three inches of the triceps in almost its entire thickness; while the lower fragment of the bone, which was broken high up, was protruding four and a half inches, stripped of muscle, the skin being tucked in under it. Without the assistance of the antiseptic treatment, I should certainly have thought of nothing else but amputation at the shoulder-joint; but as the radial pulse could be felt, and the fingers had sensation, I did not hesitate to try to save the limb, and adopted the plan of treatment above described, wrapping the arm from the shoulder to below the elbow in the antiseptic application, the whole interior of the wound, together with the protruding bone, having previously been freely treated with strong carbolic acid. About the tenth day the discharge, which up to that time had been only sanious and serous, showed a slight admixture of slimy pus, and this increased till, a few days before I left, it amounted to about three drachms in twenty-four hours. But the boy continued, as he had been after the second day, free from unfavourable symptoms, with pulse, tongue, appetite, and sleep natural, and strength increasing, while the limb remained, as it had been from the first, free from swelling, redness, or pain. I therefore persevered with the antiseptic dressing, and before I left, the discharge was already somewhat less, while the bone was becoming firm. I think it likely that in that boy's case I should have found merely a superficial sore had I taken off all the dressings at the end of three weeks, though, considering the extent of the injury, I thought it prudent to let the month expire before disturbing the rag next to the skin. But I feel sure that if I had resorted to ordinary dressing when the pus first appeared, the progress of the case would have been exceedingly different.

The next class of cases to which I have applied the antiseptic treatment is that of abscesses. Here, also, the results have been extremely satisfactory, and in beautiful harmony with the pathological principles indicated above. The pyogenic membrane, like the granulations of a sore, which it resembles in nature, forms pus, not from any inherent disposition to do so, but only because it is subjected to some preternatural
stimulation. In an ordinary abscess, whether acute or chronic, before it is opened, the stimulus which maintains the suppuration is derived from the presence of the pus pent up within the cavity. When a free opening is made in the ordinary way, this stimulus is got rid of; but the atmosphere gaining access to the contents, the potent stimulus of decomposition comes into operation, and pus is generated in greater abundance than before. But when the evacuation is effected on the antiseptic principle, the pyogenic membrane, freed from the influence of its former stimulus without the substitution of a new one, ceases to suppurate (like the granulations of a sore under metallic dressing), furnishing merely a trifling amount of clear serum, and, whether the opening be dependent or not, rapidly contracts and coalesces. At the same time any constitutional symptoms previously occasioned by the accumulation of the matter are got rid of without the slightest risk of the irritative fever or hectic hitherto so justly dreaded in dealing with large abscesses.

I have so lately given elsewhere a detailed account of the method by which this is effected, that it is needless for me to enter into it at present, further than to say that the means employed are the same as those described above for the superficial dressing of compound fractures — namely, a piece of rag dipped in the solution of carbolic acid in oil, to serve as an antiseptic curtain, under cover of which the abscess is evacuated by free incision; and the antiseptic paste, to guard against decomposition occurring in the stream of pus that flows out beneath it; the dressing being changed daily till the sinus has closed.

The most remarkable results of this practice in a pathological point of view have been afforded by cases where the formation of pus depended upon disease of bone. Here the abscesses, instead of forming exceptions to the general class in the obstinacy of the suppuration, have resembled the rest in yielding in a few days only a trifling discharge; and frequently the production of pus has ceased from the moment of the evacuation of the original contents. Hence it appears that caries, when no longer labouring, as heretofore, under the irritation of decomposing matter, ceases to be an opprobrium of surgery, and recovers like other inflammatory infections. In the publication before alluded to I have mentioned the case of a middle-aged man with psoas abscess depending on diseased bone, in whom the sinus finally closed after months of patient perseverance with the antiseptic treatment. Since that article was written, I have had another instance of success, equally gratifying, but differing in the circumstance that the disease and the recovery were both more rapid in their course. The patient was a blacksmith who had suffered four and a half months before I saw him from symptoms of ulceration of cartilage in the left elbow. These had latterly increased in severity, so as to deprive him entirely of his night's rest and of appetite. I found the region of the elbow greatly swollen, and on careful examination discovered a fluctuating point at the outer aspect of the articulation. I opened it on the antiseptic principle, the incision evidently penetrating to the joint, giving exit to a few drachms of pus. The medical gentleman under whose care he was (Dr. Macgregor of Glasgow) supervised the daily dressing with the carbolic acid paste till the patient went to spend two or three weeks at the coast, when his wife was entrusted with it. Just two months after I opened the abscess he called to show me the limb, stating that the discharge had for at least two weeks been as little as it then was — a trifling moisture upon the paste, such as might be accounted for by the little sore caused by the incision. On applying a probe guarded with an antiseptic rag, I found that the sinus was soundly closed, while the limb was free from swelling or tenderness; and, although he had not attempted to exercise it much, the joint could already be moved through a considerable angle. Here the antiseptic principle had effected
the restoration of a joint which on any other known system of treatment must have been excised.

Ordinary contused wounds are of course amenable to the same treatment as compound fractures, which are a complicated variety of them. I will content myself with mentioning a single instance of this class of cases. In April last a volunteer was discharging a rifle, when it burst, and blew back the thumb with its metacarpal bone, so that it could be bent back as on a hinge at the trapezial joint, which had evidently been opened, while all the soft parts between the metacarpal bones of the thumb and forefinger were torn through. I need not insist before my present audience on the ugly character of such an injury. My house-surgeon, Mr. Hector Cameron, applied carbolic acid to the whole raw surface, and completed the dressing as if for compound fracture. The hand remained free from pain, redness, or swelling, and, with the exception of a shallow groove, all the wound consolidated without a drop of matter, so that if it had been a clean cut, it would have been regarded as a good example of primary union. The small granulating surface soon healed, and at present a linear cicatrix alone tells of the injury he had sustained, while his thumb has all its movements and his hand a firm grasp.

If the severest forms of contused and lacerated wounds heal thus kindly under the antiseptic treatment, it is obvious that its application to simple incised wounds must be merely a matter of detail. I have devoted a good deal of attention to this class, but I have not as yet pleased my self altogether with any of the methods I have employed. I am, however, prepared to go as far as to say that a solution of carbolic acid in twenty

Reconstruction of an operation typical of those performed in the 20 years following Lister's discovery. From left to right: the surgeon, assistant holding a vomiting or bleeding bowl, the assistant dripping ether on a cloth and the assistant operating a steam spray of carbolic acid, actuated by a small flame.
parts of water, while a mild and cleanly application, may be relied on for destroying any septic germs that may fall upon the wound during the performance of an operation; and also that for preventing the subsequent introduction of others, the paste above described, applied as for compound fractures, gives excellent results. Thus I have had a case of strangulated inguinal hernia, in which it was necessary to take away half a pound of thickened omentum, heal without any deep-seated suppuration or any tenderness of the sac or any fever; and amputations, including one immediately below the knee, have remained absolutely free from constitutional symptoms.

There is, however, one more point that I cannot but advert to — namely, the influence of this mode of treatment upon the general healthiness of an hospital. Previously to its introduction, the two large wards in which most of my cases of accident and operation are treated were amongst the unhealthiest in the whole surgical division of the Glasgow Royal Infirmary, in consequence, apparently, of those wards being unfavorably placed with reference to the supply of fresh air; and I have felt ashamed, when recording the results of my practice, to have so often to allude to hospital gangrene or pyaemia. It was interesting, though melancholy, to observe that, whenever all, or nearly all, the beds contained cases with open sores, these grievous complications were pretty sure to show themselves; so that I came to welcome simple fractures, though in themselves of little interest either for myself or the students, because their presence diminished the proportion of open sores among the patients.

But since the antiseptic treatment has been brought into full operation, and wounds and abscesses no longer poison the atmosphere with putrid exhalations, my wards, though in other respects under precisely the same circumstances as before, have completely changed their character; so that during the last nine months not a single instance of pyaemia, hospital gangrene, or erysipelas has occurred in them.

As there appears to be no doubt regarding the cause of this change, the importance of the fact can hardly be exaggerated.

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The Teaching of Dental History: A Workshop

On October 7, 1987, a workshop on the teaching of dental history sponsored by the American Academy of the History of Dentistry was held in Las Vegas, Nevada. With over forty interested participants, the Workshop gave some valuable insight into the problems facing the teaching of dental history and some guidelines to the future. Organized and directed by the very capable Dr. Peter M. Pronych of Halifax, Nova Scotia, the Workshop not only stimulated discussion but resulted in a compendious book discussing the problems and solutions, and which was sent to all Deans and dental history teachers in the dental schools of the United States and Canada. This book also incorporated the findings and conclusions reached at the last previous Workshop which was held seventeen years previously. Several of the papers presented at the Workshop appear here in slightly modified form.

Why Should History Be Taught in Dental School?

—Arden G. Christen, D.D.S., M.S.D., M.A.
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I suspect that many of us have negative perceptions of how history was presented to us in our youth. Back in my early college years (dated as prehistoric times by my four daughters!), I took a World History course at South Dakota State College. As I recall, the professor had the pasty, anemic appearance of one who had been gassed in the trenches of World War I! This passive, mousey-looking man never looked anyone in the eye. In a droning, monotone, he appeared to be reading historical accounts directly from the text book. We who sat in the classroom of this eccentric, dull, disheveled professor, remained only because of the mandatory nature of the course. His quintessentially boring lectures included a sequential recital of dated world events, and a few, brief non-descriptive comments, all delivered without a breath of emotion. Today, I don’t recall a single fact or concept which was presented by this teacher. As I view this experience from a 30 year perspective, it seems to me that this course was unintentionally designed to stifle all future interest in history, which we neophyte students might have possessed at the time. It should have succeeded in dampening my interest. You may wonder, with the cards stacked thus against me, why then, have I developed a life-long passion for history, in all of its forms?

ANOTHER KIND OF HISTORY TEACHING

While I was yet a young boy, my grandfather, John Taylor, unwittingly implanted in me a love of history and humanity. How? By his persuasive power of storytelling. As a successful owner of a seed and feed store and chicken hatchery which he operated on the plains of northern South Dakota in the early 1900’s, Grandpa Taylor was a true pioneer settler. As a child, I lived with my grandparents in their small town of Ipswich every summer. During these memorable month-long visits, I spent many long, quiet evenings sitting on the knees of my white-haired grandpa as he related to me true happenings surrounding Dakota frontier life: stories about the Sioux Indian uprisings, prairie fires, grasshopper infestations, railroad bums, the hazards of early automobile travel and other exciting adventures. Most of
his tales were delivered in a serial style, as part of a continuing series. In essence, he was teaching me history, and his vivid lessons stuck.

I believe that those same teaching methods used by my grandfather which enabled history to come alive for me can be emulated by the leaders of our profession in order to create within our students a vital interest in dental history.

What were John Taylor's methods? Grandpa managed to build anticipatory excitement, drama and fun into each of his stories, thus sustaining my interest and challenging my imagination. He had a genuine personal involvement in his topic, knew his subject matter well and thoroughly enjoyed his role as storyteller. Often he "hammed up" his tales by building in variety, changing his pace and altering his voice pitch and tone. Occasionally, he would use scare tactics. Although Grandpa could become quite dramatic, he wasn't merely trying to entertain. With his homespun homilies and tales, he was also passing down sound human family values to the next generation. (Whether we are part of a family or a profession, our values are only one generation away from extinction!). Grandpa personalized his presentations. He included himself in the account whenever possible, and demonstrated pride in family history and traditions. He also expressed personal emotions freely, allowing himself to be vulnerable. Consequently, the people and events he depicted became very real to me. His historical legacies enabled me to sense my human linkage to those who had preceded me in time.

MEETING THE CHALLENGE

Recently, a friend insightfully remarked: "Arden, I've been noticing that many dentists only become interested in dental history at the end of their careers. Wouldn't it be great if dental students realized the importance of this subject at the beginning of their professions?" This is the challenging question of our workshop today: How can we ease our students into the wonderful world of dental history? What can we do to motivate them toward pursuing an active interest in this important professional topic?

DEVELOPING STUDENT PRIDE AND SATISFACTION

In my opinion, the most relevant reason for teaching dental history is to develop in our students a sense of professional pride.

My father, Harold Christen, practiced dentistry in a small town in South Dakota for 52 years. He was proud to call himself a "wet-fingered" dentist. It was a badge of honor for him. Now, at age 82, although he has retired, he is still proud of his professional title. During his practicing years, "Doc" was identified by local townspeople as "their dentist." They knew that they could count on him for both emergency and regular dental care.

Having a sense of pride in one's profession or calling adds significant meaning to life. There is nothing worse than a life devoid of meaning. Having a life purpose greatly enhances feelings of self-esteem, worth and importance. It also reduces stress levels. Dentists who have found a genuine sense of satisfaction and professional pride in their work are no longer simply "just dentists." They are bonafide health professionals, and as such, are valued members of their community. By developing an interdependent relationship with their patients, based on reciprocal needs, they gain respect and appreciation for both themselves and for those whom they treat.

