there is also nothing in these astronomical changes to intensify the moist (principally westerly) winds in winter, there will also not be a greater quantity of snow falling at that season in regions having a regular covering of snow in winter. The greater heat and rarefaction of the air in the interior of continents in summer will cause the air of the oceans to flow thither with greater force, and such a movement of the air is favourable to more abundant summer rains than are experienced now, and thus to a melting of the snow in mountainous countries.

Thus it would seem that winter in aphelion during high eccentricity would have rather the opposite effect to that which is generally attributed to it, but it seems to me that the effect would be in any case but slight, and not by far to be compared to that of the distribution of land and sea, mountains and lowlands; in other words, to that of the geographical conditions. With the change of these the extent and distribution of snow and ice must change also.

An attentive study of the physical geography of the earth and of its influence on climates, together with a judicious application of the simplest physical theories, will enable us to gain by and by a better knowledge of geological climates. The problem is an arduous one, but now that the studies are directed in the right way, there is no doubt of the final success.

A. WOEIKOF

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

AT a recent meeting of the trustees of the Mason College in Birmingham, the executors of Sir Josiah Mason presented a statement showing the amount to which the college will be entitled under the will of Sir Josiah Mason. After paying claims on the estate and providing for legacy duty, about 20,000*l.* will accrue to the college within the next three years, and after certain life interests are satisfied, a further sum of about 15,000*l.* will be available, making a total of 35,000*l.* for the estate. The benefactions of Sir Josiah Mason to the college building, endowment, and legacies will then amount to a total of 210,000*l.* The building and endowment of the orphanage and almshouses represent a sum of about 260,000*l.*

IN our University Intelligence last week, in the paragraph relating to Prof. MacAlister's lectures, the word *chemical* should have been *clinical*.

SCIENTIFIC SERIALS

The American Naturalist, December, 1881, contains—F. M. Endlich, on Demerara.—C. E. Bessey, a sketch on the progress of botany in the United States in 1880.—J. D. Caton, the effects of reversion to the wild state in our domestic animals.—W. R. Higley, on the microscopic and general characters of the peach tree affected with the "yellows" (concluded).—W. H. Dall, on intelligence in a snail.

January, 1882.—S. A. Forbes, on the blind cave-fishes and their allies (a new species of Chologaster, *C. papilliferus*, from a spring in Southern Illinois, is described).—Dr. C. F. Gissler, on a singular parasitic Isopod (*Bopyrus palæmoneticola*, Packd.), and on some of its developmental stages (this interesting species, which is figured, was found on about 10 per cent. of the common prawns (*Palæmonetes vulgaris*) examined.—William Trelease, on the heterogony of *Oxalis violacea*.—J. M. Anders, Forests, their influence upon climate and rainfall.—A. S. Packard, jun., glacial marks in Labrador (with a plate).

THE last number of the *Journal of the Russian Chemical and Physical Society* (vol. xiv. fasc. 1) contains, besides the minutes of proceedings, papers on the constitution of compounds of the indigo group, by M. Lubavin; an interesting paper on the influence of molecular weight of homologues in the so-called incomplete reactions, by Prof. Menshutkin; on Caucasus naphtha, by MM. Markovnikoff and Ogloblin; on the distribution of magnetical currents, by M. Sloughinoff; and on the electromagnetic theory of light of Wm. Maxwell, by M. Borgman.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, January 26.—"An attempt at a Complete Osteology of *Hypsilophodon Foxii*," by J. W. Hulke, F.R.S. Abstract.

