Calendar of Industrial Pioneers.

April 13, 1742. John Lofting died.—Born in Holland about 1659, Lofting removed to London in 1688, where he became well known as a successful inventor and maker of fire-engines.

April 13, 1874. James Bogardus died.—An American inventor, Bogardus made improvements in clocks, constructed a delicate engraving machine, invented the dry gas meter, a deep-sea sounding machine, and a dynamometer, while his plan for manufacturing postage stamps was accepted by the British Government.

April 13, 1894. William Haywood died.—For forty-eight years Haywood was chief engineer to the Commissioners of Sewers in London, and he was also the constructor of the Holborn Viaduct. He introduced the use of asphalt for city roads.

April 15, 1908. J. Wigham Richardson died.—The founder of an important shipbuilding firm on the Tyne, Richardson contributed much to the advancement of the building of large mercantile vessels and served as President of the North-East Coast Institution of Shipbuilders and Engineers.

April 17, 1899. Sir James Wright died.—The successor of Thomas Lloyd as Engineer-in-Chief of the Navy, Wright held this position from 1872 to 1887. Trained at Dundee, he became an assistant in Woolwich Dockyard in 1845, and was transferred to the Admiralty two years later. He was intimately connected with the adoption of the compound engine, twin screws, forced draught, high pressures, and the triple expansion engine.

April 18, 1916. Sir John Durston died.—One of the few fellows of the Royal School of Naval Architecture and Marine Engineering, Durston entered the Royal Navy in 1866 as an assistant engineer and rose to be the Engineer-in-Chief. Taking office in 1889, at a time of great difficulty, Durston held office till 1907, and to him was mainly due the introduction into the Navy of the water-tube boiler and the Parsons steam turbine.

April 18, 1920. Rudolph Messel died.—Educated at the University of Tübingen, where he studied chemistry under Strecker, Messel after the Franco-Prussian War came to England, where he joined Squire. He worked out a method for the manufacture of fuming sulphuric acid, and with Squire erected important chemical works at Silvertown.

April 19, 1904. Sir Clement Le Neve Foster died.—From the Royal School of Mines Foster passed to the Mining Academy at Freiburg, and in 1860 joined the Geological Survey. He was an inspector of mines from 1872 to 1901, and in 1890 succeeded Warington Smyth as professor of mining in the Royal College of Science. His important work on "Ore and Stone Mining" appeared in 1894. In 1903 he was knighted.

April 19, 1914. Alfred Noble died.—After serving in the American Civil War, Noble studied civil engineering in the University of Michigan, and became an eminent constructor of canals, docks, and bridges. He was a member of various commissions appointed to report on the feasibility of a ship canal across the Isthmus of Panama, and he played an important part in solving some of the engineering problems connected with the Panama Canal. He served as President of the American Society of Civil Engineers, and in 1910 received the John Fritz medal for "notable achievements as a Civil Engineer."

E. C. S.

Societies and Academies.

LONDON.

Royal Society, March 30.—Sir Charles Sherrington, president, in the chair.—The late W. G. **Ridewood**: Observations on the skull in fœtal specimens of whales of the genera Megaptera and Balænoptera. Five fœtal skulls were described. The presence of an interparietal bone in some whales, and the meeting of the parietals in a median suture in others, is of little use in taxonomy. Syncondyly is associated with suppression of the atlanto-epistropheal joint. There is no separate foramen for the hypoglossal nerve. The periotic bone shows no separate centres of ossification, but a diffuse endochondral granular deposit. The orbitosphenoid ossifies independently of the presphenoid. In whales there is no "external pterygoid plate" of alisphenoidal origin; the alisphenoid is the ossified ala temporalis. The growth of the malleus and of the tympanic bone, and the relations of the great bulla to the primary annulus tympanicus, were described.—W. L. **Balls**: Further observations on cell-wall structure as seen in cotton hairs. The daily growth rings consist of large numbers of fibrils, spirally arranged, with frequent reversals of the direction of the spirals. This arrangement is predetermined for the secondary cellulose of the growth rings by the initial pattern laid down in the primary wall. The individual fibrils have a cross-sectional area of the order of 0·05 square microns. Some of the evidence suggests stereo-isomerism in cellulose.—L. T. **Hogben** and F. R. **Winton**: The pigmentary effector system. I. Re-action of frog's melanophores to pituitary extracts. The posterior lobe of the pituitary gland contains a specific stimulant which, if injected into the frog, brings about a condition of general and complete expansion of the dermal melanophores. A minute dose induces a darkening of the skin readily visible to the naked eye. The pituitary melanophore stimulant is not destroyed by pepsin or boiling. It is rapidly destroyed by trypsin but not so quickly by acid hydrolysis. After cocaine, curare, atropine and apocodeine it still evokes its characteristic response, and therefore acts directly upon the melanophores. The results confirm the endocrine significance of the condition of general pigmental contraction found by Allen and others to follow removal of the pituitary gland in tadpoles.—Agnes **Arber**: On the development and morphology of the leaves of palms. The leaf-stalk is the basal or proximal region of the true petiole while the "fan" or "feather" limb is a modification of the distal region of the true petiole. The complex plication of the limb arises through the development of a series of invaginations penetrating the leaf-stalk tissue between the bundles. The "ligule" and "dorsal scale" of the fan-palms represent adaxial and abaxial distal margins of the uninvaginated proximal region of the petiole. The palm leaf, as a whole, is a petiolar phyllode with a pseudo-lamina.—H. E. **Roaf**: The acidity of muscle during maintained contraction. Records of electrical changes by a manganese dioxide electrode in combination with a calomel electrode show that: (*a*) In a veratrinised muscle the acidity remains as well as the tension. (*b*) In decerebrate rigidity reflex inhibition is accompanied by a decrease in acidity. Thus acidity and tension are related and a single mechanism is sufficient to account for both tetanus and tone.

Geological Society, March 22.—Prof. A. C. Seward, president, in the chair.—Sir Charles J. **Holmes**: Leonardo da Vinci as a geologist. Leonardo was the