

My sixty years with The American Physical Society

In reminiscent mood, the Secretary Emeritus recalls some of the people and events important in the development of the society since the early years of this century.

Karl K. Darrow

In the year 1913, the last of the Golden Years before the first of the great convulsions that have afflicted the twentieth century, I was a graduate student at the University of Chicago. I was a Chicagoan by birth, and my parents and I lived about a mile from the University. This geographical accident was what caused me to be enrolled in a University having one of the strongest, perhaps indeed *the* strongest, of departments of physics in the country. No such circumstance was responsible for the presence of another graduate student of physics, Yoshio Ishida, whose name discloses his native land. I wish I knew why he had chosen the University of Chicago: probably his

choice is proof that it had already a high reputation overseas.

One day Yoshio was standing nearby when I asked Robert Millikan whether I might join The American Physical Society—the Millikan, of course, already well on the way to fame and the Nobel Prize as the measurer of the electron charge by the “oil-drop experiment.” Like “Little Audrey” in the now antiquated joke, Yoshio “laughed and laughed and laughed.” It was evident that he thought that my question was presumptuous, and his laughter made me think that I had indeed made a *gaffe*. But Millikan evidently did not consider it too presumptuous, for within a few months I became a member.

Although meetings were held every year at the University of Chicago, my first out-of-town meeting of the Society—remember that “out-of-town” meant at that time, for me, “out-of-Chicago”—was held at Columbus. It was a joint meeting of the APS with the American Association for the Advancement of Science. Since this was a meeting of all the societies belonging to the AAAS, the conspicuous “retiring presidential address” was not that of the APS President, but that of the AAAS President, who was Charles William Eliot, long the President of Harvard University. Of all the words of wisdom that he uttered I remember

not one, but I still remember his dignified appearance as he stood upon the lecture platform.

A year later, the meeting of AAAS and APS was held in New York. On New Year's Eve I stood in a vast crowd at the corner of Forty-third Street and Broadway, and waited for the numerals 1916 to change to 1917 on the north facade of the Times Building. When they changed there was wild applause from the crowd. I did not join in it, but somberly reflected that 1916 had been the worst year of the twentieth century and that 1917 would probably be still worse. How right I was! Then I walked to Penn Station and boarded my train, not divining for a moment that the next New Year would find me a New Yorker. But back to New York I came in September 1917 (and from then until 1956 my services were to Bell Telephone Laboratories).

I do not recall when I first met Willard Severinghaus, my immediate predecessor in the Secretaryship of the APS. Probably it was at Chicago or Columbus. The first vivid memory that I have of him refers to the New York meeting of 1916–17. I was one of those who joined a tour of Fayerweather Hall, then the physics laboratory of Columbia University, and Severinghaus conducted the tour. Wishing to make a favorable impression on him, I asked him a question that I immedi-

This year The American Physical Society celebrates its seventy-fifth anniversary. A special session at the society's joint meeting with the Optical Society of America in Washington D.C. last April marked the occasion with retrospective and prospective views of the APS and its role in the development of physics in America. Among them was Karl K. Darrow's recollections of his sixty-year association with the society, upon which this article is based.

Darrow has been a member of the society since 1913 and was its Secretary from 1941 to 1966; currently, as Secretary Emeritus, he is one of the seven Council Advisors.



ately realized to be foolish, as did he. A convenient failure in my memory has erased the details.

The Secretary's duties

It was at this same meeting that I watched Severinghaus performing what was then one of the chief tasks of the Secretary. During the sessions he would come from time to time to the room where the session was going on, pull down one of the upper blackboards, write upon it with frantic haste the names of members who had just brought to him the news that they intended to speak, and add the titles of their papers. This experience caused Council to institute the draconian regulation that no (contributed) paper could be accepted unless its abstract was in the Secretary's hands by the deadline date for the meeting. This regulation greatly simplified my life when in my turn I became Secretary of the Society.

