BRISTOL.—A well-printed and well-arranged Calendar of University College has been published. It extends to upwards of sixty pages, and contains all the information usually found in such publications, including full details as to the Medical School.

Dean Stanley's address on Education, at University College, on Saturday, attracted an audience of about 1,700 people, who listened with the closest attention.

## SCIENTIFIC SERIALS

*Kosmos*, Part 2 (May) opens with an article by L. Overzier, on "Heredity" (Part 1), aiming at the discovery of the real cause of inheritance.—Prof. Jäger, commencing a series of articles on "The Origin of Organs," deals with the development of the eye, showing how the laws of optics and the properties of living substance mutually influence one another.—Hermann Müller, treating on "The Origin of Flowers," considers the first metasperm (or angiosperm) to have been diclinous and fertilised by the wind, that is, supposing the metasperms to have originated from a single stock.—W. O. Focke deals with "The Conception of Species in the Vegetable Kingdom," especially in relation to the genus Rubus. He shows how far the different species are from being of equivalent value and that the term variety has no definite significance. He exposes the futility of much botanical "research," owing to imperfection of methods and lack of comparative study; Darwin has few imitators. Such work requires an entire devotion of time and complete botanical gardens, for the multiplication of which the author calls.—A. Lang, on Lamarck and Darwin (I.), expounds Lamarck's conceptions of natural history.

*Kosmos*, Part 3 (June).—L. Overzier continues his discussion of heredity, reviewing Darwin's theory of pangenesis, Haeckel's perigenesis, and Jäger's chemical theory; he considers the latter to be of great value.—Carl du Prel, on the needed remodelling of the nebula hypothesis.—Prof. Jäger treats of the origin of the organ of hearing, tracing it from the simplest condition where spicules diffused through the entire protoplasmic body of an animal serve to gather up and conduct vibrations of sound. He brings forward the remarkable theory that in animals possessing nerve fibres, the organs of hearing is but a specialisation from the general tactile sense.—W. von Reichenau, on the colours of bird's eggs, makes the generalisation that birds having open nests have coloured eggs, while those with covered or concealed nests have white ones; further, that in open and ground nests the colour of the eggs has a protective object.—A. Dodel-Port, on the lower limit of sexuality in plants, gives an account of the sexual processes in *Ulothrix zonata*, but appears not to have heard of the researches of Dallinger and Drysdale on the monads.—A. Lang, on Lamarck and Darwin, expounds Lamarck's "hydro-geology."

## SOCIETIES AND ACADEMIES

### PARIS

Academy of Sciences, October 22.—M. Peligot in the chair.—The following papers were read:—M. Leverrier's tables of Uranus and Neptune, by M. Tresca.—On some applications of elliptic functions (continued), by M. Hermite.—*Résumé* of a history of matter (first article), by M. Chevreul. This is an extract from a work commenced about the end of last year, and occupying 418 pages of the *Memoires de l'Académie*, t. xxxix. A sketch of the principles of alchemy is given.—On one of the causes of red coloration of the leaves of *Cissus quinquefolia*, by M. Chevreul. This cause is sunlight. The green colour is retained in the leaves that are shaded by others.—On the order of appearance of the first vessels in the shoots of some Leguminosæ, by M. Trécul.—Modifications in the conditions of maxima of electro-magnets by the state of more or less complete saturation of their magnetic core, by M. Du Moncel. The law of proportionality of the attractive forces to the squares of the intensities of the current is true only within certain limits, and under certain conditions; and electro-magnets through which the current is interrupted at very short intervals, are (more or less) not subject to it. When the forces are proportional to (say) the cubes of the electric intensities, the helices must always be less resistant than the exterior circuit. In the case of multiplied interruptions, the resistance of electro-magnets must always be less the shorter the duration of closures of the current; and for this reason (also because of defective insulation and extra currents) telegraph electricians reduce considerably the resistance of electro-magnets applied to long circuits. Reverting to the question in the title, the thickness of the magnetising spiral may be increased in case of defective saturation of the magnetic core; becoming double the diameter of this if the force increases as the cube of the intensities.—Preparations of sulphide of carbon brought to the solid state by means of gelatine, by M. Cassius. 100 grammes of gelatine are dissolved in 1,000 grammes of water, and sulphide of carbon (25, 50, or 75 per cent.) is mixed at a temperature of 15° to 20°, and the mixture let cool. M. Cassius thinks the preparation might be useful in viticulture. The sulphide is liberated slowly, the time varying according to the proportion of sulphide absorbed.—Experiments on the formation of artificial ultramarine, by M. Plicque. He finds (in opposition to some German authors) that ultramarine does not contain nitrogen. Blue ultramarine, properly so called, is formed by an oxygenated compound of sulphur, and it is probable that this compound is fixed both by sodium and by aluminium.—On the catechines and their constitution, by M. Gautier.—On acid acetates, by M. Villiers. The increase of weight of some neutral acetates, dried and placed, in a summer month, under a bell jar with crystallisable acetic acid, was, in the case of acetate of soda, 404 per cent., or nearly six equivalents of acetic acid; acetate of potash, 264 per cent; of baryta, 179 per cent.; of lead, 134 per cent., &c. The solutions of neutral acetates in crystallisable acetic acid have much less tension of vapour than that of acetic acid.—Researches on butylene and its derivatives, by M. Puchot.—Note on the cause of anthrax, by M. Klebs.—On the structure of the blood corpuscle, and the resistance of its envelope to the action of water, by MM. J. Bechamp and Baltus. The demonstration of the membrane (by action of soluble fecula) is here given in the cases of the frog, the ox, the pig, and the sheep. Water does not destroy the globules; it merely renders them invisible, and they may always be discovered with the aid of picrocarminate, even in extremely dilute media, and after several weeks of contact. The blood of sheep (like that of the hen in M. A. Bechamp's experiments) contains globules of more delicate structure than those of the other bloods examined.—Researches on the functions of leaves of the vine, by M. Macagno. Glucose and tartaric acid are formed preferably in the upper leaves of the fruit-bearing vine-branch; this production of sugar progresses with that of the grape, and is much reduced (even to disappearance) after the vintage. The green branches are conductors of glucose. These facts explain the evil of "pinching" or removing the tops of the grape-bearing branches, with too great zeal. Where there is an abundant production of grapes, a sufficient quantity of leaves should be left for preparation of the necessary glucose.—Reply to a recent note of M. Buys Ballot, on the division into time and into squares of maps of nautical meteorology, by M. Brault.

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