The Ingenious Mr Keir of West Bromwich.

By C.J.L. Elwell.

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James Keir with granddaughter Amelia (Emily)

From the little window of the cabin where he lay he saw the sharks tearing to pieces the bodies of his companions who had died of the same disease with which he was suffering. The sea was 'tinged with blood, and their mangled limbs were seen floating on its surface. He had no friend to console him in this situation. The Army-Surgeon paid him a daily visit; and once, upon entering his cabin and observing that he was deprived of the power of speech and of motion, he exclaimed in a sorrowful voice—' He is gone too,'—-and immediately left him. My father however revived a little, and when a person came in some time after, probably with the intention of throwing his body overboard, he made a sign that he wished to write, and a pencil being presented to him, he wrote a request to have a certain quantity of Antimony, which was granted only from the persuasion that his state was hopeless, but to the surprise of every one he recovered."

This was how Keir's daughter, Amelia, described his escape from the 'jaws' of death by yellow fever in the West Indies. It was characteristic of a man, who was to make a notable contribution to science and industry, that he owed his life to his own resolution and knowledge.

One of the eighteen children of a respectable Scotch Lowland family James Keir was born on 20 September, 1735. Destined for the medical profession, he studied for it at Edinburgh but, wishing to see the world, he abandoned medicine for the army. Commissioned at the age of 22 in the 61st Regiment of Foot—now the Gloucestershire Regiment—he served in Canada, the West Indies and finally in Ireland. But the charm of foreign parts was not enough to compensate an intellectual for the dullness of his brother officers' company. They no doubt looked askance at a young subaltern who got up at four every morning to read improving literature.

In 1768, having just reached the rank of captain, Keir left the army and, after a brief sojourn in London, came to the Black Country where he was to spend the rest of his long life. While at Edinburgh University he had become a close friend of Erasmus Darwin who like himself was studying medicine. Anna Seward, the petulant 'Swan of Lichfield', in her Life of Dr. Darwin mentions 'the ingenious Mr. Kier—then Captain Kier '—she or the printer could not spell his name correctly—as being one of Darwin's 'knot of philosophic friends'. Keir had visited Darwin at Lichfield before he left the army and it is probably due to the doctor's influence that he decided not to 'rent a coal and salt work in Scotland' but to seek his fortune in the Black Country.

The Stourbridge glassworks belonging to the family of Samuel Rogers, the banker poet, had come on to the market at about this time and by 1770 Keir had married and installed himself at Wordsley. For the next eight years he manufactured glass at the Rogers' old works at Holloway End and at the same time carried out experiments in the production of alkali. On this subject he exchanged ideas and information with his friends James Watt at Birmingham and Dr. Black the great Glasgow—and later

Edinburgh—chemist. The inspirer of this correspondence, as of so much other intellectual and social activity among the 'knot of philosophic friends', was Dr. William Small, the beloved Virginian professor, whom Benjamin Franklin had introduced to them. Small became one of Keir's closest friends and on his early and much lamented death it fell to Keir to write his panegyric. Keir was also acquainted with Franklin himself, whom he once characterised with great felicity as 'The illustrious Franklin, who stole fire from heaven (an allusion to his discovery of the lightning conductor), and with his politics shook the world, which still trembles with the stroke'.

Keir's experiments were so successful that he abandoned glass for alkali and by 1780 he was building a works for its production at Bloom-field Mill, Tipton. He had tried to persuade Watt to join him in the enterprise, but one whose inventive genius was not matched by business aptitude was in no state to extend his activities. Indeed, he and Boulton had already so overstretched themselves at Soho that they had briefly enlisted Keir's help in its management. There had even been a possibility of his joining them as a partner.

The Tipton alkali enterprise in which Keir had been joined from the beginning by a former army officer, Captain Alexander Blair of the 69th, whom he had met in Ireland, was a resounding success. Initially some of the output was sold to other manufacturers, but after some years it was entirely absorbed at the Tipton works in the production of soap. Keir and Blair also made lead compounds for the Stourbridge glass industry and for Josiah Wedgwood, another of Keir's philosophic friends.

The Tipton factory which was regarded by contemporaries as a technological marvel second only to Soho was powered both by water and steam, for which nine tons of coal a day were needed. In order to supply this, Keir and Blair, in partnership also with Dr. Playfair the Edinburgh geologist, sank a mine in 1794 at Tividale less than three miles from Bloomfield Mill. There is near this place today a bridge called 'Keir's (sic) Bridge' which perhaps owes its existence to the coal owner. The colliery seems to have been profitable and after the death or retirement of the original partners it was carried on by Blair's sons. Sir Rowland Hill, the founder of the penny post recalled that, when he was living at West Bromwich, he surveyed the Tividale workings at the request of Dr. Blair the eldest son.

