

# Status of Orthodontic Education Prior to 1930

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Becoming a competent orthodontist prior to 1930 was no small task — it was a major undertaking. The colleges and universities had entrusted orthodontic education to private schools and these were the order of the day. The aspirant had a choice of one of three such schools. Two of these offered courses of eight weeks duration conducted at intervals throughout the year — the frequency depending upon enrollment. The third school offered a full year instruction. Entrance requirements to the former were the possession of the D. D. S. degree and a letter of recommendation indicating good intentions on the part of the applicant.

These short-session schools were operated upon the belief that orthodontia was a part of dentistry not unlike crown and bridge, or prosthetics and that an adequate orthodontic training could be acquired in a short concentrated course following the conventional dental training. The average general practitioner, whose ranks furnished almost one hundred percent of the applicants, never questioned the type of training he received. He accepted it wholeheartedly because it was consistent with ideas imparted to him as an undergraduate, which held that his education for the practice of orthodontia was complete except for the mechanical training.

There was nothing in the short course to change this viewpoint. Lectures consisted of the most elementary considerations of the denture, theories regarding tooth movement, and etiology with reference to malocclusion. While there were occasional guest speakers who presented topics from allied fields there was no attempt to correlate the information with orthodontic principles and procedures. Three mornings each week were spent in an orthodontic clinic observing appliance manipulation and its results. The remainder of the time was devoted to the mechanics of orthodontia at the laboratory bench. There were neither assignments, quizzes, nor examinations and, believe it or not, the diploma was granted without the candidate ever having had the meager experience of placing a separation wire in the mouth of a patient. These concentrated courses, except for the mechanical training, were administered on the principle of absorption. Although the instruction acquainted the student with the ramifications of the science, it definitely placed the emphasis on mechanics and contributed to the continued over-specialization of orthodontia along these lines. The net result was that failures were conveniently attributed to improper appliance design and manipulation and most studies in the field were directed toward their improvement. The writer was the recipient of this type of training and for five years struggled against impossible odds to render a service that was adequate. Fortunately for my patients and me, fate intervened.

At a reunion of graduates of the school in which I had received my orthodontic instruction, one of my class mates introduced a guest and mentioned that he was a graduate of the Angle College. That school was the third of the proprietary regime and Dr. Noyes will speak to you about it more in detail. I do not remember the details of all the discussions that took place in the following two days but I can assure you that they were warm because no love was lost between the followers of the two schools. Our

guest was bombarded with questions concerning everything from appliance design to "Simon's Systematic Diagnosis of Dental Anomalies." Each question brought forth a calm and scholarly answer based on scientific evidence which I, and most of my colleagues with our superficial knowledge, could follow only with difficulty. It was clear enough, however, to convince me that orthodontia had its roots deep in biological science and that the mechanical methods at our disposal were only one means by which they were to be interpreted.

This was a shock rude enough to convince me that I would have to return to school for further training in the fundamental sciences. When I inquired of our guest about the Angle College he informed me that it had closed its doors. This made the future look dark indeed and gave me courage enough to ask whether I could spend a day in this man's office. He granted me permission and the next day was spent in further discussions of the biological aspects of orthodontia and at his chair I was permitted to observe the mechanical interpretation. At the end of the day I departed for home with a promise of help in a well-formulated plan for further study.

For some two years I followed this plan supervised by correspondence. It was a slow and laborious process but some progress was made. In the midst of this struggle I received a telephone call one night as I was preparing to leave my office. It was my advisor. He informed me that he was on his way to Chicago and was stopping overnight in the city. He further informed me that he was moving to Chicago and was to head a Department of Graduate Orthodontia at the University of Illinois. After dinner I called for him at his hotel and by midnight I had been informed of the details of the new course. It was discouraging to learn that I could not qualify for the training to be offered in this new curriculum. However, there remained about three months in which to convince someone that I should be afforded the opportunity. With the help of both Dr. Noyes and Dr. Brodie I became a member of the first class. I trust that you will pardon the injection of my personal experiences into this paper, but it vividly illustrates the disillusionment and confusion that attended the acquisition of orthodontic training in 1925 and how even chance played a part.

