"It was a fantastic experience"

Part III

By Norman Wahl, DDS, MS

When Dr. Edward H. Angle closed the doors on The Angle College of Orthodontia in 1927, leaders at the University of Illinois worked to fill the void he left. On a dreary February morning in 1930, the Graduate Department of Orthodontia of the University of Illinois was officially opened. Now, nearly 60 years later, author Norman Wahl has a 'meeting of the minds' with teachers and students of that era. All remarks in this roundtable discussion are direct quotes from personal interviews or from published comments of the speakers. The participants are:

Fred J. Angel, Class of 1935
Alan G. Brodie, Former Chairman, Department of Orthodontics
Lawrence J. Furstman, Class of 1934
Abraham Goldstein, Class of 1932, later an instructor
Robert R. McGonagle, Class of 1948
Ernest Myer, Class of 1931, later an instructor
Frederick B. Noyes, Angle graduate and Former Dean, College of Dentistry
George H. Prewitt, Class of 1935
Chester F. Wright, Class of 1931

III.

Cephalometrics. Student projects.
New quarters! "Mickey Mouse." Gone fishing.
Out in the real world. Summing up.

Moderator: Dr. Brodie, how did the department get into cephalometrics?

Dr. Brodie: One of the stipulations made when the department was under consideration was that the University provide it with a Broadbent-Bolton Roentgenographic Cephalometer and the necessary x-ray equipment to complete it. At this time there was only one such machine and that was the one in use at Western Reserve. Broadbent had yet to announce his invention formally to the profession but [I] had been so fortunate as to meet him at the Angle School in 1926.... When he was approached with the idea of building a second machine for Illinois he accepted the assignment enthusiastically and, although the task proved to be costly and time-consuming, installation was completed in May 1931. The University could not have made a wiser investment because this instrument has been responsible for most of our research efforts.

Our original interest in the cephalometer unquestionably lay in our desire to find out what happened to the face as a result of orthodontic treatment. We wanted to know how fast the mandible caught up with the maxilla after correct occlusal relations were established and how much we widened the nose when we expanded the arch. We *knew* we moved teeth distally but how far could we move them and how fast?[5]

Moderator: Was it also used on non-clinic patients?

Dr. Brodie: Fortunately we did not confine all of our attention to our clinic patients but took records of all unusual cases that came to our notice. I am not certain that this was due to any deep and compelling scientific curiosity but rather to an effort to justify the expenditure for the equipment, or a human desire to "show off" a method unknown to our medical brethren.

It was during this early period that the work

on the hypothyroid child was begun in conjunction with the Department of Pediatrics and also the intensive study of the hypopituitary patient in which we collaborated with the University of Chicago. Only the difficulty of transporting the equipment prevented our studying the hypopituitary dwarfs at the World's Fair in 1933-34.[5]

Moderator: Since the early classes had no thesis requirement, what kinds of projects did you do for your minor?

Dr. Myer: At the end of the time devoted to dissection we were given individual problems. At that time we all worked on the problem of tooth form in a particular species of animal. One had the horse, one the cow, one the dog, one the sheep, and I drew the cat. Those men having the cow, sheep, and horse got their material by going out to the stock yards. I had to get a cat from another source. So I got in a car and scoured the neighborhood for a cat and finally found a boy who hunted for and gave me a large black one. As he handed me the cat he asked, "Mister, are you a scientist?" That was the crowning touch.[2]

Dr. Brodie: The other members of the class had promised to prepare a lethal chamber for the animal while Ernie was searching so when he returned he found a cardboard carton all fixed up for Tom. It had a hole in the top to hold a wad of cotton for reception of the chloroform. The cat was deposited in the box without too much trouble and administration of the anesthetic was begun.[8]

Dr. Myer: I waited for what I thought was a sufficient length of time and removed the top from the container.[2]

Dr. Brodie: The cat came out ... almost into their faces. Travelling like a cyclone it leaped to the top of a cabinet that stretched the full length of the laboratory. This was covered with bottles and kitty played tenpins with them. From here he continued around the room like a dervish, upsetting things, hissing and clawing. The boys by this time were up on the tables trying to avoid this flying devil and wondering how they would ever capture it. Then suddenly the cat slowed down to walk, curled up on the floor and fell into a deep slumber.[8]

Dr. Myer: And that is how I almost became a scientist.[2]

Dr. Brodie: ... but rivalries began to appear and the projects became more and more ambitious.... Dr. Goldstein ... developed a technique of reproducing whole skulls and coloring them. Then on these skulls he would fashion the various groups of muscles of the head and neck. These models are still being used for teaching purposes in the Department of Oral Anatomy.

