

ASTRO-PHYSICS.

An Evening's Work at the Meeting of the
Astronomical and Physical Society.

The last regular meeting of the Astronomical and Physical Society of Toronto was held at the residence of Mr. J. M. Clark, M. A., No. 667 Spadina avenue, Dr. Larratt W. Smith, Q. C., vice-president, in the chair. It was announced that at a meeting of the council authority had been given to prepare and issue the third annual report of the society. One of the officers stated that he had been desired by a gentleman living in an eastern town to assist him in getting together some material to be used in a lecture on the planet Mars to be delivered shortly, and that he and other members had cheerfully complied and had received the thanks of the applicant. This incident is only one of others that might be mentioned as evidence of the fact that success is attending the efforts of the society to awaken within the province an interest in the study of astronomy. It was further stated that during the year at least eight members had acceded to requests to address on the subject audiences in various parts of the city, and that some of them had spoken on two or three occasions. These facts, taken in connection with the favourable impression apparently created abroad, are very encouraging to the society. The letters read included a very kindly one from Dr. Ross in acknowledgment of his re-election to be honorary president for 1893; one from Mr. Holingworth, of Beatrice, Muskoka, containing his monthly report respecting aurora, of which for many years he has been a careful observer; one from Dr. Veeder, the well-known observer of aurora; and one from Professor Payne, editor of *Astronomy and Astro-Physics*, stating that the paper of Rev. T. E. Espin, F.R.A.S., referred to in the last report, had gladly been accepted, and would appear in the next number of that serial. Publications received from the Royal Society of England, the United States Naval Observatory, and elsewhere, were laid on the table by the librarian. Mr. Harvey and Mr. Elvins reported that they had observed a fine aurora on the 4th instant. The arch rose to a greater height than usual above the horizon, and the prevailing colour was light green with blotches of pink. The night was an extremely cold one. Mr. Luinsden read a memorandum dealing, in a general way, with certain of the more remarkable phenomena observed and discoveries made last year, and with some of the phenomena predicted for 1893. References were made to the sun, sunspots, planets, comets, occultations of stars, and to the moon, which was described as one of the most interesting of the celestial objects and extremely well adapted for observation with almost any kind of magnifying-glass. It was regretted that too few amateurs estimate at her true value as a subject for study and contemplation the moon, which so often and under varied aspects appears in our sky. It was asserted that some of the most entertaining works on astronomy are those devoted to a popular discussion of our satellite, her phases, her librations, her period of revolution and of rotation, her influence upon the earth, and the influence of the sun and earth upon her as she moves in her orbit. Some attempt was made to describe the lunar sky as it would appear to a terrestrial observer if he could take up a position near the centre of that side of the moon which is always turned to the earth. From such a point he would constantly see rapidly revolving directly over his head the earth, resplendent in varied scenery, and going through her phases once a month, but never rising, never setting. He would have the sun and the constellations above his horizon two weeks at a time, after which they would disappear for a like period. If the moon has no atmosphere he would be able to see with the naked eye stars that can be detected from the earth only by the aid of powerful telescopes, and, still more, would be able to study the stars even in the strongest sunlight. Such a spectacle as the sun, earth, and stars shining in the lunar sky at the same time is common enough to lunarians (if there be any), who, perhaps, little know the advantages they possess for astronomical work. The paper was followed by an interesting discussion relative to the moon, sunspots, and other phenomena, and to the causes which are operating to make in Northern Europe, Asia, and America this winter an abnormally cold one, and, at the same time, to make the summer in the Southern hemisphere an abnormally hot one, with a remarkably heavy rainfall, with respect to which details are now reaching the newspapers. Mr. Harvey suggested that solar conditions at a time like the present, when a sunspot maximum is being reached, might have something to do with the cause, if themselves not the actual cause, but Mr. Elvins, who, some years ago, exhaustively studied the subject, in an effort to ascertain the effect visible changes in the sun have upon terrestrial meteorology, was inclined to think that whatever the cause is, it comes from without, rather than from within, the solar system, and that the sun, as well as the planets, are alike subject to it. The discussion was participated in by the chairman, Mr. Turnbull, Mr. Pursey, and others. It was announced that the next meeting of the society will be held on Tuesday evening, the 21st, in a suitable hall, of which notice will be given, and that Mr. Harvey will read a paper on "The Telescope."

A meeting of the council will be held today in Dr. Larratt Smith's office at three o'clock, when Dr. Sandford Fleming, C. M. G., will be present to discuss the action to be taken by the society in endeavouring to move astronomers generally to reckon the astronomical day from midnight instead of from noon as now.