

been published by Messrs. C. Arthur Pearson, Ltd. Dr. Lankester has made important additions to his book descriptive of the compound microscope and its accessories, and has incorporated a chapter by Mr. F. Kitton on the polariscope and its uses. Dr. John Matthews has edited the second book, and has made several alterations and additions, among the latter being a prefatory chapter dealing with preliminary histological manipulation.

THE *Bulletin de la Société des Naturalistes de Moscou* (1904, Nos. 2 and 3) contains the following papers:—Four notes on the crystalline forms and optical properties of various salts.—On the theory of endosaprophytism with lichens, by A. Elenkin. A defence of the latter as against the mutualistic theory, with a bibliography of the literature of the subject (in German).—The Jurassic corals of the Sudagh, by A. Missuna (with plates). In a total of 108 species, 46 are new for the Crimea, and 14 new species are described. The Crimean coral-fauna has its nearest relative in the Jurassic fauna of Switzerland (this paper is in German).—Materials for the algology of Lake Baikal, by V. Dorogostaisky (with a plate). Results of a two years' study of the algæ in Lake Baikal and its affluents. A list of 350 species is given, a few of them being new (this paper is in French).—History of development of the excretory system with the Amphibia, D. P. Filatow (in German, with a plate).—The same number contains a fine portrait of Prof. T. A. Bredikhin, and a biographical sketch of the late Moscow astronomer, including a sketch of his theory of comet tails, by P. K. Sternberg.

### OUR ASTRONOMICAL COLUMN.

#### ASTRONOMICAL OCCURRENCES IN JUNE:—

- June 2. Venus at maximum brilliancy.  
 „ 11. 13h. 3m. Minimum of Algol ( $\beta$  Persei).  
 „ 12. 8h. 22m. to 9h. 24m. Moon occults  $l^2$  Virginis (mag. 4.9).  
 „ 13. Saturn. Outer major axis of outer ring =  $40''.87$ ; outer minor axis of outer ring =  $6''.03$ .  
 „ 9h. Mars in conjunction with moon, Mars  $6^\circ 14' S$ .  
 „ 14. 9h. 52m. Minimum of Algol ( $\beta$  Persei).  
 „ 15. Venus. Illuminated portion of disc =  $0.365$ ; of Mars =  $0.938$ .  
 „ 21. 15h. Sun enters Cancer, Summer commences.  
 „ 22h. Saturn in conjunction with Moon, Saturn  $1^\circ 29' S$ .  
 „ 23. 23h. Uranus in opposition to the Sun.  
 „ 27. 14h. 48m. to 16h. 33m. Transit of Jupiter's Satellite III. (Ganymede).  
 „ 29. 14h. 10m. to 15h. 1m. Moon occults  $\theta^2$  Tauri (mag. 3.6).  
 „ 14h. 15m. to 14h. 56m. Moon occults  $\theta^1$  Tauri (mag. 3.9).

A REMARKABLE VARIABLE STAR.—In a note published in No. 4017 of the *Astronomische Nachrichten* Prof. E. C. Pickering states that the light-changes of the variable star 154428, R Coronæ Borealis, are unlike those of any other known variable. A series of observations, made by Mr. Leon Campbell, showed that during the period March-September, 1903, the magnitude underwent remarkable changes between the limits 6.0 and 9.4. Since then until March of the present year it remained stationary at 6.0 m. The unusual character of the changes during April and May is shown in the following table:—

1905	Mag.	1905	Mag.
April 1 ...	6.0	May 1 ...	11.4
11 ...	7.3	7 ...	12.5
21 ...	8.4		

Observations with large telescopes are now desirable in order to see whether or not this object disappears entirely.

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It is easily recognised on the Harvard "Map of the Sky," plate No. 18 (118.75), and is nearly equidistant from  $\gamma$ ,  $\delta$ , and  $\epsilon$  Coronæ.

RADIAL VELOCITIES OF THIRTY-ONE STARS.—For the past ten years line-of-sight observations have been made at the Emerson McMillin Observatory (Columbus, Ohio), but Prof. Lord has now arrived at the conclusion that, as so many better equipped observatories, situated in more favourable atmospheres, are engaged in this work, it seems advisable to discontinue the observations there and direct the available resources into some other channel of research for which they are better equipped. Consequently he has collected all the results obtained during the decennary, and has published them in No. 4, vol. xxi., of the *Astrophysical Journal*. Complete catalogues of the plates taken and of the standard lines employed, and the collected results, are embodied in his communication. Amongst the thirty-one stars dealt with there occur  $\alpha$  Cassiopeiæ, Aldebaran,  $\alpha$  Arietis,  $\alpha$  Persei, Capella, Pollux, Dubhe, Arcturus,  $\beta$  and  $\gamma$  Cygni, and  $\delta$  Cephei.

MAGNITUDES OF NOVA PERSEI AND NOVA GEMINORUM.—In No. 4017 of the *Astronomische Nachrichten* Prof. A. A. Nijland publishes the results of a number of magnitude observations of Nova Persei and Geminorum. The observations of the former covered the period November 15, 1901, to January 13, 1905, and the figures given show frequent increases of brightness, which were, however, very small. A gradual decrease of magnitude underlies these minor fluctuations, and on January 13 the Nova was of magnitude 10.74.

The Nova Geminorum observations extended over the period March 27, 1903, to December 30, 1904, and on the latter date the magnitude recorded was 13.3, more than 2.7 magnitudes fainter than Nova Persei on the same date.

OXFORD UNIVERSITY OBSERVATORY.—Prof. Turner's report of the work done at the Oxford University Observatory during the twelve months ended April 30 informs us that the Oxford work in connection with the International Astrophysical Catalogue is at last within measurable distance of publication. The measures and reductions were completed last year, and the whole thing is now ready to print. What is still more satisfactory, the university has set aside 100*l.* for this purpose, and this is to be supplemented by a similar contribution from H.M. Government.

The stereo-comparator has been used to compare some of the newer with some of the older plates, but, so far, nothing of importance has been discovered; more time will be given to this work when the coming eclipse is past and the Oxford contribution to the International Catalogue is safely in the press. As some of the earlier plates for the catalogue are less satisfactory than the later ones, they are being duplicated, and the new ones are being measured and reduced as opportunity occurs. An expedition from the observatory, comprised of Prof. Turner and Mr. Bellamy, will observe the total solar eclipse of August next in Egypt.

VARIATIONS OF LATITUDE.—The provisional results of the work accomplished by the International Latitude Service during 1904 are given by Prof. T. Albrecht in No. 4017 of the *Astronomische Nachrichten*. The results obtained at the six stations employed in the service are grouped, and the variation of the momentary from the mean pole during the years 1900-4 is graphically shown. From this curve it appears that the year 1904 was marked by a diminution in the amplitude of the variation.

NEW REFRACTION TABLES.—Appendix ii., vol. iv. (second series), of the *Publications of the U.S. Observatory* contains a number of reduction tables for transit-circle observations compiled under the direction of Prof. Eichelberger. All of them, except the refraction tables, are of no use at any other observatory, but these may be found useful by other transit observers. They consist of nine separate tables, in which the logarithms of the various arguments necessary for determining the exact refraction correction for each minute of apparent zenith distance from  $0^\circ$  to  $85^\circ$  are given. An example which precedes the tables clearly illustrates the method of using them. The tables are based upon those of Pulkowa.