

These huts must have been covered, some, perhaps, with stones, others with a wooden or wattle superstructure, covered with clay or sods of turf; and their poor inhabitants evidently cultivated, to a small extent, some of the cereals, had an early knowledge of weaving, and lived domesticated with oxen, goats, and swine. The red-deer were most likely obtained by hunting in the dense forest that then occupied the deep clay lands of North Hampshire, as an extension of the ancient forests of Harewood, and Chute, and Finkley. Further, these shallow pits might have been the summer residences of a people whose winter habitations were at Finkley.

J. STEVENS

INAUGURATION OF THE OBSERVATORY AT CORDOBA

AN interesting account of the inauguration of the Argentine Observatory at Cordoba in October last appears in the *Standard* of Buenos Ayres. The chief feature of the ceremonial was a very able address by Prof. Gould, the Director, from which we make the following extracts, as bearing specially on the work of the observatory:—

"In the year 1751 a French astronomer, the Abbé de la Caille, visited the Cape of Good Hope for the purpose of determining the positions of the principal southern stars. With a little telescope of comparatively insignificant dimensions, he succeeded in obtaining the materials for so complete a catalogue—as far as the limit of brightness which his telescope permitted—and in determining the positions of those stars so well, that this catalogue of about 9,800 stars constitutes to-day the chief reliance of astronomers for their knowledge of a large portion of the southern sky. Since that time a permanent observatory has been established by the British Government at the same place, and a large number of valuable observations have been made by various eminent men. Other observatories in the southern hemisphere have been founded at Paramatta, Santiago de Chile, and Melbourne, all of which have contributed essentially to our knowledge of the southern sky; as also has the observatory at Madras, which, although north of the equator, commands a view of the greater portion of the southern heavens. Yet how much remains to be done in this direction will be very evident when I state that, while the number of stars in the northern hemisphere whose positions and magnitudes have been determined cannot fall short of about 330,000, the number in the southern hemisphere whose observed places have been published does not probably exceed 50,000. But this is not all. The greater portion of those which have been observed lie in that part of the sky which is clearly visible in Europe; and if we consider the regions beyond 30°, there are scarcely 13,000 southern stars whose places and magnitudes have been determined and made available for scientific use, while the corresponding portion of the northern sky contains something like 164,000 such stars.

"The first undertaking now proposed for the Argentine Observatory is to do something towards filling this hiatus by determining the places of the principal stars situated between the tropics, where the observations of northern astronomers begin to become less numerous, and the polar circle, where Gilliss' observations commence. This work is best performed by dividing the sky into narrow zones or belts, and subjecting each zone to a special scrutiny for the purpose of measuring the positions of all stars of a sufficient brightness within its limits. If no unforeseen impediment presents itself, these observations should be completed within two years from their commencement.

"There is another most important investigation especially desirable in the present condition of our knowledge: this is the application of the newly-discovered methods of

stellar photography to the more prominent objects in the southern heavens. The ingenious researches and inventions of Mr. Rutherford in New York have resulted in the development of methods by which the relative positions of clusters of stars may be permanently recorded by photographing them upon glass, and the numerical values subsequently determined by means of a measurement of the photographic impressions, with a degree of precision far greater than that of the ordinary methods. And this process possesses the signal and peculiar advantage, that the representations thus obtained of the stars' places at a given moment may be preserved, and the measurements repeated at any subsequent time. The process has not yet been introduced into European observatories, but it has been thoroughly tested in America, and valuable researches have already been made by this photographic method.

"During the greater part of the year we have had neither instruments nor building, and during the short time these have been available we have experienced an unexpected and most serious obstacle in the clouds of impalpable dust, which, rising from all sides, penetrate to the inmost crevices of every part of the instruments. This difficulty will, I think, be obviated to a great extent when vegetable growth shall have covered the soil; and to this end the Minister has given directions for providing as good a supply of water as may be possible, while the building and instruments have been provided with special and unusual protections against the evil. The position of the city of Cordoba renders this trouble inevitable, inasmuch as water for irrigation is only to be found in the valley, whilst an observatory must necessarily be placed upon high land. With the arrival of the rainy season I trust that a carpet of vegetation may remove this source of anxiety.

