

Up the Nile with Francis Frith

Francis H. Wenham, 1824-1908

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It is well-known that the Victorian photographer Francis Frith made three expeditions to the Middle East between 1856 and 1860. It is less well-known, but still fully documented (1), that on the first journey (from September 1856 to July 1857), which was to establish his reputation as a photographer, Frith took with him from England a little high-pressure steam launch for use as transportation up the Nile. It is completely unknown, as far as I can ascertain, that the inventor of this launch not only traveled with Frith to Egypt but was also a practicing photographer on the expedition. His name was Francis H. Wenham.

Frith wrote thousands of words about his adventures in the Middle East, and his scrawling pen covered scores of pages of original manuscript - yet nowhere does the name of Wenham appear. This is a strange omission indeed because it is quite clear that Wenham played a major role in the success of this expedition.

Francis Herbert Wenham was born in Kensington, then a separate town but now a district of west London, in 1824. He was the son of an army surgeon. As a boy he displayed a marked interest in, and aptitude for mechanical experiments and, at the age of seventeen, on the death of his father, entered a marine engineering firm at Bristol as pupil/apprentice, where he remained for five years. His first employment as a fully-fledged engineer was with the firm which had undertaken to forge the crankshaft of the steamship "Great Western," one of the earliest steam vessels to ply the Atlantic trade.

Parenthetically, it was during this mammoth engineering project that Wenham was introduced to James Nasmyth, who had been commissioned to install a steam hammer as a substitute for manual labor. Nasmyth was the inventor of the self-acting steam hammer which was pronounced to be

...one of the most perfect artificial machines, and one of the noblest triumphs of mind over matter that modern English engineers have yet developed. (2)

This introduction of Nasmyth to Wenham began a friendship which lasted until the death of Nasmyth forty years later. During this time Nasmyth took great interest in many of

Wenham's later inventions and, perhaps because of this friendship, was a strong advocate of photography, using the medium to illustrate his book The Moon. (3)

On leaving his employment in the Bristol shipyard, Frank Wenham began a series of experiments on high pressure steam tubular boilers for marine engines. The outcome was that he designed and built, on a backwater of the Thames, with the aid of two mechanics, a small steamer which incorporated his own improvements. The most radical of these was that the boiler operated at a pressure of 300 lb. per square inch instead of the average maximum of 60 lb. common at that time. The craft was also fitted with a greatly improved type of marine engine.

Sometime before September 1856, Frank Wenham - and his boat - were introduced to Francis Frith, who was preparing for his first photographic expedition to Egypt. It is pure speculation but it is possible that the two men made contact at a meeting of the Photographic Society of London. Although Wenham was not officially elected a member until 1858, he had been in attendance at the Society's meetings since its inception in 1853. In fact, he delivered a paper to the Society's members during its first year. (4)

Wenham and Frith decided to combine talents and energies on this expedition, and to take with them the small steam vessel. It says a great deal for Wenham's confidence in his craft that he himself, with one assistant, delivered the boat from its moorings to the embarkation port. They steamed along the Thames, down the Woking canal to the south coast port of Southampton, westwards along the English channel, and around Land's End and up the west coast of England to Liverpool. The small boat was then placed on board a Mediterranean steamer for its journey, with the photographers, to Alexandria and the mouth of the Nile. The small boat was then lowered from the deck of its mother ship and used as the living quarters for the photographers up to Wady Haifa and the second cataract, 800 miles up the Nile. No photographs were taken on the trip until this point. The photographers' first attempt at picture making was a view of the rock and river scenery above the second cataract. They pitched their small black darkroom tent on the sand and the interior temperature quickly rose to 114°. Wenham wrote:

The first bottle of collodion uncorked popped like ginger-beer and its contents bubbled on the plate. After ten seconds' exposure the developed picture was all in a fog, and filled with pinholes from sand dust. This caused us some apprehension as to ultimate success. (5)

The problem was alleviated by liberally watering the sand within and around the tent, and spreading a wetted white sheet over it. After the next exposure "of only four seconds" they succeeded in obtaining a satisfactory picture and thereafter "never had a

failure." (6) The photographers turned around at this point, and leisurely traveled downstream, making images of all the temples and other views along the river, towards their next stop, Cairo.

At this juncture it is important to reiterate that Francis Frith, in all his writings on Middle East travels, does not give full credit, or even acknowledge, the presence of Frank Wenham as colleague and partner. The albumen prints that were exhibited and sold from this expedition were only credited to Frith. Although it is undoubtedly true that Frith was the instigator of the trip, and was the more committed photographer, it seems decidedly odd that he would not have given Wenham his due. Frank Wenham's accounts of the trip make it clear that he considered himself a full working photographer and equal partner with Frith in the enterprise. Whereas Frith's accounts are all written in the first person singular, Wenham's all emphasize the plural "we." It is evident from Wenham's writings that he was responsible for the successful outcome of photographs that would otherwise have been impossible. One example will suffice. The photographers were anxious to obtain a picture of a piece of sculpture that was in a dark corner of a tomb, hidden from the entrance passage. The situation seemed hopeless.