While Dr. Furstman was in residence Dr. Schour was lecturing to the medical and dental students on anatomy. Now you all know Dr. Schour's fondness for models. When he came to the osteology of the head he decided he must have models of the bones and Dr. Furstman volunteered to make them.[8]

Dr. Furstman: I don't know just how it got started, but we were discussing the palatine bone one time. We went through the osteology very carefully. I made a sample of the bone out of something and Dr. Brodie liked it so much that he suggested that I do, as my project, a disarticulated skull out of chicken wire or any material that I wanted, as long as I could take it apart.

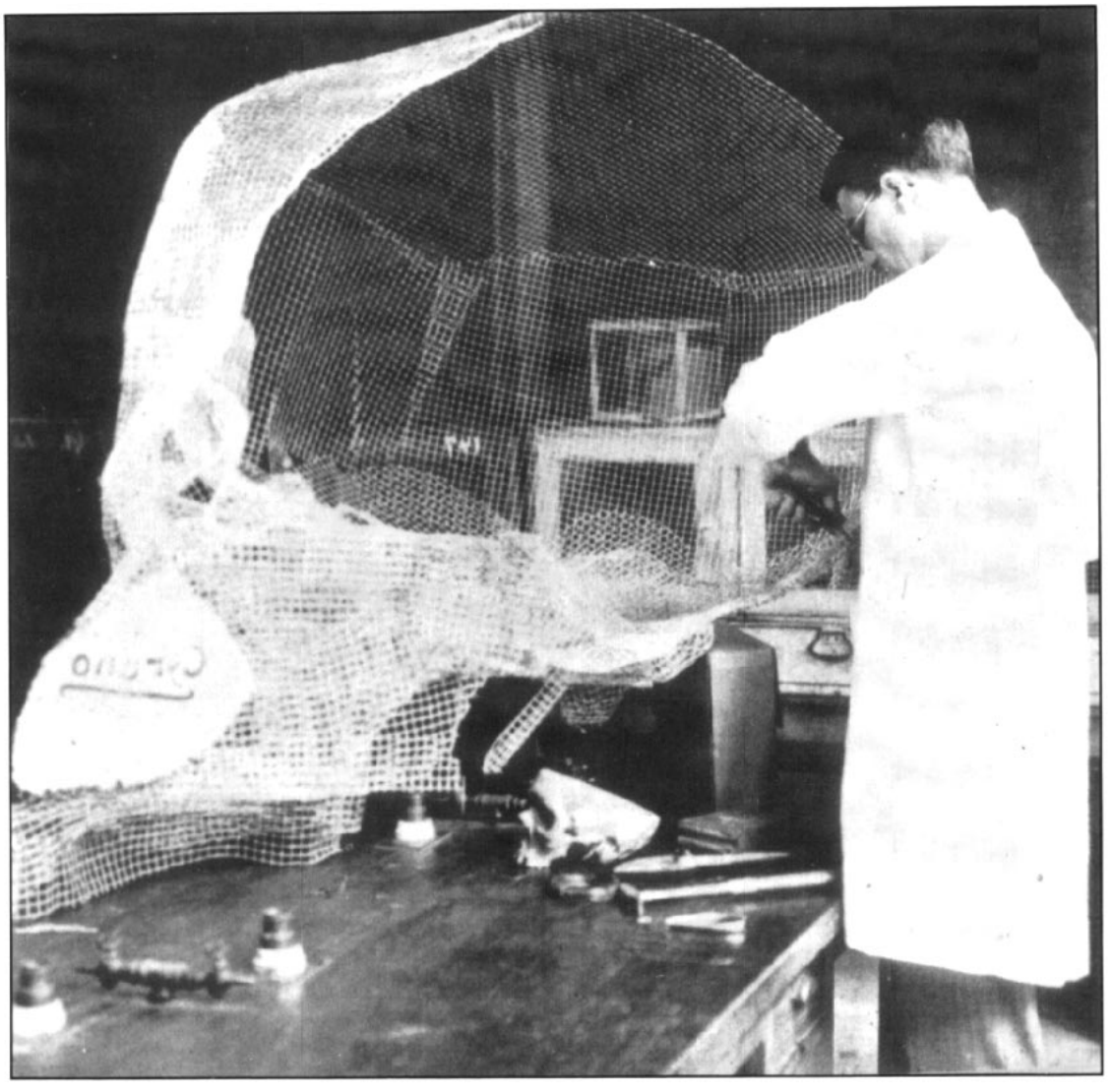
Dr. Brodie: When he showed up with this, behold, it was made of one half inch mesh chicken wire with the cartilage of the [nasal] septum represented by cardboard. The cardboard was completely out of scale. So the model henceforth, as it grew, bone-by-bone, was always referred to as Cyrano. When it was completed this model stood four feet high and could be completely disarticulated in fifteen minutes.

