

## THE SOLAR ECLIPSE.

A TOTAL eclipse of the sun is a rare occurrence, and when one takes place it attracts attention from the civilized world. It is not only because such a phenomenon is a beautiful and awe-inspiring spectacle, but for the additional reason that valuable scientific data, such as can be obtained at no other times and from no other source, are to be had. One of these is the excellent facilities afforded for looking for Leverrier's so-far theoretical planet Vulcan, believed by him and many others to have an orbit between Mercury and the sun. Mercury is the smallest known planet and, so far as known, enjoys the distinction of being the nearest one to the sun. Still, the question is an open one, and whoever discovers the long-lost wanderer will achieve distinction greater than that possessed by Leverrier himself. Certain it is that all will try this time as never before, because opportunities for observation are to be superior on this occasion, owing to its being the first total eclipse of the sun, visible on the Pacific Coast, where the air is clear and the altitudes favorable, which has ever been scientifically scrutinized.

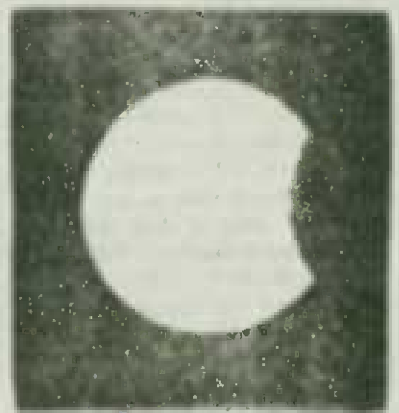
It is not, however, to be inferred from this that only professional astronomers and scientific students can make observations in quest of the intra-mercurial planet; for anywhere west of the Rocky Mountains, within the belt of totality, we are promised so fine a view of the astral surroundings of the sun that the unpracticed eye can detect fixed stars as small as the sixth magnitude, and if Vulcan has even such proportions as the larger of the planetoids swinging around the sun at various intervals between the orbits of Mars and Jupiter, and is not on the other side of the sun from us, he will certainly be detected, if an opaque body. It will also be a rare opportunity for comet seekers, and one or more of these irregular visitors to our system might appear in the depths of space without evoking special wonder.

Astronomy is now recognized as one of the most correct and exact, as well as abstruse, of the sciences. Time was, and it was not so very long ago, when the degree of information possessed by the masses relative to this subject was so limited that an eclipse, solar or lunar, afforded nothing more than sensuous gratification on the part of the populace at the time of the

event, and little if any speculation or enterprise regarding it before or after. The press, however, has been steadily invading the ranks of this class; nobly has it brought mankind well to the front regarding a knowledge of celestial economy, and it has received excellent assistance from the profession itself, which, encouraged by the greater inquiry and growing interest manifested, has busied itself in making known the rudiments of the science, and imparting advanced information as rapidly as the public mind was prepared to receive it. Thus today, when there is to be an eclipse of whatever nature, the knowledge of it beforehand is not confined to a circle or a class, but is diffused generally, and if the event is to be an important one as was that of Tuesday last, all are agog over it and duly prepared with smoked glass or other contrivance to get full views of the phenomenon through its varied degrees. The amateur astronomer or student, who casually contemplates the subject, is often of more direct use to a community in this connection than would be the most skilled of practical or theoretical astronomers, for he understands more or less in both directions—receives the greater knowledge from the greater source understandingly and hands it down to those who otherwise could not receive it; as, even without pedantry, the plain terms of an advanced professor and thinker disclosing a feature or development of his craft to those who have not studied or become intrinsically interested, would be so much Greek to the uninitiated, or as a learned exposition of the pandects of Justinian to a Sunday School class. It often happens, also, that observations taken by the amateurs are of great benefit even to the profession, since it is a well understood fact that the eye behind which is a mind bent upon learning, will peer more intently and earnestly into the depths of space in quest of developments, than will that of the practical and calculating master of the science, who knows primarily and principally what is coming and therefore receives all kinds of impressions as a matter of course. The distinction is simply this—that the amateur or student is one or two steps ahead of the one who gives the science no thought, and leagues behind the one who has thoroughly mastered it. It is a vast, grand and inexhaustible field in which to labor, seldom affording any other tangible re-

quitement to the one who is learning it than his own gratification; and it is only through the aid of governments and wealthy patrons that the professors most accomplished receive financial encouragement of any magnitude. A better illustration of this cannot be had than the fact that the great Proctor, who had become thoroughly familiar with the depths and breadths of the so-called upper deep, and was on the most intimate terms with all their discernible habitants, died within the past year and left nothing to his widow! Truly the scientist whose labors run in other than practical paths, must be an enthusiast indeed—he must be to ever achieve success even as a master of his chosen calling, pecuniary success being of necessity a secondary matter.

We venture the assertion that in no eclipse or other celestial occurrence of recent times has there been so much interest and for which there has been so much preparation as in that of the first of January, 1889. The reasons for this are numerous. California, where presumably the best and most protracted views were to be had, is thickly strewn with scientific associations and the means of taking accurate and scientific data; add to this very attractive condition of things the fact that civilization and cultivation in a high degree prevail at almost every point and the accessibility of any of them by rail, and we find a nucleus for the creation of a feeling of interest. In Nevada and Idaho also, the best views of one of the grandest eclipses of late years were at points easily reached by means of railroads. This is not generally the case, or has not been; and with the original incentive coupled to the excellent facilities, we have a result of more observations of a scientific, unscien-



VIEW AT 1:50 P. M.

tific and ordinary character than is recorded of any like event within the experience of the writer.