

in the opposite direction, a phenomenon which, under the conditions of Mr. Swinton's experiments—very low pressure and discontinuous current—is actually reversed.

REFERENCE was made in NATURE of April 4 (p. 543) to a paper by Mr. C. E. Moss on the "Geographical Distribution of Vegetation in Somerset." The paper is published by the Royal Geographical Society, but did not appear in the *Geographical Journal*.

A CORRESPONDENT asks for a reference to the latest discussion of the stadium of Eratosthenes and the official or Royal Egyptian stadium mentioned in a recent review in NATURE (April 11, p. 553). The information required will be found in "Griechische und römische Metrologie," by F. Huftsch (Berlin, 1882), and in Dr. Dreyer's "History of the Planetary System" (Cambridge, 1906).

A SECOND edition of "The Textile Fibres: their Physical, Microscopical, and Chemical Properties," by Dr. J. Merritt Matthews, of the Philadelphia Textile School, has been published by Messrs. John Wiley and Sons, of New York, and Messrs. Chapman and Hall, Ltd., in this country. The book has been re-written, and is intended to bring together all the material available for the study of the textile fibres. The price of the volume is 17s. net.

MESSRS. WITHERBY AND CO. announce the forthcoming publication of a limited edition of a work on "The Vertebrate Fauna of North Wales," by Mr. H. E. Forrest. The work will be a history of the mammals, birds, reptiles, amphibians, and fishes to be found in that part of Wales lying north of the Dovey Estuary, illustrated with plates depicting notable haunts of typical species, portraits of Pennant and other former recorders, and a coloured map of the district.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN MAY:—

- May 1. 11h. Mars in conjunction with Uranus, Mars $0^{\circ} 46' S$.
 ,, Mars. Apparent diameter $12''.54$.
 1-6. Epoch of Aquarid meteors. Radiant $337^{\circ} - 2^{\circ}$.
 6. 10h. 41m. Minimum of Algol (β Persei).
 16. 7h. 33m. to 10h. 27m. Transit of Jupiter's Sat. III. (Ganymede).
 21. 12h. Jupiter in conjunction with Neptune. Jupiter $1^{\circ} N$.
 26. 12h. 14m. Minimum of Algol (β Persei).
 ,, 16h. 6m. to 16h. 52m. Moon occults θ Libræ (mag. 4.3).

COMET 1907*b* (MELLISH).—An extension of the ephemeris given by Miss Lawson and Frederick, computed by Dr. Strömberg, appears in NATURE (April 20) of the *Astronomische Nachrichten*, and gives the calculated daily positions of the comet up to May 10. This object is now barely one-tenth as bright as when discovered, and, according to the elements, was nearest to the earth on April 10-98.

THE RING OF MINOR PLANETS.—Some very interesting facts are adduced in a discussion, by Dr. P. Stroobant, which appears as an extract from the *Annales d'Observatoire Royal de Belgique*, vol. ix., part iii.; Dr. Stroobant's subject is the constitution of the ring of minor planets, and he considers the relative distribution, the masses, and the classification of the first 512 of these bodies. After giving a very abbreviated history of the discovery and study of asteroids, the paper discusses the *lacunae* in the grouping of the minor planets, and also the grouping in regard to their mean distances from the sun. A decided maximum occurs between the limits marked out by rings respectively 2.55 and 2.85 astro-

nomical units from the sun, 199 of the asteroids considered revolving in this annulus.

From a discussion of the available data concerning the magnitudes and probable diameters of asteroids, it is found that nearly all the asteroidal matter is concentrated near to the middle of the ring in the neighbourhood of the mean solar distance of 2.7, whilst further analysis shows that, as a general law, the smaller asteroids are relatively less numerous in the richest zones. At the end of the paper Dr. Stroobant tabulates the 512 asteroids in order of their mean distances from the sun, and gives the mean movement, the mean distance, and other data for each.

POSITIONS OF PHOEBE, 1898-1904.—No. 3, vol. ix. (pp. 45-85), of the Harvard College Observatory Annals contains the measured positions of Phœbe, the ninth satellite of Saturn, during the period 1898-1904.

The places of the standard stars employed were taken from the C.P.D. for the epoch 1875.0, and, should greater accuracy be required, all the material for a second reduction is included in the present memoir; it will only be necessary for such a reduction to determine the places of the standard stars with greater accuracy.

OBSERVATIONS OF THIRTY-THREE VARIABLE STARS.—In Bulletin No. 110 of the Laws Observatory, University of Missouri, are published the preliminary results obtained from the observations of thirty-three variable stars, the light-curves and periods of which are as yet imperfectly known. The bulletin gives a list of the stars considered, with their places for 1855.0, followed by a brief discussion of the results yet obtained for each star. These results are compared with previously published elements, and in some cases the light-curves are reproduced.

THE ITALIAN PROMINENCE OBSERVATIONS, 1877-1883.—No. 5, vol. xxxvi. (p. 54, 1907), of the *Memorie della Società degli Spettroscopisti Italiani* contains a series of notes on the prominence observations made at Palermo and Rome from 1877 to 1883. These notes give the atmospheric conditions for each observing day, and brief remarks on any observation of especial interest, and should prove useful in any discussion of these valuable observations.

THE SPECTRUM OF MIRA.—A brief discussion of the spectrum of Mira, photographed at the Lowell Observatory on January 11, is published by Mr. V. M. Slipher in No. 3, vol. xxv. (p. 235, April), of the *Astrophysical Journal*. The region shown on the plate includes $H\alpha$, $H\beta$, $H\gamma$, and $H\delta$, all of which are bright and increase in intensity in the order given. The series of absorption bands commences at λ 4584, possibly at λ 4463, and appears to extend beyond the region photographed, *i.e.* beyond λ 7000. Vanadium absorption is strongly represented. A comparison of this spectrum with that obtained by Stebbins, at Lick, in 1902, shows that $H\beta$ (and probably $H\alpha$) was more intense during the more recent maximum. On the other hand, the series of dark bands appears to have been more intense, and to have extended further into the ultra-violet, in 1902.

THE HARVARD COLLEGE OBSERVATORY.—Prof. E. C. Pickering's report of the work done at the Harvard College Observatory during the year ending September 30, 1906, sounds a note of disappointment at the lack of financial support given to the schemes for astronomical work on well organised lines which he has formulated. The amount of meridian and photometric work accomplished was on the usual immense scale, and it is hoped that when the 60-inch Common telescope is completed the visual work will be greatly extended to the faintest stars.

On the Henry Draper memorial photographs Miss Cannon studied 691 stellar spectra and classified them. Three stars, H.P. 934, H.P. 3030 and +44° 3639, were found to show the second series of hydrogen lines. Mrs. Fleming also found numerous variable stars and stars having peculiar spectra on plates taken with the 8-inch Draper, the 8-inch Bache, and the 24-inch Bruce telescopes respectively. A great amount of work was also performed at the Arequipa station and at the Blue Hill Meteorological Observatory.