

central belt, which has been for years a pearly-white, is now a rich golden yellow.

Three or four dark markings on the lower part of the southern dark belt nearest the equator will be seen to incline to the left. If our earth were removed to Jupiter's distance, its disc would appear no larger than these dark masses, so enormous is their extent. The rotation of the planet is carrying them towards the right: we may assume that the bright vapour between them is left behind by the planet, which is here travelling at the rate of nearly 3,000 miles an hour.



JUPITER, OCTOBER 9, 1869, 11 P.M. G.M.T.

Spectrum analysis has taught us to suspect that any change in the colour of light proceeding from an object, indicates a change in the object itself. If Jupiter, the largest planet in the solar system, has still retained so much heat as to shine partially by his own light, the present considerable change in colour may enable spectroscopists to obtain some information on this interesting subject.

JOHN BROWNING

Cuckows' Eggs

WILL you kindly grant me space for a few remarks in reference to the very interesting paper on the eggs of the cuckoo, by Professor Newton, in your last issue? I have no intention to criticise so able and accomplished a naturalist: my object is simply to elicit information on some points of difficulty; and as Mr. Newton promises a second paper, I should be very glad if he would throw any light on them.

And first as to the colour and markings of cuckows' eggs. Are they so variable as some assert? I must take leave to doubt this. I never met with such extreme varieties, nor can I hear amongst my oölogical friends of any who have done so. One of the most eminent and experienced of living oölogists has stated: "As far as my own experience goes, it teaches me that there are not many birds the eggs of which differ less than those of the cuckoo." On the other hand, Mr. Newton says: "It has long been notorious to oölogists, that the eggs of the cuckoo are subject to very great variety of colour." This, then, is a point on which I think further evidence is wanting. Dr. Baldamus mentions sixteen varieties of eggs which he alleges are cuckows'. Were these seen to be deposited by the bird, or how were they identified as those of the cuckoo? Dr. Baldamus does not appear to have taken them all himself. Is there not room for error here?

Mr. Newton saw these eggs, appears satisfied that they were those of the cuckoo, and agrees with Dr. Baldamus in his conclusions, that the object of the practice was that the cuckoo's egg should be "less easily recognised by the foster-parents as a substituted one." How then is this process effected? Mr. Newton's explanation is that each hen cuckoo deposits her eggs only in the nests of one species, that her eggs resemble those of the species whose nest she uses, and that this process is hereditary.

Here it is that I am most in doubt. How is this hereditary

habit of laying a particular style of egg maintained? It is quite possible that habits may become hereditary; but is there any instance of a wild species of animal inhabiting one locality and freely intermingling, where some members possess peculiarities of habit which are hereditary which their fellows do not? Mr. Newton will excuse me for saying, that the Golden Eagle he mentions scarcely fulfils these conditions. Is it likely there are sixteen varieties of our common cuckoo which are only to be distinguished from each other by laying a differently marked and coloured egg? Few birds are more vagrant or possess less conjugal or parental affection than the cuckoo. How then are these sixteen varieties to be kept from crossing? And if, as I believe, interbreeding does take place, how can the alleged distinctive style of eggs be preserved? Here I am at fault, and I shall be very glad if Mr. Newton will help me out of my difficulty.

In the face of the alleged object, that the egg shall be less easily recognised as a substituted one, how are we to account for the fact that, in this country at least, a larger number of cuckows' eggs are deposited in the nests of the hedge sparrow than in those of any other species, the speckled brown egg contrasting *strongly* with the greenish blue ones?

W. J. STERLAND

The Corona

IN connexion with Mr. Lockyer's paper "On the Recent Total Eclipse of the Sun," the following observations may be useful.

I observed the total eclipse of July 1860, in company with my friends Professor Chevallier and Mr. B. E. Hammond, at the village of Pancorbo, in Spain. We were on the summit of a mountain of considerable height, about 5,000 feet above the sea, and were therefore under somewhat peculiar atmospheric conditions. I observed specially four things:—

(1) Venus; which was then extremely near the sun, the thickness of the crescent being only 1 or 2 seconds, and therefore very favourably placed for observing whether it has an atmosphere.

(2) The extent of the corona, and its form. This I am sure was very irregular; very nearly, if not quite, permanent during the three minutes of totality; was nowhere less than 25' in breadth; in one part, the top in an inverting telescope, 40' in breadth; and in another, the right, was more than 60' in breadth, running out in a long wavy line like floss silk. I have before me the drawing I made at the time, during the totality.

