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The Plains of West Texas is a plateau area bordering New Mexico, 300 miles west of Fort Worth. In size it is about 200 miles long and 100 miles wide and has an elevation of about 3,000 to 4,000 feet above sea level. The climate is warm and semiarid. It was wrested from the Comanche Indians and buffalo during the 1850's. About 100 years ago ranchers and cowboys moved in and established ranches. The area was found to be fine for farming about the turn of this century. Small towns then sprang up as each county was organized.

In the early days of settlement an occasional itinerant dentist would go through the country to pull a few teeth and make a few dentures, crowns and bridges. These itinerant dentists may not have been graduates of a dental school and they may not have had a license to practice. A license was not hard to get. Many men secured a license after one or two years in a dental school and upon making application and taking the board examination. People did not question the dentist's license or diploma. About the only questions asked were whether he was a painless dentist, what his charges were and whether he guaranteed his work.

Dr. Monte Garrison, who practiced in Wichita Falls most of his life, said he bushwhacked in Lamesa, Tahoka and Brownfield in the summer of 1907 between his junior and senior years. He had had two years in Tulane University School of Dentistry. He would notify the newspaper in each town when he would be there. He traveled by mail hack, carrying his foot engine, instrument case, folding chair and other paraphernalia. He would set up office in the back of drug stores. Dr. Garrison said he did quite well that summer, making more than a thousand dollars net. He was a little late getting back to school that fall he recalled. When his third and last year was completed, he had money left over.

These early men had their troubles, however. Once while in Tahoka some thirsty cowboy drank the alcohol used for sterilizing his instruments and for his alcohol burner. It was not clean, Dr. Garrison said, but the cowboy drank every drop of it.
Dr. Garrison served as president of the Texas State Dental Association in 1941. He died in 1965.

The early medical doctors in the Plains area became established before the dentists because their services were more essential. Each physician had a few pairs of dental forceps and extracted teeth whenever he was called upon. One of the early dental societies of the area, the West Texas Dental Society, stated in its constitution and bylaws of 1909 that the "dentist and physician should work harmoniously, each respecting the field of the other. The physician should respect the high attainment of the dentist in the field of his specialty." This implied that the physician should give up extracting teeth and leave that to the dentist. One of the early dentists in Slaton was a physician who had turned to dentistry. So far as I know he had no formal dental training.

Dr. C. M. Ballinger moved to Lubbock in 1907 from Nacogdoches, and became Lubbock's first permanent dentist. He had first located in Henderson after one year at Vanderbilt University, School of Dentistry at Nashville, Tennessee, and practiced there a year or so. Then he went back to his school and graduated in 1904.

Lubbock was a small town of a few hundred people then. Three other dentists had practiced there for short periods, but had moved on because they had caught up with the dental work. One of these was a Dr. Lewis who practiced there in 1896.

In order to make a success of his new location Dr. Ballinger spent two days each month in Slaton, 15 miles southeast of Lubbock and two days in Tahoka, 30 miles south of Lubbock. He too traveled by mail hack and carried his equipment with him and set up his office in the back of the drug store in Slaton and upstairs over Dr. Windham's drug store in Tahoka.

Dentistry was hard work in those days, with long hours of pedaling the foot engine and the laboratory polishing lathe. Dentists did their own laboratory work, for that was what dentistry was. It was making bridges and dentures during the spare time between patients or at night. A lot of extracting of teeth was done. Itinerant dentists would go through the country extracting teeth and getting
ready to make the dentures when they came through again, probably in the fall.

One early-day dentist of the area who wanted to sell out and move, mentioned how many patients, some thirty, would be ready in the coming fall for dentures. This was a selling point.

Dr. Ballinger was a very fine dentist for his day and he kept up with changes as they came. He led in dentistry in this area. His practice grew and he hired his first dental assistant, Miss Ruby Black, in 1911. She was the first dental assistant in the Lubbock area. She later married a Lubbock dentist, Dr. R. B. Hutchinson, and served as his assistant.

Dr. Ballinger served as president of the Panhandle Dental Society and was one of the organizers of that dental society. He served also as president of the West Texas Dental Society and the Lubbock Dental Society.

One year the West Texas Dental Society met in Lubbock in the dead of winter according to Dr. Ballinger. Bad weather hit the Plains with snow and ice. Many of the dentists in attendance thought it best to leave the meeting early. Others were prevented from attending by the severe weather. Arrangements had already been made for serving the dentists a big chicken dinner, so when the attendance was so drastically cut there were more chickens than dentists. Every man ate all he could and even then there was much chicken left over. Years after, dentists would frequently say, when discussing a meeting place, "Let's go back to Lubbock and have chicken." They never forgot the enormous supply of fried chicken at Lubbock.

Dr. G. C. Turner graduated in 1917 from what is now Baylor University and served in the World War I. Upon returning he practiced in Throckmorton and then Matador. Here he decided he wanted to practice orthodontics and went to New York to take the course. Upon graduation he settled first in Sherman, Texas and then in Lubbock in 1925.

Lubbock had become a city of about twenty thousand and almost needed an orthodontist. It could not support one completely, so Dr. Turner made trips to Plainview and
Lamesa twice each month in order to have a full-time practice.

To give some idea of the effect of the advertising dentists during the time advertising was rampant in Texas, Dr. Turner related this experience: While he practiced in Matador a man came to his office when he was in general practice in 1923. This elderly man asked if Dr. Turner would make a set of teeth for him and guarantee them. Dr. Turner told him "No," but that he would promise to do all he could, use his best efforts, skill and knowledge and correct any and all mistakes he might make. He would promise to make them over until they both gave up. He would do his honest best, but he could not guarantee that the man would wear them and be happy with them. The patient said he had been down to Ft. Worth and got a set at Mayo's that were guaranteed so he did not see why Dr. Turner could not guarantee his. Those he had were guaranteed for 20 years, but they did not fit. Dr. Turner asked him why he did not go back to Mayo's if they were guaranteed for 20 years. He said he did go back but it was 200 miles and although they worked on them, they still did not fit. He had just come to the conclusion they could not fit him. Dr. Turner said he told the man that he believed he should go back and see if they could not make him another set because he still had 19 years on their guarantee. Dr. Turner did not get to make the gentleman a set of teeth—he continued to wear his guaranteed teeth that did not fit.

Dental advertising was a bad practice for dentistry. Full-page advertisements portrayed superior skill and painless extractions at cheap prices and new methods for making dentures with which you could eat anything. The advertisers hurt all dentists, but especially the small town dentists. It was a good day when advertising was outlawed.

Dr. Turner practiced orthodontics during the great depression when times were hard and there was little money. During these bad times Dr. Turner was more concerned about helping some child in need of orthodontics than he was about getting paid. Many times when parents would say they could not pay right then he would say, "Well we can help this child so much and now is the critical time to do the treatment. Let's do it and you can pay later when times are better." During one six-month period in Plainview when the depression was at its lowest ebb he did not collect one dime.

At the depth of the depression when the banks in Plain-
view had failed, a farmer went to a Dr. Jones, a physician there and told him of his sad plight. He was going to lose his farm, land, equipment and everything if he could not raise $400. This farmer was a fine man, an honest, upstanding citizen, a good Christian whose plight was no fault of his own but due to hard circumstances. He asked Dr. Jones if he knew any place he could borrow the $400. That much would save him. Dr. Jones was touched by the man's need and plea. He told the man to see a certain person just to get him out of his office so that he could talk with Dr. G. C. Turner, the orthodontist who had his office next to him when he came to Plainview every two weeks. When Dr. Jones presented the case to Dr. Turner, he talked with a sympathetic listener. Dr. Turner had known hard times when he grew up on a farm as a poor boy.

The farmer soon came back from his "wild goose chase" and, with tears in his eyes, told the doctors he had failed. He could not borrow the money anywhere and there was nothing but bankruptcy for him. Dr. Turner took out his check book and wrote a check on his Lubbock account for $200 and handed it to the man. Dr. Jones did the same. That is the kind of man Lubbock's first specialist was.

During those same hard times in 1934, Dr. Turner and Dr. Bert Stevenson of Amarillo attended a meeting of orthodontists in St. Louis. Since times were hard, they felt they should economize all they could. It was the fashion of the day anyway. They agreed that Dr. Stevenson would register at the hotel for a single room and Dr. Turner would visit him. This way they would get the room cheaper. The hotel gave Dr. Stevenson a room with a three-quarter size bed. They were a little disappointed in the bed, but it cut down on expenses. After all, these two orthodontists had hunted deer together many times and had fared on meager accommodations before.

Dr. Turner served as president of the Lubbock Dental Society, as president of the West Texas Dental Society, as president of the Southwest Society of Orthodontists and on the board of the American Society of Orthodontists. He retired February 1, 1965.

Dr. A. F. Schofield practiced in Brownfield for nearly 40 years. After serving in the Spanish-American War he entered dental college in Denver, Colorado, in 1901. The next year he transferred to Western Dental College in Kansas
City, Mo. There were 48 in his class to start. Only 23 remained at Christmas and only eight were graduated three years later. The last year he was in school he advertised in the newspaper that he would trade dental work for board and room. He then sold these accounts to dental students. At the end of the year he had made more than $1,000.

After he had gotten off most of his technical requirements before graduation, he asked the dean of the college, Dr. McMillan, if he could get a job downtown in a dental office. He got the dean's permission and started working for Dr. Parker who had a large practice and was the highest priced dentist in Kansas City. He worked in his office for two years. He recalled that during that time he worked on Ethel and Lionel Barrymore of theater and movie fame. He said that many dentists in the building where he practiced did not like to extract teeth so they sent patients needing extractions to him. One Sunday, using nitrous-oxide, he extracted 252 teeth. He said if a tooth broke off and as much as half of it was missing he tried to get it out. If a small piece, less than half the root broke off, he told them it would work out in two or three years. He said most of the time it did. His price was 50 cents for multiple extractions and one or two dollars for single extractions, depending on the patient.

About 1904 Dr. Schofield moved to Lorena and Eddy. He would spend a week in each place and travel by horse and buggy taking his foot engine and hand instruments with him. He had no running water in his offices but used the old type cuspidor that was fastened to the chair. He sterilized his needles with alcohol. He did not do a lot of endodontics because he had seen so much done by others that was not good. He did some, however, filling the canals with gutta-percha points and chloroform. He said he had one of the first dental X-ray machines in Texas and made many X-ray pictures for physicians. Once a child swallowed a steel ball bearing. An X-ray picture was made and the bearing located. It passed in a day or so with much alarm and no harm.

Impressions were simple. Regular dental plaster in a metal tray was used. Later, when impression compound came out, he used compound with a plaster wash. This was an improvement.

