

proportion of the papers are by members of the Society, as are also several of the illustrations. The papers are on very varied subjects and all up to a creditable standard. The preface complains that so few members take an active part in the Society's proceedings, but, in this respect, the Society is no worse than others of much greater pretension. Still it would be to the advantage of the youthful members if the patrons and office-bearers made every effort to increase the number of actual workers. We regret that our space prevents us making special reference to any of the papers. The Botanical Section has issued a list of local plants, by H. W. Trott, the result of many years' observation; this last, we daresay, may be obtained by any one desiring it. The price is only 9d.

LONDON SCHOOL-BOARD DISTRICTS.—Mr. Stanford is preparing for the School-Board of London a series of maps of the various School-Board districts of the metropolis, which are likely to possess considerable interest. These maps are on the scale of six inches to a mile, show the various School-Board subdivisions, the positions of the schools which have been erected by the Board, and, in a different colour, of those which are under the Board's inspection. We have seen the sheet of the Hackney district, and no better evidence could be produced of the thoroughly good work done by the Board since its institution.

### SCIENTIFIC SERIALS

*Memorie della Società degli Spettroscopisti Italiani*, January.—Note from Prof. Draper on photographing the spectra of Venus and  $\alpha$  Lyrae; a 28-inch reflector and a 12-inch refractor are the instruments used, and an exposure of from ten to twenty minutes. In the photograph of the spectrum of  $\alpha$  Lyrae bands or broad lines appear in the ultra-violet region totally different to anything in the solar spectrum.

February.—Letter on the comet Borelly, 1877, Brorsen-Brahns, 1857, and the eclipse of the moon of February 27, 1877. The spectra of the first appears, according to him, to consist of some carbon compound.—Tables of statistics of protuberances and spots observed at Rome in the months of January and February, 1877.—List of positions on the solar limb in which the vapour of magnesium was observed from February 20, 1876, to July 4 of the same year.—In the appendix to this number appears an article explaining the construction of the several different forms of aneroid barometers.

March.—List of positions on the solar limb in which the vapour of magnesium was observed from July to November, 1876, by Prof. Tacchini, and a table for the year showing the frequency of visibility of the  $\delta$ -line and 1,474-line, from which it appears that the latter line is more frequently visible than the former. Table of positions and size of protuberances observed at Rome in 1876, by Father Secchi.—Some observations of the zodiacal light, by Prof. A. Serpieri.—Note by Prof. Tacchini on Mr. Le Verrier's researches on the intra-Mercurial planet.—Drawings of chromosphere for September and October, 1875, made at Rome and Palermo.

April.—Spots and facula observed spectroscopically and directly at Palermo in 1876. This paper consists of the daily notes of observations of the chromosphere for last year.—Table of spots and faculae observed in February and March, 1877, by Prof. Tacchini.—Drawings of the chromosphere for October, November, and December, 1875, by Secchi, Ferrari, and Tacchini, observed at Rome and Palermo.

*Journal de Physique*, April.—On the cause of the motion in the radiometer, by M. Gaffie.—On the capillary theory of Gauss and its extension to the capillary properties of liquid lines, by M. Lippmann.—New electric lamp, by M. Jablonschhoff.—On the quadrant electrometer of Sir W. Thomson, by M. Benoit.—Complement to the theory of the microscope and the dark chamber, by M. Neyreneuf.—Experiments of static electricity, by M. Grisson.

May.—On the observation of the infra-red part of the solar spectrum by means of the effects of phosphorescence, by M. Edm. Becquerel.—Determination of the polar distance in magnets, by M. Benoit.—Electric variation produced by contraction of the heart in the living man, by M. De la Roche.—On a new industrial application of heat, called the thermodynamic motor, by M. Ferd. Tommasi.—On the absorbent power of moist air, by M. Hoorweg.—On refrigerating mixtures of snow and sulphuric acid, by M. Pfaunder.

*Morphologisches Jahrbuch*, vol. iii. Part 1.—Oscar Hertwig, contributions on the formation, fertilisation, and cleavage of the animal ovum, part second (*Hæmopsis*, *Nephelis*, *Rana temporaria*, and *R. esculenta*), 86 pages, 5 plates.—A. Rauber, the fixation of long bones in joints, and the form of the bones.—W. Moldenhauer, the development of the middle and outer ear, 56 pages, 4 plates.

