

# A SUMMARY OF THE LIFE OF “THE FATHER OF OPTOMETRY,” CHARLES PRENTICE

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## ABSTRACT

*Charles F. Prentice published a book entitled, *Legalized Optometry and the Memoirs of its Founder* in 1926. Only 200 copies were published. This 416-page book was divided into two parts. The first part describes the events that transpired leading to the attempt to pass the first optometry practice act in the state of New York. The latter part describes Prentice's life. While every optometrist has heard of Prentice, many are not familiar with his contributions to the profession of optometry. This summary offers an opportunity to read about the achievements of the man who has been called the “Father of Optometry.”*

## KEYWORDS

*Charles F. Prentice, history of optometry licensure, optometric autobiography, optometry books, optometry history.*

## INTRODUCTION

This summary is intended to capture the essence of Charles Prentice's optometric career without the necessity of finding and reading his autobiography. This summary is condensed from Prentice's autobiography entitled *Legalized Optometry and the Memoirs of Its Founder*.<sup>1</sup> The book was published in a limited edition of 200 copies in 1926. It is 416 pages in length and the first part of the book describes the events that led to the legalization of optometry and the writing and publication of several important papers related to optics. This section of the book is 188 pages in length. The remainder of the book is devoted to Prentice's memoirs and provides details of his life from birth through his education, to his involvement in the New York State Board of Examiners, beginning the program in Optometry at Columbia University and various other topics.

Although there were many men who contributed to the founding of the profession, it is Prentice, who more than any other individual, deserves the honor of being called “The Father of Optometry.” Classe<sup>1</sup> has mentioned in his excellent chapter on “Optometry—A Legal History” that the impetus for the legal basis of optometry originated with an insult.<sup>2</sup> Prentice was a refracting optician who practiced in New York City. His examination was not limited solely to refraction and dispensing services, but he employed the ophthalmoscope and other techniques to detect disease. It was largely Prentice's unique personality, character of purpose and integrity that took great offense to a letter he received from Dr. Henry D. Noyes. Prentice chose a course of action where others might easily have succumbed to such threats.

Prentice has been characterized as an idealist. He deplored anyone who compromised at any stage of his existence.

Throughout his memoirs, he criticized his optometric colleagues, political friends, and friends in ophthalmology for their compromising attitudes. This rigid style may explain why he was only involved in the New York state legislative arena for two years.

### **Origin and Early Education**

Prentice's father, James Prentice, was born in London, England on January 2, 1812, the only son of John Prentice. Prentice does not provide the name of his grandmother. John Prentice, at this time, was secretary of the London and Manchester Coaching Company operating prior to rail service. James was apprenticed for seven years to John Beal, a maker of drafting instruments. John thought that James should know a trade.

Charles Prentice's mother was Henrietta Marschutz originally from Germany. As a young woman, she served as a Lady-in-waiting to the Princess von Wittgenstein at Schloss (Castle) Hohenrothe, Neuberg, Germany. On her departure, she received a letter of introduction and praise from the Princess von Wittgenstein to Comtesse de Moat de l'Ampere of Paris, France when she moved to that city. Following her service to the Comtesse, she accompanied a married sister and her husband to America in 1849. In America, she was governess to the children of a well-known family who resided on Astor Place in New York City. Prentice would later credit his mother for his good manners.

On the day James absolved his apprenticeship, after seven years of service, and on his 23<sup>rd</sup> birthday, his father John died, suddenly leaving his estate to James and his two sisters. James took a position with the Coaching Company at the Saracen's Head, London until this company discontinued business. In the meantime, the estate was poorly managed and ended disastrously

through ill-advised land and building investments. This turn of events resulted in James taking a job with Elliott and Sons in their mathematical instruments department. Shortly thereafter, James emigrated to New York City, where he immediately established himself in the manufacture of drafting instruments in 1842. It was from this original business that the optical business evolved. It was during the American Civil War that James opened his retail optical store.

## **James Prentice Marries**

Henrietta met James Prentice through a previous acquaintance she had known in Paris. By this time, he was a widower without heir. They were married in 1851 in Brooklyn, New York and had eight children. Charles Prentice was the second child and their only child who survived infancy. He was born on June 24, 1854. He was enrolled in a German school in New York City at the age of five in 1859. Later, during his boyhood years, he spent time on Staten Island and attended Methfessel's Institute. He and his father had a close bond, and the latter always preached the value of a good education. It was apparent that his father planned for his son to join him in business after completing his education.

One interesting childhood anecdote that followed Prentice into adulthood is of note. At some point in his first decade of life, young Charles was taken by his mother to visit a friend, Mrs. Linder. Her husband Edward was the inventor of the first breech-loading firearm. Mrs. Linder called on her nephew, a teenage boy of 18 years, to entertain young Charles. After watching the teen paint in watercolors, the young man decided to show Charles his prowess with a breech-loading pistol. Without a word of warning or explanation, he stood Charles on a chair with a target set on a bracket just above his head. He then proceeded to fire the pistol, shooting at the target while cautioning Charles not to move. After being terror stricken, Charles collapsed in the chair from fright. This unusual adventure was followed in a day or two by an attack of scarlet fever. As a result of violent drugging, Charles' digestion and metabolism were greatly impaired and from whose effects he felt he never fully recovered.