"A considerable time would, under any circumstances, have been requisite for computing the numerical table, and making the various other calculations needful for bringing the instruments into active service. The additional interval has been employed in an undertaking of a totally different sort, which may, I trust, be found in the end to possess as much scientific importance as the work originally intended. During this period of enforced delay we have succeeded in making a full catalogue of all those stars of the southern heavens which are visible to the naked eye, determining for each one the precise degree of its brightness. When, after the moon has set to-night, you raise your vision to the starry sky, and, as you look more intently, perceive one faint star after another reveal itself to your sight, you will yet succeed in discerning no star whose place and magnitude has not been recorded within the past year by some one or more of the observers in this institution—

"*Sidera cuncta notans tacito labentia cœlo.*"

"The progress of the work so far has not failed to afford its due share of discoveries. It has given us the knowledge of a considerable number of stars which possess the singular character that their brightness is not always the same, but undergoes systematic variations. Some have been seen to rise to considerable brilliancy, and then fade away until telescopes of some power are needed for rendering them visible. Others still are now found to possess a brilliancy decidedly greater or decidedly less than that which has been assigned to them by more than one astronomer in times past. Such stars must be carefully watched, and the fact of any regular and periodic fluctuation in the amount of their light either established or disproved. Of such cases there are already many on our records, thanks to the assiduity and zeal of the assistant astronomers, no one of whom has failed to make manifest the existence of several. One of those most remarkable for the rapidity of its changes is a little star in the constellation "Musea," which is invisible to the unaided

sight during one half its period, and visible during the other half; while the observations of Mr. Rock show that it goes through all its changes within the short interval of $21\frac{1}{4}$ hours. Another in the constellation of the "Southern Triangle," which has been regularly observed by Mr. Davis, exhibits regular fluctuations of light, comprised within a period of about $3\frac{1}{2}$ days, similarly alternating between visibility and invisibility. These two exhibit the most rapid changes of any of the stars which we have hitherto observed; but there are others not less interesting, observed not only by the two gentlemen mentioned, but also by Messrs. Thorne and Hathaway, who are likewise pursuing these investigations with much success."

NOTES

THE retirement of Prof. Huxley from the London School Board throws a great responsibility upon the men of Science in London in general, and on Marylebone in particular. We are of opinion that of all the good work which Prof. Huxley has done, none will have a more lasting national importance than that which has resulted in the introduction of Science among the subjects to be taught in the London schools—and, therefore, in all the School-Board-schools throughout the country, for the force of public opinion will, in the long run, insist that the London model shall be everywhere followed. It is because we fear that this important advance may be arrested, unless steps are taken still to have the claims of Science represented on the Board, that we draw attention to the subject, which, in our opinion, is of sufficient importance to occupy the attention of the Royal Society, and the other scientific bodies, if their aid is necessary. Doubtless membership of the School Board involves sacrifice; but it is to be hoped that the clerical squabbles which have so interfered with the desired progress here, as it did, effectually, in other countries, are now as nearly over as they ever will be; and if this be so, then, instead of the 170 sittings given by some members last year, a much smaller number will suffice.

WE have reason to know that many weak people have been alarmed, and many still weaker people made positively ill, by an announcement which has appeared in almost all the newspapers, to the effect that Prof. Plantamour, of Geneva, has discovered a comet of immense size, which is to "collide," as our American friends would say, with our planet on the 12th of August next. We fear that there is no foundation whatever for the rumour. In the present state of science nothing could be more acceptable than the appearance of a good large comet, and the nearer it comes to us the better, for the spectroscope has a long account to settle with the whole genus, which up to this present time has fairly eluded our grasp. But it is not too much to suppose that the laymen in these matters might imagine that discovery would be too dearly bought by the ruin of our planet. Doubtless, if such ruin were possible, or indeed probable—but let us discuss this point. Kepler, who was wont to say that there are as many comets in the sky as fishes in the ocean, has had his opinion endorsed in later times by Arago, who has estimated the number of these bodies which traverse the solar system as 17,500,000. But what follows from this? Surely that comets are very harmless bodies or the planetary system, the earth included, would have suffered from them long before this, even if we do not admit that the earth is as old as geologists would make it. But this is not all. It is well known that some among their number which have withal put on a very portentous appearance are merely the celestial equivalents of our terrestrial "wind-bags"—brought down to their proper level they would have shrunk into very small dimensions indeed. But there is more comfort still. The comet of 1770 positively got so near to Jupiter that it got entangled among his moons, the diameter of the smallest of which is only some 2,000