Dr. Schofield used cocaine for local anesthesia until 1914, when he started using novocaine. He said once while in Eddy a physician had given an injection of morphine to
a patient before she came to have a tooth extracted. He did not know about the morphine and made a dental injection of cocaine. He said the patient nearly died and that they stayed up all night working with her, using everything they could to keep her breathing. This was the only bad experience he had with cocaine.

Dr. Schofield moved to Bartlett and from there in 1923 to Brownfield, Texas. He practiced in Brownfield until a broken ankle stopped him at the age of 83 in 1959. He died in 1964 in the Veterans Hospital at Temple.

Dr. Schofield said he always liked dentistry. He did not take many vacations, and if he did, he always wanted to rush back to his practice. He said he worked on Sunday most of the time. He often went to the office before daylight so that he could do his laboratory work since he always did his own. He never sent anything to commercial laboratories. If he had his life to live over again, he would still be a dentist. He would not mind facing a mountain of dental work again equal to what he had already done if he were young again. He made over 5,500 dentures and extracted untold thousands of teeth in nearly 60 years of dentistry.

The earliest dentist to practice in Plainview was Dr. Alpheus Dyer in 1883; however, his license was not registered. Dr. F. H. Burns was registered in 1890. The early dentists there were largely interested in extractions and dentures. One of the early-day dentists, Dr. J. A. Ferguson, had made a set of dentures for a patient and was having a lot of trouble adjusting them. One morning he came to his office and found a sack containing the dentures with a note tied to his door knob, saying, "Doc, you wear them, I can't!"

Dr. C. D. Wofford, Sr. came to Plainview in 1910, after passing the state board and securing a license. He practiced a year and went to the Baltimore College of Dental Surgery, where he received his degree. He went back to Plainview where he practiced until his death in 1936. Dr. Wofford did much experimenting with the removal of brown stain in mottled enamel. He presented clinics on its removal by grinding, at a number of state and national meetings. He did aluminum denture base castings in his own office. They were invested in a cowbell suspended on the end of a wire. The molten metal was forced into the mold by twirling the cowbell overhead.
His son, Dr. C. D. Wofford, Jr., who furnished this information about Plainview dentists, said he remembered the dental salesmen who traveled by train to Plainview. It was an important day when the salesman came.

One day the salesman, big Fred Kohl, wanted to ride back to Amarillo with Dr. Wofford and two other dentists as they attended a dental meeting in Amarillo. Dr. Wofford was proud to take the group in his new Buick, a semi-coupe for four passengers with wooden spoke wheels. As the men neared Canyon on the unpaved and rough road there was a small wooden bridge with a missing plank. They did not see the gap and hit it at a speed of 30 or 35 miles per hour. The jolt bounced the dental salesman so hard and high that his head went through the beaverboard top of the new Buick. It took some thirty minutes to get his head back in the car through the hole. They did not want to enlarge the hole because, after all, it was a new car and there were other salesmen. Fred Kohl was incapacitated for 30 days or more and the Buick had a broken spoke in one wheel besides the hole in the top.

Two early-day dentists in Big Spring were Dr. E. O. Ellington, who graduated in 1904 from Vanderbilt University, and Dr. E. H. Happel, a 1902 graduate. A singular thing it is that the two men both practiced there for more than 50 years. For about 15 years they were the only dentists in Big Spring.

Dr. Happel entered Vanderbilt in 1898. Two years later he secured a license to practice in Texas. He practiced two years in Pecos, in far West Texas. While there he made frequent trips to Toyah by train to take care of dental needs there. He returned to dental school in 1901 and graduated in 1902. He never went before the dental board again after receiving his degree because it would have cost $25 just to have them state on his license that he was a graduate. Returning to Texas he located in Big Spring where he practiced 60 years. He saw many changes in dentistry. In his early practice Dr. Happel did all kinds of dental operations without anesthetics. If a patient insisted, he sometimes used cocaine, but he was afraid of it. He started using novocaine in 1910 after attending a dental meeting and seeing it demonstrated. He chuckled as he told how one early-day dentist advertised his method of treating pyorrhea by splinting with gold shell crowns soldered together to strengthen loose teeth.
Once in 1905 he rode an excursion train with about 800 passengers into Ft. Worth. There was a wreck in which seven people were killed. He heroically assisted with first aid to the wounded and dying. After a physician came on the scene he helped to give morphine to those in pain. All his life this scene of death and suffering remained vivid in his mind.

When he first began his practice in Big Spring in 1902, Dr. Happel used his foot engine and continued to use it for several years because electricity was not reliable. It was available mostly at night and was turned off in the daytime. He did his own laboratory work all of his professional life. He used an oil burning sterilizer in the early years, but he did not always boil all his instruments because it was not convenient or he did not have oil. He did, however, wash and clean his instruments thoroughly at all times and sterilized them when he could. He always flamed his needle and followed this precaution all through his long practice.

Once a lady came to his office and said she wanted a set of dentures. He asked her what was wrong with the ones she was wearing. She said they belonged to her sister who had been living with her but who was going to move and take them with her. Now she wanted a set of her own. In my talks with other dentists, no less than a dozen told similar stories. Dr. Happel died in 1961.

Dr. E. O. Ellington, the other early-day dentist in Big Spring first located in Henderson after graduation from Vanderbilt in 1904. He practiced there until 1909 when he moved to Big Spring. While practicing in Henderson he was in partnership with Dr. C. M. Ballinger, mentioned previously. Dr. Ellington traveled by horse and buggy to Laneville each month for a few days of practice. He had his office in Henderson upstairs and had to carry water up and carry his cuspidor down to empty it.

Once a colored woman came in and asked if he was the tooth dentist. He said he was. She said she had a tooth that bothered her. Dr. Ellington examined it and asked when and how much it hurt. She said, "The only time it hurts is when I eat turnip greens. Cold turnip greens makes it ache."

Dr. Ellington had a big practice and started several
young men in the practice of dentistry in his busy office.
One was Dr. Leyton Wetsel who was associated with him. Dr.
Wetsel had gone to the office one morning about four or
five o'clock to do some emergency treatment. The early
morning Texas and Pacific passenger train came in about
that time. Some people getting off the train saw the light
in his dental office and went up. They said, "We saw your
light on and had a little time and just wondered if you'd
do a little urgent dental work for us?" Dr. Wetsel was
obliging and did the necessary dentistry at that early
hour. After all, rural people pay little attention to
office hours.

Dr. Ellington told of making a bridge for a man.
During the fitting of the bridge it rolled back on the man's
tongue. The patient swallowed it. Dr. Ellington said,
"Well get down here on the floor on your all-fours and put
your head on the floor and try to cough it up." He beat
him on the back while the patient heaved and coughed. Fi-
nally he coughed the bridge up and there was a sigh of
relief. Dr. Ellington then nonchalantly remarked that it
would not have hurt anything if he had not coughed it up.
Whereupon the patient said, "Well why in the hell didn't
you say so and I wouldn't have done all the acrobatics and
turned myself wrong side out trying to get it back."

One of his denture patients had a harrowing experience
with his dentures and almost lost the upper. He flushed it
down the commode. It took him several hours to recover it
from the city disposal plant. No harm was done, however,
for it fit just as well as ever and had not a crack or scratch
in it.

Dr. Ellington was responsible for the Texas State Den-
tal Association awarding the 50-year pin of recognition to
members in good standing for 50 years. He made this sug-
gestion to Dr. McRimmon, president. He served as vice-pres-
ident on various committees of the state society and as
delegate many times. In over 50 years of membership he
missed only four meetings. He retired in 1961.

Dr. A. L. Hawkins practiced dentistry for more than 60
years. He was registered in Plainview in 1907. He was an
itinerant dentist in his early practice, before settling
permanently in Tulia, Texas, where he practiced until his
retirement in 1932.
Dr. Hawkins traveled from one town to another where he would extract teeth and make dentures. One time he had been very busy and had made six sets of teeth. He was vulcanizing some of the cases late one night. He always carried his cot with him and just unfolded it in his office at night. He placed his kerosene burning vulcanizer at the head of his cot within arm's length so that he could reach out and turn it off at the right time. This particular night he did not wake up. The next morning his first thought was that the vulcanizer surely must be about ready to blow up. Or maybe it had and he was already in the next world. He pinched himself to find out and sure enough he was still in this world. (This world was the world of smelly dental vulcanizers and dentures to remake.) He carefully inspected the vulcanizer and found that it had gone out in the night. He knew the cases were ruined but when he opened the flasks he was surprised to find they were just right—they could not have been better. Daily baths and meticulous cleanliness were not the problems of the early-day Plains dentist. It was the temperamental vulcanizer that caused the most worry.

Dr. J. Holt Smith settled in Lamesa in May 1922 and practiced there five years when he moved to Junction. He had graduated in 1912 and had practiced in several places before Lamesa. Dr. Smith recalled that there was a dentist in Lamesa at the time who ran an advertisement in the weekly paper running like this: "Dentists may come and Dentists may go but you'll find Dr. So-and-so staying at his office on the East side, making teeth."

On one occasion he worked all day making a bridge for a woman. Just before he finished the patient began to act nervous and kept going to the window to look for her husband. He was supposed to come to the dental office before the bridge was finished. Finally she said she would go down and find him and get the money now that the bridge was securely cemented in her mouth. That was the last Dr. Smith ever saw of the bridge or the patient. That was one trouble with those offices up one flight of stairs. It was too difficult for people to get up there to pay.

Dr. Bert Stevenson was the first man on the Plains to specialize or limit his practice to a speciality. In 1921 Dr. Stevenson went to Amarillo to survey the possible need for an orthodontist and exodontist combination. He interviewed several dentists there, one of whom was Dr.
R. L. Rogers. Dr. Stevenson told Dr. Rogers that he would like to move to Amarillo and to do orthodontics and extractions and asked Dr. Rogers if he would refer patients to him. Dr. Rogers said, "I'll be frank with you, Dr. Stevenson. If you are going to do orthodontia and extractions I'll not refer any patients to you; but if you are going to do just orthodontia, then I will and have several. I'll be glad to turn over to you now." Dr. Stevenson said, "That settles it! I'll come and I'll do just orthodontia." Thus the first specialist came to the Plains of West Texas. He preceded Dr. Turner of Lubbock by four years.

Early-day dentists were purchasers of automobiles. Dr. Rogers of Amarillo said he bought his first car in 1913; one with the crank in front. It was Buick's last model before the self-starter.

