

useful arts, prepared by Mr. Basil Anderton, the public librarian, and published by the Newcastle-upon-Tyne Public Libraries Committee. We have now received a copy of the new catalogue, edited by Mr. Anderton, of the Newcastle-upon-Tyne Central Lending Library, which includes all books in circulation except English fiction, children's books, and books for the blind. The volume consists of 712 pages of large size, and is, in the main, an author catalogue arranged in the alphabetical order of authors' names and writings. A noticeable feature is the introduction, under an author's works, of particulars of books by other writers containing scientific, philosophical, or other criticisms of them. It is satisfactory to find that scientific works occupy a prominent place in the library. The readers of Newcastle-upon-Tyne may be congratulated on the possession of a complete and well-arranged guide to the large number of books at their disposal.

OUR ASTRONOMICAL COLUMN.

A NEW SATURNIAN RING.—A telegram received at the Kiel Centralstelle on October 8 announces that a new, dusky ring surrounding the bright rings of Saturn has been discovered at the Geneva Observatory (Kiel Circular, No. 104).

COMET MOREHOUSE, 1908c.—Numerous observations of Morehouse's comet, 1908c, are recorded in No. 4275 of the *Astronomische Nachrichten* (p. 46, October 5).

Some suggestion of change, which may be due to observing conditions, appears in the observations of Prof. E. Millosevich and Dr. Zappa at Rome between September 12 and 17. On the former date the brightness of the comet appeared to be less than at a previous observation, made on September 4, and a tail was suspected extending a little to the west of south. On September 14 the coma showed a nucleus of magnitude 10.5, and the tail extended to a distance of 11' in position-angle 217°. Both coma and tail exhibited an increase of splendour on September 15, the latter extending for some 14' to 15'. On September 16 the coma and nucleus were again brighter, but the tail, in position-angle 228°, was not so well seen; with a clear, moonless sky on the following day this note was confirmed, and the tail was seen to be curved with its convex side towards the east, the position-angle of the tangent at the commencement of the tail being 204°.

At the Moscow Observatory, on September 17, M. P. Sternberg found the comet's head to be about 45" in diameter, and to contain a condensation which exhibited a granular structure. A photograph obtained by Dr. Kostinsky, on September 19, with the 13-inch astrographic telescope, exposure 44m., showed a short fan-like tail extending towards the south; the magnitude of the whole comet was estimated as 8.0.

In the *Comptes rendus* for October 5 M. Bigourdan reports striking changes in the comet's tail. On September 29 it was regular and 20' in length, but on the succeeding night it was irregularly fainter, showing bright patches. At 10h. 24m. on October 1, however, no tail was to be seen, although it was detected again, some 4' or 5' in length, on October 3. All the observations were made with the same instrument.

A new set of elements, by Prof. Kobold, appears in the *Astronomische Nachrichten*, and Prof. Dale has also computed new elements and an ephemeris, which is given below:—

Ephemeris, for Greenwich Midnight.

1908	R.A.	Dec. N.	log r	log Δ	Bright-ness
	h. m.				
Oct. 16	19 23.5	48 1.7	0.1778	0.0107	5.4
" 18	19 17.9	44 27.8	0.1707	0.0121	5.5
" 20	19 13.3	40 55.4	0.1635	0.0151	5.7
" 22	19 9.4	37 26.8	0.1562	0.0194	5.7
" 24	19 6.1	34 2.8	0.1489	0.0255	5.8
" 26	19 3.3	30 46.0	0.1415	0.0332	5.8
" 28	19 1.0	27 36.5	0.1341	0.0412	5.8
" 30	18 59.0	24 34.3	0.1264	0.0495	5.7

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Observations made at South Kensington on October 10 showed that Prof. Dale's positions are very nearly correct.