On giving up active, though not apparently financial, participation in the affairs of the Stourbridge glassworks, Keir moved first to Winson Green then to Smethwick Grove and finally to Hill Top, West Bromwich in 1791. He lived first at a house called 'Finchpath Hall' which was opposite the junction of Hawkes Lane with Hill Top. In 1807 when Keir was staying with his partner, Blair, at Hilton Park near Wolverhampton, the Hall was burnt down and he went to live in a neighbouring farmhouse belonging to Edward Elwell a West Bromwich ironfounder.

In our age of specialization, demarcation and committees of experts it is hard to comprehend the range of attainment and activity of such a man as James Keir. A physician who could cure himself, an engineer who was not above being his own mechanic, a scientist who was also an industrialist and business man, an inventor and a manufacturer, a political pamphleteer and a biographer who could write passable verse, he was as Mrs. Willett reluctantly acknowledged in her History of West Bromwich 'a very clever man'. Indeed, one who was competent to judge, considered that he was 'the most brilliant and versatile of the Soho group'. This is no mean praise when we consider that the group included at various times Erasmus Darwin, poet, scientist, inventor and inspired physician; James Watt and Matthew Boulton. scientists, inventors, engineers and industrialists; Josiah Wedgwood, potter and scientist; Thomas Day, author of 'Sandford and Merton', whose biography Keir wrote; William Withering, physician and botanist; and Joseph Priestley, the universal genius. The Lunar Society, as the Soho Group was known, often met at Great Barr Hall the hospitable house of one of the members, the Quaker industrialist, Samuel Galton. His butler, with true butler's wit, dubbed them 'Lunaticks'. Doubtless he would have appreciated the irony of fate which has converted the domain over which he presided into a hospital for the mentally handicapped.

Urbane and witty in his conversation, just in his dealings, sage and practical in his advice, Keir's company and his help, which they knew would be promptly and freely given, were much sought by his friends in the Lunar Society. Dr. Priestley consulted him on his experiments and Dr. Darwin sent him a draft of his poem 'The Botanic Garden'. One of Keir's comments on this attributed perhaps out of tact to Mrs. Blair, may strike us now as too down to earth, especially for a 'Lunatick'. "Mrs. Blair

thinks you have sacrificed the philosopher to the poet when you speak of Montgolfier (the balloonist) 'Urge thy venturous flight high o'er the moon,' etc. Considering especially the poem as a philosophical (i.e. scientific) one, fancy ought not to fly quite so high." When Watt's son, Gregory, died, Keir wrote an elegy to comfort a bereaved father, and when Boulton died he wrote a memoir in response to a request from his son.

It was not only 'Lunaticks' who experienced Keir's kindness or enjoyed his company. Dr. Black, when regretting he was unable to contribute to Keir's chemical dictionary acknowledged that he was under a deep obligation probably for an 'ingenious little apparatus' Keir had sent him. If opportunities for seeing his friends in Scotland, like Black, Playfair and Roebuck the inventor of the carronade, must have been rare, his association with London savants was maintained by meetings in London and Birmingham. Immediately after his retirement from the army he became a member of a club which used to meet regularly at coffee houses in or near Soho (London), then the resort of philosophy rather than of pornography. Besides Keir the members included Sir Joseph Banks, the naturalist and explorer, John Hunter, the anatomist
whom Keir must have met at Edinburgh in his student days, Sir Charles Blagden, Secretary of the Royal Society, Captain Cook, Smeaton the designer of the Eddystone lighthouse, Maskelyne the astronomer and others. Keir introduced to them a fellow 'Lunatick', Richard Lovell Edgeworth the Irish inventor and father of Moira Edgeworth the novelist. They had met probably through Erasmus Darwin and became close friends. Edgeworth, who was a man of means, had Keir to stay with him for several months at his house near Maidenhead when he was writing a book.