Dr. Rogers has had a colorful career as a dentist. He graduated from Vanderbilt in 1904, with Dr. C. M. Ballinger and Dr. E. O. Ellington, whom I mentioned earlier. Dr. Rogers first practiced in Tennessee where he did not need to have a license. He served several small towns by traveling from one to the other by horse and buggy. He wore no kind of white smock or jacket or even fancy vest. He said many men wore fancy and colorful vests in their offices.

He moved to Amarillo in 1906 and secured a temporary license. He renewed this temporary license for three years until he could take the state board examination at which time he was issued a permanent license. He used his foot engine after moving to Texas until he bought a secondhand wall bracket engine from Dr. Harrell, who was moving. Dr. Rogers, sensing the advantage of Dr. Harrell's spacious office, moved into his suite. This was a much larger office, up one flight of stairs over a furniture store and rented for $25.00 per month. He had been paying only $15.00.

Dr. Rogers used a small alcohol-heated sterilizer placed in front of a patient so that they could see he was sterilizing his instruments. He also started wearing white jackets to look professional and for cleanliness. He had simple equipment, a small oak cabinet or instrument case, vulcanizer and laboratory pedal polishing lathe, dental chair, sterilizer, etc.

Dr. Rogers recalled that his vulcanizer was kerosene
heated and had a pop-out valve for safety. Once while vulcanizing a set of dentures he was playing checkers with a friend to pass away the time. The pop-out valve blew out and scared the two men out of their wits. They jumped up to run and the checkers kept falling for several seconds. On another occasion the vulcanizer was set to cut off at a certain time. The timer failed to work and did not cut the fire off. The safety valve blew out and all the water boiled out. The dentures were completely ruined; they were burned to a crisp. Only the charred blackened teeth were left. He continued to do his own laboratory work until about 1910 or 1911 when commercial dental laboratories came into use. He would come back to his office at night to do laboratory work and often took cases home at night and worked in the kitchen while his wife did her chores.

Commercial dental laboratories charged about $5 for processing dentures, upper and lower, in Denver and Fort Worth. He charged $35 at one time for dentures but prices varied with the times gradually increasing.

He recalled one day when he extracted 30 teeth for an out-of-town patient, took impressions, processed a set of dentures that night and delivered them the next day. They worked beautifully, although there was some swelling. They were so successful that two years later this patient was in the office for a second set. These he had to mail to her because she could not wait for them. The patient wrote in a few days to thank the doctor for a wonderful fit.

Dr. Rogers hired his first dental assistant in 1910 at a salary of $5 per week, the same salary Dr. Dodson was paying. Dr. Dodson was the first dentist in this area to hire an assistant, according to Dr. Rogers.

Dr. Rogers has always been a conservative dentist, who tried to save teeth when other dentists were extracting them. Frequently, he would leave a few teeth and make partial dentures. His early partials were of vulcanite without clasps. Later when he learned how much clasps aided in retention, he started using wrought clasps.

Once he made a lower partial on just one lower cuspid tooth for a wealthy patient. About a month later the patient saw the doctor and said: "My plate is doing fine and I wouldn't take a thousand dollars for my one tooth." Some months later he saw the doctor again and said, "You know Doc, I wouldn't take ten thousand dollars for my tooth. I don't need the ten thousand dollars and I do need my tooth."
Dr. Rogers won out in the fight against the advertising dentists in Amarillo. Ethical dentists won the fight against an advertiser who was claiming in newspaper advertisements that he was the only dentist in Amarillo doing a certain type of work. Dr. Rogers had the Amarillo Dental Society incorporated so that the fight would be that of the dental society and not his personally.

He served on the Board of Dental Examiners for eight years as president and secretary. He served as president of the Panhandle Dental Society and was one of the organizers of that group. He served as president of the Texas State Dental Society. Many times he served in the House of Delegates for both the state society and the American Dental Association.

In 1964 Dr. Rogers flew to San Francisco by jet plane to serve again as a delegate to the American Dental Association after 60 years of practice.

Long since he had sold his horse and buggy in Tennessee, discarded his pedal laboratory lathe, foot engine, vulcanizer and cocaine tablets and had incorporated into his practice every modern change that dentistry offered.

Thus dentistry on the Plains of West Texas has moved from the itinerant horse and buggy days to the jet age. It has changed from the shell crown to the porcelain and ceramco crown and cast crowns. It has progressed from the foot engine to the air rotor handpiece. It has evolved from the vulcanizer and gold plate roller and die plate swager to the X-ray and electronic devices for proper diagnosis. Yes, there have been many changes but all of it is laid upon the foundation built by these pioneer dentists. Let us not forget these early-day dentists who walked before us, who blazed the trail and marked it well for us.

(Presented at the Annual Meeting of the American Academy of the History of Dentistry, Las Vegas, Nevada, November 5, 1965.)
I would like for us to think back over the last half century and recall what has happened to our profession during these past 50 years.

Today we are living in the golden age of recorded history. No other generation has experienced the rapid change and the luxuries of living that have come to this generation through the inventive genius of the men of science that these past 50 years have given us. At least 95 per cent of all the scientists that the world has produced since the dawn of recorded history are alive today. This tremendous army of trained men are responsible for our luxurious modern way of life.

People of moderate means, the middle class, live today with more luxury than a Napoleon or a Julius Caesar. We enjoy relative freedom from the disease epidemics of the past centuries and, by means of modern health knowledge and facilities, our life expectancy far exceeds that of previous generations. There have been more health-giving drugs produced in the past 20 years than in all the previous years since time began.

Science and technology are undergoing explosive developments, and the pace of change is accelerating rapidly. There is not much we can say with confidence about the world and dentistry 50 years from now except that we would not recognize it.

To our great-grandfather dentists, dentistry in 1966 would be either a nightmare or a dream depending on their attitudes.

Yes, we live in a truly remarkable age. An age of luxury, prosperity, health and happiness for all who are willing to work and for those who have the initiative to secure an education.

My introduction to dentistry was in 1921 when I entered Tulane University School of Dentistry as a freshman. These past 45 years have seen dentistry "come of age" and emerge as one of the top health professions. Modern dentistry is
another product of this golden age.

If we go back to 1910 we find that our profession was not considered by many as a truly leading health profession. In that year William Hunter of London, speaking at McGill University, charged that "American dentistry had erected mausoleums of gold over a mass of sepsis." According to other critics, "blacksmiths in white coats were pulling teeth like a farmer shells corn." Such was the standing of dentistry in the early years of this century.

Let us recall for a few minutes the things that we were taught in the early 1920's. We can then realize the vast change in education that has occurred in the lifetime of most of you who are in this audience today.

In 1921 Tulane was considered one of the better dental schools, yet it had only one full-time professor and he was the dean. Our power supply was a foot engine. The College had no research programs. The laboratory for denture and crown and bridge construction was small with practically no equipment other than benches and stools and two or three vulcanizers.

The use of Novocain as a local anesthetic was just becoming popular. We mixed our own anesthetic. In a small porcelain dish we placed 3 cc of distilled water, brought the water to boil over an open flame, added a Ringer solution tablet to make an isotonic solution, brought that to a boil again, then added another tablet to produce what we thought might be a two per cent Novocain solution. When the solution had cooled to near body temperature, we sucked the solution into a Luer syringe which used a needle about the size of a pencil lead. The needles were never sharp. You just can not sharpen a platinum needle. Then we made our injection supposing that it was a two per cent isotonic solution of Novocain, and further trusting that we would get some anesthesia. We were never sure just what the results would be.

I can remember coming home from school in 1922 and having one of the established practitioners at home question me about these new injections that the advertising dentists were using with the claim of "Painless Extractions. He asked if I had ever heard of Novocain. I explained to him the technic we had been taught. He immediately started using it, but only by infiltration. He was very pleased
with the results on maxillary extractions but could not understand why he did not get some degree of anesthesia by infiltration around lower molars. Explanation from a sophomore dental student did not satisfy his curiosity. One thing, however, did happen—the price of extractions rose from $1.00 to $2.00 if the extraction was done the painless way, but the fee remained at $1.00 if the extraction was done by the old method without the benefit of the injection.

"Killing the nerve" was another of our routine practices. If the cavity was deep, we sealed into the cavity an arsenic paste with gutta-percha. After three or four days of rather intense pain, we plunged a round bur into the pulp chamber and sure enough, the nerve was seldom dead but the patient survived. After cleaning out the root canals we filled them with gutta-percha points moistened with chloroform. And, as you know, many of these teeth gave years of service which testifies to the wonders of nature.

The full crowns were made of sheet metal gold with a band soldered together—the occlusal surface was stamped out on a die. There were a number of different die sizes for molar and bicusped occlusal surfaces. This stamped-out occlusal surface was soldered to the band and reinforced with solder. These were the shell crowns that were used as attachments for posterior bridges. They, too, were the delight of our colored friends that would come by the dozens during the cotton picking season to have full gold shell crowns placed over their front teeth for the beauty of the restoration. They would pay twice the fee to have a star, a moon or other design cut into the labial portion of the crown. If you have never practiced dentistry in a rural community of the cotton growing South in the 1920's and 1930's, your knowledge of full shell crown designs is not complete.

We had two methods of taking impressions for partial dentures—Plaster of Paris and modeling compound sectional impressions. No doubt, one of the reasons for so many full mouth extractions was the fact that it was next to impossible to get any kind of near accurate impression for a partial denture. Then came the wonder of the day, Solvite impression material. It was a potato plaster that did not get too hard, was easier to cut into sections for removal and after the model was poured it could be placed in boiling water and the Solvite impression material boiled off the model. Nothing, we thought, could ever surpass this
material for impression taking for partial dentures.

Our dentures were made of vulcanite rubber. The steam vulcanizer usually ran all day either processing new dentures or making repairs. This steam heat added to the discomfort of an office that had never heard of air conditioning. There was one big trick in making a vulcanite denture and that was to pack the pink rubber on the labial flange so that the dark rubber for the balance of the base did not seep through and ruin the "natural pink" coloring. As time progressed we had gold dust rubber for the base and then the deluxe all-pink denture rubber which required no skill to keep the dark base rubber from showing on the labial flange.

In the middle 1920's the nonrubber materials became available—the most damaging one was Hecolite—the celluloid base material. It looked fine for a few months before it began to warp and change color and further deteriorate. The trick in selling this denture was to throw it on the floor and step on it. Of course, being celluloid it did not break. Everyone who has made Hecolite dentures will recall the grief that came some months later when we had to start all over and remake the dentures in rubber at no cost to the patient. These were the days before the American Dental Association examined and tested dental materials for the protection of the public and the profession.

Copper amalgam was thought to be beneficial in fillings for deciduous teeth.

Pyorrhea was considered by most dentists as hopeless and full mouth extractions for those with this disease was the practice of the day.

