

every surgeon should not regard an induction coil and accessories as an indispensable part of his general outfit. A noteworthy feature of Mr. Cox's catalogue is a section in which the principles of construction of induction coils are described, and the best methods of using the apparatus explained.

THE Cambridge University Press have issued the following list of additional errata for Lord Kelvin's "Mathematical and Physical Papers," vol. iii. :—Page 33, line 8, for "21,000,000" read "2,100,000"; p. 63, in heading of Table II., for "289°" read "288°"; p. 74, line 7, for "640" read "64"; p. 173, line 6, for "the" (before "quantity") read "a"; p. 226, value of diffusivity of wood (col. 4) should be "0013" instead of "013"; p. 228, footnote, after "XCVI." insert "Part II."; p. 252, line 17, before "being" insert "the whole"; p. 256, line 18, insert parenthesis marks before "since" and after " $\frac{T}{274}$ "; p. 348, line 8 from foot, for "10⁻¹" read "10⁻¹⁹"; line 5 from foot, for "second" read "century"; p. 396, line 8 from foot, insert "half" after "than"; p. 398, line 3 of footnote, for "præcedentium" read "præcedentium"; p. 401, footnote, delete "or oblong-rectangle-based"; p. 403, line 25, for "§ 52" read "§ 53"; p. 409, line 5 from foot, for "Caignard" read "Cagniard"; p. 441, line 4, for "n" read "q"; line 8, for "n²" read "q²"; p. 442, line 10 from foot, for "2θ" read "4θ"; line 2 from foot, for "2n" read "4n"; p. 451, line 13, for "forces" read "force"; p. 459, line 5, for "forcives" (first) read "forcive"; p. 478, line 5 of footnote, delete comma after "force"; p. 479, line 8, for "15" read "12"; line 9, for "18" read "225"; p. 480, line 16, for "of" (after "law") read "if"; p. 483, line 7, for "18" read "225."

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus*) from India, presented by Mr. E. G. Mills; a Short-tailed Vole (*Arvicola agrestis*, var.), British, presented by Mr. A. Thomas; a Leadbeater's Cockatoo (*Cacatua leadbeateri*) from Australia, presented by Lieut.-Colonel G. E. Blunt; a Laughing Kingfisher (*Dacelo gigantea*), presented by Mr. Thomas A. de Wolf; eleven Long-nosed Crocodiles (*Crocodylus cataphractus*) from Assay, South Nigeria, presented by Mr. W. J. Bowker; a West African Python (*Python sebae*) from West Africa, presented by Mr. J. S. Budgett; two One-wattled Cassowaries (*Casuarus uniappendiculatus*), a Blue-necked Cassowary (*Casuarus intensus*) from New Guinea, a Little Rock Wallaby (*Petrogale concinna*), two Regent Birds (*Sericulus melinus*) from Australia, a Ring-necked Parrakeet (*Palaeornis torquata*, var.) from India, a Serrated Terrapin (*Chrysemys scripta*) from North America, a Grooved Tortoise (*Testudo calcarata*) from South Africa, deposited.

OUR ASTRONOMICAL COLUMN.

HOLMES' COMET 1899 d (1892 III.).—

Ephemeris for 12h. Greenwich Mean Time.

1899.	R.A.			Decl.			Br.	
	h.	m.	s.	°	'	"	r ⁻²	(rΔ ²)
Sept. 14	3	9	5 51	43	16	46.9		
15			9 16.48	43	29	52.3		
16			9 25.29	43	42	49.4		
17			9 31.90	43	55	38.0	0.1777	0.05636
18			9 36.31	44	8	17.6		
19			9 38.47	44	20	48.0		
20			9 38.37	44	33	8.8		
21	3	9	35.98	44	45	19.7	0.1758	0.05727

On the 20th the comet ceases to move eastward, and commences to travel in a north-westerly path through Perseus.