A year or two after he left the school, Larry felt the creative urge again and asked Dr. Schour to send him serial sections of deciduous teeth. You all have seen the beautiful mahogany models that he built. They can be taken down piece by piece, or rather layer by layer so that the growth process can be made visual. These teeth have travelled from one corner of this broad land to another, always under the personal supervision of Dr. Schour or myself. They are wonderful, except as sleeping companions in an upper berth![8]

Moderator: Before moving to the new building in 1937, did the department ever graduate to better quarters?

Dr. Brodie: ... when the Medical School moved out ... we were told we could have quarters of our own — their old dissecting rooms! Words could scarcely describe our elation or our feelings when we first viewed this magnificent abode. It was up on three and a half and completely segregated.... The floors ... oozed the grease drippings of years of dissecting.... But we had lots of room in which to expand. The Physical Plant ... treated the floors with lye so strong that the wood turned almost white.

Our new space ran the full depth of the building.... The partitioning of the front half gave us a clinic with six large windows, an inside waiting room, a department office with enough room for two desks and a bench and a room



Dr. Furstman at work on "Cyrano." Courtesy University of Illinois at Chicago. The University Library. University Archives.

about 10 x 12 feet for the cephalometer when it arrived.

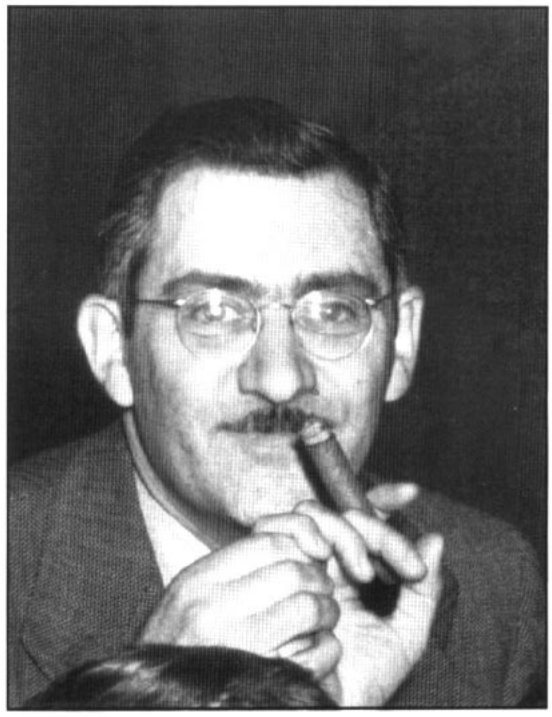
The back half, beyond the hallway, was equipped as a combination laboratory and seminar room.... The rear of the room was partitioned off and was used as an animal room.... Into this magnificent space we moved three new chairs and eventually six new Angle-Wuerpel tables.... The Operative Department turned over its three oldest chairs to complete our six places.

The chairs had wooden backs and seats which had been varnished so often that they had taken on the indescribably gummy tinge and the iron work had been similarly abused with black enamel. The boys took one of these monstrosities at a time and finished it down by hand to bare wood and metal and then built it up again. When they emerged from their beauty treatments the Operative Department wanted to reclaim them.[8]

Moderator: How did you cope with the criticism you received, mentioned previously, with respect to your emphasis on fundamentals?

Dr. Brodie: Under these circumstances it was but natural that we should take advantage of every opportunity to attract favorable publicity and we accepted practically every invitation for talks, clinics and exhibits.... In 1935 the department sent an exhibit to the meeting of the American Association of Orthodontists in New York. This was by all odds our most ambitious effort. It consisted of eighteen panels, each one carrying the complete records of one case, viz, intra oral x-rays, photographs and models, before and after treatment. The x-rays were transilluminated, each panel carrying its own shadow box, and the models were mounted on individual aluminum brackets, the handicraft of Dr. Downs.... The case history, plan and duration of treatment and all other pertinent data was hand lettered on a large white cardboard panel behind glass.[8]

Dr. Furstman: I recall that Bill Downs also made the first mechanical plaster mixer.



