

SCIENTIFIC CENTENARIES IN 1941

BY ENGINEER CAPTAIN EDGAR C. SMITH, O.B.E., R.N.

AMONG the men of science whose centenaries occur this year, one stands out above all the others as a great reformer. This is Paracelsus, who died at Salzburg on September 24, 1541, four centuries ago. Born in Switzerland in 1493, he was a contemporary of Copernicus and Luther. In Dr. Seelig's "Medicine, an Historical Outline", Paracelsus is spoken of as "a man of extraordinary power, forceful character, untrammelled thought and ingenious medical instinct". His wanderings, his quarrels and his constant warring against dogma made him known throughout the universities of Europe, and interest in his activities has continued down to the present time. In *NATURE* of January 18, 1894, there was a note to the effect that the library of Dr. Schubert, of Frankfort-on-Main, contained no fewer than 194 editions of the works of Paracelsus, and 548 books dealing partly or chiefly with him. One of the latest lives of Paracelsus is that of Prof. J. M. Stillman, which was reviewed in these columns on August 12, 1922, by Sir Edward Thorpe.

Paracelsus lived at a time when the study of botany was attracting considerable attention. Medicine and botany went hand in hand, and this led to the foundation of botanic gardens. Those at Padua, Montpellier, Leyden and Leipzig were all founded in the sixteenth century, and that in Paris, now the Jardin des Plantes, in the early part of the seventeenth century. The inauguration of this garden was due to the French physician Gui de la Brosse, who died in 1641. He was a physician to Louis XIII. He bought a piece of land on which refuse had collected and there established in 1626 a Jardin Royal des Plantes Médicinales, of which he became the first superintendent. He collected plants from many parts of the world; in 1636 he made a catalogue of 2,000 specimens, and had upwards of 400 plates engraved. At his death these were disposed of to a brazier, but Fagon, the nephew of Brosse, was able to save about fifty of them from destruction. Nearly all Brosse's writings were about the garden and its plants.

The year 1641 also saw the death of Jeremiah Horrocks, the young Lancashire clergyman and astronomer, the first individual to witness a transit of the planet Venus.

Astronomy of the following century is represented by François de Plantade, of Montpellier, who died on August 25, 1741. With his countryman Clapies, Plantade observed the total eclipse

of the sun of May 12, 1706, the first total eclipse of which the accounts, says Grant, have any pretensions to fullness or precision. That same year Plantade assisted in founding the Academy of Sciences at Montpellier. Born in 1670, he died suddenly at the age of seventy when climbing the Pic du Midi to carry out geodetical measurements.

Other men of science who died in 1741 were Ambrose Godfrey, who for many years assisted Boyle in his experiments; George Martine (1702-41), the St. Andrews physician, who in 1740 published an essay on the "Natural and Experimental History of the various degrees of Heat in Bodies", and the Danish navigator, Vitus Behring, who after serving in the navy of Peter the Great, spent several years exploring Siberia, its coasts and seas, and who perished on Behring Island on December 19, 1741.

The great explorers of the eighteenth century include also Jean François de Galaup, Comte de La Pérouse, who was born on August 22, 1741. After seeing active service in the Navy, he was given command, when forty-four years old, of an expedition to the coasts of the Pacific. In 1788 he sailed from Botany Bay, and no trace of him was found until 1826, when it was discovered that his ships had been wrecked on a coral-reef off Vanikoro, north of the New Hebrides. While La Pérouse was still serving in the French Navy, his fellow countryman Alexis-Marie Rochon (1741-1817), optician and astronomer to the Marine, was visiting many places in the Indian Ocean. With Leroy he was made keeper of a cabinet of nautical instruments at Brest. His attainments gained him a seat in 1795 in the newly founded National Institute, and when he died his place was taken by Fourier. Another well-known French man of science born in 1741 was the geologist Barthélemy Faujas de Saint-Fond (1741-1819). He held a chair in the Museum at Paris, and he was among the first to bring forward conclusive evidence of the igneous origin of basalt. His work "On the Extinct Volcanoes of Vivarais and Velay" was published in 1784. About this time he visited Great Britain and was hospitably entertained by Sir Joseph Banks and others. He attended a dinner of the Royal Society Club, of which he wrote, "Brandy, rum and some other strong liquors closed this philosophical banquet, which terminated at half-past seven, as there was to be a meeting of the Royal Society at eight o'clock. . . . I repaired to the Society along with

Sir Joseph Banks, Mr. Cavendish, Dr. Maskelyne, Mr. Aubert and Sir H. Englefield. We were all pretty much enlivened, but our gaiety was decorous." At Windsor, Faujas was startled to find Miss Caroline Herschel assisting her brother in recording observations.

