

will enter the latter about March 27. On March 21 it will be only about 2m. directly east of α Ceti.

COMET 1906b.—The comet discovered by Dr. Kopff will evidently not become an object of popular interest, for it passed perihelion at least two months ago, and is now fading rapidly in brightness.

Below is given a set of elements and part of an ephemeris published by Herr M. Ebell in Circular 86 of the Kiel Centralstelle:—

$$\begin{aligned} & \text{Elements.} \\ & T = 1906 \text{ January } 4^{\text{h}} 12^{\text{m}} 29^{\text{s}} \text{ Berlin.} \\ & \left. \begin{aligned} \omega &= 138^{\circ} 25' 1'' \\ \Omega &= 328^{\circ} 24' 2'' \\ i &= 0^{\circ} 53' 5'' \end{aligned} \right\} 1906 \cdot 0 \\ & \log q = 0 \cdot 03508 \end{aligned}$$

1906		Ephemeris 12h. M.T. Berlin.				log Δ		Bright-ness	
		a		d					
		h. m. s.		"					
Mar.	15	...	11 31 20	...	+1 57	...	9.7514	...	0.54
	19	...	11 30 10	...	+2 2	...	9.7842	...	0.44
	23	...	11 29 17	...	+2 6	...	9.8166	...	0.36
	27	...	11 28 44	...	+2 9	...	9.8486	...	0.29

A set of elements computed from later observed positions by Mr. Champreux gives the date of perihelion as December 25.17 Greenwich.

REMARKABLE VARIATION IN THE SPECTRUM OF ζ BOÖTIS.—In No. 4067 of the *Astronomische Nachrichten* Drs. H. Ludendorff and G. Eberhard direct attention to some remarkable variations which took place very suddenly in the spectrum of the double star ζ Boötis.

A spectrogram taken on June 3, 1905, showed a number of bright emission bands undoubtedly similar to those seen in the spectra of new stars, but another spectrum taken on June 5 showed no trace of these.

On looking over previous spectra obtained at the Potsdam Observatory on June 3, 4, and 26, 1902, respectively, only the hydrogen series lines, the calcium line λ 3934, the magnesium line λ 4481, and possible traces of other absorption lines could be detected. No bright bands were present.

The star is a well known double, classed as a "Sirian" star by Sir Norman Lockyer, as belonging to class I.a2 by Prof. Vogel, and as a class A star in the Draper Catalogue.

The question of the variability of the relative brightness of the two components has been much discussed, but was affirmed by W. Struve, Sir W. Herschel, and O. Struve.

A BRILLIANT FIREBALL.—In No. 368 of the *Observatory* Mr. Denning has brought together a large number of observations of a magnificent fireball which was seen in Scotland and the northern counties of England on December 30, 1905.

The meteor appeared at about 4h. 26m., swelled out into a disc, which one observer states was about half the size of the moon, and disappeared when about 10° – 15° above the horizon. The trail left by the meteor lasted for about twelve or thirteen minutes according to most observers, and during that time was contorted into a variety of peculiar forms.

From the insufficient data yet to hand, Mr. Denning supposes that this object was a very late ϵ Arietid, having its radiant point at about 40° + 23° , and on this supposition the height of the meteor works out at sixty-seven miles over Thornhill, in Dumfries, to twenty-seven miles over a point some six miles south of Arran. The earth-point would be about ten miles N.E. of Rathlin.

Thus the length of the path would be seventy-two miles and the velocity about fifteen miles per second.

In the same journal (Nos. 367 and 368) there is published an interesting discussion of the 1905 Bielid meteors by Prof. A. S. Herschel.

OBSERVATIONS OF PHOEBE DURING 1905.—A number of photographic measures of Phœbe, made during the period May 9 to December 14, 1905, are given in Circular 109 of the Harvard College Observatory. The usual exposure given to each photograph was two hours, and only very faint images of the satellite were obtained; thus they were

very difficult to measure exactly, and the resulting residuals are somewhat large.

It is seen from the measures that Phœbe attained its maximum distance from Saturn, viz. $36' \cdot 4$, on September 5. The average differences between the observed distances and declinations and those computed from the ephemeris published in vol. liii. of the *Annals* (p. 141) were about $-0' \cdot 2$ and $-0' \cdot 6$ respectively.

THE LEEDS ASTRONOMICAL SOCIETY.—The Journal and Transactions of the Leeds Astronomical Society (No. 12) has just been received, and contains a number of interesting papers which were read before the society during 1904.

In addition to these there is a *résumé* of the society's work during the year, as shown by a number of communications to various journals.

Non-members may obtain the journal for 1s. 6d. from Messrs. Jackson and Son, Leeds.

NEW MAGAZINES OF BIOLOGICAL CHEMISTRY.

JOURNALS dealing with the chemical aspects of physiological and pathological research have long been current in Germany; but up to the present time English-speaking workers have had to rely on periodicals dealing with all branches of physiology and pathology for the publication of their results. This is by no means disadvantageous to the readers of such journals, for over-specialisation has its drawbacks. But with the ever increasing activity in the biochemical field of research, the need has for long been felt of a special journal, and we have to chronicle the advent of one—the *Bio-chemical Journal*—which supplies the need, under the editorship of Prof. Benjamin Moore and Dr. Whitley, of the Liverpool University. In America also a similar want has been met by the issue of the first numbers of what is there called the *Journal of Biological Chemistry*, which is edited by Prof. Christian Herter, of New York, and Prof. J. J. Abel, of Baltimore.

The prefix *bio* and the adjective *biological* indicate a wider outlook than was implied by the older expression physiological chemistry, for there are chemical matters which have bearings, not only on physiology, but on botany, zoology, and pathology; and, indeed, this broad scope is already recognisable in the early issues of both the journals mentioned. It will be sufficient to take the English journal as an example. In the first number, just to hand, there is a paper by Mr. Joseph Barcroft dealing with the oxygen tension in the salivary glands and saliva, and throwing new light on the question of internal respiration in general. The professor of botany at Liverpool, Mr. Harvey Gibson, contributes an article on the physiological properties of West Indian boxwood, so much used now by the shuttle-makers of the north. The cardiac symptoms noticed in many of these workers are shown to be due to an alkaloid in the wood, which is dissolved out by the perspiration on the hands of the work-people, and slowly absorbed into the system. Drs. Edie and Whitley describe methods for estimating the daily gain or loss of fixed alkali from the body, and the organic acids in the urine; the application of their results in the case of diabetes is pointed out. It was previously known that in acid poisoning the body protects itself by an increased formation of ammonia from urea; it is now shown that there is a similar protective mechanism at work against excess of alkali in the production of an increased amount of organic acids from carbohydrates. The last paper, by Drs. Moore, Edie, and Abram, more directly illustrates the application of chemical studies to the elucidation of disease. They find that the administration of a neutralised acid extract of the duodenal mucous membrane counteracts diabetes in the few cases examined up to the present. The explanation advanced of the benefit is that the extract stimulates the pancreas to form that internal secretion which regulates carbohydrate metabolism, but which is apparently in abeyance in the diabetic state.

Enough has been said to show the interesting and important kind of material at hand, and we wish our two new contemporaries every success in the future.