miles; but the moons pursued their courses as if nothing had happened, while the comet was so discomfited by the encounter that it returned by another road—*i.e.* astronomically speaking, its orbit was entirely changed. While, last of all, in our correspondence this week, will be found one fact the more in favour of the idea that, in 1861, we actually did pass through a comet. We have a suggestion for those weak people who are still alarmed by these celestial portents, and steadily refuse to acquaint themselves with the most elementary work on Astronomy, which would convince them how groundless their fears are. In India, during the last Eclipse, the priests reaped magnificent harvests from the offerings of the faithful. In England, possibly, it would be considered incorrect to make such offerings to the priest; but let them still be made—to the Royal Astronomical Society. In this way the English Philistine would approach nearer the standard of his less-civilised brother; Science would be benefited, and, doubtless, the omen would be averted—at all events they always have been.

THE Anniversary Meeting of the Royal Astronomical Society was held on Friday last, when the president's address was read. The medal this year has been awarded to Prof. Schiaparelli for his brilliant demonstration of the identity which exists in the elements of the orbits of certain comets and known systems of meteors. Among the obituary notices for the year were those of Sir John Herschel, Prof. De Morgan, and Mr. Babbage.

THE Council of the Geological Society have awarded the Wollaston Medal for the present year to Prof. J. D. Dana, of Yale College, Connecticut, and the balance of the proceeds of the Wollaston Fund to Mr. James Croll, of Edinburgh.

THE Hopkins Prize, which was founded in memory of the late Mr. Hopkins, and is adjudged to the author of the best original memoir, invention, or discovery in connection with Mathematico-physical or Mathematico-experimental Science that may have been published during the three years immediately preceding (who is or has been a member of the University of Cambridge) has been awarded to Prof. J. Clerk Maxwell, F.R.S. The adjudicators were Profs. Stokes, Tait, and Clifton. The fund is vested in the Cambridge Philosophical Society.

WE learn that, in addition to the scholarships for Natural Science at Cambridge, of which a list was given in our number for February 1, King's College offers an exhibition of the value of about 80*l.* per annum. The examination will commence on April 9, will include Physics, Chemistry, and Physiology, with one Classical and one Mathematical paper, and will be open to all candidates under twenty, and to undergraduates of the college in their first and second year. Names must be sent in, before March 10, to the Rev. A. A. Leigh, tutor of the college, from whom further information may be obtained.

PROF. GEORGE ROLLESTON has been elected a Fellow of Merton College, under the ordinance of 1854, which founded the Linacre Professorship of Physiology, and endowed it out of the revenues of this college. Prof. Rolleston graduated in 1850, and was afterwards elected Fellow of Pembroke College. In 1860 he was appointed to the Linacre Professorship of Physiology.

THE Industrial Museum at Edinburgh has lost, by the death of J. Boyd Davies, its zoological director or manager. No one knows what the authorities are going to do, but it is to be hoped they will select a good man, not a talker but a worker. The monetary value of the post is 200*l.* to 250*l.* per annum. The Lectureship on Zoology at the High School is also vacant.

AT a meeting of the Royal Geographical Society held on Monday evening last, the president, Sir H. C. Rawlinson, stated that, three days before, the expedition, consisting of Lieut. Dawson, R.N., Lieut. Henn, R.N., and Mr. Oswald Livingstone, the son of Dr. Livingstone, set sail in the first steamer despatched