

point was somewhere within the sickle of Leo, but I am not sure as to its exact position. Most of the meteors shot westward along the ecliptic, through Gemini and Taurus, but others in all directions. The trains of light and the nuclei were generally white, with a slight tinge of green, but all the prismatic colours were seen. The time of duration of the flight was from the fraction of a second up to 6 seconds, and the longest trains about 40°. At one time gleams of light of various forms appeared in Leo. I had a small hand-spectroscope, but the times of duration were too short for using it."

SCIENTIFIC SERIALS

The *Moniteur Scientifique* for December 1 contains a translation of Dr. Williamson's memoir of the late Professor Graham, which appeared in the first number of NATURE, a review of contemporary physics and astronomy, a long notice of M. Paul Champion's work on the ancient and modern industry of China, and the usual accounts of new patents and meetings of scientific societies. The number for December 15 completes the volume for 1869, and gives elaborate tables of contents. The remaining space is devoted to reports of the proceedings of the Academy of Sciences, abstracts of papers, notices of new publications, and an account of the new development of the trade in false autographs.

The *Revue des Cours Scientifiques* for December 11 contains a translation of an essay by Helmholtz on Goethe as a naturalist and a physicist, an article on the boring of Mont Cenis by M. A. Cazin, and a translation of Professor Williamson's memoir of Graham, contributed to our first number. The greater portion of the number for December 18 is occupied by a translation of a paper on the Centenary of Humboldt, read before the Boston Natural History Society by Professor Agassiz. It also contains lectures on Paleontology by M. A. Gaudry, and an important paper on the Mortality of Women in Labour, by Professor Lorain.

In the *Philosophical Magazine* for this month, Mr. C. Tomlinson, F.R.S., gives an account of Van der Meusbrugge's important treatise on the Superficial Tension of Liquids, in which the movements of camphor on the surface of water are shown to form a particular case of a general theory. Mr. W. H. Preece contributes a proof of the Parallelogram of Forces, and Dr. Odling a note on Condensed Ammonia Compounds. Professor Kengott's Microscopical Investigation of the Knyahynia Meteorite, and M. Abich's paper on Hailstorms in Russian Georgia (both of which are accompanied by plates), are well deserving of attention.

In the *Chemical News* for December 17, Mr. Edwin Smith describes an interesting series of experiments on the Electrical Phenomena of Plants, suggested by a chapter in Becquerel's treatise. A paper read before the Glasgow Philosophical Society by Mr. R. R. Tatlock, F.C.S., on the Estimation of Iodine and Bromine, with special reference to the Analysis of Kelp, is reproduced. Mr. W. T. Suffolk, F.R.M.S., continues his useful articles on Microscopical Manipulation; and Mr. H. C. Sorby, F.R.S., describes the application of the Spectrum Microscope to the Valuation of Wines. In a paper on the Constitution of the Compounds of Sodium, Mr. J. A. Wanklyn, F.C.S., adduces new arguments in support of his opinion that the metal sodium had a polyvalent character. The books noticed in this number are Dr. Bence Jones's Memoir of Faraday, and a treatise on the Leclanché Battery. Correspondence from Dr. Mennier and Dr. J. H. Gladstone, and Chemical Notices from Foreign Journals, make up the rest of the number.

A Paper by M. Felix Plateau, on the Flight of the Coleoptera, read before the Physical and Natural History Society of Geneva, in September last, has just been published in the *Bibliothèque Universelle et Revue Suisse*. The conclusions arrived at are as follows:—(1), The difference of flexibility between the two edges of the wing are not sufficient to account completely for the phenomena of flight. (2), The wing makes a wide angle with the plane in which it moves. (3), It is deflected more rapidly than it is elevated. (4), The extent of surface of the wing is greater in the movement of deflection than in the movement of elevation. The influence of the elytra, their form and mode of action, as well as some other considerations, are reserved for a memoir which the author hopes to publish shortly.