## **Youthful Accident**

While attending Methfessel's Institute, during his youth, he jumped some 12 feet out of a barn window and sustained a fallen stomach. This condition was not discovered until 1909 when, at age 55, he was suffering from his third attack of inflammatory rheumatism. He had managed the condition primarily by paying careful attention to his diet. However, after having the condition for six months, his weight had been reduced to 115 pounds. A few days after returning to the office, a Scottish gentleman came to see him. Alarmed by his condition, the gentleman recommended that Prentice resume his normal diet, discontinue all medications and take one ounce of "King William" scotch whiskey before each noon meal. He worked up the courage to try this remedy on January 15, 1910, and continued it until May 15, 1910 at which time he weighed 145 pounds. He concluded that his digestion had been stimulated and assimilation improved accounting for the weight gain. However, he was not able to relinquish the scotch whiskey without recurring symptoms and had to leave the country on occasion to lawfully gain access to the whiskey. Needless to say, he was not a fan of the Volstead Act (Prohibition).

## **Education Abroad**

In April 1870, at the age of 16, he left for Europe accompanied by his mother. During that year he attended the Gymnasium (similar to high school) in Lahr, Baden, Germany. Henrietta had been born and raised in Lahr. After turning 17 years of age, when he met the age requirement, Prentice entered the Royal Polytechnicum at Karlsruhe, Baden in the autumn of 1871. His education was primarily in engineering, physics and mathematics. He completed his courses in mechanical engineering in June 1874. This program was very arduous in that lectures began at 7 a.m., changing hourly until 12 p.m., resuming at 2 p.m. until 5 p.m. six days a week. The lecture notes were to be in writing at day's end, so the nights were late. His father had carefully planned Prentice's college education being of the opinion there were no courses in optics available in the U.S. of comparable quality.



*Charles Prentice (Image from Bohne W. Handbook for Opticians: A Treatise on the Optical Trade, and its Mechanical Manipulations, 3<sup>rd</sup> ed. New Orleans, LA: Griswold, 1895: frontispiece).*

## **Prentice Joins Father in Business**

Prentice returned to the U.S. in October 1874. Not wishing to join his father in a business he felt beneath his dignity, and one the public did not yet appreciate, he worked for several months for Mr. John Towle as a mechanical engineer. Evidently, he left this position after several months because the owner's monkey kept stealing his drawing instruments. Next, he worked for Mr. John Roach at the Ninth Street Yards for eight months in a business that repaired steamships.

Prentice then complied with his father's wishes and joined him in business. His first task was to supervise the installation and take charge of his father's exhibit of engineering instruments at the 1876 World's Fair in Philadelphia. His father won a bronze medal for excellence of these instruments at this exhibit. In 1867, his father patented his so-called "Anatomical Eye Glass," the first patent issued for eye-glass frames in America. Bausch and Lomb opticians paid James Prentice royalties on shell and rubber frames for the full life of the patent. Next, young Prentice undertook the preparation of drawings and specifications for a patent application requested by one of his father's customers. As a result of this success, he solicited patent work from several other businesses. Prentice was not yet 24 years of age.

### **Charles Marries**

Just before his 26<sup>th</sup> birthday, most likely around 1879, Prentice, still inexperienced with women, married a woman two years older than he. It was a disastrous union in which during one of her fits of disapproval, she swept from the table his paper on the "Metric System of Numbering and Measuring Prisms" that contained the "Law of Decentration." Unfortunately, this marriage ended in divorce in 1894.

The second duty assigned Prentice by his father was to compile an elaborately illustrated catalogue devoted to descriptions of instruments manufactured and imported by him. His father was increasingly busy with fitting and prescribing glasses and wanted Prentice's assistance as soon as the catalogue was completed. It was during this time that Prentice began the study of optics and reading the ophthalmology literature. There were no regularly published high quality optical periodicals, journals or other such literature at this time. Although several optical books had been published by this time in America, Prentice may not have been aware of their existence.

In the evening, he would read books by Donders, Helmholtz and other authors of the period. He noticed that none of these books contained a description of the properties or construction of ophthalmic lenses. This led Prentice to write a clearly illustrated 48-page paper entitled "Ophthalmic Lenses." This was published as a book in 1886 by James Prentice and Son. As a result of this book, Prentice developed a long friendship with Dr. Swan Burnett, reviewing editor of the *Archives of Ophthalmology*.

In 1886, Prentice also wrote and copyrighted a brochure entitled the "Opticist" in which he set forth the origination of the word and its meaning. Prentice was of the opinion that since the early years of the 18<sup>th</sup> century, opticians became generally known as the adapters and dispensers of spectacles. This was apparent since they alone had acquired a certain proficiency and experience in the selection and fitting of spectacles. The oculists of this time were not interested in spectacles and confined themselves strictly to the treatment of eye disease. The dictionaries of the day support this contention.