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VANADIUM IN METEORITES.—In a paper contributed to *Mem. Soc. Degli. Spett. Ital.* (vol. xxviii. pp. 113-119), M. M. B. Hasselberg gives the results of an extensive investigation he has been making into the constitution of meteorites. Thirty-one different specimens have been examined, and photographs taken of their spectra when volatilised in the electric arc, the region extending from λ 4268.78 to λ 4444.40. Tables are given showing the relative intensities of the characteristic vanadium lines, the discussion of which leads the author to give the following conclusions:—

(1) The quantity of vanadium present in meteorites is exceedingly small, but the sensible differences found in the several specimens leave no doubt of the reality of its presence. The meteorites of New Concord, Lundsgården, l'Aigle, Kniaghynia and Alfanello are cited as showing the metal most easily.

(2) There is a distinct difference between iron meteorites and stony meteorites, the former containing no trace of vanadium, while the latter generally contain it in greater or less quantity.

(3) In the meso-siderites, of intermediate composition, the presence of vanadium is very doubtful, though faint indications are often found.

With regard to the Nejed and Obernkirchen meteorites, which are ferro-siderites, the author states that he has specially looked for the lines found by Lockyer at $\lambda\lambda$ 4112.5-4119.6, but without success, his vanadium spectrum not containing lines of these wave-lengths. Measures of photographs of comparison spectra of vanadium and Nejed meteorite fail to show the lines, and he gives a list of nine vanadium lines in this region which do not appear in the meteorite, and therefore is led to regard these two as not being exceptions to the rule that iron meteorites contain no trace of vanadium.

CORDOBA PHOTOGRAPHS OF STAR-CLUSTERS.—We have recently received from Dr. S. C. Chandler a volume entitled "Cordoba Photographs," containing the measures and computations made by the late Dr. B. A. Gould, from the photographs of star-clusters obtained at the Argentine National Observatory. Dr. Gould commenced the undertaking in 1872, at the Cordoba Observatory, which was placed at his disposal by the Argentine Government. After his death in 1896 the remaining portions were completed by his assistant, Mr. G. E. Whitaker, who had worked with Dr. Gould for eleven years. The volume is printed in duplicate throughout, in Spanish and English. In the first 41 pages a detailed description is given of the origin of the work, and the method of carrying it out, with full particulars and explanation of the methods of measurement and computation adopted.

Two series of photographs were obtained, one with an object-glass formerly the property of Mr. Rutherford, of 28.6 cm. aperture, and the other with a new glass constructed by Fitz, under Rutherford's superintendence. On Dr. Gould's return to New York in 1885 he had over 1200 plates, besides those of the moon, planets, comets, &c. Of these 281 were fully measured, giving the positions of over 11,000 stars. In addition 315 plates of 96 double stars have also been measured. The material thus made available was so great that it was decided to add no new measures, but proceed with the computations. For this Dr. Gould devised methods of applying corrections for calibration of the micrometer scale, expansion-coefficients of the glass plates, and the reduction of the measures to rectangular coordinates.

The star clusters are restricted to the Southern Hemisphere with only two exceptions, *Pleiades* and *Praesepe*. Each plate was obtained by exposing first for eight minutes, then moving the telescope slightly in R.A. without jar, after which a second exposure of eight minutes was given. Finally the stars were allowed to trail across the plate to give direction of diurnal motion. For some of the plates a third exposure was given instead of obtaining a trail. All the plates were albuminised to prevent distortion of the films, and there has been no trouble from this cause. Various electrical and other contrivances were tried with the telescope, but most of the work was directed by a heavy pendulum as governor. To explain the method of computation, the reduction of a plate of the *Pleiades* is given with full details of the calculations.

The remainder of the volume, pp. 50-482, consists of the final determined positions of 9144 stars in 37 clusters, each accompanied with its own chapter of explanation. There is a chart of each cluster, showing all the stars considered, to a scale of about 18" = 1 mm.