

# SCIENCE

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FRIDAY, SEPTEMBER 20, 1895.

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## SPRINGFIELD MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

### SECTION B. PHYSICS.

THE address of the Vice-President, Prof. W. Le Conte Stevens, was upon 'Recent

Progress in Optics.' He introduced the subject by referring to the impossibility of summarizing all of the work, even of a meritorious order, that has been accomplished, and preferred to discuss certain investigations of special merit. First among these was the standardizing of the metre in terms of a wave-length of light, an investigation begun by Michelson and Morley eight years ago, and recently completed by Michelson at the observatory of the International Bureau of Weights and Measures near Paris. A brief description was given of the construction and use of the interferential comparer, and the difficulties encountered in securing a perfectly homogeneous spectrum tint. Spectral lines that had been supposed to be single, and hence due to approximately homogeneous light, were found to be multiple, presenting the phenomenon of optical beats, or maxima and minima of brightness in the interference fringes that pass across the field of view in the observing telescope. So delicate is the method that it is possible to detect a variation of wave-length corresponding to as little as one-thousandth of the interval between the two main components of what is commonly known as the sodium line. The red line of cadmium was found the most nearly simple of all those examined, and the length of the standard meter was determined to be 1,553,163.5 wave-lengths of cadmium light. This was the mean of two independent

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