### **Invasion of the Province of the Optician**

However, Prentice claimed that between the years 1866 and 1888, after the publication of Donders' book, oculists began to surreptitiously invade the province of the optician. Some oculists, and general physicians, began to prescribe spectacles without

any training in this area. This, in turn, gave rise to a division within the opticians to those who were "dispensing opticians" and those who were "refracting opticians." In addition, the refracting opticians found their own ranks invaded by young watchmakers or jewelers who were taught to examine eyes at trade schools. All of these events led to the establishment of an atmosphere of the eventual conflict that ensued.

Later Prentice was introduced to Dr. Richard Lennox, pathologist at the New York Eye and Ear Infirmary. Prentice was interested in learning more about ocular pathology and Lennox was willing to assist. Lennox became Prentice's preceptor at the infirmary for two winter sessions during 1887 and 1888.

### **Publication Related to Combined Cylindrical Lenses**

In 1887, Dr. Swan Burnett had conceived the idea of making plastic models to illustrate bi-cylindrical refraction. Burnett sent to Prentice two crudely constructed combinations of cylinders made of wood, their axes at right angles. At this time, Burnett suggested Prentice undertake making similar models for cylinders, combined at other angles of deviation between their axes, along with mathematical solutions. After spending five months after office hours, Prentice had completed the text, illustrations and a set of five gilded models constructed in accordance with the 16 inherent laws not previously disclosed. James Prentice and Son published "Dioptic Formulae for Combined Cylindrical Lenses" in 1888. At that time, this was the only publication in which powers of the cylinders and the deviation of their axes were given and required to determine the primary and secondary refractions of any part of superimposed cylindrical lenses. The book and models were presented to Dr. Burnett who later presented them to Georgetown University, Washington, D. C.

In 1889, Dr. Burnett informed Prentice that Drs. Noyes, Jackson and he (Burnett) had been appointed to a committee to suggest a new nomenclature for prisms. A Dr. Dennett had already suggested the term "centrad." (It is not entirely clear who appointed this committee.) Burnett thought that Prentice might, based on his earlier publications, be able to suggest some simpler and more practical method of measurement. After due consideration by the committee, the resulting publication was the "Metric System of Numbering and Measuring Prisms." This paper was published in Dr. Knapp's *Archives of Ophthalmology*, January-April issue, 1890.

### **First Publication in the Ophthalmology Literature**

This paper was the first to reveal the intimate relationship between lenses and prisms and the consequent "Law of Decentration." Dr. Knapp requested this paper be translated into German for publication in *Archiv fur Augenheilkunde* in Berlin of the same year. This paper was the first published by an optician (optometrist) in the ophthalmology literature. As a result, Dr. Knapp advised Prentice to study medicine, but Dr. Burnett thought it inadvisable since Prentice displayed no interest in surgery. Prentice was happy to follow this advice since he knew to do otherwise would meet strong opposition at home.

Dr. Noyes invited Prentice to attend the meeting of the Section on Ophthalmology and Otology on October 19, 1891, to explain his suggested system of prism measurement. Prentice complied

primarily in the interest of early adoption of the prism-dioptre as the unit of prismatic power. The original name prism diopter had been suggested by Dr. Burnett. Subsequently, they decided to abandon the word diopter because it had already been applied to the surveyor's level. After the meeting, the chairman suggested a vote of thanks to Prentice, which was seconded by Dr. Knapp, and carried unanimously. Prentice was pleased since he was the only optician to have been privileged to address an assembly of medical specialists on a strictly scientific subject at this time. (Not too much has changed in this regard in 120 years, except optometrists have been banned from attending the American Academy of Ophthalmology.)

## THE AFFRONT

On December 16, 1892, the battle for independence in which refracting opticians would lawfully be recognized began with the writing of a letter. The central argument was that medicine, and in particular oculists, were not successful in convincing legislators that refraction was one of the "undisturbed possessions" of the medical profession. Prentice had taken charge of his father's practice on his death in 1888. He had developed a successful practice and received referrals from some 60 general physicians as well as satisfied patients.

Ultimately, the refracting opticians utilized three approaches to convince legislators that the medical concept or notion was not valid. First, they educated legislators with respect to historical background of optometry that clearly illustrated the development of the field and the science of refraction through activities essentially nonmedical. Second was the comparison of educational facilities and schools for training optometrists with the training provided medical students and thirdly, by placing emphasis on the physical as opposed to physiological aspects of optometry by the use of slogans. Interestingly New York was the first state to attempt to pass an optometry practice act but became the 13<sup>th</sup> state to pass an optometry practice act.

## The Letter from Dr. Noyes

Specifically, Prentice received a letter on December 17, 1892, from Dr. Henry D. Noyes thanking him for referring a patient but criticizing him for charging a separate fee for an examination. In this letter, Dr. Noyes stated that not only did Prentice place himself in direct competition with oculists but was doing so without having the proper training and education to do so. He charged that it was an impropriety for him to practice without the necessary qualifications. Prentice answered Noyes' letter on December 17, 1892, with a long letter describing his rationale, defending his actions and qualifications. This exchange of correspondence continued through much of January 1893. On January 2, 1893, Prentice again defended his actions based on his education and experience. Noyes shared Prentice's reply with Dr. D. B. St. John Roosa, who joined the fray, and thought Prentice might even be breaking the law. By the end of January, Prentice had considered the matter closed. St. John Roosa was successful in February 1895 in passing a resolution of the New York County Medical Society that ejected members who sent patients to opticians.

