

## SCIENTIFIC NOTES.

The writer recently called upon Mr. S. W. Burnham, the celebrated discoverer of double-stars, and all-round astronomer, now of Chicago, but, until lately, a member of the staff of the Lick Observatory. During an enjoyable interview, Mr. Burnham, among other subjects, referred to the efforts now being made in various directions to introduce into the High Schools, at least, an elementary course in astronomy, and said it was to be regretted that, in some places, children are denied the pleasure and profit attaching to the study of that delightful branch of science. Than he, few great astronomers are better able to speak on this subject. Mr. Burnham, when a stenographer in the courts, had his attention called to observational astronomy by the chance falling into his hands of a volume dealing with the transit of Venus, in 1874. As he read up the general subject, his interest grew until, out of his earnings, he spent, for him then, a large sum in securing the best six-inch telescope the Clarks could make. He spent his days in court, and his nights at his instrument, and, being blessed with sharp eyesight, his work in searching for double-stars proved to be most successful, for, in course of time, he was able to issue catalogues of stars that surprised already famous observers, who possessed much more expensive apparatus, but were unaware of the existence of the stars until the catalogues were printed. Under varied circumstances, the career of Mr. Burnham has been the career of Mr. E. E. Barnard, the discoverer of the fifth satellite to Jupiter, and of scores of the best astronomers the world has ever seen. The ranks of the professional astronomers must continue to be recruited from the ranks of amateurs. The future for amateurs is brighter than ever before. Astronomical societies, popular in character, are rapidly dispelling the illusion that the study of astronomy is reserved for the rich, and, now that really very good telescopes, which answer the purposes of the student, can be obtained cheaply, it is to be hoped that the day is not far distant, when in every good school there shall be placed a telescope, which, in the hands of the teacher, shall enable any child, desirous of so doing, to learn something, in a practical way, of the sun, moon and stars.

The man who, like Mr. Yerkes, gives a cool half million of money for the erection of a gigantic telescope, may, by some discovery, made by it, place science under an obligation to him, but, beyond question, such a man would confer greater benefits upon his fellows, and contribute to their happiness in a degree ten thousandfold greater, if he were to expend the same money in distributing, say two thousand four-inch telescopes, or five thousand good three-inch telescopes among the schools of his country. Not only this, he might prove to have done more for the science itself than if he followed the example set by Mr. Yerkes, because out

of the thousands thus invited to the study of astronomy, he would be almost certain to be the means of bringing to the front, many brilliant astronomers, for, after all, it is not the telescope, but the man at the eye-end of it which counts.

At 10.30, on the night of the 10th of October, a careful observation was made in Toronto with a 10-inch reflecting telescope, for the purpose of ascertaining, if possible, whether there were visible, by its means, any vestiges of the Great Red Spot on Jupiter, an object which for some months has been fading away, but which, a couple of years ago, was easily seen in the telescope. The sky was clear, and the seeing was good. At the hour mentioned, the side of the planet upon which the spot had been for years so prominent a feature, came into full view. Though nothing could be seen of the spot, the outlines of the space it had occupied were perceptible, the indentations in the dark belts, north and south of it, having practically retained their shape. This would seem to indicate that, while the spot has changed in color, it has not, by any means, ceased to exist; the conditions which for years have enabled it to force the belts outwards as they drifted past, being, apparently, still in full play. Indeed, there is reason to believe that in color, at least, the spot is variable, and that, in course of time, the former color will re-appear.

Some of the English publications have been noticing the proposition that The British Association should again meet in Canada—this time at Toronto. It seems that the subject was brought by Professor Mavor before the Association, at its annual meeting recently held, and that it was intimated that if the Canadians would again contribute towards the expenses of the members, such a meeting might be held in the near future. The meeting in 1894 will be held at Oxford. There are civic candidates for the place of assemblage in 1895, but the Association left the matter open, possibly that Canada might be heard from.

In November, Mercury will be an evening star, and may, for a few evenings in the earlier half of the month, be visible at a very low altitude in the West. Venus will continue to be an evening star, but will not be a good object in telescopes, being too near the horizon. Her phase is changing from half-full to a crescent. On the evening of November 12th she will be close to the new moon, and both will form brilliant objects. Mars is practically invisible. Jupiter is still the most splendid object in the early Eastern night sky, and is visible nearly all night. He is splendidly placed just now for careful study. Saturn and Uranus are too near the sun to be visible. Neptune may now be observed under the most favorable circumstances. He is in Taurus, on a direct line between the stars iota and epsilon, and about one-fifth of the distance from iota.—G. E. L.