

HISTORY  
OF THE  
COUNTY OF WESTMORELAND,  
PENNSYLVANIA,  
WITH  
BIOGRAPHICAL SKETCHES  
OF MANY OF ITS  
PIONEERS AND PROMINENT MEN.

EDITED BY  
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ILLUSTRATED.

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DR. DAVID ALTER.—Among those members of the medical profession of Westmoreland County who have earned high reputation in the walks of science, Dr. David Alter, who died in September, 1881, deserves to be mentioned. In our mention of him we avail ourselves of the graphic and affectionate memoir from the pen of Dr. Frank Cowan, a gentleman who

in the field of literature has done for his profession what Dr. Alter did in the field of practical science.

"In the year 1878," says Dr. Cowan, "I called upon him at his residence in Freeport, Armstrong Co., Pa., and found him, in appearance, an old man, with a calm and kindly countenance, in stature above the ordinary, albeit stooped and shrunken with age, still pursuing his profession, that of a physician, for a livelihood, while in effect he was the puzzle or sphinx that every philosopher must be to those around him who cannot appreciate the work of his hands in an objective form in the open day, much less encompass, in the depth, the distance, and the darkness of his windowless mind, the complexity of cerebration and entanglement of thought from which his work has been evolved.

"Dr. Alter was born on the 3d of December, in the year 1807, in Westmoreland County, Pennsylvania, in what is now Allegheny township, and within a few miles of the town of Freeport, in which he lived a great part of his life, and died, on the 18th of September last, in his seventy-fourth year.

"Dr. Alter was a boy of only eight or nine when his mind was directed to the study of electricity. This was the result of reading the life of Benjamin Franklin. At ten, an uncle, a student of medicine, brought home from Washington a Leyden jar and other apparatus, and the boy became acquainted with frictional electricity and the accumulation of the mysterious mode of force in the jar. And before the lad attained the age of fifteen he had set up in his father's orchard a pole surmounted by a wire, in order that he might charge his Leyden jars with electricity from the clouds, the subtle force with which he already had begun to make experiments.

"About this time, suffering from an affection of the eyes, he went to an Irish doctor in Freeport, who, after prescribing for him and learning the curious bent of his mind, lent him a book on electricity. This the young student read and re-read with such avidity that it almost cost him his eyes.

"Soon after, from another physician, he procured a work on chemistry, and devoted himself assiduously to make himself master of its contents. And thus he went on, borrowing books and accumulating knowledge slowly and laboriously, until, at the age of twenty-four, in the year 1831, he was graduated as a physician at the Reformed Medical College of the United States, New York, belonging to the botanic or eclectic school of to-day.

"After this short account of his boyhood and education in his specialties, Dr. Alter proceeded to give me an account of his labors and achievements.

"In 1836, while living at Elderton, Armstrong Co., he invented and perfected an electric telegraph, which consisted of seven wires, the electricity deflecting a needle on a disk at the extremity of each wire. Each needle being deflected to the right or left, the seven gave in all fourteen movements or characters, which

in turn by combination gave a greater number than was absolutely necessary to transmit messages resolved into letters and figures. Each wire had a separate helix. And so perfected was the system that the doctor had it in operation between his house and his workshop in the barn, himself and members of his family transmitting messages to and fro.

"I related to Dr. Alter what I had heard of his connection with the invention of the electric telegraph, which was in brief that he was the first to accomplish the results comprehended in the term an electric telegraph, and that Professor Morse had stolen the idea that has made him immortal from him, Dr. Alter. To this he replied that, as far as he knew, he was the first to perfect and put into use an electric telegraph, and that he did it apart from and independent of everybody. 'But,' he continued, 'others about the same time attained the same results. In 1837, in England, Professor Wheatstone invented a telegraph on a similar plan to mine, using one wire, a single disk, and a deflecting needle; and with respect to Professor Morse and the electric telegraph now in general use, I have seen in the newspapers time and again the statement which you make, and am free to say that it is without the slightest foundation; indeed, I may say that there is no connection at all between the telegraph of Morse and others and that of myself, and that my system would be inadequate to do the work that is done to-day by the Morse; oh, no, no! Professor Morse most probably never heard of me or my Elderton telegraph.'

"I was surprised at hearing this refutation of what I had heard asseverated so often; but at the same time I was pleased, for the doctor exhibited more anxiety to disabuse my mind of an erroneous impression of another than to create a favorable impression for himself. Indeed, with respect to his own electric telegraph, he spoke of it as if it had been a toy of his youth, or an ingenious plaything for the amusement of himself and family, rather than as the forerunner of the marvelous machine that is now in use in every civilized country of the globe. And although, as he himself states, his invention was not in the line of the ancestry of the great telegraph, yet it is worthy of honorable mention among men for all time as an original and prior achievement of a less.