Of Keir's achievements as a philosopher (the eighteenth century word for 'scientist '), chemist, metallurgist and inventor, there is no space here to do him justice. It may suffice to note that they were recognised when he was elected to the Royal Society in 1785 at the age of 50. By then he had published a paper on crystallization in glass and a treatise on 'Elastic Fluids or Gases' and he had translated Macquer's Dictionnaire de Chymie to which he, added notes on 'Trades and manufactures dependent on chemistry'. Later he was to publish papers on the solidification of sulphuric acid, on 'Indian Fossil Alkali' and on the 'Dissolution of Metals in Acids'. In 1789 he published the first and only part of his own Dictionary of Chemistry and nine years later he contributed to Shaw's Staffordshire a note on the 'Mineralogy of the South-West Part of Staffordshire'. More important than Keir's scientific writings were his discoveries and inventions. They included the process for producing alkali, an ink for a copying machine invented by Watt, a 'cylindric wick'd lamp', a 'strong and tough brass' similar to Muntz metal and an improved version of Savery's steam engine.

When Mrs. Willett wrote that Keir was 'a very clever man', she meant what she said. He was, in her view, no more and perhaps slightly less. She had referred to him in the previous sentence as 'a Mr. Keir', thus conveying to her readers Vicarage suspicion (her husband was Vicar of West Bromwich) not only of mere cleverness but, worse still, of cleverness tainted with infidelity. Fifty years after his death Keir was remembered as much for his political opinions as his scientific discoveries. Like many other very clever men—Wordsworth and Southey among them —he welcomed the French Revolution as the end of superstition and the harbinger of an age of enlightened liberty. To celebrate their expectations the very clever men of Birmingham gave on Bastille Day 1791 a dinner over which Keir presided. This was the occasion of the riots in which Priestley's and other radicals' houses were burnt by the mob. Of course what was good for the French was not necessarily good for the British and some months before the Birmingham riots Keir had written "Although our government may not be the best possible it is certainly too good to risk any public convulsion ", an attitude he shared with twentieth century very clever men who welcomed the Russian Revolution—for Russia.

As the French Revolution degenerated into terror, the military gained the ascendancy over the radical Keir and his pamphlet on The Martial Character of Nations appeared in 1793. In this he uttered a stern warning to his countrymen in whom he perceived a moral decline. "To expect patriotism" he wrote "in a people without morals is to expect that heavy bodies will ascend". Ten years later he again addressed the nation in a pamphlet entitled 'Reflections on the Invasion of Great Britain by the French Armies', in which he gave advice on the formation of a volunteer defence force.

The previous year Keir's wife had died and her daughter tells us that "she received the sacrament shedding many tears a few Sundays before her death, at West Bromwich Church". If Mrs. Willett had

known this, perhaps she would have felt more kindly towards poor Mr. Keir who was to live another eighteen years at West Bromwich. His daughter and only child had already married a Birmingham merchant of Swiss origin named John Lewis Moilliet and he lived alone with his servants in a state of semi-retirement and increasing ill health. With much leisure to reflect he wrote towards the end of his life, but did not publish, a poem in the form of a dialogue on the periods of human life. When his own was drawing to a close he sought consolation in the New Testament from which a servant read to him on his deathbed. When James Watt called him "A mighty chemist before the Lord" he was not speaking metaphorically. Keir died on 11 October 1820 and was buried beside his wife in West Bromwich churchyard.

Samuel Galton's daughter, Mary Anne, when recollecting the meetings of the 'Lunaticks' at Great Barr Hall wrote of James Keir as "the wit, the man of the world, the finished gentleman who gave life and animation to the party ". Maria Edgeworth was impressed by the calm philosophy with which her father's friend met the burning of his house. This was evident, she wrote, "in one of the most polite and kind letters I have ever read ". Sir Humphry Davy after meeting Keir called him "both an amiable and great man ". That this brilliant and most lovable of men should be relatively unknown even in the land of his successful and genial endeavours, the Black Country, is doubtless due to the lack of an adequate biography. Happily this may be remedied before long. Dr. J. L. Moilliet, one of Keir's great great great grandsons—to whom the author of this article is grateful for much generous help—and Mrs. Barbara Smith, a lecturer at Birmingham University have almost completed a life of Keir whose publication anyone interested in the Black Country will eagerly await.

Principal Sources

"Sketch of the Life of James Keir, Esq., F.R.S., with a selection from his correspondence." Privately printed 1868. The 'Sketch' consists of a memoir written by Keir's daughter, Amelia, in 1857, notes by Keir's partner's son, Dr. Blair, letters to and from Keir and his poem on the 'Periods of Human Life'. The volume was edited by Keir's great grandson, James Keir Moilliet. The article on Keir in the D.N.B. is based exclusively on it.

Four articles by J. L. Moilliet, B.A., Ph.D.,
formerly of I.C.I. viz:—

1.'James Keir of the Lunar Society', written jointly with Mrs. Barbara M. D. Smith. Notes and Records of The Royal Society of London, Vol. 22, Nos. 1 and 2, Sept. 1967.