At Forsyth Dental Infirmary for Children, where I interned, they were practicing a new kind of orthodontics and the Infirmary was being severely criticized for extracting the four first bicuspids to make room for straightening the crowded anterior teeth. Orthodontists of the day considered this in the area of malpractice even though, in their accepted treatment, after they had lined up the teeth and the appliances were removed, the teeth slowly returned to their original position just as a rubber band returns to its original position when tension is removed.

Do you remember the neglected toothache, the swollen jaw, the hard submaxillary and sublingual swelling, high
fever—the case of Ludwig's angina with none of the modern wonder drugs to treat the infection. It has been many years since I have seen one of these cases but I shall never forget the ones I saw 30 or more years ago. I doubt that many of our younger men have ever seen a true case of Ludwig's angina or experienced those days of anxiety and worry over this distressing infectious process.

About the only thing that remains as it was in the early years of this century is gold foil. Little change has taken place in that technic and not too much change in the material used for that restoration.

Now, today, things have changed. We have high speed drills, modern casting equipment, impression materials that are accurate, anesthetics that anesthetize, denture base material that will produce an accurate denture, the modern wonder drugs that combat infections and air conditioning that makes living more tolerable.

In the field of the art and science of dentistry, the capital a man accumulates while earning his Doctor of Dental Surgery will be almost completely obsolete within 25 years unless that man continues his education starting the day he receives his degree.

We have all the wonders of the Golden Age, yet one thing we lack. We have lost that close doctor-patient relationship, that principle that the real motivation in dentistry was to serve the people. The talk today is not how to serve the people better but how to utilize one's time better to produce more dental care and to increase one's income. "Time and motion" is the theme of the day, not serving the people.

The history of dentistry is a fascinating subject. The profession is fortunate to have this Academy to search out our heritage and record the facts for future generations of dentists.

(Presented at the Annual Meeting of the American Academy of the History of Dentistry, Dallas, Texas, November 11, 1966.)
F. S. McKay, HISTORY OF THE BEGINNING
OF FLUORIDATION

Dr. Mark F. Bryant, Colorado Springs, Colorado

Introduction

I knew Fred McKay for 20 years and admired his work in our profession. I also admired the man. He was a person of many interests besides those of fluoridation. A trip with him through Colorado was a rich experience indeed. Here, he would tell you, was where the narrow gauge railroad climbed over Trout Creek Pass. "Notice the old bridge where it crosses over the Denver and South Park Line. Over there, Locomotive 342 got out of control one winter night and ran eight miles down this grade before it turned over in the river bed." Or another time, Fred would tell you about the Old Timers he had met as a young man when the mines were still producing and the traps were still yielding fur bearing animals. Or again, the subject might be the opera he had just heard on a Saturday afternoon radio program. He had a very lively interest in economics and a firm conviction that Henry George had the solution to many of our financial ills, with his single tax program.

He was a warm man also, the kind you remember long after you had met him, because he showed interest in your doings, your ideas and your reactions, as well as his own. Such was the character of the man.

Frederick Sumner McKay, one of dentistry's greatest crusaders, was born in Lawrence, Massachusetts, April 13, 1874, the son of Edward and Harriet Wells McKay. His father was born in Scotland and came to the United States as a young boy. His mother was born in Sugar Hill, New Hampshire, near the White Mountains. His aunt married Dr. Arthur W. Howland, a man who had a profound effect on Fred and his life's work.

His early life was spent in and around Milford and Boston, Massachusetts, helping his father in the family dry goods store. It was at this time that a cornet was given to him and he first became interested in music. After mastering this instrument, he played in several bands. With this background, he developed such an inter-
est in Wagnerian music that while attending a Wagnerian opera he was able to recognize and name every leitmotif, or theme.

In the year 1894, Dr. McKay was advised to move to Colorado, as he was thought to be in the early stages of tuberculosis. The little town of Evergreen, Colorado, just outside of Denver and in the mountains, was his destination. During his stay in Evergreen, he developed a strong religious conviction, and what he learned there stayed with him the rest of his life. Later, he became the lay reader at the Episcopal church in Colorado Springs.

After his stay in Evergreen, he became a farm hand, milking ten cows a day and hauling the milk into Denver daily, plus many other chores. In the summer of 1896, he quit ranching to take the job as treasurer of a travelling theatrical company. Because of financial difficulties, he was forced to bum rides on the train from Florence to Denver, Colorado. Having no work or money, he left for Boston and home in the fall of the same year. The first job taken there was that of a street car conductor and starter for all the cars. While on this job, he was encouraged by Dr. Arthur W. Howland to enter the Boston Dental College, now the Tufts University School of Dental Medicine. In the fall of 1897 he enrolled as a freshman and continued his work with the street car company on Sundays.

At the beginning of his second year, he transferred to the University of Pennsylvania. During his year in Boston, he had found time to be a member of the Nantucket Hotel Band, playing an alto horn. The selections included opera music, which further added to a background for his love of music. As a senior at Pennsylvania he was the conductor of the University Band, also a member of a Cape May band during the summer. All this did not keep him from being one of the best students in his class.

He was near physical collapse following final examinations and in the spring of 1900 was barely able to make his way to the stage to receive his diploma. The summer was spent with his sister recuperating. He had been led to believe there was a possibility of going into practice with his uncle, Dr. Howland, upon passing the
Massachusetts State Board of Dental Examiners and receiving a license to practice dentistry. But as nothing was said further and there seemed to be no other prospects in Boston, his thoughts drifted back to Colorado. In November, 1900, he passed the Colorado State Board and was offered a job by a member of the Board, Dr. William Stinton of Colorado Springs, which he accepted, the salary being $75.00 a month.

In 1903, he became interested in Dr. Angle's course in orthodontics given in St. Louis, Missouri. At the close of the course, he married Gertrude E. Ronaldson, a St. Louis girl whom he had met in Colorado Springs. A daughter, Helen Gertrude, was born in 1904. The following year found him in St. Louis helping Dr. Angle teach his orthodontics course and practicing orthodontics for the next two and a half years. He was Superintendent of Instruction at the Angle School of Orthodontia. A second daughter, Virginia Mary, was born in Kirkwood, Missouri. A third daughter, Roberta Henrietta, was born after the family returned to Colorado.

As his health failed again, he relinquished his teaching post at the Angle School of Orthodontia and resumed his practice in Colorado Springs.

About 1910, a Mr. Carr came to Colorado Springs with a new idea on the treatment of periodontal disease. He had designed a set of instruments to plane the root surfaces of the teeth. Dr. McKay became very much interested and took a course in the use of these instruments. He gave up orthodontics to practice the branch of dentistry he came to love most, periodontics. In 1917, he moved to New York City to go into practice with a very noted Dentist, Dr. William Tracy, who had one of the finest dental practices in the city. Dr. McKay established a home in Greenwich, Connecticut, and commuted to New York each day. In the matter of two years, there was a divorce and he moved to New York City, where he lived for twenty-two years.

The New York years were his most successful financially. The offices of Dr. McKay and Dr. Tracy were on Fifth Avenue, but they were later moved to Rockefeller Plaza in what is now the Time and Life Building. Dr. McKay spent his leisure hours listening to music. Almost any evening would find him at Town Hall, the Metropolitan
Opera or Carnegie Hall. The conductors and performers were his friends. He found a gratification in listening to great music that enabled him to transcend youthful disappointments and rejections. He became a collector of autographed batons used by conductors such as Toscanini, Seidl, Bodansky, and Koussevitsky at memorable performances that were meaningful to him. To retain legal residence in Colorado Springs, he spent most of every summer there and voted there. Much of his time was spent with his good friend, a dental colleague, Dr. Edwin I. Backus. They were great fishing buddies and shared many a trip through Colorado and Wyoming.

In July, 1940, Dr. McKay returned to Colorado Springs. His friend, Dr. Tracy, had died and with his loss New York seemed to lose most of its glamor. He planned to retire. However, the illness of a colleague, Dr. Kramer, pulled him back into practice, a practice which continued until his death. When I went into the Army in 1943, Dr. McKay took over my offices. He has a sentimental attachment to them as he had practiced there when he first came to Colorado Springs.

On May 14, 1941, he married Honora Bailey Fink. She had a very fine soprano voice. Their mutual interest in music had brought them together five years earlier in New York.

Trains were another of Dr. McKay's interests. During the many trips he made to different cities to check the children for fluoride stains and fluoride content of the water, the train ride was always greatly enjoyed. He was so well informed about the trains that he could be in his office and tell which train was passing through Colorado Springs by the sound of the whistle.

Altogether, Dr. McKay was a very personable and a much loved man.

The greatest drama in which he played a part and of which he has been listed as the father is fluoridation. Much has been written about this man's work with fluoridation. He himself kept charts on the thousands of children he had examined. He had been to or had corresponded with officials of every city where mottled enamel was known. In my opinion, the man was not fully appreciated until the last years of his life. Dr. McKay's interest
and research in the application of fluoridation never stopped. More than 3,000 cities in the United States now use controlled fluoridation. Thirty-five million people live in these cities and ten million use fluoridated water. Adoption of controlled fluoridation as a preventive dental health measure is continuing to spread in this country and in other countries. He published many papers on this subject; more than 40 articles appeared in dental journals, water works journals, and textbooks. He financed most of his studies and his travels himself although he was not a wealthy man. In all his years of research and travel he received only one small grant from the Research Commission of the American Dental Association and the United States Public Health Service, and a one-year grant from the city of Colorado Springs.

His great service to the world will never be forgotten and in the later years of life, he was given many special awards and honorary degrees.

Dr. McKay was president of the Colorado Springs Dental Society in 1909, the Colorado State Dental Association in 1911, the Eastern Association of Graduates of the Angle School of Orthodontia in 1930 and 1931, the New York Section of the International Association for Dental Research in 1934 and 1935, and the Colorado Springs Dental Society in 1944. He also served as secretary of the American Society of Orthodontists in 1906; grand master of the New York Auxiliary of Delta Sigma Delta fraternity from 1927 to 1929; consulting specialist in child hygiene for the United States Public Health Service in 1928 and 1929; consultant on dental fluorosis for the United States Public Health Service from 1938 on; member of the Board of Editors of the Journal of Dental Research from 1929 to 1933; visiting oral surgeon at Presbyterian Hospital in New York City from 1925 to 1930; chairman of the Lord and Chaim Price Committee, First District Dental Society of New York, from 1932 to 1934; and lecturer in oral hygiene, Colorado State Dental Society, in 1912.