One day early in December 1941 George Pegram told me that Severinghaus felt he had served as APS Secretary long enough and wanted to reserve his time for Columbia University where he was professor of physics. Then Pegram asked me whether I would be willing to accept the Secretaryship. I said that I should indeed be, but that first I would have to seek the approbation of Mervin J. Kelly, then President

of Bell Telephone Laboratories. Pegram gravely nodded assent. What he knew and had not told me was that he had already discussed the matter with Kelly, who had given his full assent. Further, Kelly had given Pegram more than I suspect the latter had ever dared to hope for. Not only would Bell Telephone Laboratories continue my salary undiminished, but it would continue to pay my travelling expenses to APS meetings. This bonanza was welcome to the society and a blessing to me, for I retained my moorings in Manhattan while the Laboratories drifted off into the far countryside of New Jersey where most of its staff were happier. However, the Manhattan building of Bell Telephone Laboratories had not been completely vacated when I reached retirement age, near the end of 1956, though it was fast becoming deserted and lonesome. It was not till mid-December that I walked

out of my old office, not quite happy to be going, for the ties of habit are strong. Thereafter I had no office but that of the APS at Columbia University. The Treasury of the society, like many a boy graduating from college, found out what it was to have to pay its own way so far as the expenses of the Secretaryship were involved. Pegram in earlier days had spoken in conversation, and sometimes at Business Meetings, of the society's "scandalous surplus." It melted fast as inflation proceeded, and the dues had to be raised.

Sessions, papers and abstracts

The principal task, or in common parlance "the big job," of the Secretary was to arrange the papers into sessions, preferably of ten to fourteen papers each. These were the "contributed" or "ten-minute" papers, so-called to distinguish them from the "invited pa-

pers" to which no statutory limit of length existed. The ideal was to set up each session in such a way that everyone who attended it would be interested in every paper in it, and not in any paper included in any other session simultaneous (or, as we often said, "parallel") with it. Like other "counsels of perfection" this ideal was unattainable, but I strove to come as close as possible to it. In the halcyon days when papers were so few that there was no need of simultaneous sessions, only the first problem existed; but this by itself was no mean one, and I had to draft into service such people as Robert Serber (for theoretical physics, naturally), James Rainwater, and William W. Havens, my successor who got part of his training in this way. Fortunately, at Columbia University there were two large student laboratories, one on each side of my tiny office, each of them with numerous large tables. At certain times these were empty of students, and in the last days before the deadline date for either an Annual Meeting or a Washington meeting these tables would be covered with abstracts so that they might have been supposed to be snow-drifted but that there was so much ink on the "snow." I do not know how this job is now handled at The American Institute of Physics. I have not asked.

Finally would arrive The Great Day when I packed all of the abstracts, clipped into groups each corresponding to a single session, into some kind of a satchel and, clutching the satchel as though my life depended on it, hailed a taxi and directed the driver to the AIP. There I delivered the packet into the very able hands of Wallace Waterfall, Ruth Bryans, Jean Doty, or one of their aides. These remarkable people knew all of the cabalistic signs whereby printers are instructed what kinds of type to use and what spacings to adopt in converting typescript into print and most particularly in converting formulas into print. It was a treat to see an abstract decorated with these signs, and a still greater treat to see it as it emerged in our *Bulletin* from the Lancaster Press.

I didn't read very many of the abstracts otherwise than in the swift and superficial way that usually sufficed to locate it in a not-too-inappropriate session. I was usually very conscious of the fact that much labor and energy and time might have gone into the work to which a particular abstract was devoted, and that the paring of an abstract by its author or authors to get its length within the two-hundred-word limit might have been a painful business. It was obvious that some abstracts were more important than others; many still remember the meeting at which Felix Bloch and E. M. Purcell

THE AMERICAN PHYSICAL SOCIETY.

Minutes of the First Meeting.

MORNING SESSION.

The first meeting of the Society was held in Room 304 Fayerweather Hall, Columbia University, New York City, on Saturday, May 20, 1899, at 10:30 A. M.

The meeting was welcomed on behalf of the University by Professor M. I. Pupin.

On motion of Professor Pupin, Professor LeRoy C. Cooley was made temporary chairman, and Professor A. G. Webster was elected secretary of the meeting.

On motion it was resolved that a Physical Society be formally organized.

On motion a committee was appointed, consisting of Messrs. A. G. Webster, E. L. Nichols, W. F. Magie, B. O. Peirce, Wm. Hall-ock, and M. I. Pupin, to draft a constitution.

After a general discussion of the aims and policy of the Society it was voted that, except in special cases, the meetings be held in New York City; that the meeting express the willingness of the Society to establish local sub-sections when demand shall arise; and that it further express the sentiment of the Society to cultivate the closest relations with Section B of the American Association for the Advancement of Science, and to contribute by every thing in its power to the latter's success.

