

upon the composition of the phlegms, by M. L. Lindet.—Greater assimilability of the nitrogen from recently formed nitrates, by M. P. Pichard.—On the composition of lime-tree "honey," by M. Maquenne.—On a new terrestrial Gregarina of the melonitid larvæ of Provence, by M. Louis Léger.—On the rôle of the reserved secondary tissues of arborescent monocotyledons, by M. H. Jacob de Cordemoy.

## BERLIN.

**Physiological Society, May 19.**—Prof. du Bois Reymond, President, in the chair.—Dr. Benda, in continuation of his remarks at the last meeting, spoke on certain questions connected with cell-division, dealing first with the value of double-staining. He then made a communication on the extra nuclear origin of the nuclear spindle and its relation to the centrosoma, and lastly on the median cell discovered by Flemming, which appears after the equatorial transverse division has become formed in the dividing cell.—Prof. Gad gave an account of experiments made by Dr. Rosenburg on the transplanting of slips of small intestine into the bladder. The experiment was successful; the functions of the bladder remained normal, and investigation showed that the muscular coat of the intestine had grown into that of the bladder, while the mucous membrane had grown up through the flattened epithelium of the organ.

June 9.—Prof. du Bois Reymond, President, in the chair.—Dr. Loewy had gone carefully into the methods of blood-titration, and concluded that the most convenient and certain way of determining the alkalinity of blood is to dilute it with a solution of magnesium sulphate and to add acid until a drop of the mixture just reddens litmus. In connection with this Prof. Zuntz gave an account of some experiments of his own and of Prof. Lehmann on the nature and compounds of the acids and bases of blood. He drew special attention to the results of passing carbon dioxide through blood whereby the alkalis leave the corpuscles and pass into the plasma as the result of a splitting up of their compounds with proteids and their conversion into diffusible carbonates.—W. Townsend Porter communicated the results of his experiments on the coordinating centres of the cardiac ventricle. Starting from the fact that the function of the centres is suppressed when the blood-supply is cut off, he had ligatured the coronary artery, supplying the septum, in a number of animals. In all cases the animals lived for many hours and even days after the operation, from which fact he considered he had disproved the existence of any coordinating centre in the septum.

**Physical Society, June 2.**—Prof. von Helmholtz, President, in the chair.—Dr. Rubens gave an account of experiments he had made, together with Dr. du Bois, on the permeability of metallic wire gratings to polarised heat rays. As is well known, Hertz's experiments on electric oscillations brought them into close relationship to the properties of light-vibrations, as shown by reflection, refraction, and polarisation. The fact that metallic gratings act as polarisers towards electric waves, inasmuch as the waves can only pass through when the wires of the grating are parallel to them, has no analogue in the case of light, since linearly polarised light can pass through a grating whatever be its position. On the assumption that this difference is dependent simply on the fact that light waves are too small for the gratings employed, the authors had experimented with the longer heat-rays and gratings of extremely narrow aperture. The latter were made of the finest wire (gold, silver, copper, and iron), the intervals between the wires being  $.0025$  mm., and the rays of a zirconium flame, up to  $W.L. 6\mu$  were examined. The ocular of the spectroscope carried a very sensitive bolometer. It was found that with each of the gratings the ultra-red rays behaved like electric waves; those rays which vibrated at right angles to the plane of polarisation passed through a grating placed parallel to their plane, in threefold extent, as compared to the amount which passed when the grating was at right angles. This result was obtained with different metals with varying wavelengths of the rays, e.g. with silver by  $W.L.$  above  $2\mu$ .—Dr. Krigar-Menzel reported on the present state of the experiments he is making together with Dr. Richarz on the diminution of weight at increasing altitudes. A balance is provided at each arm with two pans, one above the other at a distance apart of  $2.2$  m. With this balance two weights are determined, of which

one lies in the upper pan, the other in the lower. The weighings are then repeated on both sides, and thus the difference of the weights when in the upper and lower pans is ascertained. In the next place a massive leaden block is built up between the two pans and the weighings are repeated. Up to the present time the weighings without the lead mass are alone complete. The block is, however, in position, and a few preliminary weighings have been made, from which it so far appears as if the presence of the lead had done away with the difference of the weights when in the upper and lower pans.

