THE *Comptes rendus* for January 25 contains an account of the experiments recently made by Profs. Dewar and Curie on the gas "occluded or liberated" by radium bromide. Three series of experiments are described. In the first series a glass tube containing 0·4 g. of the salt was exhausted by means of the mercury pump, and was found to liberate gas to the extent of about 1 c.c. per month; this gas, examined spectroscopically, gave only the hydrogen and mercury spectra. The salt was then taken to the Royal Institution, transferred to a quartz tube, connected to the mercury pump, and heated to the melting point of the salt; the gas liberated was passed through three U-tubes cooled with liquid air to condense the emanation and the less volatile gases, and collected over mercury. The gas, which had a volume of 2·6 c.c. at atmospheric pressure, was intensely luminous, and three days exposure in a quartz spectroscope showed the presence of the three chief bands of the nitrogen spectrum. During this time the glass tube had become violet in colour, and the volume of the gas had been spontaneously reduced to one-half of its original volume. A small sample of the gas was transferred to a Geissler tube, and again exhibited the nitrogen bands. Finally, the nitrogen in the Geissler tube was frozen out by means of liquid hydrogen, when a very high vacuum was produced, but the spark spectrum again indicated the presence of nitrogen and no other gas. The quartz tube containing the fused radium bromide was sealed off whilst still vacuous by means of the oxyhydrogen blowpipe and taken back to Paris. It was there examined, twenty days later, by M. Deslandres, who covered the ends of the tube with tinfoil and illuminated the gas by means of a Ruhmkorff coil; three hours' exposure in a quartz spectroscope revealed a complete helium spectrum, but the light emitted spontaneously by the tube gave a continuous spectrum free from light or dark bands.

THE additions to the Zoological Society's Gardens during the past week include two Ring-necked Pheasants (*Phasianus torquatus*) from China, presented by Mr. Eardley Wilmot Holt; an Undulated Grass Parrakeet (*Melopsittacus undulatus*) from Australia, presented by Mrs. Clement Shorter; a Bullfinch (*Pyrrhula europoea*), European, presented by Mr. R. F. Hearnshaw; an Indian Python (*Python molurus*) from India, presented by Mr. W. A. Harding; a Citron-crested Cockatoo (*Cacatua citrino-cristata*) from Timor Laut, deposited; an Arctic Fox (*Canis lagopus*) from the Arctic regions, purchased.

OUR ASTRONOMICAL COLUMN.

OBSERVED CHANGES ON THE SURFACE OF MARS.—During his observations of the Martian surface on April 19, 1903, Mr. Lowell, of Flagstaff, was surprised to see that the colour of the Mare Erythræum was a decided "chocolate-brown," whilst the neighbouring Syrtis was of the normal "blue-green." Although the sea was similarly situated for observation on March 22, this peculiarity was not seen then, therefore the change must have taken place somewhere between these two dates.

When this region was again favourably placed for observation, viz. on May 26, the Mare Erythræum had lost the brown colour except in the southern regions, and the remaining colour slowly disappeared southwards, until on May 29 only a small region near to Hellas was affected, and this became normal on May 30. During the next presentation (June 30–July 7) there was no suspicion of any chocolate coloration. Taking the time of maximum brightness of the brown colour as the time of minimum for the "blue-green" which it supplants, Mr. Lowell finds that this minimum coincides, in point of time, with the minimum visibility of the canals, and, further, that the minima also coincide in latitude, travelling southwards in each case as the number of days since the summer solstice increases. This is plainly shown by the curves and tables in which Mr. Lowell displays the results of his observations of the respective phenomena.

From these data he argues that the normal blue-green colour is due to vegetation, which, owing to the absence of large bodies of water on the planet's surface, can only thrive when fed by the water which fills the canals at the melting of the polar snows. He also suggests that the brown colour, which accompanied the minimum visibility of the canals, is due to the exposure of the bare soil which probably covers the beds of such "seas" as the Mare Erythræum (Lowell Observatory *Bulletin*, No. 7).

THE GEOGRAPHICAL DISTRIBUTION OF METEORITES.—In an article contributed to the February number of the *Popular Science Monthly*, Dr. O. C. Farrington, of the Field Columbian Museum (U.S.A.), discusses the distribution of the meteorites which have been discovered on the earth's surface. He points out that, according to Prof. Berworth, of Vienna, about 900 meteorites reach the earth annually, but from various causes the number likely to be observed is only about 55 per annum, or 5500 per century. As a matter of fact, there have only been about 350 recorded falls since the fifteenth century, yet there have been 50 well authenticated falls in France during the last 100 years.

Dr. Farrington explains the apparent discrepancy by pointing out that on a map of the world, on which he has marked the places where meteorites have been found, these places are mostly in civilised and thickly populated countries, and it may therefore be surmised that the residue are either not seen or else not recorded. Another very interesting point illustrated by the map is the comparatively large proportion of meteorites which have fallen in mountainous regions (*e.g.* the Himalayas, the Alps, the Appalachian Mountains, &c.), and to explain this Dr. Farrington suggests either increased gravitational effects near to these mountainous ranges or else the actual mechanical arrestation of the meteorites by the projecting mountains.

An analysis of the types of known meteorites discloses curious "grouping"; for instance, including both "falls" and "finds," it is seen that of the 256 meteorites known in the western hemisphere, 182 are "irons" and only 74 are "stones," whilst of the 378 known in the eastern hemisphere, 299 are "stones" and 79 are "irons." Prof. Berworth has suggested that the dry air of the large desert areas of the New World has caused the preservation of the irons, whilst the moist atmosphere of the Old World has caused their disintegration, but Dr. Farrington points out that quite a fair proportion of the "irons" found in America have come from the region surrounding the Appalachians, where a comparatively moist atmosphere obtains. Several other apparent localisations of particular types are discussed by Dr. Farrington in his interesting article.

AN ATLAS OF SOLAR PHOTOGRAPHS.—At the meeting of the Paris Académie des Sciences held on February 1, Prof. Janssen presented an atlas of photographs of the sun's disc which have been taken regularly at the Meudon Observatory since 1876. These photographs have been chosen, from more than 6000 plates obtained between 1876 and 1903, in order to show the finest examples of the various solar phenomena, and they display a fairly complete history of the solar changes during that period.

The photographs were taken with an especially constructed camera which produces a nearly monochromatic image, using the exceedingly actinic light in the violet region about HH′. An exposure of 1/3000 of a second was generally found sufficient, and therefore the resulting pictures show all the finer details of the solar surface beautifully defined.

In presenting the atlas Prof. Janssen directed attention to the great importance of obtaining such a record at several widely separated observatories, because, in the light of their inter-relation with meteorological and magnetic phenomena, it is obviously desirable to have a *complete* record of the changes which occur on the sun's surface, and such a record cannot be secured if only one or two observatories are taking photographs. Recognising the importance of this record to meteorologists and physicists, it is intended to prepare a large edition of the atlas, on a smaller scale, for wide distribution (*Comptes rendus*, No. 5).