

the water is transmitted to an air tank, of which there is one at each extremity of the line. Each of the tanks is of iron plate, and holds about one thousand gallons. The time expended in filling the water tank is about three minutes, and the air thus expelled from it is more than enough to propel the waggon along the entire line, which is about two miles in length. The waggon is of a peculiar form, being a hollow piston about five and a half feet long, closed permanently at one end, and temporarily by a movable lid at the other. Leather washers placed around the closed end, fill up the space between it and the pneumatic tube, which is two and half feet in diameter. The signals between the stations are made by electric bells; the waggon announces its approach by the noise which it makes. When it is to be sent off, it is placed in the mouth of the tube, which is then put in connection with the compressed air, the other extremity being put in connection with the atmosphere, that the air in front of the waggon may have a means of escape. This system is very simple, economic, and effective, but it is applicable only where the head of water is great. In Paris it is very considerable, and a pressure is therefore produced by it which affords a motive power applicable to a great number of useful purposes.—*Id.*

—The brilliant light afforded by electricity naturally suggested, at a very early period, its application to the purposes of illumination. But every project for the purpose was practically impossible, until very great progress had been made in the modes of producing and manipulating that obtained by means of the pile, or the magnet. Galvanic electricity, which in its application preceded that derived from magnetism, appears not unlikely to maintain its ground as a convenient and economic source of light, notwithstanding the numerous and important discoveries that have been made in this department of science. This might fairly be expected: since, at least in those contrivances in which heat and light are the results of the transformation of motion—previously obtained directly from combustion—the effect must be more costly and complicated than when obtained directly from combustion as is the case with galvanic electricity. The effect produced by the latter is now so economic, and what is still more important, so reliable, that it is being introduced with excellent effect in France, as a means of diffusing to great distances a light so intense, that when it is used, collision at night is impossible. Also, during the intense frosts in January, the skaters in the Bois de Boulogne were enabled, by means of fifteen electric lights, suitably disposed, to enjoy their pastime by night, with at least as much convenience and security as by day. Each of the fifteen lights was produced by the electric current obtained from a Bunsen battery containing forty elements, and placed in a small closed pit, from which the vapours were conveyed away, so as to be the cause of no inconvenience to those in the vicinity. The carbon points lasted for several hours, affording a light practically uniform; and when they were nearly worn out, a fresh lamp, moving on rails provided for the purpose, was slid into the place of that which was exhausted. In taking its position, it lit of itself: and the displacement of its predecessor caused the worn out points to be extinguished, the change taking place so quietly, and so rapidly, that no interruption of the light was perceptible. A single additional lamp is sufficient to change the fifteen at the proper times, the points being so arranged as to become exhausted in succession.—*Id.*

—M. J. Rosenthal states, in *Comptes Rendus*, that by exciting artificial respiration, and maintaining it for three or four hours, it is possible to save the life of an animal to which a poisonous dose of strychnine has been administered.—*Id.*

M. Philipeaux has been repeating his curious experiments on the regeneration of limbs. In October last he operated on several specimens of that singular reptile the Mexican Axolotl. From one-half of the animals experimented on he removed the fore-limb completely, excising the shoulder-blade as well as the "extremity" attached to it. From the remainder of the specimens he merely nipped off the limb below the head of the bone, which was left undisturbed. Eight months have now elapsed since the experiments, and the following are the results:—In the first batch the wound has healed up, but no regeneration has taken place. In the second perfect limbs have appeared. These facts are another proof of M. Philipeaux's theory, that regeneration of the limbs depends on the presence of the basilar portion, shoulder-blade or hip-joint as the case may be.—*Educational Times.*

NECROLOGICAL INTELLIGENCE.

—It is with extreme regret that we have to record the death of Sir Frederick Bruce, British Minister at Washington, which occurred rather suddenly at Boston on the 19th September. Sir Frederick Bruce was the third son of the seventh Earl of Elgin, and brother to the Governor-General of the same name. He had at the time of his death attained to his fifty-second year; and, with few interruptions, had continued to discharge the functions of a diplomatic agent in various parts of the world since 1842, when he had first accompanied Lord Ashburton to Washington. He was appointed Colonial Secretary at Hong Kong in 1844; Lieutenant-Governor of Newfoundland in 1846; Consul-General in Bolivia during 1847; Chargé d'Affaires at Montevideo in 1851;

Diplomatic Agent in Egypt in 1853; Secretary to Lord Elgin in China in 1857; Envoy to China in 1858; Superintendent of Commerce in China in 1859, and Minister to Washington in 1865. His long and meritorious services had earned for him the civil title of Commander of the Bath, which was conferred on his return from China with the treaty in 1858, and, in 1862, the further distinction of K O B. An able diplomatist, his firm but forbearing conduct had enabled him to maintain amicable relations with the Government to which he was accredited throughout the most embarrassing complications.

