

THE Prussian Government having requested the Swedish to effect measurements of the tide, &c., on the Swedish coasts in the Baltic, similar to those which for some time have been carried out on the Pomeranian coast, Capt. Malmberg and Prof. Rosen have been commissioned to visit the German stations during the summer, and select the most suitable places on the Swedish coast for realising this proposal.

THE Norwegian Storting has voted the entire sum proposed for scientific and literary purposes—about 5000*l.* Among these we note 150*l.* to the *Technical Journal*, 350*l.* to Dr. Norman's "Flora," 60*l.* to Dr. Sophus Tromholt for prosecuting his auroral researches, 50*l.* each to the *Acta Mathematica* and the "Fauna litoralis Norvegiæ."

AT Weimar, Munich, Elberfeld, and some other German towns have been erected what are called "pyramids of instruction." They show on their various faces the elevation of the place above the level of the sea, the population, the difference of local time from that of Vienna, Paris, London, New York, &c. There are also a clock, barometer, thermometer, vane, and a variety of statistical information.

MR. H. W. EATON of Louisville, Kentucky, writes to *Science* that the *Commercial* of that city for May 17 and 18 gave accounts of a tailed child recently born there. As such cases are of scientific interest, and are very rare, a party of four, including a prominent doctor and Mr. Eaton, concluded to investigate the case. "We found a female negro-child, eight weeks old, normally formed in all respects, except that slightly to the left of the median line, and about 1 inch above the lower end of the spinal column, is a fleshy pedunculated protuberance about 2½ inches long. At the base it measures 1½ inch in circumference. A quarter of an inch from the base it is somewhat larger, and from that it tapers gradually to a small blunt point. It closely resembles a pig's tail in shape, but shows no sign of bone or cartilage. There seems to be a slight mole-like protuberance at the point of attachment. The appendage has grown in length about a quarter of an inch since the birth of the child. The mother, Lucy Clark, is a quadroon, seventeen years old, and the father a negro of twenty,—both normally formed. In Darwin's 'Descent of Man,' vol. i. p. 28, he speaks of a similar case, and refers to an article in *Revue des Cours Scientifiques*, 1867-68, p. 625. A more complete article is that by Dr. Max Bartels, in *Archiv für Anthropologie* for 1880. He describes twenty-one cases of persons born with tails, most of them being fleshy protuberances like the one just described."

ON May 27, at about 8.45 p.m., immediately after sunset, a magnificent meteor or fireball was seen at Skonevik, on the west coast of Norway. It went in a perfectly horizontal line to north-north-west, leaving a bright tail behind appearing like steam. This trail was distinctly observable for quite five minutes, when it gradually spread in the shape of a light cloud, which was soon hidden in the approaching darkness. About two minutes after the ball had passed out of sight a loud report was heard in the same direction; it was very much like ordinary thunder heard from a distance, with the exception of its lasting twice as long. The sky was perfectly clear, and several persons witnessed the phenomenon. The meteor was also observed in the Kvinherred parish.

ANOTHER "blue grotto," or, rather, series of three large grottoes, 87 metres in length, has been discovered on the Dalmatian island of Buoi, lying to the south-west of Lissa. The cave is described by its discoverer, Baron Ramsonnet, Austrian Secretary of Legation, as surpassing the famous Capri Grotto.

THE additions to the Zoological Society's Gardens during the past week include two Macaque Monkeys (*Macacus cynomolgus* ♀ ♀) from India, presented respectively by Mr. Howard

