

It is stated in *Science* that by the will of General Brayton Ives, of New York City, the largest part of his estate is bequeathed to Yale University for its general purposes. The value of the bequest is estimated at from 150,000l. to 300,000l.

We learn from *Science* that through the efforts of Dr. Ralph Arnold, and other alumni of the department of geology and mining, Stanford University has just added to its collections the working library and material of the late Prof. H. Hemphill, of Los Angeles. The collection contains between 8000 and 9000 specimens of shells and 150 volumes. The material is of great importance in the study of the Tertiary geology of the Pacific coast, and especially of the geology of the petroleum deposits of California.

THE March number of the *Nature-Study Review* (Ithaca, N.Y.), the official organ of the American Nature-Study Society, is devoted to an elaborate prospectus of courses in nature-study for elementary schools. It has been prepared by Mr. G. H. Travers and Miss H. M. Reynolds, of the Minnesota State Normal School, and it is copyright. The authors take a big view of their subject, and emphasise "the æsthetic, the social, the economic, and the hygienic" aims of nature-study. (The old-fashioned teacher will rather miss the intellectual aim!) To help the pupils to enjoy the world they live in, and to acquaint them with the useful and injurious forms of life, these we understand as the æsthetic and economic aims, but the social aim, so far as explained, seems to us far-fetched, and the hygienic aim is lugged in by sheer force. The "disciplinary theory" of training the powers of observation, memory, reasoning, and imagination must be given up, we are told, for the researches of modern psychology have shown it to be unsound. But it seems to reappear under another name. To more purpose, as it seems to us, the authors emphasise that the nature-study should deal with the material available in the child's environment, which in urban conditions requires to be enlarged artificially. The starting point should always be in the child's experience, and the material should be of interest or capable of becoming of interest to the child. Each study should concern itself with a child's problem, and the child should be guided to solve it. And the solution should mean something in the life of the child. "If the problem does not seem to allow of any application, we may well inquire whether the problem is really worth while." This may be pushed too far, for a stimulated imagination may be a great gain and a search for applications a bore. The graded outlines of courses are carefully thought out, and the general arrangement—following the seasons—is admirable. Teachers will find the outlines very suggestive and the introductory essay very provocative. We would particularly commend the consistent way in which the authors have sought to get at the child's point of view, and to keep to the Socratic method, not in the letter alone, but also in the spirit.

## SOCIETIES AND ACADEMIES.

### LONDON.

**Royal Society**, March 25.—Sir William Crookes, president, in the chair.—Prof. B. Moore: The production of growths or deposits in meta-stable inorganic hydrosols.—Prof. B. Moore and W. G. Evans: Forms of growth resembling living organisms and their products slowly deposited from meta-stable solutions of inorganic colloids.—H. Onslow: A contribution to our knowledge of the chemistry of coat-colour in animals and of dominant and recessive whiteness. This research was undertaken in order to discover a chemical method

of differentiating the two similar forms of white animals known as dominant whites and recessive whites, or albinos. Hitherto this has only been possible by observing their genetic behaviour. Dark animal pigments are believed to result from the oxidation of a colourless chromogen by an oxydase. The skins of young black rabbits were found to yield a tyrosinase which converted tyrosine to a melanin. By means of this tyrosinase it was possible to test extracts from white rabbits of both types. Briefly, extracts from dominant whites contained an anti-oxydase which inhibited the tyrosinase of the black rabbit extracts. Extracts from albinos, on the other hand, had no inhibiting influence, and were themselves incapable of producing any pigment. The anti-oxydase was also found in those white parts of rabbits which are dominant to colour, such as the white bellies of the wild rabbit and of the yellow rabbit carrying agouti. These results tend to confirm the Mendelian view that dominant whiteness is caused by a factor which inhibits the pigment-producing mechanism if present, and that albinism results from the partial or total absence of the factors necessary for the development of pigment. The experiments also revealed facts which suggest that the difference between pigments producing black, chocolate, and yellow hairs is quantitative rather than qualitative, for, after extraction, the pigments in all three colours appear identical. That variation in colour is a structural modification is supported by the fact that dilute colours, such as blue, are caused by a lack of pigment in the cortex. In the corresponding intense colours, such as black, pigment being present in the cortex, the white light reflected from the vacuoles is absorbed, thus deepening the colour.