[NOTE.—In the report of the Physical Society, NATURE, vol. lviii. p. 144, column 2, five lines from the top—"the vapours of these metals similarly gave an emission-spectrum following on the absorption spectrum"—for "similarly" read "neither," and for "following on" read "nor."]

## BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Heat: M. R. Wright (Longmans).—Aids in Practical Geology, 2nd edition; Prof. G. and J. Cole (Griffin).—An Introduction to the Study of the Diatomaceæ: F. W. Mills (Liffé).—Diagnostik der Bakterien des Wassers: Dr. A. Lustig (Jena, Fischer).—Euclid's Elements of Geometry, Books v. and vi.: H. M. Taylor (Cambridge University Press).—Acoustics, Sound (Advanced), enlarged edition: W. Lees (Collins).—A Study of the Languages of Torres Straits, Part 1: S. H. Ray and A. C. Haddon (Dublin).—The Arctic Problem: A. Heiprin (Philadelphia, Contemporary Publishing Company).—Exploration of Mount Kina Balu, North Borneo: J. Whitehead (Gurney and Jackson).

PAMPHLETS.—Ueber die Typen der Küstenformen: Dr. A. Philippson.—Sir F. Ronalds, F.R.S., and his Work in Connection with Electric Telegraphy in 1816 (Simpkin).

SERIALS.—Medical Magazine, July (Southwood).—The Lingualumina, Parts 1 and 2: F. W. Dyer (London).—Proceedings of the Society for Psychological Research, June (K. Paul).—The Book of the Fair, Part 1: H. H. Bancroft (Chicago, Bancroft).—Botanische Jahrbücher für Systematik Pflanzengeschichte und Pflanzengeographie, Sechzehnter Band, iv. u. v. Heft (Williams and Norgate).—Annals of Scottish Natural History, July (Edinburgh, Douglas).—Notes from the Leyden Museum, July (Leyden, Brill).

## CONTENTS.

PAGE

Vertebrate Embryology. By Prof. E. Ray Lankester, F.R.S. . . . . .	265
Rural Hygiene . . . . .	266
Our Book Shelf:—	
Dubois: "Die Klimate der Geologischen, Vergangenheit und ihre Beziehung zur Entwicklungsgeschichte der Sonne" . . . . .	266
Foussereau: "Polarization Rotatoire, Réflexion et Réfraction virtuelles, Réflexion métallique" . . . . .	266
Letters to the Editor:—	
The Non-Inheritance of Acquired Characters.—Dr. Alfred R. Wallace, F.R.S. . . . .	267
The Conditions Determinative of Chemical Change: some Comments on Prof. Armstrong's Remarks.—Prof. W. Ramsay, F.R.S.; James Walker . . . . .	267
The Corona Spectrum.—J. Evershed . . . . .	268
Lord Coleridge and Vivisection.—Prof. Percy F. Frankland, F.R.S. . . . .	268
Oyster-Culture and Temperature.—Prof. W. A. Herdman, F.R.S. . . . .	269
The Diffusion Photometer.—Prof. J. Joly, F.R.S. . . . .	269
Alphonse de Candolle. By W. T. Thiselton-Dyer, C.M.G., F.R.S. . . . .	269
Carl Semper. By Dr. J. Beard . . . . .	271
Notes . . . . .	272
Our Astronomical Column:—	
Ephemeris of the New Comet . . . . .	276
Comet Finlay (1886 VII.) . . . . .	276
Observations of the Planet Victoria . . . . .	276
Difference of Longitude between Vienna and Greenwich . . . . .	277
Photographs of the Milky Way . . . . .	277
The Institution of Naval Architects . . . . .	277
Society of Chemical Industry . . . . .	279
The Plague of Field Voles . . . . .	282
The Zoological Society . . . . .	283
University and Educational Intelligence . . . . .	284
Scientific Serials . . . . .	284
Societies and Academies . . . . .	284
Books, Pamphlets, and Serials Received . . . . .	288