Lane and Madam Kettner; two White-fronted Capuchins (*Cibus albifrons* ♂ ♀) from South America, presented by Mr. Messum; a Coypu (*Myopotamus coypus*) from South America, presented by Mrs. Constance Keely; a Harpy Eagle (*Thrasaetus harpyia*) from South America, a Red-billed Tree Duck (*Dendrocygna autumnalis*) from America, presented by Capt. H. King; a White-tailed Buzzard (*Buteo albicaudatus*) from America, presented by Mr. Lewis; a Wedge-tailed Eagle (*Aquila audax*) from Queensland, presented by Mr. Henry Ling Roth; two Choughs (*Pyrrhocorax graculus*), British, presented by Mr. J. Compton Lees; a Gray-breasted Parakeet (*Bolborhynchus monachus*) from Monte Video; presented by Mrs. Moore; two Cape Crowned Cranes (*Balcarica chrysolargus*) from South Africa, presented by Mr. J. R. Chapman; a White Stork (*Ciconia alba*), European, presented by Mr. Hubert D. Astley; a Partridge (*Perdix cinerea*), British, presented by Mr. George Rubie; a Blue and Yellow Macaw (*Ara ararauna*) from South America, deposited; a Brush-tailed Kangaroo (*Petrogale pericillata*) from New South Wales, four White Storks (*Ciconia alba*), three European Pond Tortoises (*Emys europea*), European, a Common Boa (*Boa constrictor*) from South America, purchased; a Black-necked Swan (*Cygnus nigricollis*) from Antarctic America, received in exchange.

OUR ASTRONOMICAL COLUMN

THE OXFORD UNIVERSITY OBSERVATORY.—The Savilian Professor of Astronomy has issued his Annual Report to the Board of Visitors of the University Observatory, which was read on the 5th of the present month, and forms a supplement to No. 493 of the *Oxford University Gazette*. The attendance of students at the lectures has been greater than at any previous time, and the Professor mentions "the phenomenon" of the regular appearance of two ladies at his lectures on the planetary and lunar theories, at the same time reminding the Board what even the approximate mastery of such theory implies.

On the astronomical work of the staff of the institution during the year, Prof. Pritchard's Report is a most favourable one. He refers to three memoirs on important astronomical questions which have issued therefrom, and which have been printed in the *Memoirs* of the Royal Astronomical Society. These include an extensive memoir by himself on the "Photometric Determination of the Relative Brightness of the Brighter Stars North of the Equator," in which his work at Cairo is brought to bear, and a memoir by the first assistant, Mr. W. E. Plummer, on the probable motion of the solar system in space, the data for which depend upon Mr. Stone's recent catalogue of southern stars; it is a memoir very similar in character to the well-known one by the late Mr. Galloway. Further, Prof. Pritchard has communicated to the Royal Astronomical Society a paper which was read at the last meeting, demonstrating, as he thinks, the existence of small displacements among the Pleiades. Upwards of a thousand measures of the relative brightness of stars were made, leaving about the same number to be made in the next year. This measurement of all the naked-eye stars from the Pole to the Equator will furnish a *Uranometria Nova Oxoniensis*, and Prof. Pritchard hopes that its publication may be undertaken by the University Press. The measures of the Pleiades having been completed, he now intends to devote himself to lunar work—the determination of selenographical longitude and latitude of a large number of points on the moon's surface by means of a valuable series of lunar photographs at the Observatory. Reference is made, in addition to the Pleiades work, to the existence of measures of some 250 stars in another cluster made at the Observatory a few years since, and to be shortly reduced and published; the particular cluster is not indicated in the Report, but presumably may be M. 39 in Cygnus, described by Messier when he observed it in 1764 as "a star-cluster of 1° diameter."

VARIABLE STARS.—In a communication to the Liverpool Astronomical Society Mr. Baxendell notifies that his determinations of the times of eight maxima between 1861 October 16 and 1881 November 21 are not satisfied by a constant period, but that, dividing them into two groups, he obtains the following results:—

Group 1. Mean period 206·37 days. Ep. 1864 Jan. 17·47.
Group 2. Mean period 212·52 days. Ep. 1880 Sept. 24·21.

Such a difference is well worthy of further investigation. The magnitude at maximum has varied between 7·8 and 9·3.

There does not appear to be any earlier observation of this star than that by Bessel on January 6, 1833, when it was estimated a ninth magnitude. It was not observed either by Lalande or D'Agelet. Prof. Schönfeld's elements in his second catalogue, which assume a uniform period of 208·8 days, would give a maximum on October 6, 1881; according to Mr. Baxendell, it took place on November 21.