PHOTOMETRIC OBSERVATIONS OF VARIABLE STARS.—In No. 4275 of the *Astronomische Nachrichten* (p. 33), Herr A. Tass places on record the results of a number of photometric observations of variable stars. The observations were made at the O'Gyalla Observatory during the years 1905, 1906, and 1907.

A BOLIDE WITH A PERSISTENT TRAIL.—A number of drawings and a description of the trail of a bolide, observed by M. Quéniisset, at Juvisy, on July 31, appear in the October number of the *Bulletin de la Société astronomique de France*. The bolide itself appeared at 11h. 12m., and was sufficiently bright to illuminate the surrounding scenery for about half a second, as though the moon were shining. The trail left by the bolide was visible in a binocular twenty minutes after the apparition, and could be seen with the naked eye for half that time. At first a straight line, the trail afterwards curved up at both ends until finally it became an elliptical nebulous cloud, very like a telescopic comet. During these transformations the whole cloud was displaced, gradually but regularly, in a W.N.W. to E.S.E. direction. When the first drawing was made, the trail was situated about 1° north of, and parallel to, the line joining α and β Aquarii, the coordinates of its commencement and end being, approximately, 335°, +3°, and 320°, -5½°, respectively.

RADIAL VELOCITY OF ALGOL.—From measurements of the spectrograms taken at the Pulkowa Observatory during 1905-7, Prof. Belopolsky has derived a set of elements for the orbit of Algol, and publishes it, together with a detailed account of the reduction, in No. 22, vol. xi. (1908), of the *Mitteilungen der Nikolai-Hauptsternwarte zu Pulkowo*. Each of the lines Hδ, Hγ, λ4472 (He), λ4481 (Mg) and Hβ is discussed separately, and the following elements result from the complete discussion:—

$$\begin{aligned} \omega &= 42^{\circ}.5 \pm 1^{\circ}.35 & a &= 1,693,523 \pm 100 \text{ km.} \\ e &= 0.0476 \pm 0.0037 & i &= 90^{\circ} \\ T &= 2.509 \pm 0.00019 \text{ days} \end{aligned}$$

THE EFFECT OF STAR-COLOURS UPON THE CONSTANT OF ASTRONOMICAL REFRACTIONS.—To determine the effect of the colour of the star observed upon the constant of refraction, Mr. Hirayama, of the Tokio Observatory, reduced the observations of Courvoisier, Bauschinger, and Nyrén by dividing their stars into three groups, according to colour, and then deriving the corrections to the assumed value of the constant corresponding to the different colours. The results of the discussion are published by the Tokio Mathematical Society, as a reprint from No. 17, vol. iv. (second series), of the *Tōkyō Sūgaku-Buturigakkwai Kizi*, and show (1) that the effect of the colour of the star upon the constant of refraction is not shown in any single series, (2) the arithmetical mean of the three series to be 60".19 for whitish-yellow stars, 60".16 for yellow stars, and 60".12 for reddish-yellow stars.

HALLEY'S COMET.—Prof. Turncr's discourse on Halley's comet, given at the recent British Association meeting, has been published by the Clarendon Press at the price of 1s. net. After some general, personal, and historical notes, Prof. Turner describes the several circumstances which led to Halley's sagacious conclusion respecting the periodicity of comets, and then proceeds to describe briefly the conditions under which the coming reappearance of Halley's comet will probably take place. According to the ephemeris prepared by Messrs. Cowell and Crommelin, the comet should enter Pisces, from Aries, in January, 1910, travel westwards towards γ Piscium until the beginning of May, and then, turning eastwards again, travel back through the constellations Cetus, Orion, Monoceros, Hydra, and Sextans. From this it will be seen that observers in the southern hemisphere will be better situated for seeing the comet, and, as Prof. Turner points out, it is just possible that it will be well seen in Tasmania during the total solar eclipse of May 8, 1910. The computed brightness varies from 1.0 on January 2 to 5.8 on May 2, to 1112.0 on May 10, and afterwards decreases to 8.6 on May 30, 1910.