Calendar of Scientific Pioneers.

October 6, 1825. Bernard Germain Etienne de la Ville, Comte de Lacépède, died.—The disciple and friend of Buffon, Lacépède, after the Revolution, was appointed to a chair of zoology in the Jardin des Plantes, and published various works on natural history.

October 6, 1880. Benjamin Peirce died.—A leader in the American world of science, Peirce was professor of astronomy and mathematics at Harvard, and for some time superintendent of the U.S. Coast Survey. He wrote many treatises, and was a founder of the American Academy of Sciences.

October 6, 1894. Nathanael Pringsheim died.—The founder in 1858 of the Jahrbuch für Wissenschaftliche Botanik, and in 1882 of the German Botanical Society, Pringsheim contributed much to the study of sex in plants, of algæ, and of alternations of generations.

October 6, 1902. John Hall Gladstone died.—Following in the footsteps of Graham, Gladstone devoted himself mainly to physical chemistry, and especially studied the relation of the elements and compounds to light. Of independent means, he gave much time to educational and social matters. He was the first president of the Physical Society.

October 6, 1911. John Hughlings Jackson died.—Physician to the London Hospital and the Hospital for Epileptics, Jackson was one of the first in England to use the ophthalmoscope, and was distinguished by his work on the nervous system and epilepsy.

October 7, 1847. Alexandre Brongniart died.—A famous mineralogist and the associate of Cuvier, Brongniart, after serving in the army, became director of the Sèvres porcelain factory, and in 1822 succeeded Haüy at the École des Mines.

October 8, 1647. Christian Severinus Longomontanus died.—An assistant to Tycho Brahe at Hven, Longomontanus, or Longberg, accompanied Tycho to Bavaria, and from 1605 onwards was professor of mathematics at Copenhagen. His "Astronomica Danica," 1622, is an exposition of the Tychonic system of the world.

October 9, 1869. Otto Linné Erdmann died.—For nearly forty years professor of technical chemistry at Leipzig, Erdmann made valuable researches on nickel and on indigo and other dyes, and with Marchand made determinations of atomic weight.

October 10, 1679. John Mayow was buried.—Remembered for his advanced views on combustion and respiration, Mayow, who was a physician, died in London in September, 1679, and was buried on October 10 in St. Paul's, Covent Garden. It has been said that his premature death retarded the advance of modern chemistry by a century.

October 10, 1708. David Gregory died.—Nephew to James Gregory, the inventor of the reflecting telescope, David Gregory owed his fame to his advocacy of the Newtonian philosophy, which he was the first publicly to teach. From 1691 he was Savilian professor of astronomy at Oxford.

October 11, 1708. Ehrenfried Walter Graf von Tschirnhausen died.—A mathematician, Tschirnhausen was the founder of catacaustics, and was known as the maker of large burning glasses.

October 11, 1889. James Prescott Joule died.—The favourite pupil of Dalton, and one of the most intimate friends of Kelvin, with whom he collaborated, Joule is universally known for his determination of the mechanical equivalent of heat, and for his share in establishing the law of the conservation of energy. His epoch-making papers were read in 1843, 1845, 1847, and 1849. The Copley medal was awarded to him in 1870.

E. C. S.

Societies and Academies.

BIRMINGHAM.

Institute of Metals.—Annual autumn meeting, September 21.—Prof. A. A. **Read** and R. H. **Greaves**: The properties of some nickel–aluminium–copper alloys. In some of the copper-rich nickel–aluminium–copper alloys the α-solution will retain more nickel and aluminium at 900° C. than at the ordinary temperature. These alloys, while relatively soft on quenching from 900° C., are hardened by slow cooling or by reheating to lower temperatures. This change is the result of the appearance of a new constituent, probably a nickel–aluminium–copper solid solution, the separation of which is accompanied by changes in density and electrical conductivity, in addition to its effect on tensile, hardness, notched bar, and other tests. The separation of this special constituent takes place slowly, so that chill-cast alloys and hot-rolled rods of small section consist almost wholly of the α-constituent. On annealing the cold-rolled alloys softening proceeds slowly up to 500° C., when precipitation of the nickel–aluminium-rich constituent begins to take place. If the separation is sufficient, this may give an alloy of high elastic limit and tensile strength and good elongation. The hardest product is obtained by reheating the quenched alloy for some time at 600–700° C. Alloys so treated generally give better properties than those obtained by uniform rates of slow cooling, and show considerable endurance under alternating stresses above their true fatigue limit.—R. T. **Rolfe**: The effect of increasing proportions of lead upon the properties of Admiralty gunmetal, with an appendix dealing with the effect of lead on gunmetal containing copper 85 per cent., tin 5 per cent., and zinc 10 per cent. Synthetic alloys containing increasing proportions of lead up to 1·68 per cent. were examined. In sand-cast gunmetal lead gradually increases the strength, ductility, and softness of the alloy up to about 1·5 per cent. of lead, but above this proportion causes a decrease in all three. It does not affect the soundness. In chill-cast gunmetal the effect on the hardness parallels that of the sand-cast metal, with a change-point at about 1·5 per cent. of lead, but associated with a minimum rather than a maximum strength figure. It does not affect the soundness. The influence of lead on liquation, machinability, corrosion, and behaviour for bearing purposes is discussed, and it is suggested that in sand-cast gunmetal the proportion of lead permitted by the Admiralty specification might with advantage be increased from 0·5 to 1 per cent.—R. **Genders**: The casting of brass ingots. The failure of hollow-drawn articles made from brass rod has generally been found to be due to the presence of non-metallic inclusions which originated in the cast ingot. The methods used in casting ingots of brass vary, much consideration being given to the saving of rolling. When a hollow article subject to expanding stresses is to be made, the avoidance of inclusions of foreign matter is vital, and the form of ingot requires modification. The ingots made were 3 in. square and 30 in. in length, as compared with the ingots 6–7 ft. in length and $1\frac{1}{2}$ in. square section in common use. A hot sinking head or "dozzle" was introduced, and molten brass is poured through the "dozzle." No pipe is formed in the ingot proper, and additions of metal may be made at any time to the metal in the "dozzle" without risk of introducing defects into the ingot, any dross rising to the top of the still fluid head. The moulds were tapered, the top being enlarged by increasing amounts in successive experiments, and ingots were cast at the usual foundry speed.—T. G. **Bamford**: The density