

should be followed up simultaneously. But to carry out this work powerful instruments would be needed and persevering, enthusiastic observers.

Nevertheless the amateur, also, not possessing a photometer or photographic method, here can do useful work provided that his telescope enables him to see stars of the 12th or 13th magnitude. Take "Prager's Katalog und Ephemeriden veranderlicher Sterne" or "Astronomische Nachrichten Nos. 5655, 5748, 5791." There you will find plenty of variable stars of short period with elements still unknown. Mark the selected stars in the "Bonner Karten" or have an observatory draw for you small charts of the neighborhood around them. Then look for the variable star in the sky, but take care not to mistake it for faint stars in its neighborhood. Observe it every bright evening for two or three hours at least, estimating its brightness three or four times an hour. After a few weeks you will already be able to find out the exact period and the other elements of light-variation, an interesting problem, but not very easy, if the evenings of observation were few and irregularly scattered. In this manner you, also, may furnish valuable stones for the construction of that great building, "Astronomy."

INNSBRUCK (AUSTRIA) 1932 FEBRUARY 3, (UNIVERSITAETS-STERNWARTE).

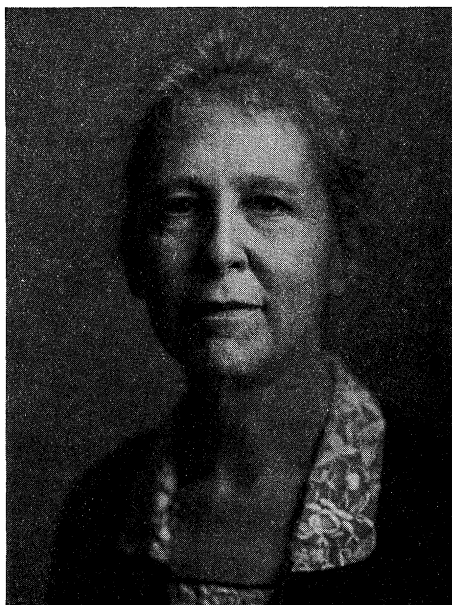
Harriet W. Bigelow

By MARJORIE WILLIAMS

Although a great shock to her family and friends, the sudden death of Harriet W. Bigelow seems a peculiarly fitting end to a life so full of energy and enthusiasm. To those who knew her it was inconceivable that a time should come when she should become ill, unable to spend long evenings at the observatory, or to walk briskly across the campus. How could she have become reconciled to being a care to others—she who never saved herself, or seemed to have a thought for her own comfort. How much better that her life should come to an end during a pleasant voyage, at the end of a happy year spent with friends and loved ones.

Harriet Williams Bigelow was born to Dana Williams and Katharine Huntington Bigelow, on June 7, 1870, in Fayetteville, New York, where her father was pastor of the Presbyterian church. Her early childhood was spent in Fayetteville and in Pitcher, New York. In 1878 the family moved to Utica, New York, where the father remained as pastor of the Memorial Presbyterian Church until his death almost forty years later. Here Miss Bigelow spent her girlhood, attending the public schools, and graduating from the Utica Free Academy in 1889. This simple life as one of a large family in a minister's home laid the foundation for her unselfish character—her devotion to her friends, her church, and to her duty.

In 1893 Harriet Bigelow graduated from Smith College. While in college she studied astronomy under Miss Mary E. Byrd, the first director of the Smith College Observatory, which had been built in 1887. When asked once how she happened to take up astronomy, Miss Bigelow laughingly replied, "My dormitory window faced the observatory, and I thought it would be fun to help turn the dome around." At that time she had no thought of making astronomy her life work. After spending a year at home, she went to teach in the Granger Place school in Canandaigua, New York. While there she received an invitation from Miss Byrd to return to Smith College as her assistant in astrono-



HARRIET W. BIGELOW
1870-1934

my. Thus began in 1896 the work to which she devoted the rest of her life. Miss Byrd was a pioneer in using the laboratory method for teaching astronomy, and published, with Miss Bigelow's help, Byrd's Laboratory Manual in Astronomy which still finds a place in our work at Smith. Miss Byrd outlived her pupil and successor only a few days, as her death occurred in July, 1934. Miss Bigelow has continued to advocate the use of the sky as a laboratory, and has faithfully carried on the work started by Miss Byrd. She remained an assistant in astronomy until 1901, when she went to the University of Michigan where she completed the work for the degree of Doctor of Philosophy in 1904. The publications of the Detroit Observatory of the University of Michigan contain references to her work in determining errors of instru-

ments, etc. Her thesis work was done with the meridian circle under the direction of Asaph Hall. After receiving her degree, she returned to Smith College as instructor in astronomy, and in 1906 was made associate professor and director of the Smith College Observatory, upon the resignation of Miss Byrd. She was given the rank of professor in 1911.

During all her years at Smith Miss Bigelow's greatest efforts were put on teaching. She believed that all teachers should have some time for constructive research work, and she spent long hours at the telescope making observations of comets and of variable stars. But she felt that most of all the Smith College Observatory was a teaching observatory, and that it was our task, not to turn out astronomers, but to make the girls intelligent about the universe in which they live. And how better can we do that than by letting them watch the sky for themselves? She was much opposed to having mere information courses in astronomy or in any science. "There are plenty of books they can read," she would say, "if that is all they want." And in Miss Bigelow's classes the students gained, not only astronomical knowledge, but a thorough mental discipline in scientific methods. "We are not teaching merely astronomy, but science." No student was allowed to slip through without an earnest effort to help her to understand the subject. Many hours were spent in private conference, going over and over the laboratory reports until they were satisfactory. No slovenly English was tolerated, and no papers were accepted until the facts were expressed in clear understandable form.

Few people were more devoted to the interests of the college than was Miss Bigelow. She felt it her duty to help uphold its traditions and to encourage others to do so. It was unusual for her seat in chapel to be vacant, no matter how late she had been using the telescope the night before. She served on several college committees, and in recent years had given unlimited time to the assignment of each Freshman to a Faculty adviser.

In the astronomical world Miss Bigelow's influence was felt, both in the American Astronomical Society, of which she was a councilor at the time of her death, having been elected for the period 1932-35, and in the American Association of Variable Star Observers, for which organization she served as vice-president for one term and as president for two terms. Her observations of variable stars were sent in faithfully each month. It was through Miss Bigelow's efforts that the informal meetings of the women astronomers of the eastern part of the country were started. At her invitation the first two meetings were held at the Smith College Observatory, and the organization has continued to hold profitable meetings at other observatories.

There was no conflict between science and religion in the mind of this scientist. She was a devoted church member, giving freely of her time and money to the church, and to needy individuals.