After a reference to papers descriptive of parts of the skeleton of this dinosaur, by Professors Owen, Huxley, and himself, the author gives a detailed description of the skull, vertebral column, shoulder, and hip-girdles, with their appendages. The skull is essentially lizard-like, both in its general form and in its structural details. The frontal is a paired bone. The premaxillæ send upwards mesial processes separating the external nares; the exclusion of the maxilla from these nares by the external ascending process of the premaxilla is apparent more than real, since the maxilla is prolonged forwards beneath this process, and comes into close proximity to the nostril. The supra-occipital enters into the foramen magnum. The palate fissured nearly in its whole length is strictly lacertilian. The presence of simple cylindrical teeth in the premaxillæ, of small, compressed teeth in the front of the maxilla and in the mandible, and of larger, more complex, compressed teeth behind these, foreshadow the incisors, premolars, and molars of the higher vertebrates. The vertebræ are opisthocœlous in the neck, planocœlous in the trunk and loins, and amphicœlous in the tail. In the neck and thoracic region of the vertebral column the ribs are forked. In the loins a simple unforked riblet is anchylosed to the end of the transverse process. The sacrum comprises five vertebræ. The ilium has a very long preacetabular process. The femur is shorter than the tibia; the inner trochanter is long and acutely pointed. The tibia has a stout præcnemial crest. The tarsus consists of two bones that together form a sinuous hollow upper surface, in which the tibia and fibula rest; the outer bone representing the os calcis supports both bones of the leg, whilst the inner, representing the astragalus, bears the tibia only. In two feet evidence of two elements of a distal row of tarsalia was found in the outer side of the foot. There are four functional toes with 2, 3, 4, 5 phalanges counting from the inner side of the foot, and a styliform rudiment of an outer metatarsal, devoid of phalanges. This alone demonstrates the generic distinctness of *Hypsilophodon* from *Iguanodon* in which, as is well known, the hind foot comprises only three functional toes. The ungual phalanges are sharply pointed. The sternum is rhomboid. The scapula and coracoid have a general resemblance to those of Iguanodon. The humerus has a considerable deltoid crest, and is shorter than the femur. The radius and ulna are shorter than the humerus. The ungual phalanges of the digits resemble those of the hind toes, but are smaller.

Physical Society, February 25.—Prof. G. C. Foster in the chair.—New Members: Prof. G. F. Fitzgerald, Trin. Col. Dublin, Mr. C. Richardson, Lieut. H. J. Dockrell, R.N., Mr. W. Ford Stanley, General H. Hyde, R.E., Mr. J. Buchanan.—Prof W. E. Ayrton, F.R.S., read a paper on Faure's accumulator, giving the results of experiments made by him and Prof. Perry on the efficiency, storing-power, and durability of the battery. The efficiency was got by measuring the power put in, and comparing it wi h that taken out, by means of Perry and Ayrton's voltameter and ammeter. The authors found that the cell has great resuscitating power if left insulated after all the current appears to have been discharged. Care had to be taken to see that the cell was quite discharged by letting it stand on open circuit for intervals and discharging between whiles. When this was done they found that the total loss for charges up to one million foot pounds need not be greater than 18 per cent. With slower charges they got a loss of only 10 per cent. As to the storage, a mean current of 18 amperes gave, after eighteen hours' discharge (six hours on three consecutive days), 1,440,000 foot pounds of work equivalent to 1 horse-power in forty-three minutes. The cell contained 81 lbs. of red lead, thus making a capacity of about 18,000 foot pounds per lb. of red lead. The cell showed no deterioration after two months of work.—Prof. Ayrton then described a new form of his dispersion photometer, which greatly reduces it in size and convenience. The principle of this instrument has already been described to the Society by the author. It consists in using a concave lens to disperse the stronger light, and thus obviate the necessity of putting it at a great distance if it is very powerful, such as an electric light. The powers of the two lights arc compared by the eye in estimating the intensity of the shadows of a rod thrown on a white screen of blotting-paper by the two lights simultaneously. A sperm candle is used as the standard, and it is placed on a movable stand at an angle to the path of the other beam through the lens. Both the lens and candle can be shifted to and from the screen along a scale giving their distances, and the stronger beam is reflected from a small mirror. This mirror is ingeniously fixed so as to reflect the ray from the