He belonged to the Colorado Springs Dental Society, the Colorado State Dental Association, the American Dental Association, the St. Louis Academy of Dentistry, The Missouri State Dental Association, the American Society of Orthodontists, the Eastern Society of Graduates of the Angle School of Orthodontia, the First District of
New York Dental Society, the New York Academy of Dentistry, the American Academy of Periodontology, the American Association for the Advancement of Science, the International Association for Dental Research, and the New York State Dental Society.

Dr. McKay held honorary memberships in the New York City Chapter of the International Association for Dental Research, the Colorado Springs Dental Society, the Colorado State Dental Association, the New York Academy of Dentistry, the American Dental Association, Omicron Kappa Upsilon fraternity, the American College of Dentists, the Rocky Mountain Society of Orthodontists, the American Association of Orthodontists, the Wisconsin State Dental Society, and the American Dental Hygienists Association.

In 1957 he was awarded a life membership in Delta Sigma Delta fraternity. Honorary Doctor of Science degrees were conferred upon him by the University of Pennsylvania, Western Reserve University, the University of Colorado, and Colorado College.

Among the medals and awards that Dr. McKay received were the Jarvie Medal from the New York Dental Society, 1945; the Callahan Medal from the Callahan Memorial Commission, Ohio State Dental Society at Columbus, Ohio, 1949; the Spenedal Medal from the First District of the New York Dental Society, 1952; an Illuminated scroll from the American Association of Public Health Dentists, 1950; the Lasker Award from the American Public Health Association, 1952; the Florence Sabin Award from the Colorado Public Health Association, 1953, the Award of Merit Plaque from the Detroit District Dental Society in commemoration of the completion of ten years of water Fluoridation at Grand Rapids, Michigan, the first city in the world to Fluoridate its water supply, 1955; an Award from the Colorado State Dental Association, commemorating the 50th year of the study of mottled enamel and water Fluoridation, 1958; Delta Sigma Delta's Annual Award for distinguished and meritorious service to the Dental Profession, 1959.

He was president of the Civic Music Association of Colorado Springs from 1942 to 1944; treasurer of the Colorado State Federation of Music Clubs in 1944; president of the Colorado Springs Symphony Orchestra Association in 1951 and 1952; a member of the Colorado Springs

Dr. McKay died August 21, 1959, at the age of 85 years. He was survived by his wife, Honora, and two daughters, Mrs. Helen Horchler of Philadelphia and Mrs. Roberta Lusardi of New York.

(Presented at the Fifteenth Annual Meeting of the American Academy of the History of Dentistry in Dallas, Texas, November 11, 1966.)
Mr. President, officers, members, and honored guests of this meeting of the American Academy of the History of Dentistry, allow me a big West Texas "Thank You" for the invitation to come before you and visit with you about the two things most dear to my heart--outside of my family--my work and my home town. I have been practicing general dentistry in Hereford, Deaf Smith County, Texas since 1951.

For you visitors who are not familiar with the Panhandle of Texas, it consists of approximately 25 "Plotting Board" counties. This becomes obvious when you look at a map of Texas and observe the physical boundaries of the counties. Their boundaries were graphed on a plotting board in Austin. This action was necessitated by the agreement of the State with an English concern to provide approximately one million acres of land in the Panhandle in return for the construction of the state capitol in Austin. As you know, the now famous X I T ranch came into being as a result of this transaction. The name X I T is derived from the fact that the land encompasses ten counties, thus "Ten In Texas." Deaf Smith County was in the X I T ranch.

Deaf Smith County was created on August 21, 1887 from the Texas Territory, with the law enforcement personnel being one Texas Ranger with headquarters in Tascosa. The first official town in Deaf Smith County was called La Plata and was situated in the approximate center of the county. Records show that at 8:00 a.m. on September 1, 1898, the residents of La Plata decided to move their town approximately 20 miles to the southeast so that they could utilize the facilities of the newly built Santa Fe Railroad.

Mr. J. R. Jowell had just brought the first herd of registered Hereford cattle to the Panhandle and had settled in Deaf Smith County. One of the ranchers, Mr. L. Gough, made the suggestion that the new town be called HEREFORD. And this is a thumbnail sketch of how Hereford, Deaf Smith County, Texas, came into being.

February 25, 1910 Mr. D. L. McDonald, on a farm three miles south of town, brought in the first commercial irrigation water well. The county contains 1,507 square miles
(964,480 acres) and just a fraction over one-third of the county is under irrigation.

I will not bore you with statistics of production, but Deaf Smith County, commercially produces: wheat, cotton, grain sorghum, corn, barley, sugar beets, soy beans, potatoes, onions, carrots, lettuce, tomatoes, peppers and cantaloupe. Roughly one million head of cattle are fed out in the feed lots each year. Deaf Smith County has had more cattle on wheat than any of the other 259 counties in the state for the past twelve years.

Enough of the physical and commercial facts about Deaf Smith County. One thing further, all county records and other sources indicate that our patron ERASMUS "Deaf" SMITH was never in the county. His exploits as a scout for the Texas Army that battled at the Alamo are all quite well documented. Most of the counties of the state are named after some prominent historical figure.

Deaf Smith County Clerks Records indicate that only 15 dentists have registered their licenses to practice in the county since its inception. Of this number, five are in active practice today. Seven are deceased, two in limited practices, and one retired.

Dr. J. A. Freeman was officially number one. Registered his license May 16, 1900.
Dr. George W. Heard was next with his registration date as June 10, 1905.
Dr. M. J. Bisco, September 14, 1908.
Dr. D. E. Turrentine, July 11, 1910.
Dr. Frank Jones, September 20, 1927.

The following men are in active practice:

- Dr. W. F. Graham
- Dr. J. W. Barnett
- Dr. W. B. Owen
- Dr. J. B. Whitley
- Dr. J. D. Hamblen
- Dr. R. L. Zimmerman
- Dr. H. A. Cavness
- Dr. B. M. Wiltshire

Dr. B. M. Wiltshire has retired from active practice.

From a historical standpoint, Hereford's history has
been entwined with dental news and highlights for the past 30 years. The one man who was responsible for most of this news was Dr. George W. Heard.

Dr. George W. Heard moved to Hereford in 1905 after practicing dentistry for 17 years in Alabama. His primary reason for moving to the area was for his wife's health. Dr. Heard's first observations were noted on the small Mexican cattle being brought into the county. Being a farmer and rancher himself, these observations were very normal. His observations of these cattle over a period of less than a year regarding their phenomenal skeletal growth and beef gain became a definite starting point for Dr. Heard's later findings.

Dr. Heard's firm belief was that you must have a mineral rich soil such as that found in Deaf Smith County, and then not disturb the mineral balance of the foods produced there by ordinary means of food preparation. Eat the foods in their natural state...raw.

"I believe that this area furnishes superior zoological specimens, as well as vegetable produce, and if the people would confine their food to that grown here, and in its natural state, the superiority of their teeth would be so great it would attract national attention." Dr. George W. Heard, April 1944.

Dr. Heard's observations are well documented as to how he tried for 24 years to get the other men in the profession to listen to his findings about Deaf Smith County. Finally, one man listened, Dr. Edward Taylor.

Dr. Edward Taylor was Dr. Heard's medium of communication to the world. Dr. Taylor was a member of the Texas State Department of Health, Chief of the Dental Division, when he was invited to Hereford to examine some of Dr. Heard's findings. Dr. Taylor, an ex-school teacher, came to Hereford with a National Youth Administration assistant in the 1930's to go over Dr. Heard's claims about Hereford. After listening to Dr. Heard, Dr. Taylor and his assistant went into the residential district of the town and picked homes at random, introduced himself and explained his mission, and was granted permission to examine the dental condition of members of the households. All of this first survey was done without Dr. Heard being present at the time of the examination or giving suggestions as to which homes
to visit. On this first visit, Dr. Taylor examined 56 people at random; 43 were natives and in the 2-year to 60-year age bracket. All were in the class of continuous residence of Deaf Smith County. He found no dental decay.

Needless to say, Dr. Taylor made another visit to Hereford. This time he examined 810 people, all of school age. This examination showed less than 1/2 DMF per child on visual examination. With a more complete dental examination including light, explorer, and dental X-rays, the average rose to slightly under 1 DMF per child. This was the lowest DMF rate ever recorded in the world. As Dr. Taylor expanded his examination geographically and traveled 50 to 100 miles in all directions from Hereford, there was a rise in the DMF rate. His next course of action was to have the Department of Chemistry in Texas Tech at Lubbock to examine the water, soil, milk and produce from Deaf Smith County. The major conclusion of this examination was an exceptionally high content of phosphorous. In 1939, Dr. Taylor listed the following as the causes for the low DMF rate in Hereford:

1. Fluorides
2. Phosphorous
3. Sunshine
4. Substrate Caliche

In March 1942 in The Journal of the American Dental Association, Dr. Taylor listed the following findings of a study of the proteins in Deaf Smith County:

1. Lowest incidence of dental caries of any place in the world found on people of continuous residence in Deaf Smith County.
2. Caries immunity partially acquired after dental eruption.
3. High phosphorous content in foods grown in Deaf Smith County.
4. Caries increase with an increase of the lactobacillus count.

From all of these studies Deaf Smith County received a great deal of publicity for a number of years. Mr. J. D. Ratcliff wrote the article "Town Without a Toothache" in Colliers in December, 1942. This received nationwide attention. Dr. Heard had personal articles in Oral Hygiene in April of 1944. Universal Newsreel made a documentary film in March of 1943 on Hereford. The hometown newspaper, The Hereford Brand, has the entire story well documented.
Ladies and gentlemen, the foregoing is a small and partial list of the papers and articles that have been written about Hereford and Deaf Smith County—with particular interest to the field of Dentistry—most of it coming before World War II. Now let us look at a few of the items of dental interest coming from Deaf Smith County that are of more recent vintage.

A 14-year study of bone and tooth metabolism was undertaken by members of the Hereford Medical and Surgical Clinic and the Deaf Smith County Research Laboratory. The following are the conclusions of a paper, "New Concepts in Bone Healing," by Dr. L. B. Barnett formerly of Hereford.

1. All collagen tissue which include dentine ostoid and connective tissue respond or suffer deficiencies from the same factors.
2. Some local areas show a greater rate of bone metabolism manifest in increased rates of bone healing than do other areas.
3. The principal factors responsible for low dental decay and increased bone healing are the same. Those principal factors are: Adequate intake of all essential elements to bone apatite, fluroine, trace elements, high protein intake and high Vitamin C intake.
4. Increased metabolic rates at optimum altitudes resulting in increased energy and physical output of animals and people living in Deaf Smith County, Texas.
5. It is evident that some local areas in the world produce superior zoological specimens due to the adequate local production or availability of all essential nutritional elements.