Communications from Mr. Knott and Herr Wilsing, of the Observatory, Potsdam, on Ceraski's short-period variable, U Cephei, have appeared in the *Astronomische Nachrichten*. Mr. Knott, from 20 minima observed by him between 1880 October 23 and 1884 March 20 finds for elements—

Ep. 1882 April 19·92641 G.M.T. + 2·4928722 d. E.

Herr Wilsing has collected 61 minima by different observers between 1880 July 3 and 1884 April 9, and finds (similarly expressed)—

Ep. 1881 Nov. 21·34640 G.M.T. + 2·4928646 d. E.

To the suspected circumpolar variables recently named in this column may be added Bradley 392, which figures in our catalogues with various estimates of magnitude from 4·5 (Argelander's Zones) to 7 and 8 (Taylor and Lalande); generally, however, it has been called a sixth magnitude. Doubtless in many, perhaps in most, cases, such discordances arise from errors of estimation, through clouds, &c., or from misprints, but in others, as in the case of Schwerd's magnitudes of U Cephei (6·7, 8, 10 respectively), they are known to have been caused by a real fluctuation in the star's brightness, and hence it seems worth while to examine similar instances of disagreement in the catalogues.

MISSING NEBULÆ.—In Rümker's Catalogue are two objects observed as nebulae which were missed by D'Arrest and Auwers. In No. 1542 of the *Astronomische Nachrichten* Mr. G. Rümker has given the particulars of the observations from his father's manuscripts. The first nebula was observed on May 27, 1841, and its apparent place was R.A. 13h. 52m. 38·20s., Decl. + 45° 36' 13"·8. The Hamburg mean time of the observations was 9h. 31m. 43s. In the *Durchmusterung* we find a star thus—

8·8 ... 13h. 53m. 10·0s. + 45° 31'·7 ... R.

Consequently Argelander identifies this star 8·8 m. with Rümker's nebula. Two questions arise in such a case, and not for the first time: Was a comet projected on the place of Argelander's object at the time of Rümker's observation? or (more improbably), Was the star at that time surrounded by nebulosity which has since become invisible? Bessel, we know, observed a nebulosity on November 8, 1832, in a position where only a star 9·3 m. was subsequently seen by Argelander and D'Arrest. We refer to Rümker's first nebula more especially because its place was not very far from that which might have been occupied by the third comet of 1858, recently shown to be periodical by M. Schulhof. If that comet were at perihelion about 1841 April 21·8, its right ascension might have agreed with that of Rümker's nebula, but the declination would be given by calculation about 6° further north. Whether with the consequent period of revolution, which, assuming three periods, 1841-58, would be near M. Schulhof's lower limit, the action of the planet Jupiter during the first revolution could have caused such difference from the orbit for 1858 as to reconcile the discordance in the observed and computed declination, we cannot say, though it hardly appears likely. Still it may be worth while to mention the above approximate coincidence, as M. Schulhof has searched unsuccessfully for an indication of a former appearance of the comet in question.

GEOLOGICAL NOTES

TRICLINIC PYROXENE.—Mr. J. J. Harris Teall points out to us that since the paper was written on this subject by Mr. Whitman Cross, to which reference was made in *NATURE* (*ante*, p. 155), this author has found that, after reconsidering the matter in the light of the researches of Fouqué and Michel Lévy on the optical properties of monoclinic pyroxene, a great majority of the instances cited by him as indicating a triclinic pyroxene are explainable as augite, and that the few cases which still seem

anomalous are not in themselves sufficient to justify a reference to the triclinic system. The mistake was made in specimens not cut rigidly parallel to the axis, for it appears that the ellipsoid of elasticity is so situated as to produce very great variations in optical behaviour in sections which are but little inclined to each other. [*Amer. Journ. Science*, No. 151, xxvi. p. 76].

