country, owing to the extraordinary defective condition of our preliminary school training. But if children in elementary schools were taught to appreciate the main principles of scientific method, it would be possible for them afterwards to properly avail themselves of the higher training which is offered to them, and which alone can render them competent as industrial and domestic workers. It is to be hoped, therefore, that the School Board will see its way to extending the work of scientific education begun under its auspices six years ago.

IN a preliminary report recently prepared for the Technical Education Board of the London County Council, Dr. C. W. Kimmins gives the following statistics to show the progress that has been made, especially in the teaching of physics and chemistry, in the secondary schools assisted by the Board.

	1893-4.	1894-5.	1895-6.
Number of pupils receiving theoretical instruction in physics	1867	1899	2266
Number of pupils doing practical work in physics	215	433	1576
Number of pupils receiving theoretical instruction in chemistry ...	2091	2287	2647
Number of pupils doing practical work in chemistry...	630	1101	1814
Percentage of those receiving theoretical instruction in physics, taking practical work in this subject	11·5	22·9	69·5
Percentage of those receiving theoretical instruction in chemistry, taking practical work in this subject	30·1	48·1	68·5

Dr. Kimmins points out that the statistics show that there has been a general advance in the number receiving instruction in experimental science at these schools, and that the proportion doing individual practical work has increased to a far greater extent. He reports that the general introduction of practical teaching in elementary physics is producing excellent results. A marked improvement is also to be noticed in the teaching of chemistry; the practical work is of a much more rational kind, and bears a closer relation to the class teaching. Qualitative analysis is rapidly ceasing to occupy the important position it has held in the laboratory in former years.

SCIENTIFIC SERIALS.

THE *Journal of Botany* commenced its enlarged issue with the present year, and the two numbers already published indicate that its editor will have no difficulty in filling its pages with matter of value to the English botanist. An interesting paper, by Mr. E. A. L. Batters, describes several new British seaweeds, including two new genera, *Colaconema* and *Trailliella*, both belonging to the *Florideæ*. Mr. J. H. Burkill contributes a paper on the variation in the number of parts of the flower of *Parnassia palustris*. Mr. A. H. Praeger proposes a division of Ireland into botanical districts, accompanying his paper by a map. There are a number of other papers on various departments of descriptive botany. The plates illustrate two new forms of British pond-weed described by Mr. A. Fryer, and new African plants described by Mr. A. B. Rendle and Mr. E. G. Baker.

Bulletin of the American Mathematical Society, vol. ii. No. 3, December 1895.—Prof. F. Morley, in a notice of Gundelfinger's Vorlesungen aus der Analytischen Geometrie des Kegelschnitte, classes it with two other recent analytic works on conic sections, for which one is very thankful; the other two are the works by the late Prof. Casey and Miss Scott. He states the plan of Gundelfinger's treatise to be to systematically develop the theory by means of homogeneous coordinates, while bringing out the fact that the elementary (x, y) system is merely a case to which we can descend when so minded. This latter may seem a minor point; pedagogically it is not so, and it is certainly not well explained in many books. The development of the theory is really analytic, though one feels that the analysis is under the control of a masterly geometric insight. Prof. Morley's review is a long one, and enters into many details of the work which has been edited by Dr. Dingeldey. Short notes follow, viz. on divergent series, by Prof. A. Chessin, and a simple proof of a fundamental theorem of substitution groups, and several applications of the theorem, by Dr. G. A. Miller.—Dr. James Pierpont contributes an interesting note on an undemonstrated theorem of the *Disquisitiones Arithmeticæ*. This ends with two theorems relating to the construction of a polygon of n sides by a series of *rational* conics, *i.e.* conics whose coefficients are rational in the current domain of rationality, and gives in three rows the polygons, constructible by rule and compass, known to the Greeks (twenty cases); then the polygons of this class discovered by Gauss (five cases); and, in the last row, the *additional* polygons which can be constructed when *rational* conics can be employed (thirty-five cases). The table is limited to constructible regular polygons of sides $\leqq 100$.—Notes and new publications close the Number.

Bollettino della Società Sismologica Italiana, vol. i. 1895, No. 7.—Ernesto von Rebeur-Paschwitz, by A. C.—The first instant of the great earthquake-shock of May 18, 1895, noted in Arcetri (Florence), by A. Abetti.—On the Florentine seismic centre, by M. Baratta. A topographical discussion of the three principal earthquakes felt in the neighbourhood of Florence in the present century, those of 1812, 1887, and 1895. The centres of the meizoseismal zones, though very near one another, are not quite coincident; but this, it is suggested, may be due to a variation in the depth of focus, or in the intensity of the original disturbance.—Notices of earthquakes felt in Italy (May–June 1895), by M. Baratta. The most important are the Florentine earthquake of May 18, the Spoleto earthquake of May 20, and the Rovigo earthquake of May 25.

SOCIETIES AND ACADEMIES.

LONDON.

Chemical Society, January 16.—Mr. A. G. Vernon Harcourt, President, in the chair.—The following papers were read:—The acetylene theory of luminosity, by V. B. Lewes. The adverse criticism of the acetylene theory of luminosity by Smithells does not affect the considerations upon which the theory is based; these are (1) that the unsaturated hydrocarbons in the inner region of the flame are largely converted into acetylene before luminosity commences; (2) that pure acetylene develops luminosity when flowing through a heated tube; (3) that the temperature necessary to decompose acetylene with evolution of light does not raise to incandescence the liberated carbon; and (4) that in luminous hydrocarbon flames of sufficiently high temperature, the luminosity varies directly with the amount of acetylene present at the point where luminosity commences.—The action of sodium alcoholate on certain aromatic amides, by J. B. Cohen and W. H. Archdeacon. Many of the aromatic amides form addition compounds with sodium meth- or eth-oxide; thus, acetanilide yields a substance of the composition PhNHAc, MeONa.—Note on the electrical conductivity of formanilide and thioformanilide, by T. Ewan.—The action of sugar on ammoniacal silver nitrate, by J. Henderson. A definite factor can be assigned expressing the action of glucose, lævulose, and galactose on ammoniacal silver nitrate under standard conditions, but no such factor can be obtained in the case of lactose or maltose, owing to secondary reactions. Cane-sugar, starch, and dextrin do not act on the ammoniacal solution under the standard conditions.—Solution and diffusion of certain metals in mercury, by W. J. Humphreys.—On some of the ethereal salts of active and inactive monobenzoyl, dibenzoyl, diphenylacetyl, and dipropionyl glyceric acids, by P. Frankland and J. MacGregor. The physical properties of these salts have been determined, and the relation between the rotatory power and the constitution of glyceric acid derivatives is discussed.—On the rotation of optically active compounds in organic solvents, by P. Frankland and R. H. Pickard. As a result of cryoscopic and rotatory power determinations of methyl dibenzoylglycerate and ethyl diacetylglycerate in various solvents, the authors find that when the substance has a low molecular weight, the specific rotation is high, and *vice versâ*; the bearings of these results are discussed.—Note on the action of hydrogen chloride on ethyl alcohol, by J. C. Cain.—Transformation of the alkylammonium cyanates into the corresponding ureas, by J. Walker and J. R. Appleyard. Measurements of the rates of transformation of the alkylammonium cyanates into ureas, and *vice versâ*, indicate that the cyanates are dissociated into two ions in aqueous solution. On certain phenylthiocarbamates, by H. L. Snape.—The available potash in soils, by T. B. Wood.