Dr. Abraham Goldstein at the 1951 Reunion.

Dr. Chester F. Wright at the 1951 Reunion. Courtesy Dr. Abraham Goldstein.

Dr. Brodie: Months went into the preparation and about the only comment heard was that of a teacher of orthodontia who gleefully exclaimed, "Look, they *do* get root resorption." To which one of his own students innocently replied, "Why don't we take x-rays, maybe we're getting some too." The fact remains that this was the first time a department of orthodontia had ever shown *finished* cases.

During this meeting I had a very illuminating experience which verifies some of the things Dr. Wright told you.... A former classmate of mine approached me and asked if I would give him a personally conducted tour through the exhibit at some time when the society was in general session and we could be alone. I readily agreed because I had always liked this man and in addition I wanted to brag a bit.

We spent probably two hours in front of the panels and each one was analyzed.... He occasionally asked a question but was otherwise silent. As we finished he asked, "You do this for every case, that is, you have a *plan* of treatment?" I countered with, "Why, how else could it be done?" He grinned sheepishly and replied, "The way I do it — I get a pair of appliances on, get the teeth all loose and then hope they'll settle into normal occlusion. I didn't know there was any other way."[8]

Moderator: It sounds like you and Dr. Schour spent as much time preparing exhibits as you did teaching.

Dr. Brodie: Indeed, it is doubtful that many people around the school knew we were professors — most of them thought we were carpenters... it was always the graduate students that were pressed into duty. Some were clever and some were not but one in particular we shall never forget. This was Dr. John Spence.

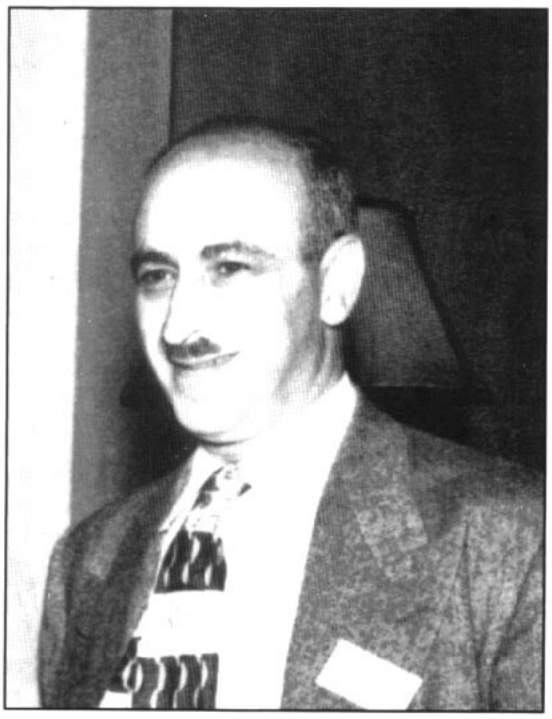
"Jawn" was never satisfied with the ideas *we* had and would come up invariably with counter-proposals all of which involved infinitely more work. But since only he could do the work we had to let him go ahead and things were always ready on time. Some of the things he created would make Walt Disney green with envy....

He had teeth that pivoted, and dog's jaws that snapped and after Steadman had worked out the formula for the gradients of the rat incisor he insisted on building a working model of it. This turned out so beautifully that Dr. Schour carted it all the way to Vienna to show [Dr. Jakob] Erdheim. When it was plugged in the incisor rotated and erupted and each incremental line was laid down just so. When Erdheim was shown this masterpiece that great endocrinologist clapped his hands and exclaimed, "Ah — Mickey Mouse!"[8]

Moderator: What did you do for relaxation?

Dr. Furstman: Steadman and I played handball on our lunch hour at the YMCA.

Dr. Myer: The only good aspect of the time spent in the laboratory was the usual afternoon interlude over at the University Inn, otherwise known as "The Greek's." I believe we learned more anatomy at "The Greek's" than in the lab. If there is anything which stands out in my



Dr. William B. Downs at the 1951 Reunion. Courtesy Dr. Abraham Goldstein.

Dr. Ernest Myer

mind it was the "bull sessions." We ironed out among ourselves theories on all the subjects being studied, as well as others not studied.[2]

Dr. McGonagle: Chet Wright had never missed an opening day of the bass season, and being in the graduate class at Illinois wasn't about to change his pattern. However, he needed a partner and found a willing one in Bill Downs. They planned to play hookey and be on the water that day, class or no class. Enter Dr. Brodie; he set up an anatomy exam for 1:00 p.m. that very day.