Since the present constitutes an outcome or expression of past experiences and developments, perhaps it would be informative to present, analyze, and evaluate the course which orthodontia has taken. I need not call your attention to the fact that the earliest and necessarily simple efforts at straightening teeth were performed by the dentist, and purely for the sake of esthetics. The relative success attained, was sufficiently satisfactory to stimulate complicated procedures and mechanical devices, which ultimately became limitations. With this beginning, it was only natural that orthodontia should develop along mechanical lines. Prior to the dawn of the twentieth century, orthodontic training consisted principally in the construction and manipulation of mechanical appliances even though the subject had become an integral, though minor, part of the dental curriculum in our great universities.

Orthodontia, as a specialized science, owes its beginning to Dr. Edward H. Angle, a brilliant personality who had the courage to break away from the conventional stagnation of the subject in dental schools and demonstrate the real mission of the orthodontic specialist. It goes without saying, that Dr. Angle found it impossible, under the conditions imposed by the uni-

versities, to go forward in the development of the science as he visualized it. He therefore severed his connections with the learned institutions of his day and organized the first of the proprietary schools of orthodontia. The value of this contribution cannot be overestimated, because previous to this time orthodontia was given no special importance and was heading in no special direction. That orthodontia was even unwanted by the dental profession, is attested to by the following quotation by Dr. Angle himself.

"I became filled with the belief that if orthodontia was to make any material progress a separate school, entirely independent of dental schools, must be formed which would amply provide opportunity for those with aptitude and liking for the subject, to study in a broad, thorough and comprehensive manner and where it would be relieved of all blighting, handicapping influences which are necessarily thrown around it in dental colleges."

Although the study of occlusion had been going forward since the days of Hunter, it was not until 1899 when Dr. Angle declared it to be the basis of the science of orthodontia, that its significance was grasped — and then only by the biologists. Dentistry did not accept this discovery and for twenty-five years orthodontia fought for its place among the healing arts.

I am sure that it is unnecessary to call the attention of this audience to the fact that the term *occlusion* embraces more than just teeth. I am sure that all of you are familiar with Dr. Angle's following quotation.

"Not only this, but the jaws, the muscles of mastication, the lips, and even the facial lines, probably, will be in best harmony with the peculiar type of the individual."

This was a biological concept which embraced the entire masticatory machine and was the foundation upon which orthodontia was to build. Recognition of occlusion as the basis of orthodontia, opened the fields of general science for application of all available knowledge and also furnished incentive for discovery of new facts. From that day until the present, progress has been marked by the correlation of biological knowledge with the phenomenon and principle of occlusion. Even mechanical development can be followed step and step with biologic demands in treatment.

Following his convictions Dr. Angle founded his school on the scientific principle of occlusion which in turn furnished a guide for the successful development of corrective appliances and their application. After this, events followed in a relatively rapid succession, as the story of occlusion unfolded. In 1905, Dr. Angle declared the six-year molar to be the key to occlusion since this tooth places the denture in relation to the head and body as a whole. In 1908, the importance of bone and its development were added to the orthodontist's concepts. Then the influence of hereditary factors, the glands of internal secretion, the temporomandibular joint, in fact, every field of biological science was searched, for its contributions to the knowledge of occlusion. To be sure, some fields contributed more than others and in time the significant was retained, the over emphasized properly evaluated, the unimportant discarded. The important point is that collateral fields of fundamental biological knowledge contributed to the elevation of orthodontia to its place among the healing arts.

In 1925, Dr. Angle conducted his last formal course in orthodontia and although this field of specialization, through the efforts of its founder and his followers, held a firm position in the world of science, a state of chaos existed in several respects. Variation and specialization in methods and

appliances contributed to discord and criticisms among members of the profession. Arguments were still rampant in regard to the general aims and objectives as well as to minor details in the therapy of individual cases. Unfavorable results, to a great extent, were attributed to faulty mechanics and this further made for a lack of understanding among orthodontists.