According to Hans Selye, "altruistic egoism" (looking out for oneself by
being necessary to others, and thus earning their good-will) is a major way to reduce the stresses of life. As Selye states:

I’ve always advised my children and students not to worry about saving money or about climbing the next rung on their career ladder. Much more important, they should work at making sure they are useful, by acquiring as much competence in their chosen fields as they can — their ultimate protection no matter what the future holds in store.

“HUMANIZING” STUDENTS

After observing dental students for thirty years, I have concluded that many are in need of humanization. Their specialized, intensive, scientific training predisposes them to practice parochial, insular thinking. Thus, unconsciously and automatically, their emotional and intellectual development becomes stifled and stunted. Without offering a proper balance between science and the liberal arts (including a study of ethics, history, psychology, sociology, literature, the arts and music), we professors face the serious risk of graduating dentists who may be excellent technicians, but who lack both personal human skills and a sense of personal identity. Many of these technical “experts” will never understand or appreciate the vital link between history and professionalism.

Seventeen years ago, at our Academy meeting, Dr. H. Martin Deranian, in his outstanding paper, “The Value of History to the Professions,” explained the importance of this identity crisis:

This matter of identity or self-knowledge is, to me, the primary value of history to the professions. Socrates dictum was: “Know Thyself.” To truly know what kind of a man he is, a member of a profession must study and know the just actions of men who formed his particular culture or profession. Collingwood, in his book on Essays in the Philosophy of History, has stated briefly and clearly in a single paragraph his answer to the question: What is the value of history? “My answer is that history is for human self-knowledge. It is generally thought to be of importance to man that he should know himself; where knowing himself means knowing not merely his personal peculiarities, the things that distinguish him from other men, but his nature as man. Knowing yourself means knowing, first, what it is to be a man; secondly, knowing what it is to be the kind of man you are and nobody else is. Knowing yourself means knowing what you can do; and since nobody knows what he can do until he tries, the only clue to what man can do is what man has done. The value of history, then, is that it teaches us what man has done and thus what man is.”

Deranian also stated that by studiously examining the basic characters and personal qualities of great dental, medical and scientific leaders, dental students can become more skillful in self-sensitivity and self-analysis and more aware and appreciative of the social qualities of others.

CONNECTING THE PAST, PRESENT AND FUTURE

There are some dental school administrators and faculty members who sincerely believe that dental students’ minds should be fixed only upon the present and the future. They see the study of dental history as irrelevant and impractical in view of the already crowded and continually expanding curriculum. Thus, they incorrectly conclude that dental history is expendable. In truth, there is a powerful linkage between our past, present and future. As Philip Rhodes wrote:

We receive and use gifts from the past of which we are often unaware.
Many of them now form the basis of today's theory and practice of medicine. They were hardly won in their time, though now they are rightly taken for granted, and used because they are established. And this too is a use of history, for it shows that the miracles and breakthroughs of today will in their turn become the commonplace of tomorrow, and that we are no less prone to error than our ancestors were, and which only our progeny will recognize.

The past is much like the foundation upon which a building or structure is constructed. If it is built upon a solid base of bedrock, the foundation will hold the building, no matter how much it is swayed by the gales of life.

The magnificent Tower of the Americas, 750 high (including the TV mast), was built to celebrate the 1968 San Antonio, Texas, World's Fair. "HemisFair '68", which opened on April 6th and closed on October 6th, hosted 6 and a half million visitors from all over the world. Today, it continues to have a profound influence on the city and its people. The Tower is topped by two observation decks and a full service restaurant which makes one revolution each hour, thereby affording a complete view of the city during the course of a meal. The Tower's concrete structure was poured from the base upward in one continuous operation, using a "slip-form" method. The top structure was constructed on the ground, jacked up to the top and finished in place. What few people realize is that while it was being built, the tower's foundation was firmly and broadly planted 80 feet into the earth. Because the Tower's foundation is so well-prepared and grounded on solid bedrock, even when assaulted by high winds and torrential rainstorms, it can safely sway 8 to 12 inches.

Likewise, a thoughtful understanding of history serves as a sound foundation for our thought processes. How can we make intelligent and functional life decisions without first understanding the historical contexts of our present circumstances? Choices made by our forebears which exemplify either faulty or sound decision-making can help us to address and manage life change. In considering the choices made by others and the consequences which result, we can learn not only what options to avoid, but also what choices to make in order to secure a more productive, satisfying future.

With or without their awareness, dental students are presently connected to the history of their profession. History is not simply a past occurrence involving someone else. We are creating history now, as we participate in daily life. We all contribute to the history which we study.

ENJOYING LIFE

Although dentists can make a comfortable living without any knowledge of dental history, why would they choose to remain ignorant about the foundations of their chosen profession?

The world appears to be full of dull, lackluster individuals who merely choose to "exist," rather than to better understand their world, to challenge themselves and to savor life's possibilities. We all need to breathe new excitement into our lives; to broaden our horizons, to test our limits and to enrich our present existence. Creatively undertaking a study of professionally and/or family-oriented history can challenge us to add significant and spicy new dimensions to life. Those who neglect their own "roots" (no pun intended) are depriving themselves of a life-enhancing experience. As tourists, we often take guided tours in order to make our new travel experiences more meaningful and to increase our enjoyment of our journeys. Tour guides act as teachers, increasing our knowledge and appreciation of the visited areas.
As dental school history teachers, we similarly act as tour guides, mentally and emotionally preparing and enlightening our students for their careers in dentistry and for the process of living itself.

ENCOURAGING INTERDISCIPLINARY CONTACT

Unfortunately, many students who ultimately become dentists drift into the narrow confines of their profession, escaping into the restrictive "world of teeth." Although ours is a great profession, there is more to life than 24-hour-a-day dentistry! A little-known saying from dental folklore expresses it well: "If you spend all of your time with other dentists, you will start looking like a tooth!"

Progress in dentistry, like other professions, has rarely, if ever, occurred in isolation. It follows in the wake of and is part of general societal progress. As the English historian Rhodes reminds us:

Civilizations seem to advance on many fronts at once. They develop an intellectual climate which feeds and sustains, and is exemplified in, several fields, with ideas crossing and recrossing boundaries between subjects, which for clarity of thought about them we separate. This is because our own highly specialized society has had to separate them.²

Throughout history, a persistent pattern has been evolving, moving from generalization to specialization. Thus, unless we "plant" and cultivate business and social contacts with those who are outside of dentistry, we will have lost the opportunity to become professionally rejuvenated.

There are diverse ideas and concepts from other disciplines and life arenas from which we, in the dental field, could profitably borrow. We cannot be aware of or respond to these new potential dimensions for professional growth if we restrict ourselves to a "teeth only" environment. As the leaders and role models of our profession, we must continually create a broader academic base by integrating and expanding interdisciplinary programs into the dental school curriculum. Additionally, we must lay the foundations for personal and professional excellence through the creative teaching of dental history.

SUMMARY

As dental historians, our challenge is to present history in such a compelling manner that our students become motivated toward personal and professional excellence, thus: (1) developing pride and satisfaction in their profession, (2) striving to become better human beings in a "humanistic" sense, (3) understanding more readily the important linkages between their past, present and future, (4) appreciating and enjoying life more completely, and (5) realizing the importance and necessity of planting and cultivating interdisciplinary contacts.

REFERENCES


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Who Should Teach Dental History?


Cherry Hill, New Jersey

The subject matter of this paper is rather difficult to present since there is no precedent to examine, no references to check, no authority with which to confer. Teaching implies that the person is knowledgeable and qualified to present the subject matter. There is only a small number of individuals who are recognized by the dental schools to teach dental history. Their backgrounds or curriculum vitae do not reflect a certificate in teaching, nor a diploma after completion of a course in dental history. Those who teach have been appointed by the deans of dental schools on the basis of friendship or as acknowledged students of dental history.

Before we ask that teachers be appointed, first be sure that there will be a historian qualified to teach. There is no teacher training school for dental historians. On several occasions I have been called by appointees asking if I could supply needed information on teaching dental history such as syllabi, manuals, examinations, etc. May I quote a reply I received when asked why the appointee needed the material: “Because the dean asked me to do it and I don’t know the first thing about it.”

At the present stage in the development of dental school curricula, the subject of dental history is certainly not a top priority. This is not to say that recommendations and resolutions have not been given to school authorities. They have been, for many years, either through academic channels or personal contact but with no success.

Recommendations to the Council on Dental Education of the American Dental Association have met with little interest. Within recent weeks I received a communication from a correspondent who readily admitted that he knew of two schools with which he was associated that had no course on the history of dentistry and he wasn’t too disturbed about it!

Even in those schools where dental history is taught, there are only a very few where the course is given for credit. In many instances it is a sideline in a course of didactic or clinical instruction, and that because of the interest of the instructor.

After the survey being conducted by our Academy is completed, we will know which schools are teaching the subject, how many hours are devoted to it and what faculty rank the teacher holds.

Ideally, each dental school should have a teacher of the history of dentistry. That person should be well qualified in terms of knowledge, interest and ability to present the material.
RECOMMENDATIONS

1. I believe that our Academy is sufficiently established, after more than 35 years, so that a recommendation to any dental school should be listened to with great attention. If there is no one teaching the subject then a recommendation should be made to the proper authorities, and once appointed, every effort should be made to assist that person.

2. Members of the Academy who are faculty members should urge their contacts to secure appointment in schools where none exist.

3. Members of the Academy who are not faculty members should concern themselves with preparation to teach. Assistance is readily available from the Academy.

TO WHOM SHOULD DENTAL HISTORY BE TAUGHT?

I would like to rephrase the question to read “To whom should dental history be taught and made a matter of particular interest?” I would divide this portion of my paper into three areas: the dental student, the dentists, and the general public.

The dental student should be the prime target of this effort. In many instances dental history is taught in the first year. This has its advantages and disadvantages. It could act as an introduction to the art and science of dentistry which, to the student, is a new area. It should give him or her an introduction to the background and tradition of the profession as he or she launches a professional career. On the other hand, much of the material presented is couched in language that is quite new. Nomenclature and dental scientific terminology is quite foreign to the student’s vocabulary. Perhaps it is too idealistic, but I would suggest that the history of dentistry be presented twice to each dental student, once during the first year as an orientation vehicle, and during either the third or fourth year, when a detailed analysis of the subject could be presented.

Dentists, in my experience, are woefully ignorant of their professional history. It is only upon rare occasions such as the anniversary of a society or school that the average practitioner pays notice to history. Those of us who are faculty members and who quiz our fellow faculty members with regard to their knowledge of dental history, are quite surprised at the lack of knowledge. I suggest that dental history teachers make themselves available to dental societies, fraternal groups, study clubs and indeed their own faculty to promote programs devoted to dental history.

Unfortunately, the general public knows very little about our history. When asked they will tell you that George Washington had wooden teeth or that Paul Revere was a dentist and other such fallacies. It seems to me that a public relations program for the public in which the history of dentistry is explained could be of the greatest advantage to dentistry. In the last issue of the Journal of the American Dental Association, there appeared a striking advertisement featuring St. Apollonia. We should compliment the company for the thought that a dental historical figure would be of sufficient interest to be used.

I urge the Academy to develop a Speakers Bureau, a coterie of members who would make themselves available to any social, community service, civic or professional organization. Indeed, they should request an appearance as a featured speaker at any of their meetings. In my community, such a suggestion was readily accepted.
DR. ASBELL, one of America's foremost dental historians, is a charter member of the American Academy of the History of Dentistry, a former secretary-treasurer and president of the organization and the 1975 recipient of the Academy's Hayden-Harris Award. He is also the author of *A Century of Dentistry: A History of the University of Pennsylvania School of Dental Medicine* and *A Bibliography of Dentistry in America: 1790-1840*. Secretary of the Middle Atlantic Society of Orthodontists, he practices that specialty at 1001 North Kingshighway, Cherry Hill, NJ 08034. Requests for reprints should be directed to the author.

The Content of a Dental History Course: What Should Be Taught?

—J. Henry Clarke, D.M.D.
Portland, Oregon

This paper outlines five major content areas for a dental history course. These are: 1. The Correction of Common Misinformation, 2. A Clear Overview, 3. Modern Parallels, 4. Major Contributions to Humanity, and 5. Significant Personalities. In each of the categories, a few examples and general comments are presented.

It seems a wise exercise for every teacher to periodically ask him or herself, "Why am I including these specific topics? What purpose does each one serve? Should some content be eliminated? Should some other content be added? Could it be better organized?" This paper presents a frame of reference for addressing these questions.

CORRECTION OF COMMON MISINFORMATION

Professor Tom Burnam has written an interesting book titled *The Dictionary of Misinformation*. If someone took the time, a similar book could be written regarding the history of dentistry.

Twenty years ago, a colleague of mine told me that he felt it was too bad that our dental heritage was such a humiliation while the history of medicine was such a proud tradition. Further conversation confirmed that he had very little information and quite a bit of misinformation on the subject. When I was a college student, I heard a professor comment that the ancient Egyptians made gold inlays and the ancient Arabians invented silver amalgam and that dentistry had not changed much since then. The same professor stated on another occasion that blacksmiths did all the dentistry in early America. He was not a historian, but I am sure his misinformation was accepted by many students.

