



THE REALM OF SCIENCE

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THE American Association for the Advancement of Science held its sixty-fifth annual meeting in Atlanta, Georgia, from December 29, 1913, to January 3, 1914. The Astronomical and Astrophysical Society of America, as well as about two dozen other affiliated societies took the opportunity to hold meetings at the same time in the same city. Being a member of the two named societies, it was my privilege to be present at the gathering.

Leaving Omaha on Sunday, December 21, 1913, and spending one day in Chicago and four in Cincinnati, I arrived in Atlanta the following Saturday. I was most hospitably lodged at the Marist College on Ivy and Peachtree Streets, where every attention was shown me by Reverend George S. Rapier, the president, and the other eight or more members of the faculty, notably Reverend Joseph A. Petit.

The Marist College is a young institution, numbering at present about one hundred and fifty students. It is very favorably situated and has extensive grounds. That it is progressing is evidenced by the new faculty building now nearly completed, which will leave the older and temporary quarters entirely devoted to college purposes. Both buildings, like the church, are large and elegant brick structures, equipped with all modern facilities.

Atlanta, the "Heart of the South," is an up-to-date city, if skyscrapers and garages are any test. It is somewhat larger than Omaha and claims 150,000 inhabitants. In the old part of the town the blocks are rather small and very irregular.

The headquarters of the Association were at the Piedmont

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Hotel, a modern skyscraper, and Monday, December 29th, was devoted to registration. Each member presented a card, previously filled out by him, giving his name, his permanent and his Atlanta address, and the name of his section and the affiliated societies to which he belonged. Professor Edward S. Pickering, the director of the Harvard Observatory, and universally acknowledged to be the greatest of living astronomers, must have seen my name in the list and been thereby reminded of the shadow in the photograph which figured so prominently in our criminal court three years ago, because the evening issue of the Atlanta Journal of that day contained an interview in which he narrated the circumstances and expressed his satisfaction at the practical part astronomy had played in the case. Last year when I showed the shadow photographs to the Astronomical Society in Cleveland, Professor Pickering, our president, gave me a very appreciative introduction. To judge from the remarks made by The Observatory in its December number, page 490, he must also have spoken about the case to the astronomers in England on his recent European visit. While the main fact, that the exact hour and minute of the exposure were found from the position of a shadow in the photograph, is always correctly stated, the collateral circumstances seem to be generally adorned to suit the reporter's fancy and are at times ludicrously diversified.

That same Monday evening the American Association was formally called to order by Professor Pickering, its retiring president, in Taft's Hall. This is a hall seating about a thousand people and adjoining the very large one in the city auditorium, which can accommodate twelve thousand. Several pieces were played in this auditorium before the meeting on its correspondingly large organ, which had an echo organ in Taft's Hall. Professor Pickering began by introducing to the Association its new president, Edmund B. Wilson, of Columbia University, New York, who then took the chair and conducted the exercises. Governor Slaton, although unable to be present, had commissioned a representative to read

his address of welcome to the state, and Mayor Woodward then welcomed us to the city. After which Professor Pickering, as the retiring president, read his address on "The Study of the Stars," which may be found in full in Science January 2nd. Coming directly from the lips of the best living authority, the subject had a most unusual interest. It was of course fully worthy of its author. The audience, however, was small and seemed not to exceed five hundred. The total registration, as was determined after all the sessions were over, was only three hundred and twenty-four members whereas Cleveland last year had about twenty-five hundred. The reason of the poor attendance was most likely due to the fact that Atlanta is out of the ordinary and most frequented routes of travel, and that the membership in the adjoining states is below the average.

The next morning, Tuesday at ten o'clock, the sectional meetings began. The Astronomical and Astrophysical Society was assigned a room in the electrical building of the Georgia School of Technology. This institution is away from the heart of the town and accessible by only one line of cars. The accommodation offered us was, although the simplest, sufficient for our purpose. The walls were not even plastered, but only whitewashed, but there was a projecting lantern and a student to operate it.

The members were slow in arriving, several having attended the council meeting in the hotel. The total number of those present at any time never exceeded fourteen, but they represented almost as many of the best observatories in the country. Besides Professor Pickering, our president, there were Professor Fox, our secretary, from the Dearborn Observatory in Evanston, near Chicago, and Professors H. N. Russell from Princeton, W. S. Eichelberger from Washington, F. R. Moulton from Chicago, G. C. Comstock from Washburn, Michigan, F. Slocum from Yerkes, C. H. Gingrich, associate editor of Popular Astronomy, and W. J. Humphreys of the Weather Bureau in Washington. All of these men, except Professor Slocum, I had met before.

My own paper on the Arlington Time Signals in Omaha came up first. It provoked a very instructive discussion for half an hour. All were astonished at the simplicity of the outside wiring used at the Creighton University. Only two others of those present had done any wireless time work, but all manifested the greatest interest in the matter. The building in which we were, had a wireless sending and receiving outfit, but the antenna wires impressed me as being far more conspicuous and less efficiently placed than those at Creighton. The operator was absent, so that we could get no particulars.

My second paper was taken up next. It consisted of a series of eight astronomical panoramic views taken from the Creighton Observatory with the circles of the celestial sphere drawn upon them for every five degrees, so that not only the altitudes and bearings were indicated, but also the paths of the stars, their time distances from the meridian, and their points of rising and setting. The idea was pronounced novel and instructive and the views originally taken by Professor A. Schmitt, S. J., director of the Creighton Camera Club and associate professor of physics, were much admired for their distinctness.