Three Englishmen of note who were born in 1741 were Dr. William Withering, F.R.S. (1741–1799), physician, botanist and mineralogist, of Birmingham, friend of Watt, Priestley and Boulton; Joseph Huddart, F.R.S. (1741–1816), nautical surveyor and chart maker, who made a fortune out of his rope-making machine patented in 1799, and the Cornish clergyman and astronomer, the Rev. Malachy Hitchins (1741–1809). Though he began life as a miner, Hitchins was enabled through his wife to go to Oxford, and in 1767 Maskelyne found him a post at Greenwich Observatory as a computer. He made calculations for the "Nautical Almanac" from 1768 until his death at St. Hilary Vicarage, Cornwall, in 1809: "The reputation which the Nautical Almanac obtained was largely due to his care. . . ."

The names of men of science who died a century ago include those of the famous Swiss naturalist, Augustus Pyramus De Candolle, of Geneva, whose "two-fold enthusiasm was to increase the knowledge and advance the welfare of the human race", and the French entomologist, Jean Victor Audouin, a son-in-law of Alexandre Brongniart, the successor of Latreille at the Muséum d'histoire naturelle, a collaborator with Milne-Edwards and the first president of the French Entomological Society. Another French naturalist who died in 1841 was Jean François D'Aubuisson de Voisins (1769–1841), the geologist, who was the favourite pupil of Werner at Freiburg, but who abandoned Werner's views after he had visited the volcanic region of Auvergne. The same year saw the death of Felix Savart (1791–1841), the physicist who succeeded to Ampère's chair in the Collège de France; of the famous British surgeon, Sir Astley Paston Cooper, who is buried beneath the chapel of Guy's Hospital and whose statue is in St. Paul's Cathedral; of Dr. George Birkbeck (1776–1841), the pioneer of technical education, whose best-known memorial is Birkbeck College, London, and of the two mathematicians, Olinthus Gilbert Gregory (1774–1841) and George Green (1793–1841). Gregory, who was one of the projectors of the University of London, taught for many years at the Royal Military Academy, Woolwich, and was known both as a writer of text-books and as experimenter, while Green is remembered principally for his "Essay on the Application of Mathematical Analysis to the Theories of Electricity and Magnetism", in which he first applied the term "potential" to these

branches of science. Green was largely self-taught, and he did not study at Cambridge until he was forty years of age, five years after his essay was published. He was only forty-seven when he died.

Of the many men of science born in 1841, one of the most eminent was the French physicist Marie-Alfred Cornu, For. Mem. R.S. (1841–1902), for many years professor of physics at the École Polytechnique, and in 1896 president of the Paris Academy of Sciences. After his death in 1902, Silvanus Thompson wrote of him in NATURE as a man who had won universal esteem: "A true follower of the great traditions of France in the pursuit of science and a passionate follower of Arago, Biot, Fresnel and Fizeau, he was in his own person much more than this. He was the ideal of a well-equipped well-balanced intellectual leader in scientific thought."

Science in Italy last century is represented in the records by Antonio Pacinotti (1841–1912), who, as a youth serving in the Garibaldian Wars, pondered over the construction of his ring armature dynamo, for the invention of which he is remembered, while science in Switzerland is represented by the Lausanne anatomist and physiologist, François Alphonse Forel (1841–1912), who made a life-long study of the Lake of Geneva, and whom Chrystal called "the Faraday of Seiches".

Centenaries of astronomers of note, professional or amateur, are numerous, for 1841 saw the birth of Herman Vogel (1841–1907), director of the astrophysical laboratory at Potsdam; of Friedrich Engelmann (1841–88), of Leipzig, who published Bessel's collected works; of Theodor von Oppolzer (1841–86), of Vienna; and of Hugo Gylden (1841–96) of Stockholm, both known especially as eminent teachers. Three British astronomers born in the same year are Andrew Ainslie Common (1841–1903), an engineer who became known for his construction of silver-on-glass mirrors; W. E. Crossley (1841–1905), a carpet manufacturer, who at Halifax installed a telescope having one of Common's mirrors which he afterwards gave to the Lick Observatory; and G. F. Chambers (1841–1915), a lawyer, who was the author of an excellent "Handbook of Descriptive Astronomy" which passed through several editions.