—Professor Michael Faraday, the great authority for many years in the world of chemical science, was born in 1794, and was therefore seventy-three years old at the time of his death. He was the son of a poor blacksmith, and was apprenticed to the book-making business, at which he worked till he was twenty-two years of age. Even then he had made an electrical machine, and given other evidences of the bent of his genius. Through a friend he was enabled to attend some of the lectures of Sir Humphrey Davy, and a note to the latter was the means of procuring him a situation in his laboratory. He attended Davy on a travelling tour as his Secretary, and ultimately rose to a professorship. Prof. Faraday's experiments and profound observations have long had a world-wide celebrity. His investigations, particularly into the nature of heat, light, magnetism, and electricity, have been considered of the utmost importance. The University of Oxford made him a Doctor of Laws in 1832, and many other learned bodies recognized his merits. In private life, he was greatly beloved for the simplicity and kindness of his disposition and his character for integrity.—*Exchange.*

—Mr. Joseph Dennis was one of the earliest settlers in Upper Canada, having come here in 1792, when he was three years of age. His father, the late Mr. John Dennis, in common with many others of that sterling band known as the "United Empire Loyalists," suffered much in consequence of persecution at the hands of the Americans after the war of the revolution. His estates, now of immense value, were confiscated, and himself and family obliged to leave the country. He first settled on the Humber, and while there the seat of Government was moved over from Niagara to York—the latter place being then represented by an old fort and some two or three trading houses. Having been a ship-builder he was employed to superintend the building of some vessels for the government. Among others, he built at the Humber, one christened *The Toronto*, a yacht of some 60 or 70 tons, for Governor Simcoe. There are those now living who well remember this vessel, with her raking masts and beautiful model—no expense having been spared either in building or fitting her out—as she lay during the intervals of her cruises, anchored at her usual ground then opposite the village, now about abreast of where Crawford's spice factory stands. In those days the supplies had to be brought from Niagara, and it used to be hinted that the best time ever made by the beautiful vessel with her crew of eight men and two officers, was when sent across to Niagara for a few pounds of fresh butter for the Governor's table. Mr. Joseph Dennis served during the war of 1812, and was a prisoner in the States for some months till exchanged. After the war he turned his attention to trade on Lake Ontario, then ship-building, and finally retired from active business altogether, down upon the family property on the Humber about the year 1830, where he died at the ripe old age of 78. Mr. Dennis, whether as a magistrate or in his private relations, was of unblemished integrity and uprightness of character, and was respected accordingly. He was father of Brigade-Major Dennis, of this city.—*Exchange.*

The cable despatches mention the death of Sir Archibald Allison, the eminent historian, in the seventy-fifth year of his age. He was born in England of Scottish parents, and was educated at the University of Edinburgh where he had the advantage of studying under Leitch Stewart and other professors who then made that seat of learning so celebrated. He was called to the Scottish Bar in 1814, and was deputy-advocate during the Duke of Wellington's administration. Between 1830 and 1834 he wrote the work on "Criminal Law," which now bears such a high reputation in Europe and America. In 1834 he was appointed Sheriff of Lanarkshire by Sir Robert Peel, and in 1852 he was created a Baronet by Earl Derby. Previous to this he had been Lord Rector of Marischal College, Aberdeen, and of the University of Glasgow. Sir Archibald's chief work, "The History of Europe from the Commencement of the French Revolution to the battle of Waterloo," has been translated into three or four foreign languages, and has spread his fame as a historian throughout the world.—*Leader.*

MISCELLANEOUS INTELLIGENCE.

The Select Committee of the House of Commons appointed to consider and report on the advisability of making purchases from the Paris Exhibition, for the benefit of Schools of Science and Art in the United Kingdom, and any other means of making that Exhibition useful to the manufacturing industry of Great Britain and Ireland, report that—1. They are of opinion that it is desirable that purchases should be made at the Paris Exhibition of objects of art and science, especially of such as illustrate modern scientific inventions and discoveries, and the application of art to manufactures and that the exhibition of such objects in the museum of South