Over the past twenty years, I have observed that people who have not studied the history of dentistry tend to have much more misinformation than correct information on the subject. The correction of these errors is generally very interesting to students.

The following are a few examples of historical points that are frequently misunderstood:

1. Ancient and primitive people were not free from dental disease but suffered from extensive and serious dental problems.
2. Dentistry is not a new profession but one of the oldest medical specialties dating back to at least 3000 B.C.4
3. The most ancient and primitive people did not master the difficult task of extracting firmly attached teeth. When extraction of teeth became feasible (about 600 B.C.), it was considered difficult, dangerous and, for many centuries, was only attempted as a last resort.5
4. Until modern times, dental abscesses were very common and frequently resulted in death.6
5. Ancient people in Western Civilization did not produce surgical anesthesia by compressing the carotid arteries, using anesthetic drugs or any other technique.7
6. Dentistry did not evolve from barbering. (For a relatively short time, historically, barbers practiced a few dental techniques.)8
7. Dental treatment today is relatively much less expensive than it was 200 years ago. (During the last ten years of his life, George Washington spent twice as much on dental treatment as he did on all other medical expenditures for his entire family.)9
8. George Washington never had wooden dentures. The dentures of the period were carved from ivory and were very expensive.10

The list could be much longer, but this serves to illustrate the point that there is much widespread misinformation that can and should be clarified in a dental history course.

A CLEAR OVERVIEW

In addition to correcting common misconceptions, a dental history course should do what most academic disciplines are expected to do: tie the events and facts into a meaningful organization. Students should be able to see a clear overall picture of the evolution of dentistry. Furthermore, the picture should illuminate the relationships between the histories of dentistry, medicine and civilization in general. However, course time available generally necessitates limiting the coverage to Western civilization.

Some examples of historical relationships between dentistry, science and medicine are the following:
1. Hippocrates, the Father of Medicine, and Aristotle, the Father of Biology, devoted much of their writing to dental subjects.11
2. Ambroise Pare, the Father of Surgery, wrote extensively on dental subjects. Pierre Fauchard, the Father of Dentistry, had a career very similar to Pare’s, and accomplished for dentistry what Pare did for surgery.12
3. Andreas Vesalius, the “Father of Anatomy,” wrote considerable material on dental anatomy, and one of his students, Bartholomaeus Eustacheus, wrote the first independent monograph on dental anatomy and deserves the title “Father of Dental Anatomy.”13

There are, of course, many more examples.
Some examples of the relationship between the history of dentistry and Western civilization in general are the following:
1. The French Revolution and its destructive effect on the surgeon-dentist movement.14
2. War: Pare’s and Fauchard’s military experience, the influence of the U.S. Civil War on the rapid growth of oral and maxillofacial surgery,15 and the effect of World War I on the development of Plastic Surgery, led by a dentist, Varaztad Kazanjian.16
3. Increased availability of refined sugar in seventeenth century Europe and the subsequent increase in caries and need for more dentists.17
MODERN PARALLELS

In addition to presenting a clear overview and correcting misinformation, material selected for a dental history course must be perceived by students as relevant and interesting. Robert Daniels states that “learning depends upon how an individual grasps the significance or practical application or inherent excitement of a given subject.” He also comments that “a person should never try to memorize a fact if he doesn’t know its significance; and if he understands its significance it is almost impossible to forget the fact.”

As Horowitz recommended in 1970 in regard to teaching history, whenever a parallel, a link or a contrast can be demonstrated — without undue strain — these lessons of history should be highlighted. Here are a few examples of historical events with modern parallels in recent years:

1. The “Amalgam War of the 1830’s, 40’s and 50’s centered around a question that should have been evaluated scientifically, that is, whether or not silver amalgam was an acceptable filling material or was harmful to health. It was an excellent example of science and objectivity being pushed aside by politics and emotionality. The result was the downfall of the national organization of dentists in 1856.

The most obvious parallel with this “war” is the current controversy over the alleged adverse effects of mercury in amalgam restorations. As is always the case with historic parallels, some general characteristics of the controversy are similar but important specific elements are different. The challenge to the history teacher is to help students recognize both the general lessons of history and the unique elements of the current situation.

2. A general principle drawn from an historic event already mentioned, the French Revolution, has always interested me. M.D.K. Bremner refers to the triad foundation of a profession as education, literature, and organization. At some point it occurred to me that he had overlooked one of the most essential elements, legislation, or legal restrictions on who may or who may not practice a given profession. The French revolutionary government of 1792 abolished all regulations of professions and the effect on medicine, dentistry and many professions was disastrous and soon had to be corrected. In contrast, in the United States, laws regulating dental practice began to be enacted as the profession began its organized development in the mid 1800’s. Today, these state laws are often challenged and modified but continue to regulate the practice of dentistry.

3. A related point is the current debate over state board examinations versus reciprocity or licensure by credentials. In the mid and late 1800’s there were dentists who had graduated from excellent dental schools but there were also those from deplorable diploma mills. There were dentists from very good three year dental preceptorships but also some who had had totally inadequate training of but a few months. State board examinations were implemented to assure the public of some basic level of competence in the face of this chaos. Today, a D.D.S. or D.M.D. from any U.S. or Canadian school has a very similar background in length, content and requirement of the dental curriculum. Are the state board exams still needed? Are they up-to-date with current dental practice?

These are the kinds of parallels that can breathe life into a dental history course, but I think Horowitz’ warning should be emphasized — not to stretch a point unduly. The connection should be real and relevant.
MAJOR CONTRIBUTIONS TO HUMANITY

Individual dentists and the profession as a whole have made some of the most significant advancements to benefit the human race. This should not be overstated, but it should be clearly recognized. Every history teacher's list would vary slightly. There are undoubtedly many other interesting innovations that would be on a comprehensive list, but certainly the following would qualify as some of the major contributions:

1. **Reduction in Deaths from Dental Disease.** In seventeenth century England, "teeth" were listed consistently for many years in the top five leading causes of death. There are many reasons to conclude that this was probably quite accurate. The reduction in the number of these deaths began to occur long before antibiotics as a result of improved techniques in our profession for preventing and treating dental infections.

2. **Anesthesia.** In his book on the 100 most influential persons in history, Michael Hart states in the chapter on W.T.G. Morton, "Few inventions in all of history are so highly valued by individual human beings as anesthetics, and few have made as profound a difference in the human condition." This discovery certainly must rank as one of the most important in the history of medicine. The two individuals responsible for the discovery of anesthesia were the dentists Horace Wells and William Morton.

3. **Cost of Dental Treatment.** Dentists and non-dentists are usually surprised to find that 200 years ago there were many sophisticated dental procedures being practiced, but that these conservative, restorative and prosthetic services were so costly as to be afforded only by the wealthy. The invention of Vulcanite by Charles Goodyear in the 1850's, and the development of a durable silver amalgam for restorative use by G. V. Black in 1895 brought the cost of dental care within reach of the average person in most countries.

4. **Prevention.** Many of the earlier dentists such as Robert Bunon, R. C. Skinner, and L. S. Parmly had devoted their careers to trying to prevent dental disease, with but little success. With the classic scientific studies of W. D. Miller, we began to understand the cause of and, consequently, the ways to prevent dental caries. Since then, scientific discoveries along with their clinical applications have resulted in dramatic reductions in dental caries and some progress in reducing periodontal disease.

5. **Correction of Maxillofacial Defects.** Most people might assume, correctly, that the specialties of orthodontics and oral surgery were developed by dentists but most people would probably not be aware of the pioneering work of the dentist, Varaztad Kazanjian, in plastic surgery. Together, these specialties are responsible for the correction of some of the most tragic and debilitating problems affecting human beings.

SIGNIFICANT PERSONALITIES

Nothing adds more inspiration and life to a history course than the fascinating facts we know about great human beings like Giuseppangelo Fonzi, Horace Wells, and G. V. Black.

The lives of such individuals are best covered as they naturally occur in the discussions of important inventions, discoveries and developments such as porcelain teeth, anesthesia and the foundations of operative dentistry. This is where the "Story Teller's" art is valuable. Related with skill and feeling, these factual stories and anecdotes stir the enthusiasm that Goethe said was the best part of history.
REFERENCES

8. Weinberger, B. H. op. cit., Vol. I, Chapter XIV.
10. Ibid
19. Ibid., Page 35.

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On the Teaching of Dental History

—Richard A. Glenner, D.D.S.
Chicago, Illinois

—Audrey B. Davis, Ph.D.
Baltimore, Maryland

There are numerous ways in which the practicing dentist may benefit from a knowledge of dental history. The important question for all of us is not what the value of dental history is to the dentist, but how do we get dentists interested in their history, so that they can appreciate its value. We believe the time to begin stimulating this interest is in dental school.

Dentistry today is changing rapidly; there are new materials and techniques, including implants and lasers, making it essential that the modern dentist function with a large reserve of energy, and be firmly focused to meet the new challenges of dentistry. In spite of the time and attention required to function within the many parameters of modern techniques, and to deal with many differing patients and staff, the dental practitioner will still find it worthwhile to spare some time for the study of the history of dentistry. Through history the dentist will obtain a new perspective on his profession; he will gain comradeship as well as many other benefits many of us have experienced.

There are many cogent reasons which argue for the teaching of history to dental students: to understand history is the duty of a professional; to develop pride in the profession; to learn about techniques, ideas and inventions which are related to their modern counterparts; to continue awareness of the long past of the profession and pass it on to future dentists; to learn to express thoughts and read beyond the technical dental curriculum; and to become more enthusiastic about dentistry. Few would disagree with these objectives and some would add other reasons for teaching dental history. Yet the reality today is that the history of dentistry is regularly taught in only some dental schools, in spite of course catalogs belying this fact. Members of the American Academy of the History of Dentistry provide many of the teachers of these courses. The content of each course is determined by the teachers since there is no standard syllabus or recommended set of lectures, text books or audio visual material. Thus, while some students are taught some history of dentistry, they are not systematically taught. Does this matter? Has the lack of a required, regular, standardized course in the history of dentistry had an effect on the profession? Dr. J. Ben Robinson, founding
president of the Academy, then Dean of the University of Maryland Dental School and foremost dental historian, claimed that the lack of interest in the history of dentistry has had a devastating effect on the development of the profession. "The dental profession," he said, "will continue to flounder, to perpetuate its handicaps and to fail its true purpose as long as it lacks an intelligent understanding of its historical background."

HOW DENTAL PRACTICES EVOLVED

Teaching the history of dentistry should be a labor of love if it is to be recognized as being as important as the rest of the dental curriculum. And although there is no direct relevance to modern dental techniques or practices its purpose is to reveal an evolution — a series of steps by which events moved and changed until they came to be what they are today.

Most educated Americans believe in evolution, an interpretation of the way organisms, including themselves, evolved. In a similar fashion they sense the importance of history, which is an interpretation of the evolution of society, culture, ideas, discoveries, inventions and technology. For some, history has a direct relevance to their lives. History is pragmatic; it offers an opportunity to review the past in light of the present and to explain the present in terms of the past. This use of history is narrow and less exciting, but serviceable for those who indulge in it. Other reviews of the past exist on a higher plane. Studded with rival conjectures and explanations which serve equally well for a while, these historical explanations motivate and satisfy, until one or another theory is proven inadequate by new evidence or a new interpretation of old data or a combination of old and new information and viewpoints. History is as much a series of new discoveries as any other scholarly endeavor and offers the excitement aroused by unexpected and original findings.

It is a duty of the professional to know and teach the history of his or her profession. Who is better qualified to understand the intricacies of its technical aspects and the focus of the profession? Who has more at stake in presenting the history of a profession to new practitioner members and the laity than professionals themselves who carry on a tradition bequeathed to them over the centuries by their predecessors?

COUNTERING A NEGATIVE IMAGE

The history of a profession such as dentistry sets the scene for the way in which the lay public accepts the profession today. Professionals bear the burdens and accolades of the past and dentistry today bears a heavy burden. By association with those forebears who treated dental disease, mostly by extracting teeth and selling opium laced and fraudulent pain killers, dentists are continually confronted with the stigma of being poor practitioners today. But these earlier "dentists," who were more frequently charlatans and quacks, are not the only ancestors of today's dentists. And while they did cause havoc among many hapless and helpless patients whom they mistreated, there were others who regarded the study and treatment of dental disease as an important and difficult career that required the best of their talents and efforts. These are the individuals that today's dentists should be studying and trying to understand. There will always be much that will seem naive, wrong and puzzling in the efforts of these earlier dentists, but their lives teach at least one lesson: it is very difficult to see one's achievements and mistakes while making them, and it remains for others in the future to find
them and understand why they occurred. In finding the mistakes, as well as the successes, of the past, the dental student or dentist of today becomes a member of a fraternity extending over centuries and assumes his or her place in a field requiring certain basic attitudes and needs which he or she must learn to fulfill, in order to continue the profession for the present and future generations.