The *Bulletin of The American Physical Society*, volume 1, number 1, reported in its opening pages the first meeting of the APS, on 20 May 1899 at Columbia University.

simultaneously brought to the world the discovery of magnetic resonance. It was obvious that others were trivial, but they were not excluded. Non-members would sometimes send in abstracts totally irrelevant to physics, but the fact that a nonmember was debarred from presenting a ten-minute paper was sufficient for rejecting these. The fact that "physical" is a word of more than one meaning subjected us to experiences that chemical and astronomical and geological societies do not have. My wife remembers a headline in a newspaper of a medium-sized city which made it clear that its editor thought that "physical" had to do with physique and body-building. I wish I had that headline now. It read: "Body-builders Assemble for Meeting!"

Finally came the preparation of the Preamble. The word "preamble" was, I am nearly sure, introduced by myself into the vocabulary of the society. Into the Preamble I strove to insert, or others strove to insert, all that the members had to know about such matters as the names of the "official" hotels and their rates. In olden days I would take care to include instructions how to get from the hotels to the meeting-place by streetcar or bus, but as the members got more flush and their expense accounts more liberal, most people just took taxis. This worked very well for those going from the hotels to the meeting-places, but not always in the other direction, and many were the times when I stood on Connecticut Avenue near the National Bureau of Standards waiting for a streetcar or a bus to come along.

In the one-session-at-a-time days the President or the Secretary could be conspicuous by his absence. In the multisession days this handicap vanished, and I could disappear into the local art museum after leaving word with a few important people that I could be paged there. I never was. In fact I acquired quite an extensive knowledge of the museums of the US and Canada during my years in the Secretaryship. Among these is the superb museum of Kansas City, to which I paid the "ultimate tribute" once by going at my own expense from St. Louis to Chicago via "K.C."

The Council

Timing of Council meetings could be a delicate business. There seemed always to be at least one Councillor, or more than one, who would complain that the Council meeting was scheduled just at the time when some paper was being given that he particularly wanted to hear, or worse yet, when he himself was scheduled to give a paper. This simply could not always be helped. We finally circumvented this



Albert A. Michelson (left), the second president of APS, is seen in Marguerite O'L. Crowe's 1908 photograph with Robert A. Millikan, Henry G. Gale and Carl Kinsley, seated on the steps of the Ryerson Physical Laboratory at the University of Chicago.

by holding the Washington and New York meetings on the days before the scientific sessions commenced—this was likely to ruin Sunday, until the meetings were transferred the latter days of the week—and the Midwestern meeting at some specially chosen day in October so that Thanksgiving would not be ruined for the Midwestern members. A Chicagoan myself, I never realized how great was the antipathy in the Midwest to Thanksgiving meetings until I had to take responsibility myself for recommending a date to the Council.

The Council also has changed, and in my not-so-humble opinion, not for the better. It has expanded from a membership of about fourteen to twenty-five or thereabouts. Formerly it could meet in Pegram's office at Columbia; now it meets at the AIP, around a table so long that it seems to extend almost from the United Nations to the Rockefeller University. I, who used to know all of the members of the Council, now see people sitting at the council table whom I do not recognize. This is my loss, not theirs; but I remember that when the change was proposed, someone—luckily I have forgotten who—said that the old system favored "the élite." I remembered the story of a member of the *Chambre des Députés* in Paris, who was present when some radical measure was proposed, perhaps the extension of the franchise to eighteen-year-olds. The proponents said the then system favored the élite. Upon this another member of the

Chambre leaped to his feet and shouted "Vive l'élite!". And so say I.

Michelson and Millikan

The first President of The American Physical Society was Henry Augustus Rowland. Him I never saw, and he is one of the two Presidents who enjoy, or enjoyed, that distinction. The second President was Albert Abraham Michelson, whom I was to see often in due time, for he was professor and head of the department of physics at the University of Chicago—the titular head, that is to say: Millikan apparently was the real head. Michelson sat in a big office with a matte-glass panel on the door: he was supposed to spend his time cogitating on the problem of making bigger and better diffraction-gratings. Twice, and twice only, I dared to tap on that door. One occasion is without significance, but the other seems worth telling. A fellow-student and I differed on a point in electromagnetic theory that had figured in Michelson's lectures. We decided to abide by Michelson's arbitrament, and my fellow-student was so unwise as to insist that we bet three dollars on the outcome. One of us rapped on the glass panel, and Michelson came and opened the door and received us with the grave courtesy characteristic of him. My fellow-student was first to put his case, and Michelson agreed with him. Then came my turn: I put my case, and Michelson reversed himself and agreed with me! We excused ourselves, and like a gen-



HAVENS

tleman my colleague at once paid over the three dollars. I tried my best to refuse it, for I felt that the three dollars meant much more to him than to me who was being supported by my parents; but I failed.

