

Memories of OSA and Optics In the 1920s

John N. Howard

When F. Dow Smith was elected to the OSA presidential sequence in 1973, he found that one of his duties as president-elect would be to serve as a traveling lecturer, visiting all the OSA local sections to give a talk. In preparing one of the lectures it occurred to him that he should contact some of the important old timers and ask them for their recollections of years past. One who responded was professor George Harrison of MIT, a well-known spectroscopist who had been a member of OSA since the early 1920s, had served as editor of JOSA for 10 years and had been OSA president in 1945-46. In 1973, Harrison was dean emeritus of the School of Science at MIT. Here are some of his reminiscences, with a few editorial comments in parentheses.

I first became aware of the Optical Society during 1921, when I went to the National Bureau of Standards (now NIST) to work for the summer with W. F. Meggers. Meggers left for Europe within a week of my arrival, after turning me over to help out as an assistant physicist in the laboratory of Paul Darwin Foote and F. L. Mohler. (Foote had been one of the charter members of OSA when it was founded in 1916.) Those were the days when the critical potentials for atomic excitation and the production of optical spectra were very much the rage in physics. Foote spent most of his time blowing intricate glassware; I remember getting tangled up with one of his complex productions by accidentally touching the terminal of the high voltage transformer located within it. My arms flailed in all directions, smashing the glassware as I fell to the floor. I remember carefully calculating how long I should stay there as Foote came running. If I got up too soon he would berate me for breaking his equipment, but if I stayed down too long he might think I was dead.

“At that time (1921) Foote was editor of JOSA, which was familiarly known around the National Bureau of Standards as “Foote’s Annalen.” The Optical



Photo by Johnston and Johnston, AIP Emilio Segre Visual Archives

Paul Darwin Foote oversaw the NBS lab in which young Harrison was employed as an assistant physicist. “Those were the days when the critical potentials for atomic excitation and the production of optical spectra were very much the rage in physics,” remembered Harrison.

Society, which had originated as an offshoot of what is now the OSA Rochester Section, was only a few years old then. The Bureau of Standards itself had a very active OSA local section, with at least a couple dozen members.

“In those days attendance at OSA meetings in excess of 50 was very unusual; that was about the number that we expected at the Annual Meeting, which was usually held at some place like Lake Placid, N.Y., or Buck Hill Falls, Penn.

“In the late teens and early 1920s, there was considerable feeling among those optical, acoustical and other physicists who were not primarily concerned with atomic structure that the American Physical Society was not taking proper care of their interests, and this resulted in the formation of a number of specialized societies such as OSA. As this movement grew, however, such people as Karl T. Compton (a physicist who was president of MIT in 1930-48) and others felt it was desirable to try to foster some unity in

this diversity, and the American Institute of Physics (AIP) was started in 1930 as a common publications office. (OSA was one of the five founding societies of AIP, which undertook the publication of JOSA.) As the editor of JOSA for a 10-year period, I can remember that my greatest ambition in the early days was to have enough pages in JOSA to produce an issue thick enough so that the volume number could be printed on the spine of the journal as well as on its face. (The minimum required size was 64 pages.) This was a problem that I imagine will not soon arise again.

“In much the same way that OSA had grown in the early 1930s, the applied spectroscopists showed a desire to break away from the Society after the war. But the break was delayed when the pages of JOSA were opened to papers on atomic and applied spectroscopy. (Later, of course, the applied spectroscopists formed their own very active Society of Applied Spectroscopy, which grew rapidly.)

“After the snipping had begun, my barber said to the other barber, ‘We gotta lotta opticians in the hotel this week.’ After more snipping the other barber replied: ‘They ain’t opticians ... they’re higher class ...’”

“I remember the meeting at which R. W. Wood announced the results of his tests of concave replica gratings, which had been made by the process of White. This was a great step forward and marked only one of the many times that R. W. Wood reported on interesting work before the Society. I am sure that Wood gave White proper credit, although at the time I had the impression that he was the one who had made the first replicas. Credits got sorted out in due course, but the incident reminded me of the Wheatstone Bridge, which was not really invented by Wheatstone but merely described by him at a meeting of physicists, where his being a celebrity

completely eclipsed any credit that might belong to the real inventor, who was a relative unknown.

“I remember the first announcement of what is now the Xerox copying process at a meeting of OSA in Niagara Falls, N.Y. As I recall, the process was demonstrated on the stage and showed excellent results in copying typed and printed papers, but was not very good for copying half-tone figures. (This problem was only solved years later with the introduction of new types of Xerox copiers.)

“I remember at that same meeting I had arrived from Boston so early in the morning that the OSA registration desk had not yet opened. Getting a haircut

seemed like a good way to waste some time. After the snipping had begun, my barber said to the other barber, ‘We gotta lotta opticians in the hotel this week.’ After more snipping the other barber replied: ‘They ain’t opticians ... they’re higher class ... They’re the ones who design the stuff that the opticians work with ... It’s sorta like the difference between the barber supply fellas and us.’”

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Correction

In a caption in the June 2003 edition of this column, Abraham (A.C.S.) van Heel was incorrectly identified as the first president of the International Commission for Optics (ICO). Thomas Smith was actually the first president of the ICO; Abraham van Heel was the second.