Historical research provides a dentist with a method which dental practice does not give. It fosters an ability to look for and write about human endeavors that help to clarify thoughts, attitudes, practices and to enforce intuitions and intentions under the varied conditions of being a modern dentist. Analysis and awareness of past dental practices, organizations, schools, teachers and patients provides the modern dentist with a perspective that no other source can provide.

In understanding the past as more than a series of disconnected blunders and horror stories, the dentist of today will come to understand what an intellectually enriched career can be. Insight will be gained in the way others have practiced their special methods and how they entered into the social and cultural life of their communities.

If the dentist ignores the history of his profession, his patients do not. What books and articles do laymen and women turn to if they wish to know more about the history of dentistry? Films, and novels such as *Greed*, convey the stereotypical message that the dentist is a technological buffoon who causes more pain than he alleviates; who acts like a torturer let loose on the hapless patient sitting in his “executioner’s” chair. Films provide some of the most unflattering portraits of the dentist. In “The Little Shop of Horrors,” the dentist is portrayed as a sadistic fool. Films such as “Laughing Gas” with Charlie Chaplin in 1914, “The Dippy Dentist” in 1919, “Leave ‘Em Laughing” with Laurel and Hardy in 1928, “The Dentist” with W. C. Fields in 1932, “Paleface” with Bob Hope in 1948, all reinforce this message. At best, the dentist is seen as a conservative pedant, a plodder with little imagination and few admirable qualities.

We know better and it behooves all of us to get out the message that the life and career of a dentist is as complex, exciting and difficult as any other, and deserves full attention in its widest context.

It is the duty of the dentist to support the history of dentistry and tell the rest of us what is special, difficult, unusual and unsolved in dentistry. Those dentists who are gifted writers and researchers, and who are curious about the history of their profession should be supported and given opportunities to convey their views to dental students. Hopefully, some of them will be enticed into dental history so that they may join the ranks of those who will extend and improve the history of dentistry in the future.

**HOW DOES ONE BECOME INTERESTED IN DENTAL HISTORY?**

The basic literature in dental history is limited. Most biographies and autobiographies of dentists are brief sketches, often devoid of personal interest and pathos — telling the main features of a life with only those steps which led to a career as a dentist being described in detail. Family, associates, hobbies and failures are mentioned more in passing than to reveal the breadth of a dentist’s life and the extent of his skills, talents, limits and handicaps. More of these cultural and personal relationships need to be explored and analyzed in order to reveal the complicated lives that dentists have led. One obvious need is to know why dentists have been saddled with a popular
image that depicts them as comedians and losers in the struggle to cure dental disease. And if they are successful, why is it depicted as being at the expense of the patient who dreads and fears their services. Could it be that historians have failed to understand and tell the story of the dentist in sufficient depth and credibility?

Each dentist has his own reasons for becoming interested in dental history. Richard Glenner, when originally setting up his office, wondered what a dental office was like in the past. His curiosity was aroused to the point that he became a student of dental history. In a room adjoining his modern office he installed an office which belonged to a Kansas dentist, who practiced at the turn of the century. All his patients, as well as his dental colleagues, may glimpse a bit of dental history, and if inspired enough, read the notebooks and papers and look at the pictures of this pioneer American dentist. Dr. Glenner voraciously collected objects, books, papers and photographs to document the pieces he found. Recently, as water raged around Chicago during an historic rainstorm, did the full extent of his collecting become as clear to him as it had to his wife, Dorothy. He was forced to clear out a storage area which he had been avoiding in spite of his wife's reminders and he discovered many unique and interesting documents which will add depth and meaning to a variety of his historical projects. These are all conducted in his spare time, stolen from a busy practice and paid for by his own funds.

Dr. Audrey Davis is a dental historian and curator and interpreter of the National Museum of American History collection of dental instruments and artifacts; she has had many first hand experiences in the dental chair. She has become increasingly impressed with the value of the museum's collection and its potential for teaching the history of dentistry to the professional and the layman.

IS DENTAL HISTORY "PRACTICAL"?

In the U.S. where practicality has always been a crucial measure of the need for education, it is generally necessary to continually defend the teaching of a course without obvious practical consequences. We seek to find the practical aspects in a course which concentrates on the past. The “practical” value of history does not provide the primary reason for its value to either student or practicing dentist. However, there are instances when knowledge of older techniques and methods becomes very important to the dentist who is forced to improvise while treating a patient. For instance, the early method of mixing amalgam in a mortar and pestle has proven useful to understanding and working with the components of amalgam.

The past may or may not provide insights for the future, but the past is all there is available to analyze and build on in the present. History is the bequest of the past to the present and future and it behooves the heirs to guard the ancestral treasures by at least becoming aware of them and applying what seems feasible to the present and future. It is foolhardy to renounce the past without knowing what it contains and offers. But this is the very position in which students are placed if they do not have an opportunity to study the history of their chosen profession.

Through history, individuals are placed in a broad context of local, national and international events. Within this framework professionals may better direct their energies, reflect on and discover alternative methods and approaches to their areas of specialization and generally reap the insight
which flows from interdisciplinary thinking. In a period of rapid change and increasing economic, political and social pressure, the stability and lessons of history are urgently needed. Dental students deserve an opportunity to find out how their predecessors coped with these unpredictable elements and how they found effective solutions.

SOME SUGGESTIONS FOR TEACHING DENTAL HISTORY

Dental school students tend to fall into four categories regarding their interest in dental history. Some are interested in history in general; some are very interested in dental history; some are collectors of dental and other antiques; and many are interested only in today's dentistry and techniques. A good dental history course will include sufficient material to arouse the interest of all these students and advance their thinking to the point where they will wish to continue to explore the history of their field after they graduate.

To inspire the practicing dentist one method which seems promising is to present history through what Richard Glenner calls the "back door", that is, to answer questions which a dentist may ask of us or institutions such as the ADA or the Smithsonian, with the utmost care and sensitivity. This is also the opportune time to introduce the questioner to the American Academy of the History of Dentistry, which is the way many of us became interested in dental history. At whatever level a dentist seeks historical information, it behooves all of us to make the most of the opportunity and continue the process so that much more may be gained by the original inquirer than a simple answer. We must accept this call for an answer as a window of opportunity to expand interest in dental history on a broad scale.

To enhance courses in dental history we suggest the use of new audiovisual materials, including clips from old motion pictures showing dental offices; biographical information on not only the well known pioneers, but many other practitioners from different regions of the U.S.; judicious use of historical instruments, devices, memorabilia, and instruction in the art of collecting antique items. Field trips for students and dentists attending a convention in a city where a dental museum or display is located will spark or add to an interest in dental history. We highly recommend that a corps of lecturers in the history of dentistry be enlisted to visit dental schools and present lectures, preferably illustrated, to inspire students, faculty and administration to promote further study of dental history. They might adopt a type of "Big Brother" program in which specific dental schools would be targeted to encourage the teaching of dental history or to enrich the course that is being taught. New topics for the dental history course should be explored such as military dentistry; the social evolution of the dental office; the rise and development of the various dental specialties; the recording of dental history on coins, stamps, photographs, pictures and exhibits; and the impact of American dentistry on the social and cultural life of a specific period. Teachers should challenge themselves to continually revise their courses, adding new material and discarding what has been proved outdated, incorrect or modified by recent research.

Dental history has interested all of us, teachers, students, practitioners, curators and librarians. Let us all join in a renewed effort to study and teach dental history so that the next generation may benefit from, and know the value of this vital study.
DR. GLENNER, who is in the private practice of dentistry, is the author of the excellent book *The Dental Office: A Pictorial History*. He is also Historian of the American Academy of the History of Dentistry.

DR. DAVIS is the Curator, Medical Sciences Division, Museum of American History, Smithsonian Institution, Washington, D.C. She is also the co-author of a newly published and very valuable reference book, *The Finest Instruments Ever Made*. Requests for reprints should be directed to Dr. Glenner. His address is 3414 West Peterson Avenue, Chicago, IL 60659.

## HOW TO ORDER THE RECENT BOOKS ON THE HISTORY OF DENTISTRY

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Medical History Publishing Associates

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Arlington, Massachusetts 02174

*History of Dentistry* by Walter Hoffmann-Axthelm is available from the publishers

Quintessence Publishing Company

10 South LaSalle Street, Suite 1338

Chicago, Illinois 60603
Amédée Charles Henri de Noe (pseudonym Cham) 1819-1879—French

Fils D'Amour Dentiste—Son of Love, Dentist

Caption:
With a name like that you must have a light hand—but light like love and also the eye.

Alas, there is a dentist who brings love not fear! He is perched like cupid with wings on his back, bow in his left hand and a garland of flowers around his waist. He approaches the patient on one leg, his “extraction key” in front of the patient’s eyes. Nonetheless, the patient, sitting upright in his armchair, appears very apprehensive. The “love dentist” apparently does more than extract teeth... there is a display of false teeth hanging on the wall adjacent to a table containing a water pitcher.
Lazare Riviere’s *Practice of Physic* English Edition of 1687.

—Max Geshwind, D.D.S.
Jamaica, New York

By the end of the Seventeenth Century knowledge of the teeth and dentistry had not progressed much since Classical times. Theories about the cause of such dental ills as toothache were dominated by belief in magic, astrology, humors, worms and superstitions and religious beliefs. The foremost authorities were the Greeks, Hippocrates, Galen, and Aristotle. The Arabic authors, who also based their work on the ancient Greek authors, were also frequently quoted. Herbal remedies abounded, using heating and cooling herbs designed to bring the humors into harmony. Other humor-regulating “therapies” included bleeding, leeches, cupping, evacuation, vomiting, smoke, fumigation with steam and other inhalants, and kitchen remedies. Kitchen remedies included the commonly available culinary herbs and kitchen staples such as salt, pepper, bread, butter, milk, cheese, vinegar, honey, oils, fats, lard, and, of course, wine. These kitchen staples were often combined with culinary and apothecary herbs in almost endless varieties of recipes for use by layman or physician.

Lazare Riviere’s work contains an extensive record of dental knowledge current at that time. It was not until Fauchard’s time in the next century that the true beginnings of professional dentistry took place.

Lazare Riviere (1589-1655) was a professor at the medical school at Montpellier, France, and the first to teach chemistry at that school. Sudhoff pointed out the important position that he holds in the history of dentistry and Guerini also recognized this and quoted extensively from the 1737 Latin edition published in Geneva. The book I will describe is the English edition of 1687. This 1687 date makes it quite contemporary with the earliest editions of Riviere published in his native France in the 1640’s and the 1650’s.

The tome I have before me is a small folio, measuring seven and a half inches in width by eleven and one half inches in height. My copy is leather bound, but the leather is quite the worse for wear and the covers have long since been detached. The backstrip is gone and the book is somewhat disbound. The title page reads thus:
The Practice of Physic in Seventeen Several Books.
by, Nicholas Culpeper, Physition and Astrologer.
Abdiah Cole, Doctor of Physick. And
William Rowland, Physitian.
Being chiefly a Translation of
THE WORKS
of that Learned and Renowned Doctor,
LAZARUS RIVERIUS,
sometimes
Counsellor and Physitian to the King of France.

To which are added Four Books containing Five hundred and thirteen
Observations of Famous Cures. By the same Author. And a Fifth Book
of Select Medicinal Counsels. By John Fernelius. With a Table of Princip-
al Matters treated of therein. As also a Physical Dictionary, Explain-
ing the hard words used in these Books.

LONDON
Printed for George Sawbridge, at the Bible on Ludgate-Hill.
MDCLXXXVII

An engraved frontispiece faces the title page. This page depicts the por-
traits of Riviere, Culpeper, Cole, and Fernelius in four engraved ovals. There
are several unnumbered preliminary pages. A list of books “lately imprinted”
precedes the text.

The format of Riviere’s Practice is the traditional discourse of diseases
arranged in order from head to foot. Book one, on the diseases of the head,
takes up the first 56 pages. Book two covers the diseases of the eyes, up to
page 93. Book three, on ears, ends on page 106. Book four on the nose runs
to page 119. Book five on diseases of the tongue runs through page 128. The
sixth book is on diseases of the teeth, gums, jaws, palate, and windpipe or
larynx, and has pages 129-146.

The sixth book starts with a preface in which the author states his pur-
pose is to discuss diseases of the teeth and “omit those that are ordinarily
cured by Chirurgeons.” The first chapter “Of The Toothach,” consists of a
discussion of the humoral theories of Galen which are held by Riviere also.
These theories are applied to the explanation and treatment of the toothache.
He then alludes to worms in rotten teeth. He further explains the principal
external causes of toothache as those things which cause “defluxions; the
chief are Cold Air, South-Wind, staying in the Sun, or night Air, Surfets,
and all faults in diet.”