As all the other astronomers present were engaged in specific work at large observatories, the papers read were all of a highly technical nature. They treated of the spectra of certain new stars, the brightness, color and probable distances of certain others, the errors of Newcomb's fundamental catalogue, and the like. Professor Humphreys thought there was a connection between sunspots, the temperature of the eastern United States and the rainfall of Europe, and had statistical diagrams to bear him out. The absorption of light in space was well debated. Some thought it was proved by the general red color of the more distant stars, the blue being partially intercepted by the ether. Mr. Moulton indicated a rapid and time-saving method of computing orbits, which gave results equally as reliable as those in common use. Professor Barton's paper, read by Mr. Eichelberger,

gave graphic solutions of two mathematical problems, and Slocum showed with what accuracy the distances of stars were found by the Yerkes telescope. As the hour was after 12:30 p. m. we adjourned to the only lunch counter in the neighborhood. The accommodations were not equal to the number and taste of the visitors, because the next day we all agreed to go down town and get our meals in the hotel.

At 2 p. in. the Astronomical and Astrophysical Society of America held a joint session with section A, Mathematics and Astronomy, of the American Association for the Advancement of Science. This was a mere legal formality and increased the attendance by two persons, but it resulted in the vice-presidential address of section A on the Influence of Fourier's Series upon the Development of Mathematics by Professor Edward B. Van Vleck of the University of Wisconsin, and the address of the representative of the Astronomical Society on Relations between the Spectra and other Characteristics of Stars, by Professor Henry Norris Russell of Princeton University. Each of these addresses was more than an hour in length and written for a technical audience.

As nomination for offices was next in order, I slipped away to get half an hour's walk in the fresh air back to the Marist College, where at 8:30 p. m. that same day, I gave a lecture, illustrated by 85 views of the heavenly bodies, on Life in Other Worlds. The hall was filled by an interested audience and the lantern well managed by a local electrician.

The weather had been unfavorable all along my route. In Cincinnati, as afterwards in St. Louis, it snowed, and in Atlanta it either rained or threatened to do so. When the next morning, Wednesday, brought a heavy rain, before going to the meeting I secured my ticket to leave Atlanta the following morning, because I was sure we would finish all our papers before night. This conjecture proved true.

As the unanimous voice of the astronomers was in favor of taking our meal at the Piedmont, we prolonged the session to 2:30 p. m. in order to finish off all the papers that needed the lantern and the blackboard and then continue our meet-

ing in the hotel. Arriving there in the rain, while the rest went to their rooms to deposit their overcoats, I somehow strayed into another dining room, where I lunched with Mr. William Bowie, inspector of geodetic work, chief of computing division of the U. S. Coast and Geodetic Survey, Washington, D. C. As I had just a week or two before come into possession of his recent work on Determination of Time, Longitude, Latitude and Azimuth, and had found it of great service in the present wireless longitude campaign, we were at once fast friends, and the more so as I could show him that I had read and studied his book and liked certain parts. He then, of course, took down my name and address and promised to send me all the government books in my line that he could lay his hands on. He also introduced to me Professor Otto Klotz, chief of the seismological department of the Dominion Observatory in Ottawa, Canada.

The simultaneous sessions of so many sections and affiliated societies, held in separated parts of the town, made it impossible to attend satisfactorily the meetings of more than one of them. Although I went to the general headquarters of the Association several times, I could not find any more old acquaintances or make new ones. The next meeting in Philadelphia will most likely bring a very heavy attendance. The president for that meeting will be Charles W. Eliot, president emeritus of Harvard University.

New Year's day, 1914, Thursday, dawned with a clear sky and a bright sun, but the local weather forecaster said that rain was practically certain before night. My train was the Dixie Flyer, running from Jacksonville, Florida, to Chicago, with a St. Louis sleeper to be detached at Nashville, where it was to lie over for three hours and a half, from 4:30 to 8:00 p. m. In this instance it was fortunate that the train was late, because it reduced my stay in Nashville to twenty minutes and delayed my hour of departure at Atlanta from 8 to 11 a. m. Atlanta has, strange to say, a terminal station and a depot, some distance apart, the first for arriving and

the second for departing, so that a through train must go to both places.

The sun shone all day and enabled me to enjoy the magnificent scenery, so full of incidents of the Civil War. At Chattanooga, especially, Lookout Mountain, where the "Battle of the Clouds" was fought, 1,700 feet about the railroad track, as well as Missionary Ridge, with their many conspicuous monuments, presented a sight that must live long in the memory of one accustomed to the Western Plains, although it is fair to say that the bluffs seen from Omaha on a bright summer evening do not differ so very much from a chain of mountains.

The next day found me in St. Louis with many old friends. The science professors and their departments came in for a good share of the time, especially the wireless station. St. Louis University has erected on the roof two latticed steel towers 350 feet apart with six parallel wires, and is equipped for sending as well as receiving. The whole outfit is superior to ours, and I was delighted to hear the familiar signals from Arlington and Key West much louder than I generally get them here. But although our antennae were erected only for receiving the Arlington time signals and are by far less conspicuous and less expensive, they cover the whole United States equally well. I am much indebted to Professor George Rueppel for his courtesy and kind suggestions.

On Sunday morning, January 4th, I spent a few hours with Father Dowling in Kansas City. He says he feels very well and shows no signs of the affliction that brought him so near the grave last summer. At 7 p. m. I was home again with a big mail before me and class on the morrow.