

velocity for blue over red light, seeming to exceed 1 per cent. of the whole, must rest upon the merit of the present observations themselves.

SCIENTIFIC SERIALS

Journal of the Royal Microscopical Society, June, 1881, contains: On the diatoms of the London Clay, by W. H. Shrubsole, with a list of species and remarks by F. Kitton (Plate V. Fig. 1).—On the estimation of aperture in the microscope, by Prof. E. Abbe (woodcuts).—On a new species of *Hydrosera* (Wallich), by Dr. H. Stolterforth (*H. tricornata*), Plate V. Figs. 2, 3.—Summary of current researches relating to zoology and botany (principally Invertebrata and Cryptogamia), microscopy, &c., including original communications from Fellows and others.—Proceedings of the Society.

The Scottish Naturalist, July, 1881, contains under Phytology—Dr. Stirton, on the genus *Usnea* and a new genus allied to it.—Rev. J. Stevenson, *Mycologia Scotica* (continued).—J. Cameron, the Gaelic names of plants (continued).—Dr. F. B. White, preliminary list of the flowering plants and ferns of Perthshire.

SOCIETIES AND ACADEMIES

VIENNA

Imperial Academy of Sciences, July 7.—L. T. Fitzinger in the chair.—Dr. T. Holetschek and T. v. Hepperger, determination of the elements and ephemeris of the comet of 1881*b*.—E. Rathay, on the spermagonia of the *Accidie mycelles*.—F. Exner, on galvanic couples consisting only of chemical elements, and on the electromotive force of bromine and iodine.—C. Block, a sealed packet.—A. Brezina, on new and little-known meteors (third report).—A. Schlosser and Z. H. Skraup, synthetical experiments on the chinolin series.—R. Brix, on the constituents of copahu (Maracaiho) and on commercial copaibic and metacopaibic acid.—H. Weidel, on dichinolins.—A. Spina, inquiry into the mechanics of intestinal and cutaneous resorption.—Th. Openchowsky, on the pressure of the pulmonary circulation.

July 14.—L. Fitzinger in the chair.—T. Glax and R. Klemensiewicz, contributions to the theory of inflammation (1st part).—E. Scherks, on the action of metals on α -bromopropionic ethyl ether.—H. Leitgeb, on *Completozia complexus*, Lohde, a fungus-parasite on fern-prothallia.—N. v. Lorenz, on the action of lead-metal on aqueous solutions of nitrate of lead.—A. Adamniewicz, preliminary note on the microscopical vessels of human cord.—A. W. Meisels, studies on the zooid and oekoid of different vertebrates.—C. Etti, contributions to the knowledge of catechin.—T. Kachler, on the action of nitric acid on some fatty bodies made by ustion.—S. Exner, to the knowledge of the cortical motor area.

PARIS

Academy of Sciences, July 18.—M. Wurtz in the chair.—With regard to a telegram from Gabès about a recent earthquake there, and detonations preceding the shocks, M. Boussingault remembered having heard detonations at intervals during an earthquake in South America in 1827.—Observations of comet *b* 1881 at Paris Observatory, by MM. Tisserand and Bigourdan.—Theory of the plane flexion of solids, &c. (continued), by M. Villarceau.—On the reduction of quadratic forms, by M. Jordan.—Researches on glycolic ether, and on oxides of ethylene, by M. Berthelot.—On the trajectory of cyclones, and on the announcements transmitted by telegraphic cables, by M. Faye. Commandant Bridet has lately shown that if Mauritius and Réunion (Bourbon) were connected by means of a cable, the latter might be informed eighteen or twenty four hours in advance of the arrival and direction of storms. M. Bridet is trying to get this project realised.—On the integration of a linear differential equation of the second order on which evection depends, by M. Gylden.—Effects produced by sulphide of carbon on vines of Beaujolais, by M. Henneguy.—Ephemerides of the planet (103) Hera for the opposition of 1881, by M. Callandreau.—On the tails of comets, by M. Flammarion. He replies to M. Faye, and supports M. Berthelot's theory of electric illumination.—On the vision of stars through comets, by M. André. The enlargement of the image is probably a simple effect of diffraction indicating the presence of solid or liquid nuclei in the mass of matter.—On a function similar to modular functions, by M. Poincaré.—Distribution of energy in the normal spectrum, by Prof. Langley. He gives two curves obtained from observations with his new instrument for a diffraction spectrum after and before zenithal absorption by our atmosphere. The curve of light coincides almost exactly