“Diagnostic: If worms are the cause of pain, it will be intermitting, com-
ing and going often, and sometimes the motion of the worm will be felt. —
Prognostic: — A tumor rising in the Gums and Jaws takes away the pain
of teeth, for the flux is carried on to the external parts, so that it no longer
lieth in the internal cavity of the tooth.”

Then bleeding, cupping, and vesicatories are discussed and sites where
they are to be applied. Then there follow various recipes for application to
the mouth, the teeth, or to be instilled in the ear; then follow recipes for
Masticatories:

“Commonly the oyle of Cloves is used in a little lint to stop the tooth
if it be hollow, or otherwise, for so the humor, adhering to the part is drawn
forth, and the part strengthened.” Following this are narcotic and “bitter”
remedies to kill worms in the teeth.
"If the pain still continueth, and the tooth be very hollow you must draw it out, and then the pain will cease. — But you must take heed that you draw not the tooth when the defluxion falls violently and the head aketh, or the Gums swell or there is great pain. — And the chirurgeon is to be admonished, that he pull it out not violently or at one pull lest the Brain be too much shaken, and the Jaw bone broken, from whence comes a great flux of blood, a feaver, and sometimes death." Like the ancients, doctors in the seventeenth century considered extraction of teeth a life threatening procedure. If the blood flow could not be "staunched," then cautery was to be a remedy of last resort.

"Those who fear cautery may use the leaf of Elleboraster rubb'd upon the tooth is best, but you must not touch the other teeth lest they all fall out. A countryman troubled with the Tooth-ache, was persuaded by another to rub his tooth with Elleboraster, he unwittingly rub'd all the teeth on that side, and presently almost all his teeth fell out."

In chapter two "Of the Blackness and Rotteness of the Teeth" he recommends hygiene, the use of a "tooth picke made of mastic wood or the like, then wash the mouth with wine and rub the teeth with this powder." A recipe follows using Snakewood roots, alum, and white coral. Of the use of mercury, Riviere states: "Quick silver doth black the teeth, whether it be used to the whole body, as in the Pox, or only to the face. Hence it is that Women which use Mercury to make them fair, have black and ill coloured teeth."

"Infinite medicines are prescribed by the Authors for making teeth white, which may be experienced, one namely, the Spirit of Sulphur or Vitriol, in which you must dip a little stick, and rub the teeth with the end thereof, and then wipe them with a clout. In a great foulness you may use the oyls themselves, otherwise you must mix them with Honey of Roses, or fair water. Montanus, consil. 1,13. reports, that he learned at Rome, of a Woman called 'Greek Mary,' to whom he came when he was young, and she twenty years old, and often when she was forty, he found her almost in the same condition, and she confessed that her beauty and strength were preserved by the Spirit of Vitriol, and that her teeth, which were very bad in her youth, were by that made very fair and firm, and also her Gums, and also that she perceived herself by the use thereof to seem more youthfull, and the use every day of one drop or two to rub gently her teeth and gums."

Chapter three "Erosion of Gums." follows:

"The Gums are eaten away and ulcerated by sharp corroding humors, which come into them, — sometimes the erosion of the Gums comes from worms, or the corrupt humors which cause worms, so that it is a plain sign of worms when it continueth long. So sayeth Fabricius Haldanus, obs. 50, Centur 1. The Son of a citizen of Dusseldorf was long troubled with erosion of the Gums, and died, after the use of many internal medicines and Topics. When he was opened we found abundance of worms, which had eaten through his guts, and many in the stomach."

Among the cures he advocates are, "evacuations by bloodletting and purging — Apozemes, Juleps, and physical broths and the like. Flux of the same is to be diverted by Cupping-glasses, and cauteries fitly applied. — Afterwards you must use 'Topics, which are to be altered according to the greatness of the disease.'"

Chapter four "Of bleeding Gums", chapter five "Of Ulcers of the Mouth and Jaws", chapter six "Of the relaxation of the uvula, or falling down of the Palate", and chapter seven "Of the Angina, Quinzie, or Squinzié", follow.
The last five books are independently numbered, a total of 463 pages, followed by a dictionary. An alphabetical table of diseases and two blank pages complete the volume.

One of the “Observations of Famous and Rare Cures,” number 487 on page 313, is about the reimplantation of a tooth inadvertently pulled out:

“A Tooth plucked out, and fastened in the Gum again.

A Certain Virgin dwelling in a Neighboring Village, being tormented with the Tooth-ach, which she thought was caused by one of the grinders which was rotten, she went for a Chirurgeon to draw her Tooth. He pluckt out the Tooth being sound, and suddenly perceived the error; drew out the rotten tooth, and soon after having washed the hole of the former Tooth with wine, he thrust in the sound Tooth again, and prescribed an astringent Gargarism of red Roses, Balustins, Pomgranate Rinds, Lentisk-wood, and Allum boilied in water and harsh red Wine, which the patient often used. And he had her for certain days to use only supping meats, and to abstain from all chewing. And so the Tooth which had been pulled out, was fastened in place again.”

Observation 471 is of a stone under the tongue. The author describes it thus: “A Man forty years old was troubled with grievous and frequent defluxions of Rheum into his jawes and the Almonds of his Ears. At last it was perceived that there grew a stone under the Tongue, which was easily drawn out, and from that time forward the Patient was no more troubled with those defluxions.”

On page 269 of the “Observations” is the report of treatment of “Rottenness of the Teeth”:

“I have seen many in this Climate tormented with the Tooth-ach, by reason of rotten and hollow Teeth. I was wont to fill the hollow Teeth with Turpentine, and to burn the Tooth with a red hot Iron; which succeeded very happily.”

The book contains numerous other case histories and treatments of diseases of the mouth, but they are too lengthy to include here.

DR. GESHWIND, who has for many years now collected early medical and dental books, is retired from active dental practice. His address is 184-14 Midland Parkway, Jamaica, NY 11432. Requests for reprints should be directed to the author.
What Is It?

—Alex Peck
Charleston, Illinois

This issue's item dates from about 1650. It is forged of iron and is about seven inches long. The main shaft has two movable pieces attached to it at the center and these can swivel up to fit close to the ends of the main shaft, which are serrated.

Most of you will know immediately what this item is and what it was used for. But to some of you it may be new.

The teaser in the last issue is an item which would have been found in the armamentarium of every practicing dentist up to about the 1930's. It is a gauge for measuring the diameters of wires used in various aspects of dental care such as orthodontics and removable partial dentures. The holes were of gradually increasing sizes and were numbered from one to eight. With this gauge the dentist would select from his stock of wire, usually of stainless steel, pick the appropriate thickness he wanted for the particular job at hand and check its diameter by running it through the appropriate gauge in this instrument.
A NOTE ON THE PROVENANCE OF THE PINGRET PAINTING OF GEORGES FATTET BY ITS CURRENT OWNER

—Karl J. Leone, D.D.S.
Staten Island, New York

The first time I saw this painting was at Clare Brown’s auction gallery in Staten Island in 1974. It hung unframed, against an oriental rug on a cement wall. It hung quite high and as I strained to see it, I exclaimed, “Holy Mackerel! That’s a dentist up there!” I borrowed a ladder from Mr. Brown and climbed up to it. Sure enough, it was a denture in his hand. The little typed card attached to its back incorrectly stated that it was Dr. T. W. Evans in his Paris dental studio. At that moment I didn’t know that this was misinformation. My excitement derived from the fact that my Alma Mater was the Dr. Thomas W. Evans Institute and Museum of Dentistry at the University of Pennsylvania.

The next day I called the Librarian at the University and described the painting to him, and inquired whether or not such a painting was listed in the U. of P. archives of the museum. He didn’t remember such a painting being listed, but he had a vague recollection of such a painting. A few days later I received from him a photocopy of several pages from Proskauer and Witt’s Bildgeschichte der Zahnheilkunde published by DuMont-Schauberg in Koln. On one of the pages was a photocopy of the painting identified as the “Consulting room of Georges Fattet”, by Edouard Pingret, Paris, ca. 1850. One of the other pages included the following text: “Office of the Parisian dentist Georges Fattet. Painting. Publicity for Fattet by caricatures.
Lithographies. Georges Fattet, born in 1820, succeeded in gaining considerable celebrity as a fashionable Parisian dentist in the reign of Louis Philipp and Napoleon III. This he achieved by commissioning caricatures of himself in *Charivari* and other comic papers. The “dents osanores” which he enthusiastically extolled in five popular publications were nothing more than the carved dentures in common use at the time. Negro servants, silken coats for office hours, poster ads, and his sensational carriage — shaped like a huge denture, which bore him through the streets of Paris to the blare of trumpets — all served admirably to make famous the name of Fattet. The pictures drawn by Pingret were later collected in a brochure entitled, *Vie du Celebriisme et Dentissime Georges Fattet*.

Proskauer/Witt refer to it as a “painting”. Theirs is an exact description of “my” painting. This painting bears the signature of Edouard Pingret. This same volume indicates that the painting is from the Meibauer Collection, New York.

Clare Brown said he obtained the painting from a Dr. David Weiss, a dentist in Staten Island. I checked with Dr. Weiss, who has since become my friend. He said the painting came from his attic but that at one time he shared a dental office with Dr. Meibauer in Manhattan. Dr. Weiss does not remember how he came into possession of the painting.

At the Frick Research Library in New York City, I found a book by Francois Grille (014.12 G879), which includes “Autographes de savants et artistes, de connus et d’inconnue, de vivante et de morts, nis aux vents, avec annotations, gloses, commentaries”, 1853. In pages 240 to 257 is a statement from Pingret about his life as an artist. No mention is made of this painting.

Benezet's Dictionary refers to E. Henrique Theophile Pingret, painter of genre, history, and portraits, 1788-1875, and that he was a student of David. Benezet listed a number of Pingret paintings hanging at the museum at Versailles. Still no listing of the Fattet painting. I wrote to the director at the Versailles museum. He wrote back that he had no knowledge of the Pingret painting of Fattet, but thanked me for my photograph of the painting and that he would add it to the Pingret files at his museum.

It is of some further interest that Fattet was contemporary to the American, Dr. Thomas W. Evans' long dental career in Paris. Evans was the dentist to Louis Napoleon and Empress Eugenie and is credited with aiding her escape to England during the chaotic upheavals in France following France's defeat by Bismarck in the Franco-Prussian War, 1870. Whether or not Evans and Fattet knew each other is not presently known, but I feel they must have been aware of each other, by reputation at least, since Evans was also a skilled promoter of his own talents.

DR. LEONE is a specialist in the problems of the Temporo-mandibular Joint and practices in Staten Island, NY. Besides being a member of the American Academy of the History of Dentistry, he is a world-renowned authority on the life and writings of William Faulkner. His address is 173 Mayberry Promenade, Staten Island, NY 10312. Requests for reprints should be directed to the author.
HISTORICAL MUSEUM AND PUBLICATION OF THE DENTAL SCHOOL IN BUENOS AIRES

The Bulletin has been receiving a very interesting publication on dental history which has been issued for the past several years by the Museum of the Faculty of Odontology of the University of Buenos Aires in Argentina. Written in Spanish, it covers all facets of dental history and is not restricted to that of South America. It is available on request to

Revista del Museo de la Facultad de Odontología
Marcela T. de Alvear 2142
1122 Buenos Aires
Argentina

The museum, which is a member of the International Council of Museums, is governed by a council of nationally and internationally known dental historians. It is housed in the dental school of the University.

Two views of the Buenos Aires dental historical museum. Pictured is Dr. Orestes Walter Stüttli, Director Emeritus of the Museum.

NEW GERMAN DENTAL HISTORY SOCIETY FOUNDED

On October 6, 1987, a German society for history of dentistry was founded in Cologne. The name chosen is Arbeitskreis Geschichte der Zahnheilkunde, i.e. working circle for the history of dentistry. Anyone interested in the subject is invited to declare membership. Neither admission fees nor subscriptions to periodicals are required. Arbeitskreis Geschichte der Zahnheilkunde has an informal structure. Bi-annual meetings will be held in the spring and autumn at Bundesverband der Deutschen Zahnarzte in Cologne, which generously sponsors the Society’s activities. Officers of the newly formed society are Prof. Dr. Dr. Marielene Putscher (Chairman) and Dr. Ulrich Lohse (Speaker). Further information can be secured from Dr. Ulrich Lohse, Bahnhofstrasse 29, D-2448 Burg. a.F., Federal Republic of Germany.

THE INVENTOR OF WIRELESS COMMUNICATION: MAHLON LOOMIS, DENTIST

—Raphael Escoe, D.D.S.
Massena, New York

Gutenberg invented printing and thus revolutionized our civilization. Wireless communication — radio and television — has also revolutionized
our civilization but in a much shorter time. No longer must a manuscript be read, no longer needed is a printed page; information today can be projected throughout the universe with the speed of light! Information to all at once!

A dentist invented wireless communication and succeeded in transmitting information over a distance of about fifteen miles. Mahlon Loomis was this American dentist and inventor, born in Oppenheim, New York, July 21, 1826, son of Nathan and Waitie Jenks Loomis. He studied dentistry in Cleveland in 1848. Dr. Loomis married Achsah Ashley, May 28, 1856. He then practiced dentistry in Earlville, New York, Cambridgeport, Massachusetts, and in Philadelphia.