... however, being desirous of obtaining a picture of it, Mr. Wenham was determined not to be baffled, and procured two looking-glasses, and stationing an assistant at the entrance with one of them, he directed a mass of the sun's rays along the passage, while receiving them upon the second mirror, he again changed the course of the rays, and being unable to illuminate the whole of the subject at once, by keeping the second mirror in constant motion, so as to paint the figures as it were with the light, a photograph was actually obtained. (7)

As an editorial in The British Journal of Photography remarked, albeit clumsily:

The voyage up the Nile...afforded plenty of opportunities for an inventive genius such as Mr. Wenham was. (8)

The same article continues that Frank Wenham often had to provide the food for the party, using his shotgun and rifle to bag "tough ducks and even curried young crocodiles."

After the return back to the mouth of the Nile, the photographic expedition was continued through Cairo, across the desert to the Jordan Valley and the Dead Sea, and on to Jerusalem, Damascus and Beirut. It was claimed, by both Wenham and Frith, that this expedition was the first to undertake a series of photographs of Egyptian tombs and

scenery by the wet collodion process and produced the first photographs to be publicly issued from collodion negatives. Both claims are debatable but the skill, tenacity and talent displayed by the photographers are not in question.

There is a postscript on the tale of the little steamship before this chapter of Wenham's life is complete. On the return of the steamer to Alexandria, the reigning Pasha (9) on hearing of the vessel's exploits and innovations, offered to purchase her - -provided that the craft was certified as safe and reliable by the Pasha's Scottish engineer, and provided that the door was enlarged sufficiently to allow the Pasha, an enormously stout man, to enter.

The second condition was more easily fulfilled than the first, for the 300 lb. pressure marine boiler was such an innovation at that time that great difficulty was found in convincing the engineer of its safety, which, however, was finally accomplished. (10)

Two months after their return to England a series of stereoscopic views taken on the expedition was displayed at the Liverpool Photographic Society, on the 22 September 1857. They were described as being taken by "Messrs. Frith and Wenham." (11) This was unusual; thereafter it was commonplace for the photographs to be credited to Frith alone. Francis Frith made two more expeditions to Egypt. His second began in November, only three months after his return to England, and ended in May 1858; his third began in the summer of 1859, when he reached the sixth cataract, over 1,500 miles from the Nile Delta, farther than any photographer had been before. Frank Wenham, as far as it is possible to ascertain, did not return to Egypt.

Instead, on his return to England, Frank Wenham was appointed director of the Panopticon of Science, an institution of popular recreation situated in Leicester Square, London. Unfortunately this enterprise was short-lived, due to disputes among the proprietors, and Wenham returned to engineering, in partnership with a colleague, at Battersea. During this time he designed a gas engine. Although this was the first of its kind in England, the patent was found to conflict with a prior engine and manufacture was discontinued. Terminating his partnership, Wenham entered business on his own, patenting a hot air engine, the design of which was in use for many years for pumping purposes. Still enamored with steam, Wenham invented a marine engine which utilized an auxiliary cylinder for superheating the steam. This was a great practical success and enabled steamers trading cotton between the southern states of American and the Clyde ports in Scotland to travel 20 miles per hour instead of the usual maximum of 15 miles per hour. In this way, the boats could run the blockades at the time of the American Civil War.

During the 1850s and 1860s, coincidentally with his engineering pursuits, Wenham was also engaged in photographic experiments, particularly in the fields of optics and microscopy. As early as 1853, "when only a beginner in the practical art of photography," (12) he had made life-size portraits on paper with a homemade sun enlarger. Although this remarkable achievement was duly noted in the transactions of the Photographic Society, at which he presented a paper on the subject, (13) within a few years the experiment had been forgotten. In 1859 two photographers, John Atkinson and David Woodward, were engaged in a heated controversy over who between them should be given exclusive patent rights to the solar camera, as the sun enlarger was called. It was necessary for the editor of The Photographic Journal, George Shadbolt, to remind both parties that there was not any novelty in the idea, and referred them (14) to Frank Wenham's experiments and paper of six years earlier. Indeed, Wenham himself opened the paper with a disclaimer of priority, remarking:

...I must disclaim all originality in the idea, as a nearly similar plan for enlarging photographs has been proposed, at a very early stage of the art; and indeed the method is so obvious and simple, that if anyone had desired to produce magnified impressions, a few experiments would have led them to the same mode of accomplishing it... (15)

The idea of enlarging small negatives had been suggested by William Henry Fox Talbot a year or two earlier, and the Rev. J.B. Reade produced photographs on white leather by aid of the solar *microscope* immediately after the introduction of the calotype process. However, these prior experiments do not detract from Wenham's work; in all likelihood he was the first to seriously make calotype paper enlargements from collodion negatives, as he himself claimed (16). By 1862 the production of life-size portraits was claimed by Antoine Claudet, Negretti and Zambra and Josef Albert (of Munich). The last named also claimed to have invented the idea - until rebuked by The British Journal of Photography: "As to the invention, it rests with our countryman and friend, Mr. F.H. Wenham." (17)

Meanwhile Frank Wenham was busy in another field: microscopy. (18) Many instruments and accessories were invented by him, and described in numerous papers read before the Microscopical Societies, including binocular microscopes and the idea of oil immersion objectives. For some time he occupied the position of vice-chairman of the Microscopical Society.