One final item of interest comes from another paper by Dr. L. B. Barnett, "Magnesium and its Relation to Fluorides in Bone Composition," with Mr. O. Z. Golden, of the Deaf Smith County Research Foundation, as the clinical chemist. Mr. Golden carried all the investigative analyses out with flame chromatography.

In a "Comparative Study of Inorganic Mineral Composition of Bone" from the above paper the following is of interest:
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<th>Elements</th>
<th>Native Born</th>
<th>Non-Native Born</th>
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<tr>
<td>% Ca</td>
<td>29.3</td>
<td>26.3</td>
</tr>
<tr>
<td>% P</td>
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<td>1048</td>
</tr>
<tr>
<td>PPM Br</td>
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<tr>
<td>% Ash</td>
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Please note the similarity of F and the gross dissimilarity in per cent of Mg.

In closing, allow me to present to you this for your consideration. I believe that Deaf Smith County, Texas was the source of some of the first clinical evidence of the effects of the environment of dental development and sustained good health. A progression of dedicated men have spent a lifetime in bringing this information and data to the attention of the profession. With the advent of gas chromatography and the more sophisticated methods and means of investigation, the medical and dental investigators of our time will unravel some of the mysteries of our professions.

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(Presented at the Annual Meeting of the American Academy of the History of Dentistry, Dallas, Texas, November 11, 1966.)
EARLY RESEARCH IN FLUOROSIS IN BAUXITE, ARKANSAS

Dr. David W. Hensley, Benton, Arkansas

Mottled enamel is an endemic hypoplasia of the permanent teeth produced by the ingestion of toxic quantities of fluoride in drinking water. Its macroscopic pathology is classified according to severity as: questionable, very mild, mild, moderate, moderately severe, and severe. Using this classification, the mottled enamel index of a community may be one of the following: negative, borderline, slight, medium, rather marked, marked, and very marked. There is a direct quantitative relation between the fluoride content of drinking water and the clinical manifestations of dental fluorosis. In amounts not exceeding 1 ppm in drinking water, fluoride causes no significant development of mottled enamel.

This paper covers primarily a community that contained 13 to 14 ppm of fluorides and was obtained from reports by Grover A. Kempf, Frederick S. McKay, H. Trendley Dean, Elias Elvove, H. V. Churchill and Philip Jay, and those compiled by the U. S. Public Health Department and the Aluminum Company of America.

Mottled enamel has an interesting history. It was first reported in 1901 in the public health report by Dr. J. M. Eager, stationed in Naples, Italy. From Dr. Eager's description it was recognized as the same enamel defect found in various places in the United States.

The term mottled enamel was first used by Dr. G. V. Black. He and Dr. F. S. McKay were the first in the United States who made an actual study of this enamel defect to publish their results. Reports published in 1916 and 1917 covered affected areas in Colorado, Texas, Virginia, Arizona, South Dakota, Idaho, California, Illinois, North Dakota and Minnesota.

Dr. E. L. Robertson of Benton, Arkansas, about five miles from Bauxite, was the first to report endemic mottled enamel in Bauxite. His report was made to the Arkansas State Board of Health. In March, 1926, the State Health Officer requested the U. S. Public Health Service to make a study of mottled enamel in Bauxite.

Bauxite proved to be an ideal location for such a
study, as the Aluminum Company of America was able to furnish complete data relating to age, place, and duration of residence of the people in Bauxite since Alcoa owned all the involved area. These records were available from the establishment of Bauxite in 1901.

The original water supply of Bauxite for domestic purposes came from shallow wells and springs. By 1909 the increased population required more water and three deep wells of 255 feet were drilled and piped to the houses.

The evidence collected during the examination of the children in Bauxite can be summarized as follows:

1. No cases of the enamel defect was found which antedated the introduction of the deep-well water.
2. The oldest individual found with this enamel defect was born about the time the deep-well water was introduced.
3. All individuals in the community who had used the deep-well water during any considerable period of enamel formation exhibited this defect.
4. No individual in the community whose enamel had developed elsewhere exhibited the defect.
5. Certain individuals who, although residents of the community, and attending school there but who actually lived beyond the distribution of the deep-well water and depended upon shallow wells, exhibited normal enamel.

This was the most direct correlation between the use of a certain definite water and the production of this enamel defect.

It was necessary to rule out some factor in the food supply since the source of food supply for these people was from a central store. The diet of the people exhibiting the enamel defect was, except for the water, the same as that of people in the same environment who had escaped the defect.

Immediate steps were taken to substitute another source of water. The Saline River was used. Bauxite thus
became the second community (Oakley, Idaho, being the first) to abandon an otherwise satisfactory water supply because of fluorosis.

A total of 458 children from 5 to 18 years of age were examined in the schools of Bauxite. Mottled enamel of some teeth was found in 202 cases, or 44%. This number included children born in Bauxite and those who moved there later in life. Because of the accurate records it was easy to determine the age and length of time the children had drunk the water. The incidence of mottled enamel in children born in Bauxite or living there for varying lengths of time was:

100% Born in Bauxite  
93% Residence after 3 years of age  
81% Residence after 4 years of age  
58% Residence after 5 years of age  
55% Residence after 6 years of age  
21% Residence after 7 years of age  
12% Residence after 8 years of age

To serve as a check on the children of Bauxite, 124 children were examined in the school at Benton, five miles from Bauxite. Of these 124 children, 103 were native to Benton and all had normal enamel. The remaining 21, ranging from 11 to 19 years of age, had formerly lived at Bauxite. Of 16 living there one year or more, 11 had mottled enamel.

The data gathered in this survey indicated there was a specific agent or condition in the environment of Bauxite which interfered with the development of the enamel of permanent teeth. This agent or condition was strictly limited to the city because children in the immediate vicinity of Bauxite were not affected. Food as a cause was ruled out, physical condition was of no importance, economics status made no difference. As far as could be determined, the only condition was the use of the water from the central deep well supply.

Until 1931 about all that investigators of mottled enamel agreed on was that the defect occurred in certain geographical areas and was associated with the water supply of those areas; but no specific common characteristic of the waters from the affected areas had been discovered.
A. W. Petrey of Alcoa spectrographically discovered the presence of fluorides in the deep-well water of Bauxite. Following this discovery, H. V. Churchill, also of Alcoa, obtained from Dr. McKay samples of water from other localities where mottled enamel was known to occur.

Fluorides from 2 to 13.7 ppm were definitely shown in these waters. Although at this time no precise correlation between the fluoride content of these waters and mottled enamel had been established, it was noted the relative severity of the defect in these various areas followed the fluoride concentrations.

Approximately ten years after the change in water supply, the children of Bauxite were resurveyed by Drs. Dean, McKay, and Elvove. In brief, their study showed that the older children whose permanent teeth had calcified while they were using the "old", or deep-well supply, showed moderate to severe types of mottled enamel, while those children born subsequent to the change in the water supply were practically free of mottled enamel.

An analysis was made of the amount of dental caries in the deciduous molars and the first permanent molars of 82 children with verified continuity of exposure to the Bauxite common water supply. This limited number (82) of children available for study--distributed over a wide age group (6-15 years), a period when the permanent dentition is subject to varying changes because of the eruption of the permanent teeth--precludes a computation of dental caries experience rates. In the instance of the 1938 data, therefore, study of the dental caries experience is limited to such constants as the deciduous molars present and the first permanent molars, the results being reported on the basis of the percentage incidence of dental caries experience. All missing deciduous molars were excluded from the tabulations for the reason previously stated, and the percentage incidence of dental caries affection was based upon the number of teeth actually present in the mouth. In a community where the clinical examinations indicated an average amount of reparative dental decay (fillings, etc.), it may be assumed that a portion, at least, of the population has recourse to dental practitioners for alleviation of their dental needs. Under such conditions it is possible that certain deciduous molars with advanced dental caries may have been extracted by a dentist prior to the time that the tooth would have been
normally exfoliated. In these 82 children, however, not a single instance of a filled tooth, deciduous or permanent, was noted and one would seem warranted in assuming that in this particular group practically all missing deciduous molars were lost as a result of normal physiological exfoliation. Missing permanent first molars, of which there were two, were assumed to have been lost as a result of dental caries; three other first permanent molars showing extensive carious involvement were diagnosed as "extraction indicated."

While the number of observations is small, there seems to be an inverse relationship between the amount of dental caries and exposure to the "old" common water supply with the high fluoride content. The Bauxite population prior to May, 1928, had been exposed to a fluoride intake of unusually high concentration and it would seem that the physiological effects, insofar as they relate to the inhibitory influence on dental caries, had carried over for several years after the change to the fluoride-free river water.

With approximately nine years of exposure to the risk of dental caries, only six deciduous molars were carious, or 9% of the 66 deciduous molars present in the 17 children born prior to the change in the water supply. In 21 children born within a year or two after the change to the river water and whose deciduous molars had approximately six and one half years of exposure to the risk of dental caries, 31 were carious, or about 22% of the 141 deciduous molars present. And in 19 children born three and four years after the water change and with the shortest period of exposure to the risk, approximately four and one half years, 52 of these teeth showed carious involvement, or about 36% of the 143 deciduous molars present. The incidence of dental caries in the first permanent molars in the group born prior to the change in the water supply was no greater, in fact less, than that recorded in the group born subsequent to the change, irrespective of the fact that the exposure in the former group was nearly four times that of the latter group.

During the next two years much attention was focused on the probable relationship of fluorine to dental caries. Continuing epidemiological studies have shown a markedly lessened prevalence of dental caries in communities where the fluoride (F) concentration of the public water supply
is slightly over the minimal threshold for endemic dental fluorosis, one part per million.

Although the number of school children available for study at Bauxite was limited, this community seemed to offer some possibility of studying the mechanism of this phenomenon under the conditions of changed exposure to domestic waters differing widely in fluoride concentration. Primarily, the study was planned to determine the amount of dental caries in a population having a moderate to severe type of mottled enamel but which for the past 12 years had been consuming a domestic water free of fluorides. It seemed important also to include an estimate of the number of oral L. acidophilus in the saliva of as many as possible of the children included in the study.

Two findings of this study seem worthy of stressing:

1. The older Bauxite group, all of whom showed a moderate to severe type of endemic dental fluorosis, disclosed markedly less dental caries than a comparable group at Benton who were free of mottled enamel.

2. The cumulative increase in the amount of dental caries experience concomitant with increasing years of exposure to risk did not hold true in the Bauxite school population studied. The reversal in trend of this epidemiological constant suggests the noticeable physiological influence which operated in this population and which was presumably associated with the change in the communal water supply.

