

explosions of steam boilers. Mr. H. C. Sorby, in a note communicated to the London, Edinburgh, and Dublin Philosophical Magazine, completes these researches by showing that in capillary tubes, the temperature of water may be lowered far below  $32^{\circ}$  without freezing even when the tubes are shaken. In tubes of from  $\frac{1}{16}$  or  $\frac{1}{32}$  inches in diameter, the water may be reduced to  $5^{\circ}$  Fah., without freezing, provided it be not in contact with ice. These experiments go to show that these phenomena are caused by the adhesion of the water to the walls of the tube interfering with its change of state; and thus lead to the belief that they have no application to water in large vessels, such as steam boilers.

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#### *New Disinfecting Powder.*

MM. Corne and Demeaux propose as a powerful disinfectant, a mixture of powdered plaster of Paris, with two or three per cent. of coal tar. M. Velpeau, the celebrated surgeon, and director of the Hospital *La Charité*, speaks of it in the most energetic terms as perfectly successful in disinfecting the most offensive ulcers, (to which it is applied as a plaster,) and assisted their healing; and in rendering entirely inodorous the masses of semi-putrescent matters in the dissecting room. So highly did he think of its value, that he urged the Academy of Sciences to waive their usual rule of awaiting the report of their Committee, and to recommend the Minister of War at once to use it for the wounded in the late Italian war.—*Cosmos*, July 22, 1859, p. 106.

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#### *New Material for Buttons.*

Excellent buttons and even handsome cameos may be made with talc or steatite, provided after they are made they be heated for several hours at a nearly white heat. By this strong calcination, the steatite gets so hard that it strikes fire with flint, and resists the best tempered file. They may be polished by emery, tripoli, and jeweler's putty; and colored by mineral or organic matters; chloride of gold colors them purple; nitrate of silver, black; exposure to the reducing flame increases very much the brilliancy of the color.

*Cosmos*, July 22, 1859, p. 92.

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#### *Coal Supply of Great Britain.\**

The coal fields of Great Britain yield nearly 70,000,000 tons per year. A better idea of the immense commerce of England could not be formed than by stating the fact that at Manchester and its environs a motive steam power equal to 1,200,000 horses is constantly maintained, to support which there are consumed 30,000 tons of coal per day, or 9,500,000 a year. In the manufacture of salt alone, about

\*From the Lond. Practical Mechanics' Magazine, April, 1869.

3000 tons are consumed per day, or 950,000 a year. The Transatlantic steamers from Liverpool and other ports consume 700,000 tons per year, and the manufacture of gas absorbs at least 10,000,000 tons per year. The export of coal from England reached, in 1858, 6,078,000 tons. It is estimated that England alone could furnish enough coal for the consumption of the whole of Europe for the space of 4000 years.

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FRANKLIN INSTITUTE.

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*Proceedings of the Stated Monthly Meeting, October 20, 1859.*

John Agnew, Vice-President, in the chair.

John F. Frazer, Treasurer.

Daniel R. Ashton, Recording Secretary, P. T.

The minutes of the last meeting were read and approved.

Letters were read from the Royal Geographical Society, London; the K. K. Geographischen Gesellschaft, Vienna, Austria; and Capt. C. Wilkes, U. S. N., Washington, D. C.

Donations to the Library were received from the Royal Geographical Society, and the Chemical Society, London; L. A. Huguet-Latour, Esq., Montreal, Canada; Capt. C. Wilkes, U. S. N., Washington, D. C.; and from Prof. John C. Cresson, and the American Philosophical Society, Philadelphia, Pa.

The Periodicals received in exchange for the *Journal of the Institute*, were laid on the table.

The Treasurer's statement of the receipts and payments for the month of September, was read.

The Board of Managers and Standing Committees reported their minutes.

Candidates for membership in the Institute (17) were proposed, and the candidates proposed at the last meeting (6) were duly elected.

Mr. Howson exhibited a specimen of C. Sharp's breech-loading repeating pocket pistol. It consists of a barrel block having four bores, the block being arranged to slide along the stock to and from the breech, which is stationary. When the barrel block is slid out, a metallic cartridge is inserted into each bore, and the barrel block pushed back and locked against the breech. A very ingeniously contrived rotating nipple on the hammer, strikes one corner of each cartridge in succession. Mr. Howson remarked that more accurate aim could be taken with this pistol than with an ordinary revolver, and that it could be as rapidly loaded and discharged. Patents have been granted in this country, England, France, and Belgium for Mr. Sharp's invention.

Mr. Howson also exhibited a specimen of Mr. Warburton's patent perforated hat. The novelty in this invention consists in using heated points for making the perforations. In piercing the body of the hat with these points, the shellac stiffening melts and a clear hole is made through the body without breaking or crushing the material of which the body is made.

1946 Coal mines were nationalised under the Labour government. Coal was in great demand but production had fallen due to labour shortages and lack of investment during the war. The slogan of the new National Coal Board (NCB) was "Coal at any price". Britain had been mining heavily throughout the industrial revolution and the most easily accessible coal had been extracted so, although there was (and still is) plenty of coal left underground, it was already much cheaper by the early 1980's to buy it overseas. However, commercially sound decisions about where to buy coal were impossible to make at that time because the British economy was a hostage to its trade unions. Supplying a power plant with a pipeline is far simpler than supplying it by train. Both Great Britain and the Northern part of China experienced shortages of timber. This process increased the use of coal as a substitute fuel. Hartwell's research showed that between 806 and 1078 per capita yields of pig iron increased over six-fold. CONCLUSION Coal is one of the major factors in supplying the Industrial Revolution. Aside from the switch to coal as a fuel on itself, the geographical location of coal deposits to the urban centres matters, as Pomeranz pointed out. But this geographical argument on China does not hold in the case of the Northern Song. Coal was Britain's lifeblood, and without it, the economy could come to a standstill. The decline of the British coal industry started after the First World War. However, coal mines were such a dominant employer in a mining communities that when a mine closed down, the economic effects were often devastating. She actually arranged with the EU to supply Britain with Coal. As She knew the miners would take strike action, when she announced she was shutting The NCB down. Thatcher the PM caused utter Chaos. Thatcher also shut down Britain's Heavy Engineering factories, Steel Plants, Munitions factories and a whole range of other Industries. She wanted to be solely reliant on the EU. She declared Industrious Britain was finished. Britain's last deep coal mine, North Yorkshire's Kellingley Colliery, closed in December 2015 and the industry's future looks all but over as the government ramps up plans for all coal-fired power stations to shut down by 2025. But amid the dying gasps of the industry are a series of attempts to open new surface mines, which would add to more than a dozen still in operation. Merthyr works closely with its main customer Tata Steel on its two sites Ffos-y-fran and Nant Llesg. It also supplies coal to the cement industry and various heritage railways around Wales and the UK. It invests £12.9m annually, made up of £8.9m in goods and services. Another £4m in wages is pumped into the local economy through spending on goods, services and wages within 10 miles of its Ffos-y-fran site.