To complete this survey, brief mention may be made of several workers in other fields of science. Karl August Lossen (1841–93), a member of the Prussian Geological Survey, was spoken of as the founder of dynamic metamorphism; Edouard François Dupont (1841–1911), another geologist, was the honorary director of the Royal Museum of Natural History at Brussels, and William Topley, F.R.S. (1841–94), who did notable work on the Geological Survey of Great Britain and

served as president of the Geologists' Association. Topley began his work on the Survey with Clement le Neve Foster, F.R.S. (1841-1904), who had studied at Freiburg, and in 1890 succeeded Sir Warrington Smyth as professor of mining at the Royal School of Mines. In 1903 Foster was knighted. The Irish chemist, Cornelius O'Sullivan (1841-1907), and the English chemist, Walter Flight (1841-85), both owed much to their contact with Hofmann, to whom they became assistants after his return to Berlin. Both were fellows of the Royal Society, but while O'Sullivan's researches were connected with the chemistry of brewing, Flight's investigations led him to the study of the

mineralogical constitution of meteorites, his work being done in a laboratory at the British Museum, where he held a post. Of the engineers born in 1841, John Donaldson (1841-99) and George Wallace Melville (1841-1912) were connected with marine engineering. Donaldson was a pupil under Rankine at Glasgow; in 1872 he joined Sir John Thornycroft at Chiswick, and was associated with the development of high-speed torpedo boats and torpedo-boat destroyers. Melville held the high office of engineer-in-chief of the United States Navy for sixteen years, during which period the American fleet grew from an almost negligible force to one of the most powerful.

OBITUARIES

Dr. J. W. Blagden

DR. J. W. BLAGDEN died on November 28 at his home in Loughton, Essex, in his sixty-seventh year. He came from a scientific family, and was educated at Dulwich and Emmanuel College, and took an honours degree in natural science in 1895. Proceeding to Würzburg, he worked under Häntzsch, obtained his Ph.D., and after a period as senior demonstrator in electro-chemistry at Darmstadt, entered industry with C. F. Böhringer und Söhne as research chemist and departmental manager. He worked on electrolytic oxidations and reductions, and later became interested in the then new field of catalytic hydrogenations. In this, particularly in its applications to industry, he was one of the pioneer workers. The outbreak of war in 1914 put an end to his work in Germany. During the period of hostilities he was an internee at Ruhleben, where as the leader of a group he endeavoured to continue scientific work, an effort typical of a man who refused to be dismayed by difficulties. At the end of the war he returned to England and sought an opportunity to continue his work on catalysts. He joined Messrs. Howards and Sons, Ltd., in 1919 and undertook the organization and direction of a newly formed Research Department. The range of new products manufactured by the firm during the last twenty years is a tribute to the energy and skill with which he pursued the task. In 1929 he was elected a director of the Company.

Blagden was a fellow of the Institute of Chemistry and the Chemical Society, and a member of the Society of Chemical Industry. He served on a number of Committees, among which may be mentioned the Pharmacopœia Commission, the Essential Oils Committee of the Imperial Institute, Chemical Committees of the British Standards Institution and the Patents Committee of the Association of British Chemical Manufacturers.

He had little desire or time for publication, and apart from a few relatively minor papers the record

of his work exists in patents and in the technical achievements of the laboratory under his direction.

Dr. Blagden was always accessible to members of his staff, and devoted much of his time to their encouragement and welfare. He felt that industry owed a debt to the universities, and was pleased to acknowledge this by both material and technical assistance whenever possible.

Dr. C. W. Saleeby

DR. C. W. SALEEBY, who died on December 9, aged sixty-six, was a popular lecturer and writer, able to put forward the views he furthered in simple direct language illuminated by apt and telling phrases. He was in particular an exponent of eugenics, in my opinion a lost cause, for the British people cannot be persuaded, and are not stimulated by family allowances by Government, to have enough children to maintain the vigour of the nation after the War. There is great doubt, too, whether eugenics, except in the case of a few rare inherited disabilities, is of any value.

A far more valuable field of Saleeby's propaganda was that of sunlight and open air as givers and restorers of health. He founded the Sunlight League, and its continuance depended mainly upon him. In the *Journal* of this League were well advocated the views he held so strongly. His own dwelling in London was contrived to secure all the benefit possible from sunlight. In his lectures he made much of Rollier's great successes in treatment of tuberculosis at the Leysin Sanatoria and the open air school run there as a prevention of disease for delicate children. In doing so Saleeby did not seem to be aware of the pioneer work of that great surgeon Oscar Bernhard at St. Moritz, who inspired the work of Rollier and whose surgical methods of wound treatment by sun and open air are of great value to-day. With the death of Saleeby an enthusiastic popular teacher has passed away.

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