

In August, 1913,<sup>1</sup> I described such a device in which the fan was moved by clock-work. This I used with satisfaction for a year, but replaced it (see figs.) by an apparatus in which the fan was driven by a toy motor. The latter is practically noiseless and has been used in experimental work for two years.

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### SOCIETIES AND ACADEMIES

#### THE ASTRONOMICAL SOCIETY OF THE PACIFIC

A MEETING of the Astronomical Society of the Pacific was held at San Diego on Thursday and Friday, August 10 and 11, in conjunction with the first meeting of the Pacific Division of the American Association for the Advancement of Science. In the absence of the president and vice-presidents of the society, the meeting was opened by Dr. R. G. Aitken, chairman of the program committee. Dr. W. S. Adams, of the Mount Wilson Solar Observatory; Dr. W. W. Campbell, of the Lick Observatory, and Professor Charles Burkhalter, of the Cabot Observatory, presided at the three sessions held.

The papers at the first session related entirely to the nebulae, those at the second session principally to spectrographic investigations. All of the papers were fully discussed. Abstracts of the papers are given in the August-October number of the Publications of the Astronomical Society of the Pacific, hence only the titles are printed here.

"Spectrographic Observations of Relative Motions within the Planetary Nebulae." (Illustrated with stereopticon.) By W. W. Campbell and J. H. Moore, Lick Observatory.

"The Rotation and Radial Velocity of the Spiral Nebula, N. G. C. 4594." (Illustrated with stereopticon.) By Francis G. Pease, Mount Wilson Solar Observatory.

"Forms of Planetary Nebulae." (Illustrated with stereopticon.) By H. D. Curtis, Lick Observatory.

"Color-photographs of Nebulae." (Illustrated with stereopticon.) "A Simple Method for De-

<sup>1</sup> *Amer. Jour. of Pub. Health*, III., 8, August, 1913.

termining the Color of a Star," by Frederick H. Seares, Mount Wilson Solar Observatory.

"Spectrographic Observations of Nebulae and Star Clusters," by V. M. Slipher, Lowell Observatory.

"On the Motion of Nebulous Filaments in N. G. C. 6992; Variable Stars in the Lagoon Nebula, N. G. C. 6523," by C. O. Lampland, Lowell Observatory.

"Notes on Stellar Clusters," by Harlow Shapley, Mount Wilson Solar Observatory.

"A Relation between the Convergence Wavelengths in Spectral Series and the Radii of their Respective Atoms as Computed from Einstein's Photo-electric Equation and by other Methods," by Fernando Sanford, Stanford University.

"Recent Stellar Spectroscopic Results." (Illustrated with stereopticon.) By Walter S. Adams, Mount Wilson Solar Observatory.

"The Measurement of Close Pairs of Solar Lines," by Charles E. St. John and L. W. Ware, Mount Wilson Solar Observatory.

"The Suggested Mutual Influence of Fraunhofer Lines," by Charles E. St. John, Mount Wilson Solar Observatory.

"Observations with High Dispersion of the Line 6708 in Laboratory and Sun-spot Spectra." (Illustrated with stereopticon.) By Arthur S. King, Mount Wilson Solar Observatory.

"Recent Observations of the Diurnal Change of Refraction at Lick Observatory," by R. H. Tucker, Lick Observatory.

"Preliminary Note on the Determination of the Longitude of the Students' Observatory by Wireless Signals from Arlington," by R. T. Crawford, University of California.

"John Winthrop (1714-1779), America's First Astronomer, and the Science of His Period," by Frederick E. Brash, Stanford University.

"The Chabot Observatory," by Charles Burkhalter, Chabot Observatory.

"Notes on Certain Double Star Orbits." (Illustrated with stereopticon.) "Note on Barnard's Proper Motion Star," by R. G. Aitken, Lick Observatory.

"Note on Aethra," by Dinsmore Alter, University of California.

"Comet b 1916 (Wolf)." (Illustrated with stereopticon.) By R. T. Crawford and Dinsmore Alter, University of California.

"A Luminous Object Seen on May 4, 1916," by C. D. Perrine, Argentine National Observatory.

"A Luminous Object Suspected to be a Comet," by A. Estelle Glancy, Argentine National Observatory.