Loomis began to experiment with electricity in 1860; an early experiment was to force the growth of plants by buried electrodes attached to a battery. He carried on wireless two way communication in 1868. Dr. Loomis was the first to use an aerial [he coined the name], and erected towers for aerials. He incorporated, by act of Congress, in 1870, the "Loomis Aerial Telegraph Company." Dr. Loomis died October 13, 1886. His dream of universal wireless communication did not come to fruition during his lifetime because of a lack of financing for research.\footnote{Curt Proskauer recounts that Loomis' name is nearly forgotten in dental literature. Loomis did make a contribution to dentistry by perfecting a method of making an all porcelain, one piece, artificial denture where shrinkage of the porcelain was compensated for.}

As early as 1858 this American dentist envisioned wireless communication according to his diaries which reposes in the Congressional Library. He had a notion that an outside source of power was not needed for communication, but that the energy needed would come out of the atmosphere. Clearly Loomis' work needed some perfection. While Congress was willing to pass an act of incorporation of Loomis' Company and President U.S. Grant was willing to sign the act, Congress would not appropriate the funds which Loomis requested for research. Prior to his death Loomis said that "It would be gratifying . . . to live to see the world acknowledge that I am at least sane; or at least such a crank as God employs to move the world."\footnote{Martin Clifford\textsuperscript{3} gives the circuitry which Loomis used for wireless communication. The transmitter consisted of a kite attached to which was a copper wire mesh; attached to this mesh was a kite string made of copper wire. A telegraph key made and broke the connection between the end of the copper wire and ground. The receiving apparatus was identical except that a sensitive galvanometer replaced the key. With this apparatus Loomis transmitted a message between two mountain tops, a distance of about fifteen miles. I have endeavored to reproduce Loomis' results. I could not transmit information across a room — let alone fifteen miles! Dr. Loomis' radio apparatus and technique probably required special methods of adjustment and control which are lost to us. Was he a crank that God employed to move the world?}

Loomis' grave is on the outskirts of Terre Alta, West Virginia, and there has been some activity to make this a historic attraction.

REFERENCES
2. Proskauer, C. "Dr. Mahlon Loomis, pioneer in dentistry and inventor of wireless
EARLY SPANISH ITINERANT DENTIST

This fascinating photograph, taken about 1890, was submitted by Dr. Pedro Borja de Guzman of Gandia, Valencia, Spain. It shows a dentist of that city, a Dr. Sequa, extracting a tooth from a patient seated in an open carriage while the dentist stands above him; a crowd of townspeople observe the operation with interest.

Dr. Borja, who has what is probably the largest private dental museum in the world and is an Honorary Member of the American Academy of the History of Dentistry, was featured in an article about him and his collection in the April, 1984, issue of the Bulletin of the History of Dentistry.

NEW DENTAL MUSEUM AT THE UNIVERSITY OF ALBERTA

With Dr. G.H. Sperber as Curator, a fascinating collection has been opened at the University of Alberta, Saskatchewan, Canada. The University is fortunate in having a Faculty of Dentistry sympathetic not only to its patients but also to its heritage; it allocated a considerable amount of space in the Dental-Pharmacy Centre to house the Dental Museum. Professional consultants and museologists have been utilized in the planning of this museum for the past four years.

Started in 1952, the dental collection encompasses a startling array of artifacts covering the fields of paleoanthropology, natural history and den-
tal antiquity. Within these three parameters constituting the trilogy of the dental museum are found fossil remnants of early man, dinosaur dentitions, elephant tusks, "unicorn horns", dental extraction instruments from Napoleon's time... in fact, just about everything odontological!

Complementing this collection is a history of dentistry in Alberta being written by a former Dean of the Faculty of Dentistry, Dr. Hector MacLean and which is due for publication soon by the University of Alberta Press. Among the array of artifacts referred to by Dr. MacLean which are in the collection are the first dental diplomas issued in the Northwest Territories before the founding of the Province and the first dental degree granted by the University of Alberta in 1927.

Among the multitude of interesting items in the collection are irreplaceable dental casts of severely worn dentitions of Inuit who used their teeth for softening animal skins.

NEW FINDINGS OF DENTISTRY IN ANCIENT ROME

Dr. Walter Hoffman-Axthelm, an Honorary Member of the Academy, has graciously shared with us this selection from the Newsletter of the Society for Ancient Medicine and Pharmacy. It is based on material supplied to the Society by Professor Marshall J. Becker of the Department of Anthropology and Sociology of West Chester University, West Chester, Pennsylvania. Additional information is contained in the article "The Temple of Castor and Pollux on the Forum Romanum: A Preliminary Report on the Scandinavian Excavations, 1983-1985," which was authored by Inge Nielsen and Jan Zahle and published in Acta Archaeologica, 56(1985), 1-29.

Dentistry in ancient Rome has long been suspected to have been a profession ancillary to other 'cutting' professions. We now believe that we can demonstrate that barbers also practiced tooth extractions and that this trade was plied amidst the great temples of the Roman Forum. An international program of excavations at the Roman Forum, which is right in the center of modern Rome, has been coordinated by Dr. Irene Iacopi, the Archaeological Superintendent for the Roman Forum. That portion of this project, which is under the direction of a Danish team, has produced a number of exciting new discoveries in an area which is visited by tens of thousands of tourists each year. Recent excavations in the area of the large Temple of Castor and Pollux in the heart of the Forum have produced evidence for the presence of a barber's shop surprisingly located adjacent to, if not abutting, the temple. This portion of the complex Forum area has been under excavation by the Danish group within the Scandinavian team which is working in conjunction with their Italian counterparts.

In clearing the area between the Temple of Castor and Pollux, and the adjacent road which runs parallel to the temple, excavation director Inge Nielsen and her assistant Pia Guldager recovered the evidence for these barbering activities. This trade must have been conducted in a residential shop (a taberna) very similar to those which can still be found in Rome: a small open-fronted room on the street, where business was conducted, with a small room above or behind which served as the residence of the operator. The excavators found fragments of large numbers of small glass bottles, tiny bowls, delicate ivory tools such as spatulas and picks, and other pharmaceutical gear which was part of the equipment of ancient (as well as
medieval and even colonial American) barbershops. A complete analysis of these artifacts and interpretation of functions is now in process.

Among these tools of the trade of barbering found on the floor of this shop, and also thrown out into the street, were approximately 100 human teeth. Almost all of these teeth are molars. These teeth offer the best direct archaeological evidence that this aspect of dentistry, in addition to a prototypic form of pharmacy, was being practiced by early Roman barbers. Quite probably the dental work which involved the manufacture of false teeth held in place by gold bridges, known from at least four examples from Etruscan sites, was performed by the goldsmiths who fabricated the bands of these bridges.

The authors will return to Rome in December of 1987 to continue the study of these teeth and expect to photograph them in detail to determine if they were extracted from many different people, how old these people may have been, and what kinds of pathologies or decay problems they suffered from. We may even learn how the teeth were extracted through study of the surfaces of the teeth and the instruments found in direct archaeological association.

THE HARASSED DENTIST TO HIS PRECIOUS ASSISTANT

The maid who serves as my chairside assistant
An aid and a joy is, a consoling beauty,
Has militant grown, aggressive, persistent,
Insisting she's destined for "extended duty"

She'd rubber dam all with ease and so gently,
Carving amalgams, anesthetic applying,
Extending her duties, she'd earn half the rental
Hailing a practice sans stress and sans sighing

Prithee fond maiden, why need I extend thee
With duties a dentist is trained to do easily,
Dear one I cherish and would not offend thee
But intrusions you plan render me queasily

For the nonce keep things simple, my solace, my darling dear
Your duties are ample — I mean no debasement.
Tho' your aid is quite precious, gives comfort when you are near,
It all turns to dross love, when you seek my replacement.

—Bernard P. Tillis, D.D.S.
(Dr. Tillis, a member of the American Academy of the History of Dentistry, is the editor of the New York State Dental Journal.)
To the Editor:

It is with a heavy heart that I read your letter telling me of your intended resignation as editor of the Bulletin.

I am only a "Johnny Come Lately" to our wonderful organization, the American Academy of the History of Dentistry. But in the short time as a member and avid reader of the Bulletin, I have marveled as the high standards you have upheld for the publication. I hope that your successor can continue that high tradition you have established.

I shall certainly endeavor to continue my pieces of the history of antique books if the new editor desires it.

Sincerely,
Max Geshwind, D.D.S.
Jamaica, New York

To the Editor:

Thank you very much for your kindness in sending me a copy of the October, 1987, issue of the Bulletin containing your article on the development of the air turbine handpiece and my role in its discovery. I read it with great interest and pleasure.

I noticed that this issue also contained your Academy's roster and was surprised to see that you have no members in New Zealand.

Yours sincerely,
Sir John Walsh
Auckland, New Zealand

To the Editor:

In order to preserve a comprehensive history of the development of the turbine handpiece, I enclose herewith evidence that I, too, was involved in its discovery. These engineering drawings show that I designed an air turbine handpiece and the drawings are dated January 18, 1949.

Personally, I recognize Dr. Robert J. Nelson as the originator and inventor of the Turbo-jet handpiece.
The prototype air turbine handpiece which I developed was contributed in 1970 to the historical collection of the American Dental Association.

Sincerely yours,
I. M. Sharon, D.D.S.
School of Dentistry
University of the Pacific
San Francisco, California

To the Editor:

I was pleased to get the April issue of the *Bulletin* so promptly and, as usual, thoroughly enjoyed reading it. You produce a very good publication. I felt sure that your article in the previous edition of October would produce a response. I do hope, however, that anybody who reads the responses will understand that Sir John Walsh has, and has always had, a very high regard for all his colleagues throughout the world, and nowhere more so than his many American friends.

John Walsh had begun his work on high speed cutting in Australia before he ever went to New Zealand. In H.F. Symmonds in New Zealand he found a very valuable colleague and between them produced two outstanding contributions to knowledge of high speed cutting. These two publications were *Vibration Perception in Teeth during Cavity Preparation*, published in the N.Z. Dental Journal in January 1948, and followed it with *A Comparison of the Heat Production and Mechanical Efficiency of diamond instruments, stones and burs at 3000 and 60,000 r.p.m.* published in January 1949. In both of these articles he describes using an air-rotor cutting device for both his clinical and laboratory studies. Having achieved a potentially useful general clinical tool, he set about finding an engineering resource which could overcome the many problems he and Symmonds had encountered. The main one of course was the lack of satisfactory bearings, and he encountered many rebuffs when he sought help from various sources. He was delighted when Dr. Nelson succeeded in producing the design which gave us all such a valuable tool.

It would be a pity if many of your readers in America were left with the impression that John Walsh was a critic of American achievements. I am sure that he would have wished that the necessary skill to produce a high speed contra-angle dental handpiece had been found either in N.Z. or Australia, for the sake of the profession itself. Incidentally, the provisional patents he took out at the time he wrote his Melbourne thesis, he had arranged to be handed to the N.Z. government — he never sought to benefit personally from the discovery other than to gain some recognition for dentistry.

—Dr. R. F. Stockwell
Claremont, Western Australia

To the Editor:

I shall be most grateful if I could be sent gratis or for a charge the following issues of the *Bulletin* which I do not have in my library.

I really find these *Bulletins* an ocean of historical facts and information.

In addition, I have the names of several of my colleagues and faculty members whom I wish to propose for membership.

With warmest regards,
Professor H. Adeyemi Mosadomi, Dean
School of Dental Science
College of Medicine of the
University of Lagos
Lagos, Nigeria

To the Editor:

As part of my job as the Medical Center Archivist for the Bowman Gray School
of Medicine, I am in the process of collecting materials from various Health and Medical Related Information-Support-Education Organizations in order to create and maintain a resource file for the Medical Center. This information will be used with and available to Medical students, house officers, staff doctors, and hospital personnel.

While I am creating a file for this information, I am also planning to display some of this material in the Library of the Medical School. Thus, any pamphlets, posters, journals, newsletters, handbooks, charts, bibliographies, and other visual and/or informative items you could send me would be very beneficial.

I look forward to hearing from you, and thank you in advance for any assistance you can provide.

Sincerely,
Sarah-Patry Knight
Medical Center Archivist
The Bowman Gray School of Medicine
Wake Forest University
Winston-Salem, North Carolina

To the Editor:

With the help and encouragement of Dr. McCauley, we are succeeding in establishing a study group for Dental History in New York City.

After being presented with 50 supporting signatures, the Board of Directors of the First District Dental Society unanimously approved the establishment of a Section on Dental History. It only remains to present the resolution to the general membership at a Stated Meeting in the Fall to make it official. This means that we will be able to hold four meetings a year at the First District headquarters, 295 Madison Avenue, NYC 10017 and be entitled to a modest budget for mailings, etc. I assume we will begin our active phase in 1989.

I am writing to you personally to ask if you would honor us by being the first speaker at our fledgling organization.