with that of heat. There is enormous absorption by the atmosphere in the blue.—On a method enabling us to amplify the displacements of the plane of polarisation of light, by M. H. Becquerel. When monochromatic luminous rays, polarised rectilinearly, traverse a half-wave crystalline plate, the emergent rays are polarised rectilinearly in a plane which, relatively to the axis of the plate, is symmetrical with the plane of polarisation of the incident waves. This known property is utilised for the purpose indicated.—On the velocities of propagation of the inflammation in explosive gaseous mixtures, by MM. Mallard and Le Chatelier. In one form of apparatus each end of the tube has a lateral orifice communicating through a caoutchouc tube with a small chamber closed with an elastic membrane, which, being pressed outwards at the moment of explosion, affects an inscribing style. The propagation in the larger tube is not of normal velocity, unless the part not yet inflamed remains as rest during the whole phenomenon. In a tube closed at one end the velocity is much greater if the gas be fired from the closed end. Even in the other case violent movements often occur in the unburnt mass, and there are various irregularities.—On the decomposition and enlargement of bands of the rainbow, by M. Ritter. Near the observer (to a distance of about 150m.) the two systems of cones, with parallel axes from the eyes, by which the rainbow is defined, are quite separate; thus if the drops are within that distance one should see two distinct arcs or rings. Illustrations of this deduction and others are given.—On the extraordinary temperature of July, 1881, by M. Renou. The temperature of 37°·8 in the Park of Saint-Maux, on July 15, is undoubtedly the highest ever experienced in Paris or the environs.—On hydrosulphurous acid, by M. Schutzenberger.—Action of sulphur on various metallic solutions by MM. Filhol and Senderens. It decomposes them (in heat), producing more or less complex reactions.—Separation and determination of alumina and oxides of iron and chromium, by M. Carnot.—Industry of magnesia, by M. Schloesing. This is preliminary to an account of new ways of extracting magnesia from the water of salt marshes, and even from sea-water.—On injury done in Greece by anthracnose and *Peronospora viticola*, by M. Gennadius.—On the origin of trunks of fossil trees perpendicular to the strata of the coal formation, by M. Fayol.—On some points relative to anthracic immunity, by M. Toussaint.—On a new malady of domestic geese observed in the Commune of Viviers-Montagnes (Tarn), by M. Caravin-Cachin.—Experiments on yellow-fever patients with phenic acid, phenate of ammonia, &c., by M. de Lacaille.—On the Cretaceous system of the Northern Sahara, by M. Rolland.

CONTENTS

	PAGE
MISS GORDON CUMMING'S "FIJI"	281
OUR BOOK SHELF:—	
Houston's "Practical Botany for Elementary Students"	283
Falb's "Von den Umwälzungen im Weltall"	283
Jouliet's "Quantitative Estimation of Phosphoric Acid"	283
Lang's "Butterflies of Europe"	283
LETTERS TO THE EDITOR:—	
Chemical Equivalents.—C. W. M.	284
Slow Lightning.—W. M. FLINDERS PETRIE	284
Thought Reading.—GEO. B. MERRIMAN	284
Optical Phenomena.—J. RAND CAPRON	284
Symbolic Logic.—J. VENN	284
Jupiter.—J. BIRMINGHAM	285
New Red Variable.—J. BIRMINGHAM	285
A Fireball. JOHN TENNANT	285
Meteor.—G. H. KINAHAN	285
THE COMET. By J. RAND CAPRON; F. C. CONSTABLE	286
SEA-SHORE ALLUVION	286
SCIENCE AT ETON (<i>With Illustrations</i>)	287
NOTES	290
OUR ASTRONOMICAL COLUMN:—	
Encke's Comet	291
Comet 1881 <i>c</i>	292
BIOLOGICAL NOTES:—	
On some New Lower Green Algae	292
On the Influence of Intermittent Illumination on the Development of Chlorophyll	292
CHEMICAL NOTES	293
PHYSICAL NOTES	294
GEOGRAPHICAL NOTES	295
SOLAR PHYSICS.—THE CHEMISTRY OF THE SUN. By J. NORMAN LOCKYER, F.R.S. (<i>With Diagrams</i>)	296
ANCHOR ICE	301
UPON A MODIFICATION OF WHEATSTONE'S MICROPHONE AND ITS APPLICABILITY TO RADIOPHONIC RESEARCHES. By Prof. ALEXANDER GRAHAM BELL (<i>With Diagrams</i>)	302
EXPERIMENTAL DETERMINATION OF THE VELOCITY OF WHITE AND COLOURED LIGHT. By Dr. J. YOUNG, F.R.S., and Prof. G. FORBES	303
SCIENTIFIC SERIALS	304
SOCIETIES AND ACADEMIES	304