

his appointment to the chair in these subjects in the University of Paris. The list of Prof. Picard's works and papers on mathematical subjects occupies a very large part of the memoir, which also contains an appreciation of his work by Prof. Henri Poincaré, delivered in 1888 in presenting him with the grand prize of the Paris Academy of Sciences for Mathematical Science.

THE first issue of a new annual, entitled "The Green Book of London Society," has been received. Its subtitle describes the volume as a directory of the Court, of society, and of the political and official world, including celebrities in art, literature, science, and sport, with many other subjects of current interest. The editors of the compilation are Mr. Douglas Sladen, who, it will be remembered, compiled "Who's Who," and Mr. W. Wigmore. Under science are given lists of some men of distinguished eminence in the London scientific world, with the researches and discoveries which have made them famous; the most important scientific and engineering institutions; and some of the chief scientific periodicals. The book runs to 487 pages, and is published by Messrs. J. Whitaker and Sons, Ltd., at 5s. net.

THE sixth edition, revised, of Dr. Bernard Dyer's small handbook on "Fertilisers and Feeding Stuffs: their Properties and Uses," has just been published by Messrs. Crosby Lockwood and Son, price one shilling net. Short descriptions have been added of the two new fertilisers—nitrate of lime and calcium cyanamide—in which atmospheric nitrogen is fixed, but the practical disadvantages of their use are pointed out. Of the former Dr. Dyer remarks:—"It has a serious practical disadvantage in its deliquescent property, which makes it necessary to sow it immediately the air-tight packages in which it is sent out are opened, and it cannot be conveniently sown in moist weather." Calcium cyanamide is also unpleasant to sow. Dr. Dyer's book is a manual from which practical farmers can obtain many useful hints as to profitable procedure in fertilising the soil for different crops and feeding the stock. The text of the Act of 1906, referring to fertilisers and feeding stuffs, is printed in full, together with the regulations of the Board of Agriculture and Fisheries for the protection of farmers from the supply of adulterated materials.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN AUGUST:—

- Aug. 2. 11h. 18m. Moon in conjunction with Venus. (Venus $4^{\circ} 8' S.$)
 8. 9h. 11m. Minimum of Algol (β Persei).
 9. 6h. 26m. Moon in conjunction with Jupiter $2^{\circ} 34' S.$
 10. 12h. 46m. Venus and Neptune in conjunction. Venus $0^{\circ} 27' N.$
 11—13. Maximum of August Perseid display. Radiant $44^{\circ} + 57^{\circ}.$
 14. Venus. Illuminated portion of disc = $0.889.$
 16. Saturn. Major axis of outer ring = $43.21''.$ Minor axis = $13.51''.$
 25. 5h. 46m. Moon in conjunction with Saturn. Saturn $1^{\circ} 18' S.$
 27. 14h. 11m. to 14h. 54m. Moon occults τ Tauri. (Mag. 4.3).
 28. 10h. 53m. Minimum of Algol (β Persei).
 30. 11h. Mercury at greatest elongation, E. $27^{\circ}.$

SUBJECTIVE PHENOMENA ON MARS.—In No. 4427 of the *Astronomische Nachrichten* M. Antoniadi returns to the discussion of the objective reality of the dark band seen circling the Martian snowcap. He previously directed attention to the fact that this band was not visible on photographs of the planet, and suggested that its appearance during visual observations was simply an effect of

contrast. This argument was weakened by the possibility of photographic "spreading" in the sensitive film being sufficient to account for the obliteration of the dark band. But M. Antoniadi now points out that on the photographs taken with yellow screens during the last opposition, the caps are no more intense than the "continental" areas, and from this he suggests that "spreading" is negligible. Yet the dark band is not to be found on these photographs, and therefore, if the premises are true, it appears that its visibility in visual observations is only a subjective phenomenon.

THE GENESIS OF VARIOUS LUNAR FEATURES.—In the *Comptes rendus*, No. 2 (July 11), M. Puiseux discusses the probable origins of the circles and of the angular outlines of lunar crevasses shown in the polar regions of the moon on the concluding sheets of the great photographic atlas of the moon published by the Paris Observatory. He points out that many of the circles appear in chains, of two or more, parallel or perpendicular to the meridian. Where two of these circles intersect, the point of junction is marked by a small crater or a considerable elevation, and M. Puiseux believes that this is evidence against Faye's theory that the *bourellets* were formed by repeated periodic overflows which filled in the circle. Such differences of level as are now revealed would be incompatible with this theory. On the same plate (lxvi.) is seen a number of circles aligned on, or across, a meridian, and joined by a high, narrow ridge, and M. Puiseux considers that these are evidence against the meteoric bombardment theory.

Near the northern pole the geometrical contours of circles are exceptional, and angular features predominate. The ridges here are found to be in echelon, and M. Puiseux considers that the sharp angles were formed where previous ejecta prevented the eruptions from following the general line of weakness to which, however, the subsequent eruptions returned, thus producing the echelon form.

HALLEY'S COMET.—A preliminary account of the observations made by an expedition which journeyed to the Pic du Midi to observe Halley's comet is given in No. 2 of the *Comptes rendus* (July 11) by MM. G. Millochau and H. Godard.

Arrangements were made to photograph, regularly, the comet and its spectrum, but they were sadly interfered with by bad weather. No spectrograms were secured, but several good photographs were taken with a Zeiss "astrophotoplanar" lens having a large field. The photograph secured on May 29 showed a bright condensation, detached from the nucleus, which at 2° from the head became broader, and was prolonged some 8° into the tail. The photograph of May 31 shows a secondary nucleus at a distance of $17''$ from the primary.

A long summary of the numerous observations made at different places during the passage of the comet is published in the July number of the *Bulletin de la Société astronomique de France*, and is illustrated by a number of drawings and photographs.

THE GNOMON IN ANCIENT ASTRONOMY.—All who are interested in the early days of astronomical observation will find an article by M. Jules Sagaret, published in No. 17 of the *Revue scientifique*, full of interest. M. Sagaret discusses at length the rôle played by the gnomon in the observations made by the ancient Chinese, Babylonians, Egyptians, &c., for the determination of time and season, especially of the solstices, and shows that in a vertical bamboo rod the Chinese of about the second century B.C. found a, comparatively, very effective astronomical instrument.

THE LEEDS ASTRONOMICAL SOCIETY.—The Journal and Transactions of the Leeds Astronomical Society for 1909 (No. 17) shows that this society is endeavouring to popularise the study of astronomy with its wonted vigour. In addition to numerous interesting papers read by members at the meetings of the society, there are a number of reprints of popular articles contributed to various publications. Among these are articles on current phenomena contributed by Messrs. Whitmell, Scriven Bolton, and Ellison Hawks, and a series of articles by Mr. Elgie which appeared in *T.P.'s Weekly* over the pseudonym "F.R.A.S."