### PARIS.

**Academy of Sciences**, April 12.—M. Ed. Perrier in the chair.—E. Guyou: Remarks on the *Extrait de la Connaissance des Temps* for 1916. An account of the modifications introduced with the view of shortening and facilitating nautical calculations.—A. Müntz and E. Lainé: Study of the material brought down by watercourses in the Alps and Pyrenees. Determinations of the quantities of material carried by the principal watercourses in the Alps and Pyrenees. The erosion is much more intense in certain recent formations. The agricultural value of the deposits has still to be examined.—M. de Forcrand: A hydrate of hydrogen arsenide. The hydrate  $\text{AsH}_3 \cdot 6\text{H}_2\text{O}$  has been isolated and determinations made of its dissociation pressures at temperatures from  $0^\circ \text{C}$ . to  $25^\circ \text{C}$ . From these data, with the aid of Clapeyron's equation, the heat of formation has been found to be 17.75 calories. Comparisons are given for analogous data for the hydrogen compounds of sulphur, phosphorus, and selenium.—J. Guillaume: Observations of the sun made at the Observatory of Lyons during the third quarter of 1914. Observations were made of sixty-seven days, and the results are given in three tables showing the number of spots, the distribution of the spots in latitude, and the distribution of the faculæ in latitude.—S. Chevalier: The effect of atmospheric dispersion on the diameter of photographed celestial objects. Photographs of the sun and of Jupiter show that the effect of atmospheric dispersion on the diameter of a photographed celestial body depends very slightly on the brightness of the body or on the sensibility of the plates.—Ernest Esclangon: The limited integrals of a linear differential equation.—Ph. Flajolet: Perturbations of the magnetic declination at Lyons (St. Genis Laval) during the third quarter of 1914.—M. Lubimenko: Some experiments on the antioxydase of tomato fruits. Details are given of a

method for estimating the amount of peroxydase in the tomato, and this method was applied to determining the proportions of peroxydase during the different stages of the ripening of the fruit. From the results obtained, it is concluded that the tissue of the tomato contains an enzyme which paralyses the oxidising action of the peroxydase. This is provisionally termed anti-peroxydase, and it is much more sensitive than the peroxydase to the influence of antiseptics. Even toluene destroys it fairly rapidly. The relations between these two enzymes during the ripening of the fruit is discussed.—A. **Jungelson**: Chemical intoxication and mutation of maize. Studies in the variations produced by treating the seed with a solution of copper sulphate.—H. **Vincent** and M. **Gaillard**: The purification of drinking water with calcium hypochlorite. Compressed tabloids of 0.015 gram calcium hypochlorite with 0.08 gram salt are used. These contain 3.5 mgr. of active chlorine, and one is capable of sterilising a litre of water in about twenty minutes. There is no appreciable taste. Bacteriological experiments are given showing the removal of pathogenic bacteria.—J. **Vallot**: An installation permitting the application of intensive heliotherapy, in winter, to wounded and military convalescents.—MM. **Hirtz** and **Gallot**: A new radiosopic method for the determination of the depth of a foreign body in the organism.

### BOOKS RECEIVED.

- Year Book of the Royal Society of London. Pp. 250. (London: Harrison and Sons.) 5s.  
Imperial University of Tokyo. Calendar 2573-2574. (Tokyo: Z. P. Maruya and Co.)  
Royal Societies Club. Founded A.D. 1894. Foundation and Objects. Rules and By-Laws. List of Members. Pp. 354. (London.)  
Practical Irrigation and Pumping. By B. P. Fleming. Pp. xvi+226. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 8s. 6d. net.  
The Design of Steam Boilers and Pressure Vessels. By Prof. G. B. Haven and G. W. Swett. Pp. vii+416. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 12s. 6d. net.  
Electrical Engineering. By Dr. T. C. Baillie. Vol. i., Introductory. Pp. vii+236. (Cambridge: At the University Press.) 5s. net.