## Opticians Mobilize

At this time seeing the true trend of affairs, Prentice, brought the matter to the attention of Mr. Frederick Boger, editor of the *Optical Journal*. Boger, favoring a national or American association of opticians organization, published a call for action in the July 1895 issue of the *Journal*. He received an approving response from across the country. However, Prentice thought that a national organization was premature but would support a state association for scientific purposes. There already existed a New England Association. Prentice's editorial explaining the bill to incorporate The Optical Society of the State of New York appeared in the *New York Sun*. The Optical Society had been formed April 15, 1895, and was the third such society formed before any legislation was attempted in any state.

A small triumvirate was formed that consisted of Prentice, Andrew Jay Cross and J. J. Mackeown. This trio met in Mr. Boger's office to consider forming a steering committee for an organization. This group, and six other opticians, met September 13, 1895, in Cross' office. Of the nine people present, six were primarily interested in the dispensing business. No action was taken at this meeting once the group concluded that more opticians needed to be supportive of such an organization, if it were to be successful. A meeting was scheduled for December 14, 1895, at The Arena located at Broadway and 31<sup>st</sup> Street. However, after the September meeting, Mr. Mackeown informed Prentice he had contacted his personal attorney, a Mr. Channon Press. Mr. Press was of the opinion it was feasible to incorporate a society with powers to regulate opticians as had been done by the Dental Society. Up to this time, Mr. Prentice had concealed his intent to introduce legislation but in a private conference with Messrs. Cross and Mackeown, he shared his idea and they unanimously concluded that Prentice should present this plan at the next meeting. During the intervening time, Mr. Press was engaged as counsel for this yet-to-be-formed organization and received \$1,000 for his services in drafting legislation. Mr. Boger agreed to tour the state to solicit the attendance of opticians at the December meeting.

At the December 14, 1895 meeting, Mr. E. B. Meyrowitz was elected chairman of the group for this meeting. It was also at this meeting that the plan for an organization as outlined originally by Prentice was read by him to the group. The proposed legislation was, for the first time, publicly disclosed, explained by Mr. Press and endorsed by the assemblage. It was agreed to hold another meeting January 11, 1896. A few days later, Mr. Meyrowitz asked Mr. Press, the retained counsel, to call on certain members of the New York Ophthalmological Society to get their opinions of the proposed legislation.

There is no further reference to the called January meeting in Prentice's book and memoirs, but a meeting was held February 8, 1896, in Mr. Cross' office attended by a large number of opticians from across the state. At this meeting, Mr. Press gave his report of reactions from oculists interviewed and, following the report, the dispensing opticians rose and apologized for not being able to be a part of this organization. They wished the others good luck and retired from the room. This left the original 11 men plus Mr. Boger in the room. These 11 opticians were Prentice, Bausch, Cross, Bissell, Mackeown, Kenney, Mason, Appleton, Guy, Newing and Robbins.

Following the dispensing opticians' departure, Prentice addressed the group and told them this was the reaction he expected and that they should proceed to Albany, New York and place the drafted bill before the legislature at once. Mr. Cross cautioned against such hasty action and thought that opticians needed more education to a higher plane of efficiency and increased membership. Since no other attendees seemed in accord with Cross' suggestions, Prentice compared Cross' action to building a house on land you do not own. Furthermore, he stated "oculists don't care how much education we have, but they seriously object to our being allowed to use it. We must strike now." Prentice, many years later, told a meeting in Los Angeles, California in 1923 that it was that moment that determined the future of optometry in the U.S. Following this, all of the 11 men paid their respective shares of money and officers of The Optical Society of New York were elected. Prentice was elected president; George Bausch, vice president; Andrew J. Cross, secretary; and Frederick Boger, treasurer. The executive committee consisted of Messrs. Bissell, Bausch, Cross, Mackeown, Kenny and Mason.

## Opticians Challenge Oculists

### *First Attempt to Pass Legislation*

Within a week's time of the organization of The Optical Society of the State of New York, a bill was drafted and introduced in the Assembly (House) of the New State Legislature in Albany. It was accorded a hearing before the Committee on Public Health on February 26, 1896. It was during this hearing that Prentice used his "Class Model," his "Astigmatic Eye Model" and another model developed for laymen to explain the defects of vision and their correction by lenses. By February 19, 1896, the oculists had been granted a hearing and had already filed briefs in opposition to the bill. In an attempt to pass this legislation on its merits, the opticians presented some 600 signatures in support of the bill. Mr. Press described how the groups harmonized and where they differed. Letters were read from prominent physicians and five volumes of letters were placed in evidence, sent by physicians to five of the opticians. Press answered the committee members' questions and Prentice used the various models referred to above to demonstrate the various defects in vision and the manner of their correction by lenses. Prentice also emphasized that the art of adapting lenses is "the treating of light and not the treating of the eye." In fact, one of his models bore the inscription, "A Lens Treats Light" – "Physics Not Physic" – "A Lens Is Not a Pill." It was this particular model that was presented to the Rochester School of Optometry in 1921. Of these three phrases, the latter is the most famous. Following this, Prentice read a very lengthy paper entitled, "Defense of the Optician."