But desire is a great force and leads to much ingenuity. Chet and Bill decided to leave the night before, stay in a cabin overnight, and be on the lake at daybreak. Everything cooperated including the weather and the fish. With a full limit and a little reviewing enroute (it was a 150-mile trip) plus a little luck, they arrived in time for the exam which they handled in fine shape. Dr. Brodie's only rebuke came much later when he learned of the adventure and felt he had been slighted in not being asked to join them.[11]

Dr. Brodie: One day ... I entered the old building on a Saturday afternoon and as I trudged up the three and a half flights of stairs I heard strange noises which seemed to emanate from the department. It sounded like an animal, larger than a cat, however, suffering in agony. I quickened my steps and stepped to the door of the rear room where a strange sight greeted my eyes. The boys had apparently been cleaning the department ... and they were down to their undershirts. Petey Breidt, stripped to the waist, was hanging by his hands from a pipe under the ceiling and uttering the most ghastly yells. Just as I appeared he finished one off with, "I'm Tarzan!" The rest of the class, convulsed with laughter, had their backs to the door and did not see me until Petey in a very weak voice said, "Oh gosh, the Chief" and dropped limply from the pipe.[8]

Dr. Myer: ... it remained for Bob Naftzger to hit upon the "Potentate" as the name which stuck with our class.[2]

Moderator: Where did you guys live?

Dr. Angel: At the Professional YMCA across the street from County [Hospital].

Moderator: Did you have a car?

Dr. Angel: No. The "El" [elevated train] ran only a block from the hospital and you could get downtown in ten minutes. In fact, you could get on a street car and ride from one end of the town to the other for seven cents!

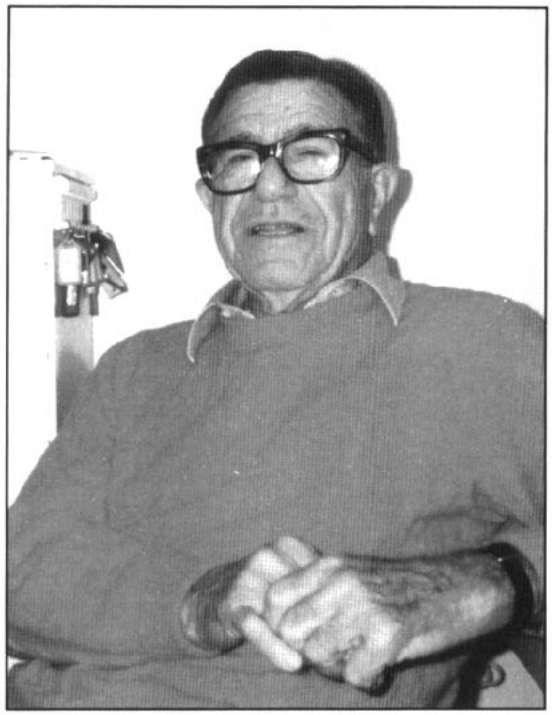
Moderator: Do you remember what the tuition was?

Dr. Furstman: $600 a year. I remember because I had to borrow from my father.

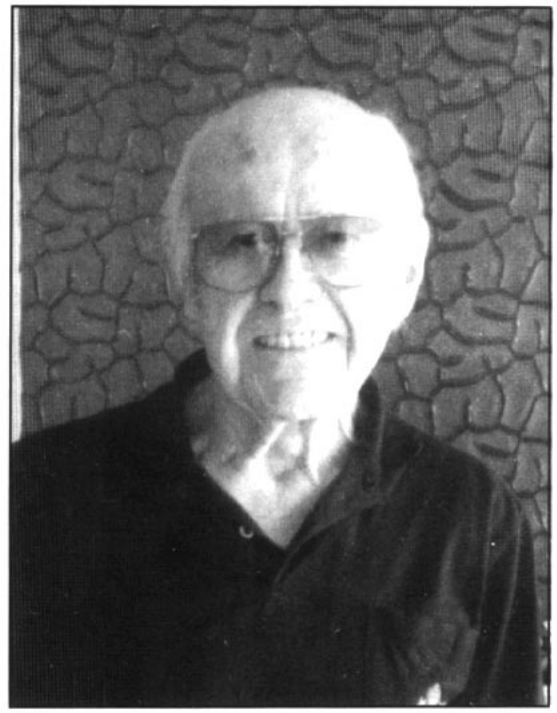
Moderator: What about your living expenses?