### DIARY OF SOCIETIES.

#### THURSDAY, APRIL 22.

ROYAL SOCIETY, at 4.30.—Deep Water Waves, Progressive or Stationary, to the Third Order of Approximation: Lord Rayleigh.—A Chemically Active Modification of Nitrogen, produced by the Electric Discharge. VI.: Hon. R. J. Strutt.—The Difference between the Magnetic Diurnal Variations on Ordinary and Quiet Days at Kew Observatory: Dr. C. Chree.—The Effects of Different Gases on the Electron Emission from Glowing Solids: F. Horton.—Heats of Dilution of Concentrated Solutions: W. S. Tucker.—The Origin of the "4686" Series: T. R. Merton.  
ROYAL INSTITUTION, at 5.—The System of the Stars: The Stellar System in Motion: Prof. A. S. Eddington.

#### FRIDAY, APRIL 23.

ROYAL INSTITUTION, at 9.—Military Hygiene and the War: Major P. S. Lelan.  
INSTITUTION OF MECHANICAL ENGINEERS, at 8.  
PHYSICAL SOCIETY, at 5.—The Theories of Voigt and Everett Regarding the Origin of Combination Tones: Prof. W. B. Morton and Miss Mary Darragh.—Experiments on Condensation Nuclei Produced in Gases by Ultra-Violet Light: Miss Maud Saltmarsh.—The Self-Induction of Solenoids of Appreciable Winding Depth: S. Butterworth.

#### SATURDAY, APRIL 24.

ROYAL INSTITUTION, at 3.—Modern Artillery: Lieut.-Col. A. G. Hadcock.

#### MONDAY, APRIL 26.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Geography of the War Theatre in the Near East: D. G. Hogarth.  
ROYAL SOCIETY OF ARTS, at 8.—Foodstuffs: Dr. D. Sommerville.  
INSTITUTE OF ACTUARIES, at 5.—The New National Life Tables: G. King.

#### TUESDAY, APRIL 27.

ROYAL INSTITUTION, at 3.—The War on Belgian Architecture: Banister Fletcher.  
ZOOLOGICAL SOCIETY, at 5.30.—White Collar Mendelising in Hybrid Pheasants: Mrs. Rose Haig Thomas.—Two New Tree-Frogs from Sierra Leone, recently Living in the Society's Gardens: E. G. Boulenger.—The Foraminifera of the Kerimba Archipelago (Portuguese East Africa). Part II.: E. Heron-Allen and A. Earland.  
ILLUMINATING ENGINEERING SOCIETY at 8.—Visibility: its Practical Aspects: C. C. Paterson and B. P. Dudding.  
INSTITUTION OF CIVIL ENGINEERS, at 8.—Annual General Meeting.

#### WEDNESDAY, APRIL 28.

ROYAL SOCIETY OF ARTS, at 8.—The Utilisation of Solar Energy: A. S. E. Ackermann.  
INSTITUTION OF ELECTRICAL ENGINEERS, at 7.45 (Students' Section).—Annual General Meeting.  
GEOLOGICAL SOCIETY, at 8.—A Composite Gneiss near Barna (County of Galway): Prof. Grenville A. J. Cole.—Further Work on the Igneous Rocks associated with the Carboniferous Limestone of the Bristol District: Prof. S. H. Reynolds.

#### THURSDAY, APRIL 29.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: The Transmission of Infra-red Rays by the Media of the Eye, the Transmission of Radiant Energy by Crookes's and other Glasses, and the Radiation from various Light Sources: H. Hartridge and A. V. Hill.—Surface Tension and Ferment Action: E. Beard and W. Cramer.—Surface Tension as a Factor controlling all Metabolism: W. Cramer.  
ROYAL INSTITUTION, at 3.—Advances in General Physics: Prof. A. W. Porter.  
INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—The Bombay Hydro-Electric Scheme: A. Dickinson.

#### FRIDAY, APRIL 30.

ROYAL INSTITUTION, at 9.—Emulsions and Emulsifications: Prof. F. G. Donnan.  
INSTITUTION OF PETROLEUM TECHNOLOGISTS, at 8.—Oil Well Engineering: W. Calder.

#### SATURDAY, MAY 1.

ROYAL INSTITUTION, at 3.—Photo-Electricity: Prof. J. A. Fleming.

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