THE BRUSSELS MUSEUM AND ITS WORK.—The second volume of the *Bulletin of the Musée Royal d'Histoire Naturelle de Belgique* has just been completed by the issue of a fourth fasciculus. In this part geology and palæontology continue to assert their supremacy. M. Dollo supplies a paper on a gigantic fossil bird (*Gastornis Edwardsii*, Lemoine) from the lower part of the Landenian stage at Mesin, near Mons. Having completed the summary description of the Iguanodons, but not being yet in a position to publish his expected large monograph on that important group, he has in the meantime turned to the Crocodilians of Bernissart, of which he furnishes here a preliminary notice. They consist of four individuals capable of division into two well-marked groups—two large specimens indicating an animal about two metres in length, to which he gives the name of *Goniopholis sinus*, and two small forms which he regards as belonging to a new genus, named by him *Bernissartia*. M. Ernest Van den Broeck, following up the memoir published in a previous number of the *Bulletin* by his colleague, M. A. Rutot, offers a note on a new mode of classification and of graphic notation for geological deposits, based upon the study of marine sedimentation. The veteran palæontologist, Dr. L. G. De Koninck, contributes an essay on the *Spirifer mosquensis* and its affinities with other species of the same genus.

GEOLOGICAL SURVEY OF BELGIUM.—Appended to the last number of the *Bulletin of the Musée Royal* is a Report by M. Dupont, Director of the Museum, on the state of the detailed geological map of Belgium, which is being prepared under his supervision. The preliminary examination, which was estimated to require six years, having been completed, the continuous survey of the formations has been prosecuted, each important group being intrusted to an officer specially qualified for its investigation. Nineteen sheets are in the course of preparation for publication. Of these the greater number belong to the remarkable Devonian territory which forms so interesting and important a part of Belgian geology. We see from the map that these sheets are mainly the work of M. Dupont himself. He spent 100 days in the field last year almost entirely among the Devonian rocks. M. Moulon devoted his time to tracing the area of the Famennian beds. The third section, under the charge of M. Van den Broeck, has made progress among the oligocene Tertiary deposits of Central and Northern Belgium. The fourth section, supervised by M. Rutot, spent half of the season in mapping the Eocene deposits of Limbourg, and the remainder in prosecuting the investigation of Hainault, Brabant, Flanders, and the study of the Upper Cretaceous rocks and base of the Eocene series, the Eocene part of three sheets being finished. Dr. Purves, in charge of the fifth section, has devoted his energy to the mapping of the Jurassic rocks of Luxembourg, and the study of the Cretaceous series of Hainault and Limbourg. The total number of days spent in field-work by the whole staff has been 512.

GEOLOGY OF FINMARK.—Mr. Karl Pettersen continues his contributions to our knowledge of the geology of the Norwegian coast. In a recent memoir (*Archiv for Math. og Naturvidenskab.*, Bd. viii. p. 322) he describes that picturesque tract lying between the mouth of the Kvenangen Fjord and the Refsbotten, which includes the lonely Jökelfjord and Bergsfjord with the islands of Stjernö, Seiland, Sörö, and Kvalö. The greater portion of this area is occupied by various crystalline rocks—gneiss, mica-schist, gabbro, diorite, &c.—referred by the author to the Laurentian series. Above these lie certain certain mica-schists with included beds of limestone, which, under the name of the Tromsö mica-schist group, are assigned to the Cambrian system.

AMERICAN JURASSIC DINOSAURS.—In the *American Journal of Science* (April 1884) Prof. Marsh continues the valuable series of papers which he has contributed to our knowledge of the structure and affinities of the Jurassic Dinosaurs. In part viii. he discusses the carnivorous order Theropoda, two nearly perfect skeletons belonging to which have enabled him to throw some new and most important light on the order. An almost perfect skeleton, above seventeen feet long, has been named by him *Curatosaurs*, and presents some novel features in dinosaurian organisation. It has a large horn on the skull, a new, strange,