To illustrate the chaos in orthodontic objectives and instruction, the following quotation from an article by Dr. James D. McCoy in the *International Journal of Orthodontia and Oral Surgery* for September, 1926, is pertinent:

"The teacher who faces the problem of giving undergraduate or postgraduate instruction in orthodontia is confronted with difficulties which are not encountered by those engaged in teaching other subjects of the dental curriculum, for few other branches are more recent in origin or have passed through an evolution marked by such rapid changes. Even methods of practice have by no means reached the same degree of stability which has been experienced by most of the other fields adapted to specialization. For this reason, we are called upon to elect from the past and present those principles which will prove safe and sane for students to follow and because of our inexperience this is by no means an easy task. That the plan of teaching commonly employed at present is inadequate, most of us will freely admit. Some needed changes are immediately apparent, but the determination of all details necessary to the realization of our hopes must come through careful study of the problem, supplemented by patient experiment."

Alarm and fear for the future of orthodontia was apparent on every hand. There were those who were still content to push teeth into some semblance of an alignment and to them, the short concentrated course with its mechanical training was sufficient. Quite naturally, they defended the proprietary school. On the other hand, there were those who were convinced that the destiny of orthodontia lay in the application of fundamental biological knowledge. To them it was clear that organized effort and leadership were needed to reaffirm the basic concepts of occlusion upon which orthodontia was founded and upon which it stood. They believed this could best be done by the university.

Just as Dr. Angle had the courage to take orthodontia out of the universities in order to demonstrate its mission, another brilliant orthodontist had the courage to bring it back and in so doing place it on a comprehensive graduate level. Dr. Noyes was familiar with orthodontia's plight and ultimately was convinced that salvaging the intellectual advances of the profession could best be accomplished by the development and direction of correct professional curricula in the great institutions of medical instruction and research. He knew that only there, where men of widely diverse scientific interests work together, derive mutual help, and are subject to mutual restraint, could orthodontia maintain its position as an integral division of applied science. So firmly was he convinced of this that in 1930 he succeeded in establishing a graduate course of study in orthodontia at the University of Illinois. This was truly an epoch in the history of orthodontic education and will, I am sure, be recorded as the greatest modern contribution 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 with which Dr. Noyes was so intimately familiar. 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.

I am not familiar with all of the difficulties encountered in establishing the graduate course, but I do know that one of the problems which confronted Dr. Noyes, was the selection of a capable leader to head this bold venture. Having gained university sanction, success or failure was now dependent on this selection. It now seems oddly prophetic that Dr. Brodie, a member of Dr. Angle's last formal class, was given the post. The orthodontic world in general and particularly those of us who were privileged to receive our training here, realize the wisdom of this selection. It is further reflected in the fact that after only eighteen years (a short time as history goes) the University of Illinois is generally recognized as the leader in orthodontic education. Other institutions of higher learning have been impressed to the extent that, at present, eight graduates of the department are either heading or connected with, departments embracing modern concepts of orthodontic education. Furthermore, the research of Dr. Brodie, members of his staff, and graduate students, has had a sobering yet stimulating effect upon orthodontic thought. The department has, in fact, become the clearing house for orthodontic progress. It is the one place to which we can confidently look for verification or rejection of clinical procedures.

As we seek to evaluate the subject of orthodontic education we must recognize the fact that development in all of our learned professions has been from the individual, through the individual school, to the institutions of higher learning—the universities. The proprietary school was responsible for the awakening of the universities to the possibilities of orthodontia and thus served a worthwhile function. Let it retreat to its place in the historical structure of the profession. Most assuredly, the proper place for all professional training is in the university which is in reality the storehouse or repository of all that has gone before and the gateway through which future generations will go out into the fields of research and achievement. Let us remember too that the law of change is the only law without exception; that chaos always precedes orderly procedure; that progress in our civilization consists of bringing order out of chaos, in developing standards where previously there were no standards, in molding diverse thoughts into a cohesive whole.

I think it is agreed that the Department of Graduate Orthodontia of the University of Illinois has done just that and may history record its accomplishments. For the present I am sure that the members of this audience join me in expressing my appreciation to Dr. Noyes, Dr. Brodie, and the University of Illinois, not alone for what they have done for us personally but for what they have done for the profession of which we are justly proud.

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