On March 11, 1896, The Optical Society's bill, No. 727, was favorably reported to the Assembly by the Committee. A few days later, the chairman of the committee had the bill brought back and amended. On March 18, 1896, the committee granted a hearing to the dispensing opticians and oculists opposing the bill. On March 25, 1896, Prentice, Cross, Mackeown and Press called on committee members in Albany but were unable to have the bill favorably reported. This ended the first attempt to pass an optometry practice act in the State of New York.

A special meeting of the original members of the society was held at Cross' office on March 28, 1896, to frame a constitution and

bylaws for the society. It was also decided at this meeting, by the executive committee, to hold the first society meeting in Syracuse, New York on June 2, 1896. In a subsequent special meeting on April 14, 1896, plans were formalized to hold the meeting at the Yates Hotel in Syracuse. This meeting was well attended by opticians from all over the state. Their interest had been aroused by the society's legislation and the published program of scientific lectures to be presented by ophthalmologists and opticians at the Syracuse meeting.

Perhaps the most notable aspect of the Syracuse meeting was Prentice's presentation of a paper on "Prismdioptry" and also one entitled "The Optician Treats Light—The Oculist Treats Disease." The latter paper prompted a series of exchanges which were either reprinted or published in the *Optical Journal* from July through September 1896. Prentice again suggested the title optician to help distinguish refracting from dispensing opticians. Early on, he was also opposed to the title "doctor" and chose the designation "physical eye specialist."

### *Second Attempt to Pass Legislation*

At the annual meeting of the society on October 6, 1896, at the Fifth Avenue Hotel in New York City, Prentice presented his revised legislation, Bill 459. This bill was discussed, amended and presented to the State Assembly on January 28, 1897, where it was referred to the Committee on General Laws. On the advice of a Dr. H. Bendell, an Albany ophthalmologist, Prentice wrote to each medical society in the state to explain his purpose in advocating an optometry bill. This bill received numerous hearings and subsequently was favorably reported by the committee. It failed by three votes when acted on by the full assembly. In the senate, the bill was introduced and referred to the Committee on Public Health where the original bill was amended to specify that two board members must be physicians. Prentice pointed out in his letter to the medical societies that since it was the responsibility of the State Board of Regents to appoint board members such an amendment was unnecessary.

However, the real opposition by the ophthalmologists seemed to be an objection to being regulated in any manner by a board of optometry and this bill was never brought up for a hearing. The opposition to the bill was so strong because it provided for the examination of oculists and opticians engaged in the practice of optometry. In the bill, Prentice used the word optometry since opticians were at that time engaged lawfully in the practice of optometry. Optometry being defined as involving a knowledge of theoretical, practical and applied optics, all of which the bill was seeking to compel qualification. Prentice also felt the use of the title optometrist would assist in decreasing the confusion created by two types of opticians. Following the defeat of this bill, Prentice did not attend any more society meetings until the optometry practice act was passed in 1908.

### *In Reflection*

In retrospect, it is evident that such a bill was not likely to pass during the first attempt given the lack of the establishment of a practice act and its supporting infrastructure. That is to say, the power for such a bill was vested in The Optical Society and not in the State. In the second attempt, the efforts of the organization were devoted to trying to pass the bill on the merits of the argument. Another factor that affected the outcome was that

oculists had no education in any optics and were opposed to such an examination.

Beyond this important issue, they felt that medicine already incorporated all those aspects optometry was attempting to bring under its control. At this point in the profession's history, and for many years thereafter, optometry did not clearly understand that the political reality of counting votes was, relatively speaking, more important than the merits of the legislation. It seemed clear that optometry could only control its destiny and not that of the oculists. Being the idealist he was, Prentice made the decision to bow out of the political arena and devote his energies to other pursuits.

At the society's June 8, 1897 meeting, the defeat of the bill was discussed but Prentice apparently missed this meeting due to illness. However, as a result of advice from friendly ophthalmologists as well as legislators, Prentice visited, by letter, each state medical society to explain his interest in the bill. The society's executive committee had also agreed that any board of examiners established as a consequence of the passage of this legislation would consist of at least four physicians. Originally, as Prentice had written the bill, board members were to be appointed annually by the Board of Regents of the university of the State of New York, two being versed in physiology and pathology and two in practical, theoretical and applied optics. This change essentially placed the profession of optometry in the hands of ophthalmology.



Charles Prentice (Image courtesy Archives and Museum of Optometry and The AOA Foundation).

## *No Longer Directly Involved*

At the October 5, 1897 meeting of the society, Cross was elected its second president. Although no longer directly involved in the society, Prentice did retain his interest in the profession and his efforts continued as he made personal appeals to the governor, the legislature and ophthalmologists.

