

## Calendar of Discovery and Invention.

January 16, 1834.—After a voyage of two months from Portsmouth, Sir John Herschel, on Jan. 16, 1834, reached Cape Town. Re-erecting his famous 20-foot telescope at Feldhausen, near the base of Table Mountain, during the next four years he carried out his great survey of the southern hemisphere, observing more than 4000 nebulae and star clusters, and 2095 double stars. He also made many observations of relative stellar brightness, of Halley's comet, of the satellites of Jupiter, and of sunspots.

January 17, 1783.—Of capital importance in the industrial development of Great Britain were the two inventions of Henry Cort—the rolling mill and the puddling furnace. The former was patented on Jan. 17, 1783, the latter on Feb. 13, 1784. Dudley, the Darbys, Huntsman, and others, had improved the methods of making cast iron and steel, but the main British supply of wrought iron came from Sweden and Russia. Cort's improvements were the results of years of work at his foundry at Fareham, but no sooner had he brought out his invention than misfortune befell him and he was completely ruined. England, however, benefited immensely by his work, and by 1860, just before the Bessemer process was taken up, there were 8000 puddling furnaces in use.

January 17, 1867.—On Dec. 4, 1866, Werner Siemens had written to William Siemens: "I have had a new idea, which in all probability will succeed and may give important results." What that idea was, was disclosed in a paper read to the Berlin Academy of Sciences on Jan. 17, 1867. Werner Siemens then described the first dynamo. In sending the description to his brother for the Royal Society, Werner remarked: "It is successful beyond expectation even in small dimensions. It will be a most important thing." Wheatstone's invention of the dynamo was contemporary, but Werner Siemens was the first to publish particulars of such a machine.

January 18, 1799.—Paper making is one of the oldest industries, but the first to invent an endless paper-making machine was Louis Robert, an employee of François Didot, of Essones, France. A patent was granted to Robert on Jan. 18, 1799, and in the following years the French Government awarded him 8000 francs. The first machine, however, was made by Hall, of Dartford, and in 1804 the patent was purchased by Henry Fourdrinier, who spent £60,000 on improving it. In England at the present time there are about 260 paper-mills, with a total annual output of 1½ million tons of paper.

January 20, 1881.—The evolution of the solar system is regarded as one of the most interesting questions presented by modern astronomy, and to this question G. H. Darwin devoted many years of his life. One of his most important papers was read to the Royal Society on Jan. 20, 1881. He showed that in consequence of the effects of tidal friction, the evolution of the earth and moon had been probably unique in the solar system and concluded that as a result of the tides our day and the time of revolution of the moon in its orbit are both lengthening.

January 21, 1795.—During the French Revolution the Committee of Public Welfare took up the matter of education. In September 1794 it was decided "there should be established in Paris a normal school where instruction in the art of teaching science should be given to persons already possessing scientific knowledge." Through this came the foundation of the Ecole Normale, which began its work on Jan. 21, 1795.

E. C. S.

## Societies and Academies.

LONDON.

Linnean Society, Dec. 2.—J. Ramsbottom: The Society of Amateur Botanists. Mordecai Cubitt Cooke (1825–1914) was appointed head master of the new Trinity School, Lambeth, at the age of twenty-three years. Here he conducted evening botanical classes under the old Science and Art Department. In the later 'fifties he occasionally took his pupils for country rambles. Afterwards they were joined by outsiders, and in 1860 constituted themselves into the Society of Amateur Botanists. This was planned for excursions, interchange of specimens, communication of papers, and the establishment of a library, herbarium, and museum. Cooke was the first and only president. Excursions were held on alternate Saturdays and meetings on alternate Wednesdays. The meetings were held first at the Metropolitan Club, Edgware Road, and then over the shop in Piccadilly of Robert Hardwicke, the publisher of natural history works. A letter in the first volume of *Hardwicke's Science Gossip* (1865) from W. Gibson, suggesting an association of amateur microscopists "something on the plan of the Society of Amateur Botanists," led to the formation of the Quekett Microscopical Club. The new club enrolled 155 members in its first year. Excursions were carried out as with the Society of Amateur Botanists, many of whose members joined the new club. The Society languished and may be said to have been killed by the Quekett.—C. E. Salmon: Some interesting British plants. *Myosotis brevifolia* Salm. is a new species, found in marshes in the Cross Fell district, and bearing short, broad, blunt leaves; it produces numerous rooting stolons above ground; its corolla is pale blue, almost as large as that of *M. repens*, the calyx is deeply divided, rather more than half-way, and the segments are oblong, rounded or blunt at the apex; its style is very short. Other plants were also described.

Dec. 16.—E. Ashby: Notes on the flora of the Grampian Mountains of Victoria, Australia. The range is situated in Western Victoria, and covers an area of about 60 miles by 30 miles; the rocks are sandstone, with quartzite and intrusive rock in a few places. It forms an ecological islet rising abruptly from hundreds of miles of undulating plains, and is a meeting-place of the east and west as regards its flora. Fifteen species are endemic, including four species of the Leguminous genus *Pultenæa*, and a terrestrial orchid, *Caladenia iridescens*, which flourishes high up in the barren stony mountain soil.—W. T. Calman: The giant teredo. The giant teredo, *Kuphus arenarius* (Linn.), first described by Rumphius two hundred years ago, has hitherto been known chiefly by its massive shelly tube, which may be so much as four feet in length and three inches in diameter at the wider end. A complete specimen was collected by Capt. Burgess, of the Mission steamer *Southern Cross*, in the Solomon Islands. It comprises some thirteen inches of the posterior end of the body, with the siphons and pallets. Instead of boring in wood like the other Teredinidæ, *Kuphus* lives embedded in the mud of mangrove-swamps, with the siphons projecting from the surface. Possibly it is the full-grown condition of a timber-boring species (perhaps *Teredo manni*) which is set free by the decay of the wood.—J. R. Norman: Ambicoloration and associated variations in flat-fishes. Ambicoloration in flat-fishes is of particular interest on account of the other variations towards symmetry which accompany complete (or almost complete) pigmentation of the blind side. The modification of