Millikan was a great physicist but not a good linguist. I, being in somewhat the opposite situation, sat and winced when he addressed a Colloquium at the University of Berlin in 1912. Genders annoyed him, as they have annoyed many another; and sometimes he would jocularly prefix *der die das*, all three of them, to a noun. This, I felt, made the audience friendly to him. To our Mexico meeting of 1950 he came, I think, partly at my urging, for I knew that his prestige would build up what I thought would be a small meeting (it wasn't). I do not recall that he ventured into Spanish; but I do recall that in a short allocution, which I was asked to translate, he said that he was glad that he had "put me on the skids." I did not choose to translate this remark literally into Spanish; but of course there were a great many Mexicans there whose English was perfect, or nearly so. They grinned.

Lord Rutherford had something against Millikan, and I never discovered what. I went to call on him once every two years in the 1920's and 30's, and I think he never failed to make some disparaging allusion to Millikan—except once. In 1937 I went with Harvey Fletcher to make my biennial call. Fletcher had been a student of Millikan's and admired him greatly, and so I warned him of what I thought would happen. It was unnecessary. Rutherford talked about the impending war, which he foresaw accurately—this in a period when most of us were still deluding ourselves that Hitler didn't

mean what he was saying. I never saw him again. But I am going rather astray from my topic.

Joint meetings

The first of our meetings in Mexico occurred while the Mexican Physical Society was being organized, and may have given a stimulus to it. The other three were joint meetings with the Sociedad Mexicana de Fisica, of which Manuel Sandoval Vallarta was deservedly the first President. Vallarta was the principal architect of these four meetings in Mexico, indeed the man without whom they never would have been. Those who were at our first Mexico meeting will never forget the great party for us given around midnight with supper, drinks and a Mexican orchestra, in the mansion of the Margains who were the gracious parents of Maria Luisa the gracious wife of Manuel. Later we had some joint meetings of SFM and APS in the US, but naturally none could rival the splendor of that first meeting and its ambient. Keys to the city were handed out at a formal luncheon at the first of our Mexico meetings. I am looking again at mine as I write this. I am reminded that one of our meetings in Mexico was a joint meeting of all three societies—SFM, APS and the Canadian Association of Physics. I don't think that we have had so many in the US, but there have been some in states of the USA that are contiguous to western Canada.

Joint meetings with European physical societies were for me an unattainable dream. The financial problems involved in raising funds to pay traveling expenses across the ocean were insoluble. At least, they were insoluble for me; if Bill Havens solves them I will hail his success. However, one French physicist once assured me that if a French scientist were invited to address the APS his Government would pay his way. This occurred so late in my career that I never put it to the test. Perhaps Havens will.

One European physicist of great distinction, a Nobel laureate in fact, once told me that no European should be expected to come to America if his way were not paid. I told him that I had crossed the Atlantic more than 45 times at my own or my father's expense (the total is now 64). He made no comment.

Commuting physicists

During most of "my" sixty years of The American Physical Society, George Braxton Pegram was a towering figure on the Council and in the society. He was also a towering figure in the department of physics of Columbia University, and in the administration of the university itself, where for a long



PEGRAM

period he was Dean of the Faculty of Arts and Sciences. His home was in New Jersey, but at busy times he used a room in Butler Hall across the street from the University so that he could work late in the evening or begin work early in the morning—or both.

I came to New York City in 1917 to do war work at Bell Telephone Laboratories, or to be more precise, the Western Electric Company from which the Laboratories were soon to be separated. The job was to last "for the duration" as people then said, meaning the duration of the war. It lasted for 39 years and I am still here. During all this period I have lived within a mile of Columbia University. This was my father's wise decision: he wanted to be in an academic community, and so did I. With my parents I lived a couple of blocks from the Hudson River and with my wife I have dwelt beside the river. From our windows we see the ships departing for Europe, and when I come back I can see my windows as the steamship turns into its "slip." When the weather is not unfriendly I walk between my home and the University where my office used to be. This walk for many years constituted most of my exercise. My successor Bill Havens also lives beside the Hudson River, about twenty miles upstream. In distance he is much farther from his office than I was, but in time the difference is unimportant, for of course he drives. On his way he passes the hilltop where sits "The Cloisters," a great building in a pure medieval style containing a great collection of medieval art. It has an awe-inspiring chapel adjoining the cloister from which it takes its name. Havens can pause there on his way to work and ask for divine guidance: I have not been told how often he does.

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