Elias M. Karnoff, D.D.S.
31 Washington Square West
New York, NY 10011

In years past there had been a number of excellent books dealing with dental history written by such eminent authorities as Guerini, Koch, Weinberger, and Bremner. Then came a hiatus of about fifty years during which no such book appeared in spite of the growing interest in the subject on the part not only of scholars but professionals in general.

The last decade, however, has seen an upsurge in fine, scholarly works: Hoffman-Axthelm's History of Dentistry, Glenner's The Dental Office: A Pictorial History, and Ring's Dentistry — An Illustrated History. To these excellent books can now be added Asbell's work, a fine retelling of dentistry's long and colorful history.

Dr. Milton B. Asbell is exceptionally well qualified to author such a book. His interest in dental history dates back to the days when he was an undergraduate student at the University of Maryland. Early in his career he had a number of historical papers published in scholarly journals; and when Dr. J. Ben Robinson was seeking scholars interested in dental history in order to form the American Academy of the History of Dentistry he tapped Dr. Asbell to share with him a role as one of the organization's founders.

Over the years Dr. Asbell has enriched the literature, not only with many periodical articles but with several books including A Bibliography of Dentistry in America, 1790-1840; A Century of Dentistry: A History of the University of Pennsylvania School of Dental Medicine; A History of Southern Dental Society of New Jersey and The History of the Development of Anesthesia, Oral Surgery and Hospital Dental Service in the United States (of which he was co-author). These works won not only critical acclaim but are indispensable tools to scholars and bibliographers.

In spite of a busy orthodontic practice, Dr. Asbell decided to pursue further studies in his avocational field and, in 1981, received an M.A. in dental history from Pennsylvania's Graduate School of Arts and Sciences.

His interest in the history of his profession led to his position first as secretary for many years of the American Academy of the History of Den-
tistry, and then as its president. In 1975 he was the recipient of the Academy's prestigious Hayden-Harris Award. He is a widely sought after speaker who has addressed such diverse groups as dental study clubs and the Boy Scouts. And he is the only dentist member of the College of Surgeons of Philadelphia. He has lectured on dental history to the student bodies of the dental schools of the University of Pennsylvania, Temple University and the New Jersey College of Medicine and Dentistry.

This background has stood him in good stead in the writing of this book. It is a smoothly written narrative which would appeal to layman and dental historian alike. Although it is full of fascinating facts and thousands of valuable and interesting pieces of information, it is not cluttered with footnotes or reference numbers which too often interrupt the reader's appreciation of the story.

The work is divided into six main sections: proto-dentistry: pre-history to pre-Christian; the Middle Ages; Renaissance Europe; 18th Century Europe; Dentistry in the United States: Colonial and 19th Century; and the 20th Century to 1950.

It is in the later two sections that Dr. Asbell has placed so much emphasis. This is not to be wondered at since so many of the developments in modern dentistry had their genesis in this country, and it is to this country to which so many dentists from other lands turn for guidance and help.

In these sections the author discusses the origins of all of the specialties of dentistry, the development of dental education and literature, the history of the various auxiliaries to the profession — the dental hygienists, the assistants and the laboratory technicians. He also covers the development of dental research, giving us pictures of those dental scientists who were responsible for the manifold exciting discoveries in the health sciences among which was dentistry's part in the discovery of anesthesia.

There are several valuable appendixes: a list of all dental schools which existed in the United States and the dates of their founding, even though most of them have long ceased their existence; a list of all dental journals published in the United States in the 19th Century; a bibliography of books in the English language on the history of dentistry and an extensive index.

The only failing in the book is the lack of illustrations, but it is specifically because of that lack that the price of the book is comparatively low. And its low price makes it an excellent choice as a textbook in courses in the history of dentistry in our dental schools. Most dental students must invest a minimum of $50 to $75 for each book assigned; $24.95 makes this book a bargain!

—Reviewed by Malvin E. Ring, D.D.S.
Rochester, New York

Love And Admiration And Respect: The O'Neill-Commins Correspondence. Edited by Dorothy Commins. 242 pages, $32.50, Durham, Duke University Press, 1986.

This is an interesting account of 30 years of correspondence between playwright Eugene O'Neill and his long time friend, dentist and editor, Saxe Commins. Included are excerpts from a never completed memoir by Commins and comments by the editor, Commins’ wife, Dorothy.

The book recounts Saxe's first meeting with O'Neill in 1916 in Pro-
vincetown, Massachusetts. A dental graduate of the University of Penn-
sylvania, Saxe became a good friend of O'Neill, spending many enjoyable
times with him.

An early account of their friendship is related through a set of letters
from O'Neill to his second wife, describing his two weeks visit to Dr. Com-
mins, in April 1921, for dental treatment. The editor reports: "O'Neill's teeth
were a disaster area." In addition to necessary bridge work, restorations and
extractions of infected root tips, O'Neill had to have a wisdom tooth taken
out, a procedure so difficult that O'Neill wrote, "Saxe had almost to call in
the derrick squad before he could budge it." Of the time he spent under Com-
mins' care O'Neill wrote: "The work Saxe has done has been fine and should
prove lasting." He also commented: "Poor Saxe! He honestly suffered more
than I did . . ." Dr. Commins never sent a bill although O'Neill wrote several						times asking for one. From this time, the relationship between the two men
"moved from a level of easy familiarity to a plane of personal sympathy and
gratified response." O'Neill responded to people who paid him considerable
attention and Commins proved a perfect, caring friend. In his lifetime,
O'Neill probably trusted only his third wife, Carlotta, more.

Through the book we learn of O'Neill's developing relationship with
Commins. O'Neill tended to be reclusive, so Commins, initially, came to act
as a sounding board for his ideas, typed for him, and did other non-
professional chores which included escorting O'Neill's second wife to "first
nights" and other social events. In 1928 Saxe married, sold his dental prac-
tice and moved to France because he wanted to write. Preceded in France
by O'Neill and his new love, Carlotta, Commins continued to be of help to
O'Neill by typing manuscripts and doing other services.

After returning to the States, Commins became an editor at O'Neill's
publisher, a position that O'Neill obtained for him. When, during the depres-
sion, the company was about to go bankrupt, Commins made sure that
O'Neill got all the money due him. Out of gratitude, O'Neill insisted that
his new publisher, Random House, hire Commins as his editor.

The book reveals that although O'Neill was his most important author,
Commins was by no means a one author editor. He also served as editor
for William Faulkner, W. H. Auden, Isak Dinesen, Sinclair Lewis, John
O'Hara, and others. His heart and soul, however, was O'Neill's. Personally
and professionally, he assisted Eugene and Carlotta whenever they asked
for his help.

The book develops the theme that when Carlotta married O'Neill, he
saw her role as an enabler. She envisioned that through her hard work of
running a perfect home, keeping people away from O'Neill who she felt were
disturbing his creative efforts, he would continue to be a world-famous
playwright. After O'Neill suffered a stroke at the height of his career and
could no longer write, Carlotta was afflicted by a sense of lost purpose in
her life. She too became ill, and the tragic years began. During this time,
the two often argued intensely. As Carlotta attempted to cut off O'Neill's close
relationships, his friends desperately tried to save the man from his manic
wife. In one letter to O'Neill, Commins expresses the pain he feels at hear-
ing Carlotta's ravings and untruthful accusations. To placate Carlotta, O'Neill
turned away from his devoted friend and editor of 35 years. They never saw
or wrote to each other again. Saxe's "well being and his trust in human rela-
tions" were forever scarred.

The book is easy to read and touching. It will appeal to one's interests
in dentistry, as well as literature. Counterbalancing its appeal, is the book's price, which to this reviewer, seems high.

—Reviewed by Cynthia Chappelka, R.D.H.
Health Occupations-Teacher Educator
Virginia Polytechnic Institute and
State University
Blacksburg, Virginia


One of the most prominent Civil War buffs in the country happens to be a dentist who is also a member of the American Academy of the History of Dentistry. After many years of collecting memorabilia — during which time he made a name for himself as a principal speaker on the Civil War lecture circuit — he brought out, in 1983, a fascinating volume chock full of pictures of medical instruments, uniforms, prostheses and other interesting paraphernalia used during that great conflict.

Now he has brought out a companion volume which, if anything, is even more interesting than the first. In this book Dr. Dammann has a very good discussion of surgical treatment as carried on by the Civil War surgeons. There are also many fascinating tintypes of the surgeons themselves, the instruments and the equipment they used, the medicine they dispensed and the varied and unusual uniforms they wore.

In this volume Dr. Dammann has expanded the section on dentistry and has a fine catalog of photographs of Civil War era dental instruments and a wonderful posed tintype of a dentist extracting a tooth from a reluctant patient.

There is a section on medical documents of the period, which makes for interesting reading; and the sections on the Ambulance Corps and the role of the Hospital Stewards enhances our knowledge of the medical care given to the vast numbers of casualties of that unhappy conflict.

This book, like its predecessor, is paper-backed, printed on fine quality coated paper which enhances the excellent photographs. Its generous 8½ x 11 inch size allows for good reproduction of the pictures. And at $8.95 this book is truly a bargain!

—Reviewed by Malvin E. Ring, D.D.S.
Rochester, New York


This interesting, small, book is much more than just a list of collections and information on dental artifacts. According to the authors, dental folklore encompasses “the myths, superstitions, and other beliefs regarding the mouth and the teeth” while ethnodentistry refers to the “practice of the different aspects of dentistry, by different societies and cultures.” This short and very readable book discusses these aspects of dentistry, using earlier as well as more modern texts as references, particularly Guerini and Weinberger.
The book covers a large number of areas on the fringe of dentistry, but with definite connections to our profession, and places this information into distinct categories in an orderly manner.

The book is divided into 13 chapters. Chapter 1 is a short review of early development of dentistry and defines many of the terms used. Chapters 2 and 3 review later developments in dentistry, particularly in Europe, USA and Canada, from the 16th century to the 20th century. Because this is a small text, certain facts are given only in sketchy form, and certain omissions are inevitable thus making some of the information imprecise. For example, McKay is mentioned as the person who noticed mottled enamel, but no mention is made of the important role G.V. Black played. Early in the study McKay contacted Black as a well respected researcher who should participate in the study of this phenomenon. The name of Black should also have been included in the list of the scientists responsible for the progress of dentistry in the U.S.A. at the beginning of the century. While the importance of the Grand Rapids fluoride studies is given, Blayney and the Evanston studies are not mentioned, making the fluoride “story” incomplete. This, of course, cannot be helped, since the book is meant to be short, and not meant to be a full review of dentistry.

Chapters 4 and 5 discuss the folklore regarding causes of toothache and tooth decay starting with the Babylonian theories of toothworms while Chapter 6 discusses the folklore of teething and some of the “remedies” developed throughout the centuries for the problems supposedly associated with tooth eruption.

Chapters 7 and 8 discuss plant and animal products that have been used as remedies for toothaches and as mouthwashes. Here, too, it is unfortunate the chapters had to be kept short and many details could not be included. It is possible that in the future, we will see these chapters developed to more extensive discussions on these fascinating subjects. Whoever will be involved in this research, will certainly use Carter’s book as a basis from which to start.

Chapter 9 summarizes the magical and superstitious remedies and beliefs of certain groups in the “treatment” of dental problems, while Chapter 10 discusses the alterations of dental structures practiced in different cultures.

The folklore associated with tooth shedding is summarized in Chapter 11, while myths and adages are presented in Chapters 12 and 13. These include among other interesting items the sheet music for a Toothache Polka!

The authors have done a remarkable job in assembling so much diverse information and putting it together into an interesting and readable book. In the future, it is probable that all these different aspects will be picked up by others, and analyzed in detail since the present book is primarily an introduction to this area of dentistry.

—Reviewed by Hannelore T. Loevy, C.D., M.S., Ph.D.
Professor of Clinical Pediatric Dentistry
Department of Pediatric Dentistry
College of Dentistry
University of Illinois at Chicago


Dr. Nuland, together with the very capable assistance of numerous col-
leagues, has prepared a truly outstanding book. He brings the reader very nicely to the single crowning moment in the history of anesthesia that occurred at the Massachusetts General Hospital on October 16, 1846, when William T.G. Morton demonstrated the effectiveness of ether. At that instant, surgical anesthesia began its existence.

He has recorded in detail the events leading up to that one moment and the consequences that followed. Letters, proclamations, claims and counterclaims are all reproduced.

The events following this crowning moment were fast moving, especially in England when chloroform was introduced by Dr. James Y. Simpson for use in obstetrics and midwifery. Complications were many, but slowly and surely anesthesia became the speciality it deserved.

The three main persons figuring in the discovery, Wells, Morton and Jackson, are discussed in detail up to the moment — and for a time after — the historic event. Exactly what happened to the remainder of the lives of these three men is, unfortunately, not recorded. Their tragic demise has been left to other historians; it may be for the best that this historic volume ended the way it did.

The value of the book is enhanced by the inclusion of a bibliography of both primary and secondary sources in the history of this great discovery. It is especially so since the final chapter hasn’t yet been written on this momentous advance.