Dr. Furstman: For several months, I lived at the "Y", which cost $3.50 a week, and I "hashed" at Presby[terian Hospital]. I couldn't buy clothes or anything. Then I was very fortunate — I married a wonderful girl. When Dean Noyes and Dr. Brodie heard that I was getting married, they insisted that I take a week off.

Moderator: Dr. Angel, did your family help finance your education?



Dr. Lawrence L. Furstman, who now resides in Rancho Mirage, CA. Photograph by the author.



Dr. Fred J. Angel, who now resides in Los Angeles, CA. Photograph by the author.

Dr. Angel: Yes.

Moderator: Would you say that it was a financial sacrifice?

Dr. Angel: Yes, I would.

Moderator: Were you able to work part time?

Dr. Angel: No. We didn't have enough time. We were at the school all day and some of the evenings — Saturdays and Sundays, too.

Moderator: When you finished the course, did you feel qualified to treat malocclusions?

Dr. Angel: Yes, except possibly Class IIIs and double protrusions. Of course, as soon as I graduated, I became associated with Dr. Steiner. That's when I really started to learn orthodontics.

Moderator: After spending only a year in school and treating five patients, how could you feel so confident?

Dr. Angel: I think one of the reasons was that there weren't that many decisions to make in those days, nor were there that many choices. You see, we never extracted, there were no cephalometrics, we used practically no extraoral appliances, surgery was almost non-existent, and, if you were edgewise, you had your choice of one appliance. There was no Straight Wire, no Bio-Progressive, no Vari-Simplex, like there is now.

Moderator: Was Steiner non-extraction when you joined him?

Dr. Angel: Yes, but it wasn't long before we got into extraction.

Moderator: Did Tweed have anything to do with that?

Dr. Angel: Yes, I think so.

Moderator: Dr. Furstman, when you opened your office in Los Angeles, was it hard getting started?

Dr. Furstman: Well, I sat for six months in my office before I had a single patient.

Moderator: How did you drum up business? Did you take the dentists out to lunch?

Dr. Furstman: I couldn't afford it. I was only paying $37.50 a month in rent. It was a little office. When I came out here, if a guy had two chairs, he had a big office. I'm sure you've heard of Hays Nance. He was one of the most superb orthodontists we've ever had, and he had only one chair.

Of course, you must remember that those were the depression years. In 1934, when I started practicing, if you cleared $500 a month, you were doing extremely well. You only had to gross about $750 in those days to net $500.

Moderator: In retrospect, what can we say has come out of those early years of struggle at Illinois?

Dr. Noyes: Today we find that orthodontia, although back *in* the dental school, is not *of* the dental school. It is fortunate, however, that Dean Carmichael had the imagination to recognize the possibilities that lay in graduate education in this field at such an early date. Had the effort been delayed it is likely that the thread that Angle had woven would have been broken and remained broken for many years.[1]

Dr. Wright: This was truly an epoch in the history of orthodontic education and will, I am sure, be recorded as the greatest modern con-

tribution to the profession. The department was in reality a memorial to Dr. Angle, since it was dedicated to the task of teaching the biological and mechanical principles, that characterized the Angle School.... It represented an organized effort under university guidance, devoid of the element of chance and narrow personal prejudice, where men of purpose could receive basic training in their chosen profession.

It is further reflected in the fact that after only eighteen years [in 1948] ... the University of Illinois is generally recognized as the leader in orthodontic education.[3]

Dr. Goldstein: The majority of our graduates have expressed their conviction that the year they spent in training was a life experience. In most instances it has meant a reorientation that has changed the individual into a new personality with a new sense of values. The students became tissue-conscious and learned to look deeper than the teeth and to think of orthodontia as a physiological and biological problem as well as an engineering one. At the same time they learned to sense the joy that comes from persistent work coupled with a searching mind.[4]

Dr. Myer: One thing I am grateful for ... and that is that I was privileged to be a member of the first class. We owe a great deal to Dr. Brodie who has inspired each and every one of us to seek the truth, practice with honesty and further the profession of orthodontia.[2]

Moderator: And we are grateful to *you* gentlemen for helping us relive a crucial hour in the profession's history. You and others of your time suffered doubt, deprivation, dogmatism, and ridicule in order to sustain — indeed, enhance — Angle's tenets. This is borne out by the fact that, among other things, Illinois has produced more orthodontic department heads than any other school. Dr. Myer's "dreary morning" in February turned out to be a "bright afternoon" in the development of orthodontic education.

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