This era can be summarized in the following manner. The Optical Society of the State of New York was organized on February 8, 1896. Thus, this organization became the third formed before any legislation had been enacted anywhere. The first two states to enact optometry practice acts were Minnesota and California. The bills introduced by these states, while not exactly the same, were patterned after the first optometry bill that had been advocated by The Optical Society of the State of New York and first introduced in 1897. New York became the 13<sup>th</sup> state to enact its original optometry practice act in 1908.

## MOVING FORWARD

With the election of Cross as president of the society, Prentice was of the opinion that Cross followed the line of least resistance as exemplified through the belief "One can catch more flies with molasses than vinegar." Cross also earned Prentice's criticism for failing to introduce a bill in the 1898 legislature and coming very close to ruining the aspirations of the optical society. According to Prentice, "the weak and irresolute policy of Cross gave medical opponents the opportunity to introduce a bill that placed fear in the heart of opticians, chiropodists, truss makers, bandagists, department stores and Christian Scientists." If not for the determined interests of the organizations, opticians would have been eliminated.

This scare gave rise to the awareness there was a need for more aggressive leadership of the society. In 1903, Mr. B. B. Clark of Rochester, New York became the third president serving for the next three years. An aggressive policy was again resumed and another optometry bill was introduced in 1904 in which it became necessary to grant exemption to the physicians. The concession of a physician exemption and the administration of a board of optometry by the board of regents resulted in the bill being passed in the next legislative session on May 8, 1908. Clark appointed E. E. Arrington chairman of the legislative committee and lobbyist for The Optical Society of the State of New York in 1904. Prentice has given full credit to Arrington for his achievement in passing this historic legislation in spite of Arrington's weaknesses of seeking popularity and esteem. It was due to Arrington's persistent efforts that it became possible for other states to follow the example of New York. Interestingly Arrington never mentions Prentice's earlier efforts in Chapter II (Legislative Efforts) of his book entitled *The History of Optometry*.

Thus, it had been 12 years since the effort to establish and regulate the profession of optometry had begun in the state of New York. It had proved not possible to regulate the profession through a professional organization or to establish a single standard for all future eye practitioners to qualify alike. Prentice stated it was not his intent through the enactment to establish a new breed of optician, later designated as optometrists, but to establish a law that through agreement with the oculists would lead to a just ophthalmic practice act.

## New York State Board of Optometry

It was Arrington's wish that Prentice help the society prepare plans for carrying out the provisions of the law even though Prentice had not been active in the society for 10 years. As a result, Prentice served as the president of the newly formed, or more properly stated, appointed to the board of examiners in optometry from 1908 to 1918. At the society's June 1908 meeting at the Savoy Hotel in New York City, Prentice had presented his paper in support of a proposal that the subjects for board qualifications for future practitioners should be the following: theoretical optics, practical optics, physiological optics, theoretical optometry, practical optometry and anatomy and physiology of the eye. Although Cross believed this proposal was too advanced, it was nevertheless approved by the board of examiners.

An announcement was made to the optical press that at its meeting on October 8- 9, 1908 an examination syllabus had been established by the state board. This syllabus determined that the complete examination would cover six subject areas: Theoretical Optics, Practical Optics, Physiological Optics, Theoretical Optometry, Practical Optometry and Anatomy and Physiology of the Eye. Therefore, the New York State Board of Optometry, with concurrence of the New York State Educational Department, would permit graduates of programs that required at least three month's attendance to take examinations in all subjects except theoretical optics and pathologic conditions of the eye. Thus, the abbreviated examination of 1909 covered limited knowledge. The complete board examination was offered from January 1, 1910.

Prentice served as the president of the New York State Board of Optometry beginning this same year of 1908. The first comprehensive board examinations were administered in early 1910. Augustus S. Downing had decided that since theoretical optics was not being taught by current trade schools this section could be omitted until the 1910 administration of the examination. During the first 18 months of the board's existence, it passed 2,000 candidates for exemption certificates. This served as the nucleus of the first optometrists licensed in the state of New York.

## Columbia University Course in Optometry

During a banquet at the Ten Eyck Hotel in Albany, New York, attended by Gov. Charles E. Hughes, in 1909, Prentice met Dr. Augustus S. Downing. Many years later, Prentice would dedicate the first portion of his book on *Legalized Optometry* to Gov. Hughes for signing the Optometry Practice Act. The second part containing his "Memoirs" would be dedicated to Dr. Downing for his support, during Prentice's time as president of the New York State Board of Optometric Examiners. During this time, Dr. Downing was the first assistant commissioner of education and director of professional education for the state of New York. At a later time, Prentice brought to Dr. Downing's attention that none of the then-current trade schools taught theoretical optics and this would pose a problem for candidates taking the state board examination.

### *The Inception of the Columbia University Optometry Course*

It was Dr. Downing who introduced Prentice to Professor William Hallock, head of the physics department, Columbia University, on December 28, 1909. This was after Dr. Nicholas Murray Bulter,

president of Columbia University, had consented to establish a course in optometry. Dr. Downing had taken Prentice's plea to heart regarding the need for an optometry course at the university level and conferred with Dr. Bulter in a meeting at Columbia University. Prentice followed his meeting with Hallock with a memorandum on January 3, 1910.