In this early research in fluorosis, the following facts seem to be outstanding:

1. Bauxite pupils with moderate to severe mottled enamel and exposed to fluoride-free waters during the past 12 years showed markedly less dental caries than a comparable group of Benton pupils without mottled enamel who had been using a fluoride-free water during their lifetime.

2. This limited immunity from dental caries is
seemingly not dependent upon the presence of macroscopic mottled enamel because children born within several years of the change in the water supply and practically free of mottled enamel likewise disclosed a low dental caries experience.

3. The youngest age group at Bauxite---those farthest removed in time from the influence of the "old" high fluoride water---shows the highest dental caries experience in spite of the fact that they had been exposed to risk of caries for the shortest period of time.

4. The L. acidophilus counts apparently reflect a difference in caries activity in the several groups studied, a result which is seemingly consistent with the clinical findings in these groups.

5. Teeth moderately to severely affected with mottled enamel showed no tendency to rampant dental caries even though they had been exposed to a fluorine-free water for the past 12 years.

Although no survey has been undertaken since 1940 in Bauxite, I feel this paper would not be complete without including some of the following information.

Today Bauxite is fast becoming only a place in history. Alcoa, which owned all housing, has, since World War II, been closing gradually all residential property. From some 6,000 people engaged in the production of aluminum at the close of the war, Bauxite is now hard pressed to maintain over 500 children in their school system, the number necessary to retain their North Central Association Accreditation. Meanwhile, Benton's growth has quadrupled to about 16,000 people. This area has many minerals and of course most of the alumina producing bauxite in the U. S. No fluorides have been added to the Bauxite water supply, although most people who use deep-well water still have the excessive fluoride water to contend with.

It has been recommended that each family have its water supply checked, either by the State or the Benton
Water Works. We have found areas where one deep well tested 6-7 ppm, while another well dug to the same depth about 50 feet away showed no fluoride on testing.

We were able to fluoridate the Benton water supply 9 years ago, in the face of a city council which well remembered the fluorosis of Bauxite.

The dentists of Benton spent many hours with the city council, obtained every publication concerning fluoride that could be found, and had all the State Health Department officials visit; in short, they had and used every scientific method available in the area. They fought a losing battle; all the city council members could think of was all the stained teeth from drinking water with fluoride.

Finally, when it was felt all was lost, an official from the State Department of Health who certified water supplies in passing commented how sorry he was to see Benton not take advantage of this great aid to prevent decay and that he had been fortunate enough to have the benefit of natural occurring fluorides in water as a child and that he had every tooth still. He was approaching 60, about the same age as all the council members, all of whom incidentally wore dentures. After this astonishing bit of scientific information, they called for an immediate vote and voted 100% to fluoridate the water supply. This was done with no fanfare or publicity, and there have been no complaints. The records indicate about 65% reduction in decay for children who have had the benefits of fluoridated water since birth.

I have a set of teeth--classic for this area, showing fluorosis which results from 13 to 14 ppm. In 15 years this is the only complete dentition I have seen that needed to be removed. Actually, gentlemen, this and a few other similar areas and some inquisitive minds resulted in the safe, accepted, widely-proved use of fluorides in dentistry--we are indeed grateful to the people and scientists who pioneered this research.

Presented at the Fifteenth Annual Meeting of the American Academy of the History of Dentistry in Dallas, Texas, November 11, 1966.
Volume 15 · Number 4
October, 1967

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It seems to me to be an astonishing thing that so few dentists are interested in dental history; many of the great names in the history of their profession are unknown to them while most would know, say, Priestley and Boyle. This is not because they are more interested in the history of chemistry, but because their teachers thought they should know the names of famous chemists.

Why should we interest ourselves in dental history? If for no other reason, it is a lot of fun to learn something of the way in which our predecessors treated dental disease and faced up to many of the kinds of problems in practice that we still have to meet today. On a more serious level, knowing of the past work of the early pioneers in dental science gives us a feeling of belonging to a continuum of dental knowledge in which the present becomes tomorrow's history. This knowledge may also give us a guide to future trends and techniques in dentistry but also reminds us, if we need reminding, that all knowledge was built on previous knowledge.

It must occur to the dental student, at some time, that his knowledge started with his teachers and that they in turn learned from their teachers, and that the bur, hand-piece or forceps he uses today must have had a previous model (after all, cars do), and that a particular technique would have come from a previous technique built up from an earlier body of knowledge. With this realization is born the germ of an interest in dental history. A study of dental history opens up an exciting past world to us and humbles us too when we learn that in some fields we may not have progressed so very far after all.

I was always interested in history, and it seemed to me that if a knowledge of history of this country and its origins helped me to understand in some way the behaviour of our modern society, so dental history would do the same thing for modern dentistry. Just as the study of Australian history is incomplete and sometimes meaningless without the study of European history, so a study of dental history requires a knowledge of medical history, which in
turn is intimately related to man's knowledge in other fields as well as contemporary social history.

It is quite obvious that to think of the heart as a pump was not likely to take place before the pump was invented. Bacteriology could not develop without the microscope, and major surgery had to wait on good anaesthesia. It is rather humbling to know that dental prosthesis was known as early as 2500 B.C., and on the other hand pride may be taken in the fact that it is only one hundred years ago that Lister applied antiseptic principles in surgical procedures.

As well as developing new techniques and instruments, dentists had to learn to work with other dentists if real progress was to be made. The study of the history of organized dentistry is itself fascinating. Although there were minor regional dental associations in existence earlier, the fact that a National Dental Association in the U.S.A., the American Dental Association was not founded until 1859, the British Dental Association until 1879 and the Australian Dental Association not until 1928 would be related to the general social histories of these countries.

These associations, in the past, had many problems to face and difficulties to be overcome by dedicated men, as we have today, and I remember quite well the introduction of legislation in this state to make it illegal for dentists to advertise. Incidentally, early dental advertising is itself an interesting study.

It is well known that there has been some dissension among dentists today concerning the use of hygienists, school dental nurses and registration of dental mechanics, but this is nothing compared to the bitterness in dental affairs in the U.S.A. in the early part of the nineteenth century. In 1843, the American Society of Dental Surgeons resolved that it "regards the use of mineral paste in plugging carious teeth as malpractice" and anyone who used this material was expelled.

Mineral paste was amalgam and as it was easier to use than gold foil, many unscrupulous dentists used it without proper cavity preparation and without removal of caries, and it was also thought to be dangerous to health. This "Amalgam War" as it was called lasted until 1850, by which time most of the Society's members had been expelled.
Today this seems incredible, but not if we place the episode within its time, the only true way of making historical judgments. It has been said that "The real central theme of history is not what happened, but what people felt about it when it was happening."

We can trace the history of dental caries from the earliest belief of the Babylonians that worms caused toothache through W. D. Miller's chemico-bacterial theories in 1890 to our present knowledge which is still incomplete. In modern Europe dentures began with human teeth placed on "Hippopotamus Ivory" carved to fit the gums, and in the late eighteenth century De Chemant introduced his "incorruptible" mineral teeth, and now we have well functioning chrome cobalt castings. This involved developments in the fields of physiology, ceramics and metallurgy. Incidentally, in Japan dentures were once carved out of wood. Equally fascinating is the study of the development of anaesthesia from the time of Horace Wells, who used nitrous oxide for painless extractions in 1844, until the present time with our wide range of highly developed local anaesthetics.

I am by inclination a collector and I have a collection of early dental books. These are a constant source of pleasure in that they contain much of the dental knowledge of the past with all its errors and its wisdom. These books are particularly fascinating if they have the names of successive owners inside their covers. This often leads to interesting finds, if one does a little research. I have two books in my collection that are interesting in this regard, one, a 1554 edition of Celsis's "De re Medica," in which the original owner, one George Rudd, has written a great number of marginal notes in English and a study of typography shows that he wrote them before 1600. The other is J. Foster Flagg's "Plastics and Plastic Filling," 2nd Ed. 1883, with an inscription "Theo Lachaume, D.D.S. With kind regards from J. Foster Flagg, Xmas 1883." This was a nice item, signed by the author, and I wondered who Theo Lachaume may have been. Then by chance I saw in an old Dental Cosmos that Theodore Lachaume, an 1883 graduate from the University of Pennsylvania, was an Australian, so my next move will be to trace this man's history.

This leads me to add that, as well as learning the serious trends in dental history, titbits of historical interest are continually being discovered. For example, this same
J. Foster Flagg's grandfather, Josiah Flagg, himself a very famous early American dentist, was captured in the war of 1812 and while on parole in England attended lectures by the famous Joseph Fox, who first instituted lectures on dentistry at Guy's Hospital in the late eighteenth century. Also, Paul Revere, dear to the hearts of all Americans for his part in the American War for Independence, practiced dentistry in Boston in 1770, and the voluminous correspondence between George Washington and his dentist is most interesting.

These examples can be multiplied many times; however, these may be sufficient to show that dental history can be fun, as well as instructive. I would like to see a greater interest in dental history in this country. Britain has its Lindsay Club, Europe has its Société d'Histoire de l'Art Dentaire and the U.S.A. has its Academy of the History of Dentistry, of which I am a member. Maybe we should start a dental history study club here, dental history in Australia being almost untapped, and as Weinberger, a famous dental historian, has said, "History is to the world what memory is to the individual."

(Reprinted with permission of the Editor of Articulator, 1966.)
BOOK REVIEW

ORÍGENES DE LA ODONTOLOGÍA
Foción Febres-Cordero
131 pages. Illustrations. Index
The Author, Caracas, Venezuela, 1966. $3.

Orígenes de la Odontología by Foción Febres-Cordero, founder of the School of Dentistry of the University of Central Venezuela and its dean for the last five years, is an erudite study of the sources of our profession as practiced in Egyptian, Mesopotamian and Syrian cultures between three and four thousand years B.C. The presentation of this work entitled the author to academic membership in the Venezuelan Society of the History of Medicine.

An outstanding intellectual, Dr. Foción Febres-Cordero has demonstrated rare qualities in his research. He has provided documentary evidence that the origin and practice of medicine and dentistry originated, as did the great religions of the world, in lands bordering the Mediterranean, or nourished by the Nile, the Euphrates and the Tigris, namely, Egypt and Mesopotamia.

His efforts embraced a study of 32 centuries of history; of the rise and decline of civilizations where both medicine and dentistry were practiced on a high plane, although associated with elements of superstition, magic and the machinations of the priesthood. In both Egypt and Mesopotamia the priest performed the functions of religious leader, physician, exorciser and magician.