ASTRONOMY

Oppolzer communicates to the *Astronomische Nachrichten* the following elements of Comet II., 1869:—

$$\begin{aligned} \tau &= \text{Oct. } 9^{\text{h}} 26^{\text{m}} \text{ Berlin mean time.} \\ \pi &= 139^{\circ} 1' 13'' \\ \Omega &= 311^{\circ} 27' 51'' \\ i &= 111^{\circ} 26' 40'' \\ \log. q &= 0.09014 \end{aligned} \left. \vphantom{\begin{aligned} \tau \\ \pi \\ \Omega \\ i \\ \log. q \end{aligned}} \right\} \text{Mean Eq. 1869-70.}$$

Professor C. H. F. Peters, of Clinton, N.Y., has discovered still another new planet, 9.7 mag., the elements of which are as follows:—

$$\begin{aligned} \tau &= 1869, \text{ Oct. } 0^{\text{h}} 0^{\text{m}} \text{ Berlin mean time.} \\ M &= 338^{\circ} 1' 47.7'' \\ \pi &= 53^{\circ} 8' 20.8'' \\ \Omega &= 5^{\circ} 3' 52.2'' \\ i &= 8^{\circ} 9' 59.4'' \\ \phi &= 16^{\circ} 43' 30.2'' \\ \mu &= 808'' 32 \\ \log. a &= 0.428281 \end{aligned}$$

SOCIETIES AND ACADEMIES

LONDON

Royal Astronomical Society, December 10. — Second Meeting of Session. Admiral Manners, president, in the chair during the early part of the meeting; afterwards (the president finding his health not sufficiently restored to enable him to remain), Mr. De la Rue, F.R.S., vice-president, took the chair. The minutes of the last meeting were read and confirmed, and thirty-two presents announced, including a magnificent representation of the solar spectrum from France (showing the part beyond the violet end), presented by Mr. Ladd. Mr. Williams, the assistant secretary, then read a series of extracts from an elaborate work on Chinese Astronomy, upon which he has been engaged during the last three years. He exhibited in a very complete and lucid manner the Chinese mode of reckoning time by cycles of sixty years, the several years of each cycle being indicated by certain characters called Kea Tsze. He then showed how any year in ordinary chronology, whether B.C. or A.D., can be represented in the proper cycle, and in its right place in that cycle. He described the division of the heavens into thirty-one parts; three, called "Yuen," of large size; the remainder, called "Suh," representing lunar houses, and very irregular in extent, both from east to west and from north to south. While one, for instance, extended north and south from Perseus to Canopus, another consisted mainly of a few stars in the head of Orion. Other extracts exhibited the correctness of the positions assigned by the Chinese to the equinoxes and the solstices, and the evidence their estimates give respecting the date at which their observations were made. He mentioned *inter alia* that the Metonic Cycle had been known to the Chinese astronomers 2,000 years before Meton's day. The occurrence of the names of our modern asterisms in Chinese records must not be held to indicate the antiquity of our constellation-figures, because it cannot be doubted that the Jesuits taught the Chinese these new names. In fact, the Chinese were led to remodel their system of astronomy according to the instructions of the Jesuits—a misfortune, perhaps, since, although the old system of astronomy had had the disadvantage of being inexact and scarcely intelligible, the change destroyed many of the clues by which we might have found clearer ideas as to what the Chinese astronomers really meant to record.—The Astronomer Royal indicated his high opinion of the value of such researches as those in which Mr. Williams had been engaged. Astronomy is the science which of all others brings most together the past, the present, and the future, and, therefore, all studies of long past eras, even though the astronomical observations then made were comparatively inexact, cannot but have a high value. Mr. Stone, F.R.S., called attention to the general value of the matter brought before the society's notice by Mr. Williams, but expressed his regret that the Chinese records named only the day on which any phenomenon was observed. Mr. De la Rue then mentioned that the greater part, if not all, of Mr. Williams's work, would be printed in the Society's Memoirs.—The Astronomer Royal described an arrangement for correcting atmospheric chromatic dispersion, even simpler than those he had before devised. It had occurred simultaneously to himself and to Mr. Simms, the