*Reale Istituto Lombardo di Scienze e Lettere, Rendiconti*, vol. x. Fasc. vii.—Two new mycetes parasitic on vines, by M. Cattaneo.—On a cause little estimated in the pathogenesis of some female diseases, by M. de Giovanni.—The molecular velocity of gas and the corresponding velocity of sound, by M. Brusotti.

### SOCIETIES AND ACADEMIES

LONDON

Chemical Society, June 7.—Dr. Gladstone in the chair.—The following papers were read:—On the gases inclosed in lignite coal and mineral resin from Bovey Heathfield, by J. W. Thomas. Four samples were examined, two of which contained much hydrated oxide of iron in the cleavages. The gases consisted chiefly of carbonic acid, carbonic oxide, nitrogen, and sulphuretted hydrogen. In one case sulphur sublimed off in yellow crystals; organo-sulphur compounds, mercaptan, sulphide of allyl, &c., were also present in the gases. The lignites resemble cannel coal more than any other of the true coals as regards the occluded gases, but are far less stable, decomposing, *in vacuo*, below 200° C., whilst the true coals resist a temperature of 300° C. It seems probable that the iron pyrites of true coal have derived their sulphur from that existing in organic combination in the plants from which coal is produced.—On apparatus for gas analysis, by Dr. Frankland. The author proposes to substitute for the india-rubber cork, which has several disadvantages, at the bottom of the water-cylinder, a cast-iron base through which the two glass tubes pass, and are firmly clamped by a wooden clamp; the latter is screwed to the cast-iron base. The most important improvement is, however, the removal of the steel clamps which connect the laboratory and measuring tubes. These are replaced by a glass cup at the top of the measuring tube into which fits the drawn-out end of the laboratory tube, covered with thin sheet-india-rubber; this flexible joint, when wetted and covered with mercury, is quite air-tight.—On narcotine, cotamine, and hydrocotamine, Part V., by Dr. Wright. The preparation of bromhydrocotarnine hydrobromide, bromocotarnine hydrobromide, and tribromhydrocotarnine hydrobromide is described; the second of these bodies, when heated to 200° splits into a new base, tarconine, and a large amount of an indigo-blue substance; the latter body is very insoluble, but dissolves in strong sulphuric acid, forming a magnificent intense purplish solution. Bromocotarnin crystallises in fine scarlet crystals. Noropianic acid and other substances were also prepared and their properties examined.—On otto of limes, by C. H. Piesse and Dr. Wright. A terpene-like body boiling at 176° C. was obtained which yielded but little cymene. The residue in the retort, after standing two to three months, formed a quantity of crystals. These crystals were investigated and their composition determined.—On primary normal heptyl alcohol and some of its derivatives, by C. F. Cross. Pure *œnanthol* was prepared with a specific gravity of 0.823 at 16° C. Pure heptyl alcohol is colourless, has an agreeable odour, sp. gr. at 0° 0.833, boils at 175°. Heptyl chloride, bromide, iodide, acetate, and *œnanthylate* were prepared and examined; their boiling-points closely agree with those calculated by Schorlemmer.—On the transformation of aurin into rosanilin, by Messrs. Dale and Schorlemmer. The authors find the spectra of the hydrochlorides of their new base, and rosaniline quite identical; they have also prepared from their base Hofmann's violet, aniline blue, and aniline green.

Geological Society, May 23.—Prof. P. Martin Duncan, F.R.S., president, in the chair.—Richard George Coke, Robert Slater, and William Swanson were elected fellows of the Society.—The president read a letter from Mr. C. J. Lambert, announcing that he had allotted the sum of 500*l.* to the Geological Society out of the 25,000*l.* left by his father for distribution. The president further announced that the sum of 500*l.* had already been paid to the Society, and would be invested for its benefit.—The following communications were read:—Remarks on the coal-bearing deposits near Erekli, the ancient Heraclea, Pontus Bithynia, by Rear-Admiral T. A. B. Spratt, C.B., F.R.S.