In an unfortunate turn of events, Professor Hallock departed for Europe without notifying Prentice. After this, the program was quickly placed in the hands of Professor J. C. Egbert. Egbert requested that Prentice provide an outline of the expected courses to be taught by the university that would satisfactorily comply with the New York State Education Department. Prentice prepared this synopsis for Professor Egbert in six weeks time. The university would provide instructors in physics and theoretical optics and asked Prentice to lecture as well as provide the names of others who could teach the other subjects.

### *Equipment and Course Syllabus*

Mr. Prentice suggested the names of Cross and Mr. Frederick A. Woll as other possible instructors for this program. A medical faculty was requested from the College of Physicians and Surgeons as the instructor in anatomy and physiology. The necessary equipment was solicited or donated from the Bausch and Lomb Optical Company and Standard Optical Company. Members of the society individually contributed other necessary items. The synopsis was provided using two copies of five books and rearranging and classifying the pages such that three new books emerged containing subject matter that applied only to the contents designated by the titles "Physiological Optics," "Theoretical Optics" and "Practical Optics." In a memorandum dated April 8, 1910 to Professor Egbert, Prentice expressed his opinion that this course or program be in the department of physics. These new books were bound in Moroccan leather and, after approval by the board of optometry, presented to Columbia University. The cost of printing and binding were paid for by the society.

### *Announcement of the Course*

Formal announcement of the Course in Optometry at Columbia University was made in the optical press in the spring of 1910. Prentice received several congratulatory telegrams or letters from colleagues about this program on May 10, 1910. At the society's 1910 convention in Rochester, New York, Prentice announced to the convention the establishment of the Course in Optometry at Columbia University. This was the first university-based optometry program in America. The university amended the announcement that a collegiate course in optometry was offered by Columbia University in its extension education department to medical and nonmedical candidates, the latter of who must have two years of high school training. Prentice also wrote an article for publication in the public press and received the commendation of the *Brooklyn Eagle* on June 23, 1910.

### *Connection to Alabama*

In late 1910, Prentice published a two-leafed folder entitled, "An Object Lesson in Optometry," which was designed to explain to the public the corrective effect of lenses on defective vision. This folder was also printed and distributed by the American Optical Association for legislators where legislation was in progress. This folder's contents was endorsed by Professor James P.C. Southall from Alabama Polytechnic Institute, Department of Physics,

Auburn, Alabama in a letter dated December 15, 1910. Southall was to become a professor in the department of physics and director of the Columbia University Optometry Program in 1914. He also published several well-known books. The first book was *Principles of Geometrical Optics* published in 1910; the second was *Mirrors, Prisms and Lenses* published first in 1918 and revised in 1923 and 1934. Southall was also the editor of the American Edition of Helmholtz's *Physiological Optics*.

### *Medical Opposition to the Optometry Program*

Not surprisingly, shortly after the optometry course had begun in October 1910, the medical instructor, Dr. Opitz, had withdrawn his services as a result of objections made by the faculty of the College of Physicians and Surgeons. Another faculty was found, Dr. Louis R. Welzmler, to take Opitz's place. The oculists continued to petition the president and others at Columbia to eliminate the optometry courses. They were promptly referred to Albany and the state legislature.

### **Other Personalities and Issues**

#### *Prentice and Cross*

Prentice did not care for Cross since, in Prentice's opinion, the latter sought popularity and esteem early in the fight for recognition for optometry. Cross had been one of the original three men who began the effort for organizational and legal recognition of optometry. It was Cross' willingness to compromise that seemed to disturb Prentice the most. Prentice was of the opinion that Cross had been a less than forceful leader when president of The Optical Society of New York. He thought that Cross and, later his loyal sycophant, Arrington, were at opposite ends of the same appendage. Prentice thought Arrington was at the barking end and Cross the wagging end. In addition, Cross favored the title "doctor" for optometrists which Prentice opposed.

Cross did much to develop the technique of dynamic retinoscopy for clinical practice. According to Prentice, as learned from Burnett, it was Bowman who first discussed the possibility of applying the skiascopy mirror for measurement of refractive error. However, Bowman did not pursue the clinical development of this subject. Certainly Cross did much to popularize dynamic retinoscopy within optometry. In this technique, the patient fixated on the light or a near target rather than a distance object. The advantage of this technique was that it rendered cycloplegia unnecessary and gave the clinician insight as to the response of accommodation and convergence. Static skiametry was performed through a dilated pupil and thus not utilized by early optometrists. Also, for many years, Cross worked to develop a monocentric bifocal and, near the end of his professional career, this lens went into production.

Cross was elected the second president of The Optical Society of the State of New York in 1898 and the president of the American Association of Opticians in 1900. (It became the American Optical Association in 1910 and the American Optometric Association in 1919). According to Hirsch and Wick, Cross was an unusual man but imbued with a vision that moved optometry forward. Cross recognized the need for education and helped establish the New York Institute of Optometry which lasted only briefly. Prentice offered him the instructorship position at Columbia University. One of Cross' greatest assets was his ability to get

people to work together. It was Cross and Arrington who worked together to secure legislative success not only in New York but on a national basis.