This book should be in the possession of everyone associated with the treatment of pain, with anesthesia, surgery or the study of medicine. Dr. Nuland is to be congratulated for his efforts. It is a beautiful book and an absolute pleasure to read.

—Reviewed by Lloyd E. Church, D.D.S., Ph.D.
Associate Clinical Professor of Surgery
The George Washington Univ. Medical Center
Washington, D.C.


This book presents an intriguing story of the important role played by physicians in the settlement and development of Texas in the 19th Century. The authors open the book with a description of Texas in the Spanish colonial period and the leading Texas physicians of that era. Although Cortes established a hospital in Mexico City in 1524, and by the close of the 16th Century there were at least ten hospitals in Mexico, no such medical facilities existed north of the Rio Grande.

Progress in medicine was slow, but steady in the early years of the 19th Century in Texas as the population grew and physicians moved in. Descriptions are given of the struggle of frontier physicians, “who with meager skills and resources combated diseases of unknown origins and certainly uncertain cures.” The authors also emphasize the role of many eminent physicians in the development of Texas and their rise in political prominence in the state, and how “physicians in the frequent wars and frontier forays put down the scalpel only to take up the sword.”

There is also a section in the book’s appendix which lists the Texas counties named for physicians, as well as the towns which were named for — and by — prominent doctors.
The book includes a lengthy and apparently comprehensive bibliography of material dealing with 19th Century medicine, particularly in Texas. A failing, however, is that no mention at all is made of dental treatment. And this is all the more strange since dental care at that time was rendered primarily by physicians, especially in the remote and rural areas. Nevertheless, this reviewer found the book to be fascinating. It will definitely be of value to a historian interested in the status of health affairs in the 19th Century.

Reviewed by Maynard K. Hine, D.D.S.
Chancellor emeritus
The University of Indiana
Indianapolis, Indiana


The sub-title of this interesting and pleasant to read history is deceptively limiting. The book is a "medical" history only if the word medicine is defined in the broadest possible sense. The original intent was to provide a centennial history of the Portsmouth, N.H., Hospital. The committee selected to prepare the history quickly realized that a more extensive history was not only possible, but desirable. It, therefore, decided to write a "medical" history using the large amount of documentation available on health care personnel and facilities from the time of the appearance of the first physician in the Town of Strawbery Banke (now Portsmouth) to the centennial of the hospital 250 years later.

The history is reported in seven chapters, each of which could stand alone but which together present a fascinating story of the evolution of medicine, dentistry, nursing and pharmacy, and of the professionals who provided the health care in one city. Chapter 1 covers the earliest years and those physicians who not only practiced medicine in Portsmouth, but were also the social movers and shakers of the community.

Chapter 2 describes the conflicts which developed among orthodox medicine and the botanic, apothecary, Eclectic, and homeopathic interests. Described too are early attempts at limiting dissemination of medical information for profit motives and early ethical problems of quackery, advertising, and populist medicine.

Chapter 3 describes the establishment of the Portsmouth Medical Association (later Society) and its efforts at regulating the quality of medical care by enforcing educational requirements for membership; refusal of membership to persons practicing Eclectism, homeopathy, osteopathy, and chiropractic; and its encouragement of the sharing of medical knowledge by presentation of formal papers at meetings by members.

Efforts at improving the public health in Portsmouth are reported in Chapter 4. These efforts include such diverse activities as local laws for the emptying of privies, establishment of quarantine for infectious diseases, and care for the poor and indigent.

Arising from the public health effort was the founding of a cottage hospital by Harriette McEwen Kimball with the support of the Trustees of the Chase Home for Children. The hospital was in many ways an evolutionary result of the almshouse founded many years before by the Selectmen of the city. The growth of the hospital under a joint Board of Trustees
of men who were responsible for finance and appointment of the medical staff and a Board of Directors of women who were responsible for the physical facilities and nursing care is described in Chapter 5. These dual Boards existed for decades.

Problems of recruiting and retaining suitable nursing staff are discussed in Chapter 6. These resulted in the establishment of a training program for nurses in 1891 and a nursing school in 1909. This school was closed in 1934.

The changes required by advances in medical knowledge and regulations are presented in Chapter 7. These include the appointment of professional administrators, establishment of the present day volunteer program, accreditation by various regulatory bodies, and adjustments to accommodate PPOs, HMOs, Medicare, and Medicaid.

One of the most interesting and probably most valuable feature of the book is the large amount of information in tabular and graphic forms and in the seven appendices. Even though the statistics cannot be directly compared with those of other cities they provide much hard-to-locate information on the growth of the professions, the availability of health care, and the types of care delivered over 250 years in this city of vast business enterprise.

The book is highly recommended to anyone with an interest in any aspect of medical care at any time between 1623 and 1983. Each chapter is extensively documented for the person who wants to read more on a given topic; there are a number of illustrations which add to the text; and the index makes for easy location of specific information.

—Reviewed by Aletha M. Kowitz, Director Bureau of Library Services American Dental Association Chicago, Illinois


Since many of the medications used by American Indians have proven to be effective and lead to the manufacture of new medications, American Indian medicine has been of great interest to many investigators. Pharmacognosists and pharmacologists have always been very interested in this area of research, and the results have been encouraging.

This book is a comprehensive study of the Guatemalan highland-Maya medical system of early colonial times with some evaluation of possible pre-Hispanic application. The data for the study are based on the writings of colonial Guatemalan historians, and is therefore presented as perceived by non-Indians. Many of the writers were priests working with the Indians and therefore subject to European beliefs of the 16th and 17th centuries.

Orellana is a professor of anthropology and her background explains the material selected and results in the interesting manner of presentation. This book is informative and instructive for people in the health professions as well as persons who are only marginally active in medicine. The excellent glossary is helpful to those not completely familiar with medical terminology.

The book is divided into three parts. Part I is concerned with the pre-Colombian era and the relationship between medicine and religious practices. Although the information on herbal medicines was written in the post-conquest period, it describes the types of medicines used by the Indians.
According to Orellana, American Indians in the Guatemala region thought that illnesses could be caused by non-human beings, by human beings who possessed supernatural powers, or by natural causes such as accidents, etc. Once the cause was known, the illness could be treated. Treatment included witchcraft, incantations, empirical medicines or even the confession of sin and performance of penance. While this is probably all true, one must wonder about the influence of the Old World religion on the writers of the 16th century who recorded these findings. Is this what they learned from the Indians, or were the Indians telling the priests what they wanted to hear?

Part II discusses European concepts introduced into Guatemala and how these new concepts (and diseases) affected native medical beliefs and practices. The Old World had several definite ideas (not all of them correct) on disease etiology and medical treatments and these, coupled with the influence of religious practices of the time, had a major effect on treatment on both sides of the Atlantic. While the two groups exchanged diseases, several European diseases resulted in epidemics in a population with no adequate immunity to these diseases.

Part III presents an analysis of plants and their constituents, the manner in which the plants were used, and their possible effectiveness. Since not all plants have been studied with equal thoroughness, information must be uneven. However, an effort has been made to provide the reader with as much information as possible. The plants are identified by their scientific name making further study easier.

The book starts with an excellent evaluation of the sources available for this type of study. Orellana based her work not only on texts dealing exclusively with Guatemala, but with texts written on this region of Latin America. While many of the original recorders of Indian lore in the post-conquest era knew some medicine, and had been sent to the new world as missionaries to medically help the Indian populations, few were trained physicians. Many of these writers studied available plants and were able to evaluate many of them by sending material abroad.

However, some of the descriptions frequently introduced a certain amount of guesswork. The evaluation of these reports makes very interesting reading. Orellana in her introduction thanks several other anthropologists for their helpful suggestions, but it would probably have been helpful to consult with a pharmacologist or pharmacognosist interested in this area of research. This, however, does not alter the fact that the book is fascinating and easy to read, well documented, and has extensive reference lists which will help people interested in the subject to find new sources. For a long time, we have read about the influences of Indian medicine on Old World medicine; here is an opportunity to see also the effects of Old World medicine and religion on the American Indian and his medicinals.

—Reviewed by Hannelore T. Loevy, C.D., M.S., Ph.D.
Prof. Clinical Pediatric Dentistry
Department of Pediatric Dentistry
College of Dentistry
University of Illinois at Chicago

In 1978 Sotheby Publications brought out Miss Bennion’s celebrated work Antique Medical Instruments. In 1986 her employer, I. Freeman and Son, Simon Kaye, Ltd. of London, a major dealer in early medical, dental and scientific instruments and artifacts, published Miss Bennion’s second book, Antique Dental Instruments. This was an immediate hit with collectors of early dental “ana” and remains one of our most valuable resource books for information regarding these instruments and materials of an earlier era.

The volume here reviewed is a translation into German of the English-language volume with copious notes and emendations by the editors, both scholars in their own right. Marielene Putscher is Professor Emeritus of the History of Medicine at the University of Cologne and Director, the Research Institute for History and Folkhistory (Zeitgeschichte) of Dentistry of the German Dental Association in Cologne. Dr. Lohse, a member of the American Academy of the History of Dentistry, practices dentistry in the small city of Burg on the island of Fehmarn in the North Sea. He is the author of Von Bohnhasen und Zahnarztisien, a fine rendering of the history of dentistry on his home island. He is also a passionate collector of dental artifacts and a dedicated scholar of dental history.

The first part of the book is devoted to a short history of dentistry, but since Miss Bennion is not a dental historian, this section has only limited value. Although it is well written and contains a good deal of information (much of it dealing with superstitions and folk beliefs regarding dental ills and their prevention and cure) it also has numerous errors of fact, such as putting John Harris on the faculty of the newly opened Baltimore College of Dental Surgery and calling the first national dental society the American Dental Association instead of the American Society of Dental Surgeons. However, in the field in which Miss Bennion excels — knowledge of early instruments — the book is first rate. It is replete with excellent photographs — dozens of them in beautiful color — and the range of instruments pictured is impressive. In addition, the book deals with adjunctive fields such as oral hygiene and has wonderful pictures and descriptions of early toothbrushes, tongue scrapers and toothpicks as well as dentifrice-pot lids. There are also write-ups about odd items such as masticators and early dental chairs.

An interesting addition to this German edition is a portion containing notes to Bennion’s writings, written by two German editors. In it they set to right several errors Miss Bennion made or add interesting insights of their own.

Completing the book is a 45 page listing of instrument makers, separated by countries, listing also the dates associated with varying phases of their operation. Following this is a bibliography of books and journal articles pertaining to early instruments which would be of interest to dental historians. These are grouped by century, beginning with John of Gaddesen’s Rosa Medicinae of 1350 and ending with Longfield-Jones’ “A Set of silver Dental Instruments from the New Milton Collection”, 1984.

A bonus is the fact that beautiful and rare items from the collections of Dr. Gary Lemen and Dr. Ben Swanson, both long-time members of the American Academy of the History of Dentistry, are featured in the book.

—Reviewed by Malvin E. Ring, D.D.S.
Rochester, New York

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In 1981, the Watts, Franklin Publishing Company of New York brought out the remarkable book, Flowers in the Blood, the history of opium and its addiction. It was co-written by an unusually-gifted young science writer, Jeffrey Goldberg. Goldberg has a flair for taking difficult subjects and making them understandable to the layman without making them oversimplified so that the professional is turned off.

This exceptionally competent author has done it again with this new book which traces the history of the discovery of endorphins. Mosby's Medical and Nursing Dictionary defines endorphins as “...any one of the neuropeptides composed of many amino acids, elaborated by the pituitary gland and acting on the central and the peripheral nervous systems to reduce pain... Behavioral tests indicate that beta-endorphin is a powerful analgesic in humans and animals.” For years it has been suspected that something exists which dulls pain. Yet the search for these substances began only yesterday.

Since dentistry has been seeking to undo the unfair linkage of its procedures to pain, dentists should be deeply interested in any research that can shed light on what the mechanisms of pain are, and conversely, what the means are for controlling or averting pain.

The story that Goldberg tells so well deals with the discovery of the chemicals that regulate pleasure and pain, and this history is surprisingly recent.

At a research center in Aberdeen, Scotland, in 1973, a researcher, John Hughes managed to isolate a chemical from pigs' brains. "It was a naturally occurring compound," Goldberg writes, "Produced by the cells within the brain, and yet in laboratory tests it behaved with an uncanny similarity to morphine." Interestingly, Hughes was almost alone in believing such a drug existed. The implications for future use, however, were enormous, for if this drug could be produced on a large enough scale, its non-addicting nature would allow it to easily supplant morphine.

Because the potential for extreme profit would accrue to whoever was the first to produce this drug easily, many researchers in this country and abroad got into the race. And a race it was! It is this which makes Goldberg's book such an attraction to the reader. It is a pleasure to read and is really a must for any dentist who wants to understand first, why patients differ so in their response to his or her ministrations and also to understand what the pharmaceutical industry is doing to bring blessed relief.

—Reviewed by Malvin E. Ring, D.D.S.
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