In 1870 Wenham withdrew from his engineering business and accepted the position of scientific adviser to the lens manufacturing firm of Ross and Co., on the death of

Thomas Ross. He remained in this capacity for about ten years, introducing many improvements in microscopes and photographic lenses. During this decade he introduced the Wenham Shadowless (downward burning) gas lamp, (19) which was a huge success, not only in England but also in Europe and America. He was also actively engaged in aeronautics and suggested fitting balloons with gyroscopes in order to obviate the basket's motion while attempting photography (20). During his position on the council of the Aeronautical Society he wrote many papers, particularly on the designs of aircraft based on photographs of the flight of birds. These ideas received high commendation, particularly in America.

In fact, a complete list of Frank Wenham's interests, involvements and inventions would more than tax the patience of the reader and fill the available space. In the early 1880s, finding his health somewhat shaken, and having a private income, Wenham retired to Woking, Surrey, where he devoted himself to mechanical experiments.

From here, he wrote scores of notes, letters and essays to the scientific and mechanical press. Apart from his continuing interest in the fields of photography, aeronautics, microscopy, lighting, lenses, and engines, he experimented with stereo-kinetoscopes in 1852 (21), over 40 years prior to Edison, suggested improvements in gas cylinders to prevent explosions (22), described how to make microphotographs (23), invented a player-piano (24), and adapted hair springs of glass to watches (25).

In short, as one eulogy exclaimed: "he is quite a genius in the handling of tools, and has done many things which professional mechanics would have considered impossible." (26)

Francis Herbert Wenham died of a heart attack on 11 August 1908, at the age of 85.

Notes and references:

1. Victorian Cameraman, by Bill Jay. Published by David and Charles, Newton Abbott, Devon. 1973.
2. Great Facts: A Popular History and Description of the Most Remarkable Inventions during the Present Century, by Frederick C. Bakewell. London, 1859. p. 229.
3. The Moon, by Nasmyth and Carpenter, was illustrated by both Heliotypes and Woodburytypes, from photographs of a model moon. The book is not dated [first edition, 1874].
4. "On a method of obtaining enlarged positive impressions from Transparent Collodion or Albumen Negatives, by means of the ordinary Photographic Camera," by F.H. Wenham. Delivered on Thursday 1 December 1853 and published in the Journal of the

- Photographic Society, No. 12, 21 December 1853, pp. 142-145.
5. "A Photographic Tour - Past and Present," by F.H. Wenham. The British Journal of Photography, 12 August 1898, p. 523.
 6. *Ibid.*, p. 524.
 7. The Liverpool and Manchester Photographic Journal, New Series. No. 8, Vol. II, 15 April 1858. Editorial.
 8. 21 August 1908, p. 641.
 9. Whose name was Mohammed Ali.
 10. The British Journal of Photography, 21 August 1908.
 11. The Liverpool and Manchester Photographic Journal. Vol. 1. New Series. 1857, p. 206.
 12. Journal of the Photographic Society, Vol. 1, No. 12. 21 December 1853, p. 145.
 13. On the 1 December 1853.
 14. "The Solar Camera," The Photographic Journal, 15 September 1859, p. 223.
Journal of the Photographic Society, Vol. 1, No. 12. 21 December 1853, p. 142.
"The Solar Camera," The Photographic Journal, 15 September 1859, p. 223.
 17. 1 March 1862, p. 91.
 18. This interest also developed early. In 1854, he read a paper entitled "On the application of photography to the delineation of microscopic objects" to the British Association for the Advancement of Science. See the Transactions of the Association for 1854, p. 116.
 19. An improvement in this lamp, in which the gas and air are heated before they come to the burner, so giving a whiter light. The lamp was described and illustrated in The Amateur Photographer, 27 February 1885, p. 328.
 20. The Photographic Journal, 15 April 1863, pp. 271-272.
 21. Letter to the English Mechanic, 1895. Reprinted in The British Journal of Photography, 14 June 1895, p. 380.
 22. American Amateur Photographer, Vol. VII. 1895, p. 259.
 23. English Mechanic, July 1900.
 24. The British Journal of Photography, 21 August 1908, p. 643.
 25. The Amateur Photographer, 20 July 1900, p. 42.
 26. *Ibid.*

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