#### *Prentice's Goals and the Title Doctor of Optometry*

Prentice's primary goal from the beginning of his efforts to pass legislation was the establishment of a just and uniform ophthalmic practice act. His desire was for both optometry and ophthalmology to have education in optics and refraction (optometry) and co-related medicine and surgery. He did not support the title of "doctor" and even went so far as to have an amendment (S.B. 868) introduced to the New York State Optometry Practice Act on February 13, 1913. This bill would prohibit a title unless conferred by a duly authorized college or university. He had instigated the amendment on November 29, 1912 and was aware by February 5, 1913 of its introduction the next week. This was no doubt an unpopular move by Prentice.

#### *Conflicts Between Prentice, Cross and Arrington*

Beginning in 1912, Prentice exchanged correspondence with both Arrington and Cross regarding their views versus his own on several issues. It is clear Cross and Arrington had differing ideas and goals than Prentice. No doubt all three of these men were considering how posterity would view their respective roles in the history of the profession. Prentice reiterated his belief that qualifications in optics is the only excuse for the practice of optometry as a special branch of applied science. He also believed the public was best served from the services of the practitioner who has had accredited knowledge of both optics and medicine. One of his great disappointments was the exemption granted oculists in the very beginning from the optometry practice act. Prentice felt that if oculists realized their own situation (shortcomings) in this area they would ask for a proper modification of optometry laws to establish the logical ophthalmic practice acts. Other issues were related to who should receive credit for the optometry law, of being ahead of the times regarding educational requirements, securing uniform ophthalmic practice acts with one class of practitioners and the title doctor. This brief outline illustrates some of the differences in philosophy and approach.

#### *Resignation from The New York State Society*

On May 12, 1913, Prentice resigned from the optical society over the issue of the incoming president insisting on using the title doctor based on a degree known to be for sale by so-called chartered colleges in another state. This action was part of the ongoing disagreement Prentice had with Cross on what Prentice perceived as Cross' approach to issues and character. It is difficult to perceive that many contemporary optometrists would agree with Prentice on issues related to title and scope of practice. In spite of either Cross or Arrington's failings, or perceived failings, it seems they were both politically pragmatic.

### **OTHER PROJECTS**

Prentice spent much time between 1912 and 1921 working on contributions to the American Encyclopedia of Ophthalmology in the area of Physical and Physiological Optics. Prentice and Dr. Casey Wood, the editor-in-chief, had many exchanges regarding the status of optometry and its rightful title. Unfortunately, the beginning of World War I prevented a conclusion of this

discussion. These discussions were not resumed following the conclusion of the War.

Prentice learned of the intention of The Ohio State University (OSU) to begin an optometry program in its department of physics. He wrote to OSU President W. O. Thompson and received a reply on August 29, 1914. This program began in 1914 as a two-year course and became a four-year program in 1915 with a B. S. degree in Applied Optics from the College of Engineering. There can be little doubt that the inception of the OSU program and, later the University of California at Berkeley program, was influenced by the existence of the program at Columbia University.

### **Resignation from the Board of Examiners in Optometry**

In a letter dated May 15, 1918, Prentice resigned from the state board of examiners in optometry for reasons of health. He was now 64 years of age and had served for 10 years. Likewise, after seven years, he had completed his contributions to the Encyclopedia of Ophthalmology of which the last volume was published in 1921. He sold his practice as well in 1921 to his assistant Mr. Perry Hanuer. Prentice moved to the Pacific coast area of British Columbia that same year following his retirement. On March 17, 1926, he received a letter from Professor Southall informing him the optometry program at Columbia continued to flourish and that a new four-year curriculum leading to a B.S. degree, as well as a certificate of graduation in optometry, would be offered under the direct supervision of the Council of the University. This meant the optometry program would no longer be under the university extension program.

The optometry program at Columbia University was in existence from 1910 until the 1950s when the decision was made by the university to close the program. The last students of the program graduated in 1956.

### **Legalized Optometry and the Memoirs of its Founder**

It is not clear in what year Prentice began writing his book. The book is 416 pages in length. It was published in 1926 by Casperian Fletcher Press, Publishers, Seattle, Washington. The preface from the publisher is dated May 1, 1926. This book was divided into two parts. The first part, *Legalized Optometry*, is 179 pages in length (pages 9-188) and describes the events and issues related to the legalization of the profession. It provides great detail of the various individuals involved and the actions taken that led to the legalization of the profession in New York and other states. It is both striking and remarkable that in many ways the behaviors of those opposed to optometry has not changed in 120 years.

The second part, *The Memoirs of its Founder*, is 199 pages not counting the author's preface or postscript and the back matter. This chapter is the memoir portion of the book and describes Prentice's life, family, his entry into the profession and participation in various professional organizations and boards, the beginning of university optometric education and his various publications. The postscript to this chapter is dated August 1926.

Prentice died on July 2, 1946 at age 92 having never remarried. He was a courageous, if idealistic, man who deserves the credit of the title "Father of Optometry," even though he was not successful in passing legislation in the state of New York. He took a position for the establishment of an independent profession that otherwise might not have come into existence and contributed to its early formation in many valuable ways. For any optometry student, optometry resident or optometrist who wants to understand the heritage of the profession this book is highly recommended.

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