OUR ASTRONOMICAL COLUMN.

COMET FINLAY (1886 VII.).—M. Schulhof, in the current number of the *Astr. Nach.* (3171) gives the new elements and ephemeris of Comet Finlay. They are as follows :—

M	=	6° 58′ 5″·33	
π	=	7 41 34·1	1893·0
Ω	=	52 27 42·7	
i	=	3 2 2·1	
ϕ	=	46 0 49·4	
μ	=	535·8046	
log. α	=	0·5473335	

12*h. M.T. Paris.*

1893		R.A. app.		Decl. app.
		h m s		° ′ ″
July 6	...	3 26 58·9	...	+16 49 2·9
7	...	31 39·4	...	17 8 33·7
8	...	36 19·1	...	17 27 33·1
9	...	40 57·9	...	17 46 1·0
10	...	45 35·9	...	18 3 57·1
11	...	50 12·9	...	18 21 21·3
12	...	54 48·9	...	18 38 13·1
13	...	3 59 23·8	...	18 54 32·8

A BRIGHT COMET?—In a note under this heading which appeared in these columns on June 22, we gave an interpretation of a telegram from Kiel to one of the German Observatories. The message ran: "From Boston probably bright comet photograph, Lewis, 5 June, 09571 ; Boston 26423, 07558, 43552 ; 12 June, 10043 ; Boston 27119, 06904, 44066. Verbatim ventilate unpliable."

Unfortunately, after having translated the code on a separate sheet of paper, we set down the Boston times as the right ascensions, an error often liable to occur when one is used to reading right ascensions in hours, minutes, and seconds, and not in degrees of arc.

This telegram was distributed only to a few observatories in order to substantiate the discovery, or otherwise, before the announcement was openly made, and it was in the endeavour to present our readers with this piece of news as early as possible that this clerical error was made.

STARS WITH REMARKABLE SPECTRA.—In *Astronomische Nachrichten*, No. 3171, Mr. T. E. Espin continues his list of stars with remarkable spectra (*Astr. Nach.* 3090), the number amounting now to 736. The places are all brought up approximately to 1900.

THE PERIOD OF ROTATION OF VENUS.—It was hoped that the pure telescopic observations of the surface of Venus would settle the question of the period of rotation, but the results show that we are not yet in possession of the absolute value as can be gathered from a comparison of Schiaparelli's work with Trouvelot's, and Löschardt's and Wislicenus determinations. A method, apparently not yet tried, is that suggested by Egon von Oppolzer (*Astr. Nach.* 3170), which involves the use of the spectroscope for the determination of the motion in the line of sight. By comparing the spectra of opposite points on the equator, he says it might probably be possible to determine the time of rotation. Cassini de Vico's assumption involves a velocity for an equatorial point of somewhere about 473 metres per second, so that we should expect to get a motion, indicated in the spectrum by the displacement of the lines, of about 946 metres, or roughly, one kilometre. This motion, he thinks, can with our present means of measuring be made apparent, and we should thus decide between Cassini de Vico's assumption and Schiaparelli's 225-day period.

THE NEWALL TELESCOPE.—The report of the work done with the Newall refractor (*Camb. Univ. Reporter*, June 20) shows that during the past year the work was severely handicapped by the fact that the driving clock was undergoing repair. Last summer the objective prisms were adjusted, and about eighty stellar spectra were obtained, sixteen of which are of use for measurement ; but later the driving worm had to be dismounted and sent to Dublin. Using a single prism, the spectrum beween F and H is 2 inches long. In a photograph of Vega with an exposure of nine minutes the hydrogen lines up to ζ (Huggins's notation) were obtained, the spectrum between F and ζ being 3 inches in length. With both prisms the dispersion is very great, the spectrum more than covering the length of the photographic plate used (length between Hγ and H is 1·75 inches). The necessity of having to send the driving worm of the new clock away to be re-cut, in addition to making several instrumental tests, seems to have taken up much of the time that might have been used in observing. The fifth satellite of Jupiter is within the reach of this instrument, and has been seen on two occasions, January 24 and February 4, Mr. Newall remarking that "it has been most justly described as a very difficult object."

JOHNSTON'S NOTES ON ASTRONOMY.—Under this title we have before us a small book, by Swift P. Johnston, edited by James Lowe, consisting of about eighty pages, dealing with the more purely elementary mathematical portion of astronomy. The book is a compromise between a popular work and a textbook for students, and links the one to the other. Coming out originally in the form of notes, the present edition has been widely expanded, and may now be said to form an excellent course of astronomy for beginners. It is simple-worded and concise, and presents the reader with a general sketch of the more important problems which is the part of the science of astronomy to solve. The diagrammatical figures supplement and render more clear various parts of the text, and the 150 excellent questions, if fully answered by the reader, would prove a very serviceable addition to his astronomical education.

THE HODGKINS FUND PRIZES.—The following prizes are announced by the Smithsonian Institution with the intention of furthering the wishes of Mr. Thomas Hodgkins, who we have previously referred to as having presented a large donation to the institution for the "increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man" :—

(1) $10,000 for a treatise embodying some new and important discovery in regard to the nature and properties of atmospheric air. These properties may be considered as bearing upon all or any of the sciences, *e.g.* not only in regard to meteorology, but in connection with hygiene, or with any department whatever of biological or physical science.

(2) $2000 for a satisfactory essay on : (*a*) The known properties of atmospheric air considered in their relationship to research in every department of natural science, and the importance of a study of the atmosphere considered in view of these relationships. (*b*) The proper direction of future research in connection with the imperfections of our knowledge of atmospheric air, and of the connections of that knowledge with other sciences. The essay as a whole should tend to indicate the path best calculated to lead to worthy results in connection with the future administration of the Hodgkins foundation.

(3) $1000 for the best popular treatise upon atmospheric air, its properties and relationships (including those to hygiene, physical and mental). This essay need not exceed 20,000 words in length.

All these treatises may be written in English, French, German, or Italian, and sent to the secretary of the Smithsonian Institute, Washington, before July 1, 1894, with the exception of those in competition for the first prize, which will be delayed until December 31, 1894. Further information on the above and other points, such as the giving of medals, &c., may be obtained from the secretary's report, and also from *Astronomy and Astrophysics*, No. 116, p. 560.

GEOGRAPHICAL NOTES.

AT the meeting of the Royal Geographical Society, held on June 26, Captain F. R. Maunsell gave an account of his journeys in Kurdistan during the summer of 1892. Kurdistan is not an accurately-defined province, but may be described as the extensive district inhabited by the Kurds, embracing the region of Lake Van and the Upper Euphrates, as well as the country between the Tigris and the Persian frontier south of Lake Van. Captain Maunsell entered Kurdistan from the north, passing Erzingan and Erzerum, and skirted the eastern shore of Lake Van. The watershed between the lake and the Tigris Valley is very low, but it is not easy to discover any place at which there might at some former time have been an outlet. It seems not unlikely that a lava overflow from the volcano Mount Nimrud, on the western shore of the lake, cut off the plain of Van from the Tigris, and thus formed the lake. Captain