

Calendar of Discovery and Invention.

January 23, 1710.—Johann Friedrich Böttger, the German alchemist, was born in 1682 and died in 1719. Apprenticed to a chemist of Berlin named Zorn, he experimented with zest with the view of the transmutation of metals into gold. From Berlin he went to Dresden, and it was while under the patronage of the Elector of Saxony that he accidentally discovered the process of making porcelain from the reddish clay found in the neighbourhood of Meissen, and on Jan. 23, 1710, the first European porcelain factory was opened at that place.

January 24, 1838.—During the voyage from Europe to America in the sailing vessel *Sully* in 1832, the American painter, Morse, then forty-one years of age, conceived the idea of signalling by electricity, using a code of dots and dashes. Six years later, on Jan. 24, 1838, he exhibited his electric telegraph in New York city, the *Journal of Commerce* stating: "Intelligence was instantly transmitted through a circuit of ten miles, and legibly written on a cylinder at the extremity of the circuit."

January 25, 1868.—Bishop Thirlwall, writing on Jan. 25, 1868, said: "I had a treat last night, which I would not have missed for any prize. Tyndall delivered the second (the first unhappily on the Friday before) of the lectures at the Royal Institution, 'On Faraday as a Discoverer.' . . . Tyndall said many fine things, not flowers of rhetoric, but springing out of the depths of their long intimate friendship. . . . He prized the honour of being Faraday's successor less than the happiness of having been his friend. The one was a mantle almost too heavy to bear, the other a memory full of the purest delight. He closed with the words, 'Let me die the death of the noble, and let my last end be like his,' and then rushed out of the room amidst a storm of applause. The attendance was just the largest that the room, with the addition of extra chairs, would hold. It was curious to see how, after it was over, people gave vent to their feelings by shaking hands, as if to congratulate one another on being present on such an occasion. It was indeed something to remember to the end of one's life. Faraday was a noble man, with heart, mind, and soul equally and healthily developed."

January 27, 1774.—One of the principal factors in engineering progress has been the development of machine tools. Among these the oldest is the lathe. A notable advance in workshop practice was made when John Wilkinson, on Jan. 27, 1774, patented his machine for boring guns in which the gun was rotated and the boring tool advanced down the bore. Called upon to make the cylinders for the engines of Watt, Wilkinson devised a machine in which the cylinder was fixed but the boring bar was supported at both ends while the cutter-head was moved along the bar, thus enabling the surface traced out by the tool to be reproduced in the work.

January 28, 1807.—Murdock in England and Le Bon in France were the pioneers of gas lighting, but its introduction for street lighting was due to the eccentric German, Winsor, through whose efforts Pall Mall was lighted by gas on Jan. 28, 1807. This was the first public thoroughfare in the world to be so illuminated.

January 29, 1886.—It was the invention of the light, high-speed spirit engine by Daimler which made the motor-car possible, but the first to apply such engines to carriages was Karl Benz. Benz's first motor-car, built in 1885, is in the Deutsches Museum, Munich; his patent is dated Jan. 29, 1886.

E. C. S.

Societies and Academies.

LONDON.

Royal Society, Jan. 13.—F. W. R. Brambell, A. S. Parkes, and Una Fielding: Changes in the ovary of the mouse following exposure to X-rays. Part i. Irradiation at 3 weeks old. Degeneration occurred of all oocytes in the ovaries of 47 female mice, exposed to full sterility dose of X-rays at 3 weeks old. Membrana granulosa and theca interna, in those cases where differentiated, degenerate also. Finally old follicles are only represented by small cavities containing zona pellucida remnants. Simultaneously with these changes, old inter-follicular tissue atrophies, and germinal epithelium proliferates epithelial cords. In adult animals ovaries are composed almost entirely of this first proliferation. In many cases a second proliferation follows. This consists of small spherical or slightly elongated cords. These cords resemble so-called spermatid cords described in ovaries of inbred rabbits and of free-martin cattle. They also resemble structures described as anovular follicles. They have no effect on oestrous cycle.

F. W. R. Brambell, A. S. Parkes, and Una Fielding: Changes in the ovary of the mouse following exposure to X-rays. Part ii. Irradiation at or before birth. Investigation of the ovaries of 6 mice X-rayed *in utero* and of 30 X-rayed at birth confirm the foregoing results. Of animals irradiated at birth, 24 were allowed to become adult. Cords of first proliferation constituted the bulk of all the ovaries. The cells of first proliferation appear to be responsible for production of oestrin and regulation of oestrous cycle. Production of oestrin stops at certain stage of differentiation into luteal-like cells.

A. S. Parkes: On the occurrence of the oestrous cycle after X-ray sterilisation. Part ii. Irradiation at and before birth. Further evidence is brought forward in support of conclusion that all normal cyclic oestrous phenomena except ovulation can occur in animals in which Graafian follicles of ovary have been totally destroyed at an early age by exposure to X-rays, and can occur, therefore, in the absence of organised corpora lutea and Graafian follicles.

R. M. Sargent: Recovery from vigorous exercise of short duration. Recovery from vigorous exercise of short duration is extremely rapid, especially in the first 10 minutes immediately after cessation of exercise. Rate of recovery varies somewhat with the subject and the severity and duration of exercise. It is inadvisable, in determining total recovery-oxygen after exercise, to measure the amount used during the period of incomplete recovery and apply a correction. As a result of exercise, oxygen consumption at rest was found to be increased, on average about 7 per cent. This change appears to result from genuine alteration in level of metabolism, and cannot be regarded as an integral part of recovery process as such.

R. G. Canti and M. Donaldson: The effect of radium on mitosis *in vitro*. It is possible to bring about cessation of mitosis in tissue cultures *in vitro* by means of radium irradiation. With the intensity of radium irradiation employed, mitosis ceases, but when the radium is removed after several hours' exposure, mitosis reappears. At commencement of irradiation, cells not only complete division when mitosis has already commenced, but some cells also actually begin mitosis and go through the process of division in apparently normal fashion. In no experiment was there any evidence of radium producing increase in the number of cells in mitosis.

R. J. Ludford and W. Cramer: Secretion and the Golgi apparatus of Islets of Langerhans. Appear-