Calendar of Scientific Pioneers.

June 23, 1881. Matthias Jakob Schleiden died.—At first an advocate at Hamburg, Schleiden afterwards held the chairs of botany at Jena and Dorpat. He did much to establish the cell theory, while among his important writings was his "Principles of Scientific Botany."

June 23, 1891. Wilhelm Eduard Weber died.—Professor of physics in the University of Göttingen, Weber was associated with Gauss in some of his investigations, and did valuable work on the definition and determination of electrical units.

June 23, 1896. Sir Joseph Prestwich died.—While in business as a London wine merchant, Prestwich studied the geology of Hampshire and the London basin, the coal supply of England, and the antiquity of man. At the age of sixty-two he succeeded Phillips as professor of geology at Oxford.

June 25, 1868. Carlo Matteucci died.—The recipient in 1844 of the Copley medal for his electrical researches, Matteucci was professor of physics, first at Bologna, and then at Ravenna and Pisa. For some years he was connected with the Italian telegraphs.

June 26, 1793. Gilbert White died.—Educated at Oxford, and for a time senior proctor, White passed most of his life at Selborne. His well-known "Natural History and Antiquities of Selborne" was published in 1789.

June 26, 1831. Sophie Germain died.—A versatile and learned woman, Sophie Germain was distinguished for her mathematical writings on elastic surfaces.

June 26, 1883. Sir Edward Sabine died.—An officer in the Royal Artillery, Sabine made valuable pendulum and magnetical investigations which gave an impulse to the systematic study of terrestrial magnetism. From 1861 to 1871 he was president of the Royal Society.

June 27, 1829. James Smithson died.—Owing to circumstances of birth, Smithson was educated at Oxford under an assumed name. His knowledge of chemistry and mineralogy led to his being admitted as a fellow of the Royal Society in 1787. Most of his life was spent on the Continent, associating and corresponding with men of science. He died at Genoa, leaving his fortune of more than 100,000*l.* to the United States, the Government of which founded the famous Smithsonian Institution.

June 27, 1876. Christian Gottfried Ehrenberg died.—After travelling through East Russia with Humboldt, Ehrenberg became a professor at Berlin, and in 1842 was made secretary to the Berlin Academy of Sciences. He was the first to show that certain rocks consisted of minute forms of animals or plants. His "Mikrogeologie" was published in 1854.

June 27, 1892. Carl Schorlemmer died.—A student of Bunsen's, Schorlemmer in 1858 came to England as assistant to Roscoe, and in 1874 was appointed professor of organic chemistry at Manchester.

June 28, 1897. Paul Schutzenberger died.—The successor of Balard at the Collège de France, Schutzenberger made important researches on colouring matters, the constitution of alkaloids, and on platinum compounds.

June 29, 1895. Thomas Henry Huxley died.—As a naval surgeon Huxley cruised in H.M.S. *Rattlesnake*, and sent home important papers on the Hydrozoa. From 1854 to 1885 he was professor of natural history at the School of Mines. His scientific work embraced vertebrate and invertebrate morphology, comparative anatomy, histology, and palæontology. His lucid essays and crusade for freedom of thought attracted widespread attention, and as "a man and a citizen" he undertook much public work.

E. C. S.

Societies and Academies.

LONDON.

Royal Society, June 16.—Prof. C. S. Sherrington, president, in the chair.—H. B. **Dixon**, Dr. C. **Campbell**, and Dr. A. **Parker**: The velocity of sound in gases at high temperatures, and the ratio of the specific heats.—Prof. J. R. **Partington**: The ratio of the specific heats of air and of carbon dioxide. The ratio of the specific heats, $\gamma = c_{-p}/c_{-v}$, has been determined by the method of adiabatic expansion for the gases air and carbon dioxide. The gas was contained in a 120-litre vessel, and the temperature change immediately after expansion followed by a platinum thermometer, with compensating leads of wire 0·001 mm. diameter, the resistance of which was observed by an Einthoven string galvanometer of 0·01 seconds period. The fundamental temperature measurements were made by a mercury thermometer. The results were calculated by the characteristic equation of D. Berthelot, so that deviations from the ideal gaseous state were allowed for. The final results, accurate to 1 part in 1000, are: γ for air at 17° C. = 1·4034; γ for carbon dioxide at 17° C. = 1·3022, whence c_{-p} for air at 17° C. = 0·2387 cal. and c_{-p} for carbon dioxide at 17° C. = 0·1996 cal. All the values refer to atmospheric pressure.—Dr. A. B. **Wood** and Dr. F. B. **Young**: (1) "Light-body" hydrophones and the directional properties of microphones. A light prolate ellipsoid possesses directional properties by virtue of its shape. Quantitative results obtained agree with calculated values supplied by Prof. Lamb. Owing to the pronounced intrinsic directional properties of the microphone, a spherical "light-body" hydrophone is practically equal in directional efficiency to one of ellipsoidal form. "Light-body" hydrophones are of value as experimental exploring instruments. (2) The acoustic disturbances produced by small bodies in plane waves transmitted through water, with special reference to the single-plate direction finder. Sound distribution was explored round a number of discs immersed at a distance from a small submerged source of sound. By means of a pair of miniature hydrophones—one bi-directional, the other non-directional—it was possible to chart (1) direction of oscillation of the water particles; (2) relative amplitude of the movements; and (3) relative amplitudes of the pressure oscillations. The charts obtained fall broadly into two classes, according as the discs are solid or contain air-filled cavities, very minute air-filled spaces giving marked effects. The behaviour of a typical baffle-plate is investigated, but no satisfactory theory of the baffle is offered.—M. A. **Giblett**: Some problems connected with evaporation from large expanses of water. The problems of distribution and amount of water-vapour present are considered for a current of air of uniform speed moving over a water-surface of uniform temperature. Near the surface is a thin layer of air, through which water-vapour diffuses slowly by molecular processes, but above this is a rapid transition to a turbulent *régime*, where diffusion becomes much more rapid. At and near the water-surface the problem is treated as one of eddy diffusion. Formulæ are obtained for humidity at any point of the air-current, and for rate of evaporation from stretches of water extending any distance down-wind. The distribution of water-vapour is obtained for some typical cases, and an estimate made of the rate of evaporation from long stretches of water under various conditions of wind, water-surface, temperature, and turbulence. The effects which each of these elements exerts, when varied within their natural range, are examined. The results emphasise the control exercised by atmospheric turbulence over evapora-