The science of medicine and magic were inseparable from religious ideas; illness was associated with the concept of sin. Pain and sickness were treated in accordance with the knowledge of the epoch. Pharmacology and therapy were enriched by the use of drugs of proved efficacy such, for instance, as belladonna, the use of which has survived the centuries. According to the author a great part of present day European and American medicine originated in Egypt. In Mesopotamian legendry, the serpent possessed the gift of health and eternal life, an idea later adopted by the Greeks and converted into the symbol of Asclepios.

In Egypt oral hygiene was practiced; dental caries and paradental lesions were known. Surgery, including the delicate operation for the removal of cataracts, was practiced. Dr. Foción Febres-Cordero refers to a Syrian medical-dentist
who diagnosed a case of focal infection as the cause of his royal patient's illness and advised the extraction of the "royal" teeth. In his documented study of various hieroglyphic tablets, the author analyzed one which prescribed the treatment of dislocation of the jaw. He even mentions dentists of the king's court during the era of Zoser, 2,750-2,720 B.C.

The presentation of Crígenes de la Odontología is a magnificent scholarly study consisting of 131 pages, splendidly illustrated, and a most praiseworthy contribution to our profession.

Dr. Samuel Fastlicht
Londres 85 - Desp. 401
Mexico 6, D. F.
BOOK REVIEW

ONE HUNDRED YEARS OF DENTAL PROGRESS IN THE NATION'S CAPITAL, 1866-1966

C. Willard Camalier, Sr.
274 pages. Illustrations. Index.
Washington, (Bert Roberts) 1966. $6.

The latest contribution to American dental history is by far one of the best yet offered to the profession. It is concise, nicely written, and informative. Its type face and format contribute to its readability and appearance—a contribution not shared, unfortunately, by its many offset, but otherwise worthwhile, illustrations.

Dr. Camalier's intimate knowledge of the twentieth century affairs of the District of Columbia Dental Society as well as those of the American Dental Association for the same period makes him the most logical of historians for his constituent dental society. To his own well-stocked storehouse of information he has added carefully chosen excerpts from former records of his organization dating back to its founding shortly after the close of the Civil War. The strategic location of the District of Columbia Dental Society—in the midst of major governmental activities—has enabled it to become more involved, perhaps, than many other constituent societies in the affairs of its parent body, the American Dental Association, and in the growth of American dentistry.

The District of Columbia Dental Society—originally the Dental Association of Washington City—was organized on November 23, 1966, by a small group of Washington, D.C. dentists for the long term purpose of safeguarding the integrity of the profession and for the more acute purpose of fighting the Royalty demands of the Goodyear Dental Vulcanite Company. Throughout its hundred year history the society has steadfastly adhered to its original long-term purpose of improving the standards of service of the profession and improving the dental health of the public.

Among the many examples of the methods employed by the society to further its purposes—either directly or in conjunction with its parent body—Dr. Camalier cites the successes obtained in improving the status and emoluments of dental personnel in the military services—efforts which were initiated formally about the turn of this century and which continue unabated to this day. In this connection Dr. Camalier reports his society's cooperation with the
American Dental Association and the federal government in furnishing dentists to serve in their professional capacity during World War I and in assisting so effectively in the procurement and assignment of dental personnel during World War II. Dr. Camalier speaks with authority and accuracy on both of these ventures as he was intimately associated with each.

A further example, cited by the author, of his society's many contributions to the profession and to society, concerns its participation in securing the passage, by Congress, of the historic Traynor Mail Order Denture law, which prohibits the distribution of dentures by mail. Still other examples concern the successful fights by the dental profession to obtain funds for the construction and maintenance of a building in which to conduct federally supported dental research, and the perennial fight to secure federal financing of research activities conducted at the National Bureau of Standards and the Armed Forces Institute of Pathology.

Further examples are the D.C. society's foremost position in the profession's fight against the Taggart inlay processing patent, the society's pioneering position in the national movement to improve the dental health of children, and in being among the first of the nation's large cities to fluoridate its water supply. The book also includes interesting accounts of two members of the profession who made outstanding contributions not only in the field of dentistry but in other fields of science: Mahlon Loomis who, in 1864, invented wireless telegraphy and Edward Maynard who, during the second quarter of the nineteenth century, contributed much to the improvement of military small arms.

Dr. Camalier completes his exhaustive history with brief but interesting reviews of the several dental schools in the Washington D.C. area: Georgetown University Dental School; Howard University College of Dentistry; the Baltimore College of Dental Surgery, Dental School, the University of Maryland; and the Medical College of Virginia School of Dentistry.

One need not be a member of the District of Columbia Dental Society to appreciate this book. Everyone who is interested in the growth and development of American dentistry
Camalier will find Dr. Camalier's contribution to history and the dental literature most rewarding.

(274 pages with illustrations, index. $6.00. Bert Roberts, Publisher, 6951 33rd Street, N.W. Washington, D.C.)

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1933 Linneman
Glenview, Illinois 60025
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Tennessee State Dental Association. Centennial, 1867-
DEATH

HAROLD L. FAGGART, one of the founders of the American Academy of the History of Dentistry, died on January 5, 1967.

Born in Gold Hill, North Carolina, he attended Lenoir Rhyne College in that state and graduated from the dental school division of the Medico-Chirurgical College of Philadelphia in 1916. He practiced in Philadelphia and was a member of the faculty of Temple University Dental School teaching operative dentistry and dental history. He was also responsible for the development of that school's museum.

Dr. Faggart's contribution to dental history in America was authoritative and extensive. His published papers are found in our leading dental journals and will be source material for those that will follow. His great interest and enthusiasm for the history of dentistry in America led him, with others, to formally establish a society of men devoted to dental history, namely our Academy.

May his memory be for a blessing.

Milton B. Asbell
Secretary-Treasurer

Members of the Academy will be interested to learn of the reprinting of the first American book of dentistry, A Treatise on the Human Teeth by Richard Cortland Skinner, surgeon dentist.

It was originally published in New York in 1801 and last August republished in the same city by Argosy-Antiquarian, Ltd.

The 26 page volume is reproduced in its original format and is supplemented by two plates and a historical introduction by Max Geshwind.

It should be a valuable addition to a member's library. It is hoped that other historical volumes in dentistry in America will be republished also.
History Academy

Sixteenth Annual Meeting

AMERICAN ACADEMY OF THE HISTORY OF DENTISTRY
United States National Museum
Smithsonian Institution
Washington, D.C.
Friday, October 27, 1967

PROGRAM

Morning Session, 9:00 a.m.

Meeting Executive Committee

President's Address Dr. Stephen P. Forrest,
St. Louis, Missouri

Points of View Regarding the History of Anesthesia -
Dr. Daniel F. Lynch, Past-President, American Dental
Association, Washington, D.C.

Development of the Dental Collection at the Smithsonia
n Institution - Dr. Alfred R. Henderson,
Washington, D.C.

Luncheon Session, 11:30 a.m.

Afternoon Session, 1:30 p.m.

Induction of New Members

Presentation of Honorary Memberships, and
Presentation of First Hayden-Harris Award

History of Development of the High Speed Contra-
Angle Turbine Handpiece, by the inventor -
Dr. Robert J. Nelsen, Rockville, Maryland

Dentistry and the Nineteenth Century American
Humorists - Gardner P. H. Foley, M.A., Baltimore,
Maryland

Saints in Dentistry - Dr. Bruno G. Floria,
Washington, D.C.

Business Meeting.
1966 - COMMITTEES - 1967

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Alfred W. Chandler, Chairman
Stephen P. Forrest
Walter C. Stout
W. Edgar Coleman
Jacob Sharp
Milton B. Asbell
Donald A. Washburn
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James D. Harrison, Chairman
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<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
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<tbody>
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<td>Owens, Maurice J.</td>
<td>Berkeley, California</td>
</tr>
<tr>
<td>Pollock, Robert J.</td>
<td>Oak Park, Illinois</td>
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<tr>
<td>Postle, Wendell D.</td>
<td>Columbus, Ohio</td>
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<td>Prindle, V. Arthur</td>
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<td>Renouard, Clarence S.</td>
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<tr>
<td>Richmond, Fred A.</td>
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<td>Robinson, J. Ben</td>
<td>Baltimore, Maryland</td>
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<td>Rosen, Ralph</td>
<td>St. Louis, Missouri</td>
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<td>Rudewicz, Alex M.</td>
<td>West Orange, Connecticut</td>
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<td>Rutter, Richard R.</td>
<td>Palo Alto, California</td>
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<td>Sanders, Thomas E.</td>
<td>Louisville, Kentucky</td>
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<td>Schmidt, Arthur H.</td>
<td>San Juan, Puerto Rico</td>
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<td>Scull, J. Frederic</td>
<td>Langhorne, Pennsylvania</td>
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<td>Seligman, Henry J.</td>
<td>New York, New York</td>
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<td>Serow, Nathan N.</td>
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<td>Shanley, Leo M.</td>
<td>St. Louis, Missouri</td>
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<td>Sharp, Jacob</td>
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<td>Sharp, Nicholas A.</td>
<td>Branford, Connecticut</td>
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<td>Shepard, Earl E.</td>
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<td>Shklar, Gerald</td>
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<td>Seigel, E. H.</td>
<td>New York, New York</td>
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<td>Singleton, Philip A.</td>
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<td>Sorrels, Harry H.</td>
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<td>Sprau, Robert L.</td>
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<td>Stamps, Harman F.</td>
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<td>Stanton, Emmett M.</td>
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<td>Starshak, T. C.</td>
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<td>Stout, Walter C.</td>
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<td>Swanson, Henry A.</td>
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<td>Taurchini, Hugh J.</td>
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<td>Teuscher, George W.</td>
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<td>Thoburn, Robert</td>
<td>Daytona Beach, Florida</td>
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<td>Tiblier, Sidney L.</td>
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<td>Trager, Jesse</td>
<td>Treasure Island, Florida</td>
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<td>Tucker, Joseph</td>
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<td>Tulak, Stanley T.</td>
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<td>Tyson, William</td>
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<td>Vacanti, C. J.</td>
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<td>Varnado, M. B.</td>
<td>New Orleans, Louisiana</td>
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<td>Volker, Joseph F.</td>
<td>Birmingham, Alabama</td>
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<td>Walls, Milton G.</td>
<td>St. Paul, Minnesota</td>
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<td>Washburn, Donald</td>
<td>Chicago, Illinois</td>
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<td>Weber, Rudolph</td>
<td>Kansas City, Missouri</td>
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<td>Weltman, Warren P.</td>
<td>New York, New York</td>
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<td>Wheeler, Russell C.</td>
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<td>Winner, Morgon A.</td>
<td>Bronx, New York</td>
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<td>Wolf, William</td>
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<tr>
<td>Yoder, John L.</td>
<td>Iowa City, Iowa</td>
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