(3) The amount of light given by the corona. This was estimated by a photometer, consisting of a wedge of dark glass, with a moveable slit, contrived by Mr. Chevallier, and now, I believe, in the possession of the Astronomical Society, with the place marked through which I saw the corona. It was as bright as a small cloud, distant 8° from the sun, 10 minutes after reappearance; or as the moon when 2½ days old, as the sun was setting.

(4) The colours shown by a variety of coloured ribbons during totality. Of these, the only observation that bears on Mr. Lockyer's paper, was that on the extent of the corona. I estimated it twice; once as reaching, to the right, 2½ diameters of the sun, and once, later on, at nearly 2½ diameters. I had no micrometer, but could not possibly have been wrong by so much as 10'. I wrote down at the time, that it underwent no perceptible change during the eclipse. It remained visible for six seconds after the reappearance of the sun.

I had, and have, little doubt that the corona is in the solar, and not terrestrial atmosphere.

Rugby School, Nov. 11

JAMES M. WILSON

Lightning in a Clear Sky

WE constantly find allusions in ancient classical authors, to lightning and thunder occurring in a clear sky. The former is often explained as referring to the phenomenon commonly known as "summer lightning," or the reflection in the sky of lightning from clouds below the horizon, which becomes visible at night. I have also seen it stated that in the calm and clear atmosphere of Italy, thunder might be audible under similar conditions. These explanations, however, do not meet the case as stated by good observers amongst the ancients themselves. They do not explain, for instance, what is stated by Cicero amongst the portents which preceded the conspiracy of Catiline—"that a Roman citizen was killed by lightning on a cloudless day." Pliny also mentions this case, adding that it happened at Pompeii. If such a phenomenon as lightning, falling from a cloudless sky, is disbelieved by men of science, may not the circumstance stated above be explained by supposing the man to have been killed by

the fall of an *aérolite*? Humboldt, in his *Kosmos*, mentions two such instances.

We also read in Cicero that the earthenware statue of the god (Summanus), which stood on the top of the Capitol of Rome, was shivered by lightning, and its head sent into the Tiber. Is not the distance very great? I have myself seen fragments of an elm-tree struck by lightning, in Eton Playing-fields, about ten years ago, driven to a distance of twenty-five yards. The fragments were several feet long, and some of them must have weighed ten or twelve pounds. I shall be thankful for any information on these matters.

C. W. D.

NOTES

WE give elsewhere an account of the Anniversary Meeting of the Royal Society last Tuesday; one of the announcements made, however, we prefer to detail here. Dr. John Davy, brother of Sir Humphry Davy, has bequeathed to the Royal Society, in fulfilment of an expressed wish of his illustrious brother, a service of plate, presented to Sir Humphry Davy for the invention of the Safety Lamp, to be employed in founding a medal to be given annually for the most important discovery in chemistry made in Europe or Anglo-America. The directions given in the will, respecting the manner in which the plate should be disposed of, have been fulfilled, and the proceeds invested in India securities, yielding a little more than 30*l.* a year. The Council will determine the form of the medal, and specify the conditions under which it will be awarded.

THE Royal Institution Friday Evening Meetings are arranged to commence on the 21st of January. The evening discourses before Easter will probably be given by Prof. Tyndall, Prof. Odling, Prof. Ruskin, Dr. Carpenter, Mr. Clifford, Prof. Sylvester, Dr. Rolleston, Prof. Roscoe, Prof. Huxley, Prof. Williamson, and Dr. Blackie. The Christmas lectures (adapted to a juvenile auditory) will be by Prof. Tyndall, who has chosen Light for his subject: the first will be delivered on the 28th inst. at 3 o'clock. Arrangements have been made for the following courses before Easter:—On the Architecture of the Human Body, by Prof. Humphry, F.R.S.; on the Vegetable Products of Chemistry, by Prof. Odling, F.R.S.; on Meteorology, by Mr. Robert Scott; on Plant Life as contrasted with that of Animals, by Dr. Masters, F.L.S.; Deductions from the Comparative Anatomy of the Nervous System, by Prof. Rolleston, F.R.S.; an Introduction to the Science of Religion, by Prof. Max Müller; on the Sun, by J. Norman Lockyer, F.R.S. After Easter, the following courses will be delivered:—On the Principles of Moral and Political Philosophy, by Prof. Blackie; on Physics, by Prof. Tyndall, F.R.S.; on Astronomy, by Prof. Robert Grant, F.R.S.; on History, by Prof. Seeley.

