Chemical Society's Journal. The whole of the circulating system is enclosed, so that it can be immersed completely in a thermostat, the movement of the liquid being controlled by means of a series of taps connected to a suction-pump. The capillary is arranged in a vertical position, but contrary to the usual practice the flow is in an upward direction, so that the risk of partial obstruction of the capillary by particles of dust is greatly diminished. The adjustment of the volume of the flowing liquid is practically automatic and very exact. A special tube with a tap is provided, whereby the liquid to be tested can be drawn from the centre of a stock-bottle after ample time has been allowed for all traces of sediment to settle; this is a marked improvement on pouring the liquid into the viscometer directly or from an ordinary pipette. The new viscometer has been tested during several years of actual practice, and promises to take a permanent place alongside the pyknometer and the stills for conductivity-water, which have already been described by the author.

THE University of Chicago Press has in preparation for early publication in the "University of Chicago Science Series":—"The Origin of the Earth," by Prof. T. C. Chamberlin, and "The Isolation and Measurement of the Electron," by Prof. R. A. Millikan. The volumes will be issued in this country by the Cambridge University Press.

OUR ASTRONOMICAL COLUMN.

COMET 1915*c* (TAYLOR).—This comet has been under observation a number of times at the Hill Observatory since the beginning of the year. It has slowly increased in brightness. The ephemeris given below (No. 498, Eph. Zir., *Astronomische Nachrichten*) is based on the second orbit calculated by Messrs. Braae and Fischer-Petersen, and is for 12h. M.T. Greenwich :—

Jan.	R.A.	δ	Jan.	R.A	δ
	h m s	° ′ ″		h m s	° ′ ″
12	5 2 47	+13 8·0	18	5 2 28	+16 13·9
14	2 30	14 9·1	20	2 44	17 17·2
16	2 24	15 11·1	21	3 13	18 20·9

The R.A.'s increase after January 16. The comet continues to approach the sun. An observation on January 7 showed that the ephemeris then required corrections of +2·7 min. in R.A. and −43″ in declination. It may be remarked that it is moving through a region devoid of bright stars—N. and W. of Bellatrix.

We have received the following upon this comet from the Union Observatory, Johannesburg, December 9, 1915 :—

On December 2, 1915, Mr. Clement J. Taylor, of Herschel View, near Capetown, reported to the Union Observatory, Johannesburg, he had found a comet in Orion on November 24, and that it was near 31 Orion, and moving northwards. It was observed on the same evening and subsequently. The 1915·0 astrographic positions obtained at the Union Observatory are :—

Greenwich Time.

	1915		h m s		° ″
Dec.	2·347	...	5 24 45·9	...	0 39 6
	4·325	—	5 23 50·3	...	0 21 48
	5·347	...	5 23 19·9	...	0 12 12

COMET 1915*a* (MELLISH).—Some measurements of the additional nuclei of Mellish's comet (1915*a*) have been made by Mr. Knox Shaw (Helwân Observatory Bulletin, No. 16). The nuclei were situated on a bright ray in the tail, the one more distant from the head being the brighter, and in the later stages appeared to be subdividing. During May these extra nuclei receded from the head with daily motions of about 1000 km.

THE SPECTRUM OF THE BINARY SYSTEM 41 ERIDANI.—In Bulletin No. 274, Lick Observatory, Dr. G. F. Paddock investigates the question of spectroscopic orbit formulæ, especially considering the derivation of elements of nearly circular orbits, and the reduction in cases where spectra of both components are available. In the first case, he improves the determination of position and epoch of periastron, and in the second enables the reduction of the double measures to be carried on as one operation instead of using them to obtain two symmetrical solutions. The new formulæ have been put in use in a study of the spectroscopic binary 41 Eridani (mag. 3·9, Sp. B9A). Briefest reference only can be made to some of the many important questions dealt with. A definite value is adopted for the wave-length of the magnesium line—4481·400 Å., or 4481·230 I.A., and the variations of wave-length of this line alone are employed in deducing the orbit. All the thirty-nine spectrograms employed show it as a double line due to the two component spectra. The system proves to be one of normal values, although accurate photometric measures are yet required to fix the inclination of the orbit-plane. Measured wave-lengths are given for fifty lines (K to Hβ) and origins discussed. The lines are stated to be not so sharp as in Sirius, and distinctly fainter. A noteworthy feature is the number of proto-Mn lines represented. Intensities are merely verbally described. Two notes on the table of wave-lengths call for special remark. First, Mr. F. E. Baxandall, in 1914, published several new enhanced lines of Mn, including one at λ 4282·65. This origin will account for the line at λ 4282·7. Secondly, the line λ 4416·9, although masked in spark spectra, was shown by Prof. A. Fowler to be an enhanced line of iron, and provided a recognised origin for the stellar line. These points only emphasise the conclusion that 41 Eridani has an essentially enhanced line spectrum.

THE CONSTANTS OF THE TERRESTRIAL SPHEROID.—The Paris Conference (1911) adopted Hayford's values for the equatorial radius and aplatissement. Since then Helmert has derived a new value for the radius, and S. Wellisch suggests that Hayford's and Helmert's results should be combined. Instead of taking the adopted Hayford values he proposes that the mean be taken of three sets of values based on different assumed depths of the isostatic compensation layer (162·2 km., 120·9 km., and 113·7 km.). Taking Helmert's values with weight=unity, and the modified Hayford values with weight=4, he obtains for the equatorial radius=6,378,372 metres, excess over polar radius=21,476 metres, whence the reciprocal of the aplatissement=297. The length of the "metre" derived from these values is 1·00022632 metres (*Astronomische Nachrichten*, 4822).

SCIENCE AT EDUCATIONAL CONFERENCES.

"WHAT difference has the war made? I believe it has opened the eyes of the nation to the perils which arise from the neglect of intellectual things, the satisfaction with book knowledge, the inattention to facts, the concentration on physical prowess, and on a passive kind of material prosperity—the widespread ignorance of natural facts even among our leaders, and consequent contempt for investigation and expert knowledge. What has become apparent is the ignorance of our governing classes. The ignorance of all classes. The facts that education has not