IT is now generally understood that the Earl of Dunraven will not be a candidate for the presidency of the Royal Irish Academy, and that the Rev. Professor Jellett, B.D., will be elected. Should this be so, we may look for a great revival in the scientific forces of the Academy.

AN important meeting has been held this week at Cambridge, for the purpose of considering the question of the abolition of university tests. The Master of Trinity quoted a remark made thirty-five years ago by the present Bishop of St. David's, to the effect that science, as well as literature, morality, and religion, would gain by such a measure; and from what we gather, the reading of this extract gave a tone to the meeting. Here are the resolutions passed:—Proposed by the Master of Trinity, seconded by the Venerable Professor Sedgwick: "That in the opinion of this meeting the time has come for settling the question of university tests; that the mode in which the question is dealt with in the permissive Bill introduced by Sir J. Cole-ridge is open to grave objections, and that any measure designed to effect such a settlement should include an enactment that no declaration of religious belief or profession should be required of

any person upon obtaining a fellowship, or as a condition of its tenure." Proposed by the Master of Trinity, seconded by Prof. Maurice: "That a representation be drawn up and presented by a deputation to the Prime Minister embodying the resolution just passed; that a committee be appointed to draw up such a representation, consisting of the Master of St. John's, the Master of Trinity, the Master of Christ's, Professor Sedgwick, Professor Maurice, the University Librarian, Mr. Ferrers, Mr. Porter, and Mr. Phear; and that the representation, when drawn up, be circulated for signature among all masters, resident fellows, or resident ex-fellows, of colleges, or officers of the University or of any college."

CHRIST'S COLLEGE, Cambridge, makes a most liberal offer to students of natural science, viz. scholarships and exhibitions, in number from one to four, and in value from 30*l.* to 70*l.*, according to the number and merits of the candidates; that is to say, four well-informed students may each obtain a scholarship worth 70*l.* a year, and tenable for some years. The examinations will be on April 5th, 1870, and will be open to any one, whether a member of Christ's College or not, provided his name is not on the boards of any other college in Cambridge, and provided he is not of sufficient standing for B.A. It will be open, therefore, to all undergraduates of Oxford, and to non-collegiate students of Cambridge, as well as to all students who are not members of either University. The candidate may select for himself the subjects of examination, and must send his name, &c., to the Master of the College before March 29th. Further necessary information may be obtained from the Rev. W. Gunson, Tutor of the College.

PROFESSOR PRINGSTEIN has been elected a correspondent of the Academy of Sciences of Paris, to fill the vacancy caused by the death of Professor von Martius.

WE have received the following from our Dublin correspondent:—The Council of the Royal Dublin Society have appointed Mr. H. W. Dunlop, B.A. Dub., C.E., as temporary assistant librarian. The Science and Art Department, on condition that the Library of the Royal Dublin Society should be open to readers from 10 o'clock A.M. to 10 o'clock P.M. each day, Sundays and Holy Days excepted, assented to provide for the extra services of the staff of porters and for a temporary assistant librarian. Perhaps there is no other public library in Great Britain and Ireland that is so completely at the service of the public as this library; and there is none that for its size possesses a larger selection of modern foreign works on literature and science. Its great defect is a useful working catalogue, and it is to be hoped that the Science and Art Department, seeing how successfully the Committee has managed the affairs of this library, will not grudge them the small sum required to compile a catalogue. It may not be uninteresting to mention that the expense incurred in the binding of the works issued by the Patent Office amounts to an average of 50*l.* a year. The works are presented by the Patent Office to several public institutions in Ireland. But while some towns, such as Belfast, store them away in a lumber-room, in Dublin they are carefully arranged and substantially bound. The Library is now open from 10 o'clock A.M. to 10 o'clock P.M.

THE Board of Trinity College proceeded on Saturday last to the election of a librarian, and, somewhat to the surprise of the literary circle in Dublin, they adhered to their ancient custom, and elected one of their own body to this important post. The newly-elected librarian is the Rev. Dr. Malet, Senior Fellow and Senior Lecturer of Trinity College. Dr. Malet is well known as a numismatist. He is the author of a catalogue of Roman silver coins in Trinity College, Dublin, and there is no doubt will make both an efficient and popular librarian. The Rev. Dr. Dickson retains his position as assistant-librarian.