"And here, in parenthesis, in justice further to Professor Morse, I may say that a claim for priority is made even for his invention, substantially and essentially as it now exists, over the crude and cumbersome inventions of Dr. Alter and Professor Wheatstone. In 'Appleton's Encyclopedia' it is stated authoritatively that Morse completed and put into successful operation his telegraph in 1835, or two years before the date generally assigned, and one year before Dr. Alter, while Dr. C. T. Jackson, Morse's most formidable rival, declares that his telegraph was an accomplished fact in a perfect instrument in operation in 1834, or one year before Morse.

"Now to pass to another invention, which, in other forms, in time may rival the telegraph and electric motor.

"In 1837, Dr. Alter invented a little machine which was run by electricity, and on the 29th of June, 1837, he published in the *Kittanning Gazette* an elaborate article on the use of electricity as a motive-power, under the heading of 'Facts Relating to Electro-Magnetism.' This paper attracted attention among scientists and inventors, and was commented on generally. See Silliman's 'Principles of Physics,' page 616.

"In 1845, Dr. Alter, in association with Dr. Edward Gillespie and James Gillespie, went into the manufacture of bromine from the bittern, or mother-liquor of the salt-works, by a process which he and his partners had invented and elaborated to such an extent that they secured two patents for it. A large jar of the precious substance was exhibited at the World's Fair in New York in 1853, and attracted great attention, the wonder being that the rare form of matter could be produced in such quantities.

"I beg leave here to correct another error that prevails with respect to the achievements of Dr. Alter, namely, that he was the discoverer of the elementary substance bromine. He was not, and never pretended to be. Bromine was discovered by a chemist named Balard in 1826, and Dr. Alter, in his modest way, only assisted others in inventing and patenting two processes for its manufacture, in which he engaged in business with his associates.

"I now come to the ultimatum attained by Dr. Alter in science and invention, namely, the discovery and application of the principles of the prism in that marvelous mode of investigation universally known to-day as spectrum analysis. And here, in setting forth his claim to this achievement, which in effect has added almost a new sense to mankind, beyond the statement which the doctor made to me that he made his discovery in 1853, I desire to give in evidence only that which is unimpeachable and indisputable, namely, the documents setting forth the discovery in detail, which were published in a leading scientific journal and spread before the eyes of investigators and inventors throughout the world. And in doing so I doubt not that I shall do all that my lamented friend, were he here, would ask or allow to preserve his name among his fellow-men, without condemning either the encyclopedists for ignoring him, or the distinguished scientist who, perhaps unconscious of the prior claim of another, wears the crown of glory to which he, Dr. Alter, is entitled.

"The first paper of Dr. Alter appeared in November in the year 1854, or no less than five years before the announcement of the discovery of spectrum analysis as his own achievement by Gustav Robert Kirchhoff, of Königsberg, Germany, for a sketch of whose life and works the reader is referred to the leading encyclopedias of the day.

"It appears in Silliman's *American Journal of Science and Art*, 2d Series, vol. xviii., for November, 1854, pp. 55-57, under the following head: 'Article VI.—On certain Physical Properties of Light, produced by the Combustion of different Metals in the Electric Spark refracted by a Prism. By David Alter, M.D., Freeport, Pa.'

"A second article appeared in the same scientific journal for May, 1855, vol. xix., pp. 213-14, under the caption, 'Article XXI.—On certain Physical Properties of the Light of the Electric Spark within certain Gases, as seen through a Prism. By Dr. Alter, M.D., Freeport, Pa.' In this explicit article a paragraph is found indicating the application of his discovery to the detection of the elements in combustion in shooting stars or luminous meteors, in other words, to the application of spectrum analysis to the study of celestial phenomena *ad infinitum*.

"While, in curious confirmation of the discoverer's comprehension of the scope of spectrum analysis still in his hands, Dr. Alter already had daguerre-typed the dark lines of the solar spectrums, two of which he sent along with his communication to Professor Silliman.

"It remains now but to show that the substance of these articles of Dr. Alter was reproduced in Europe, and came within the ken of Professor Kirchhoff, possibly beneath his very eyes, to make out a presumptive case that, in addition to the indisputable prior discovery of spectrum analysis by Dr. Alter, his was the source, afar in the backwoods of Western Pennsylvania, from which has flowed the stream of science on the surface of which the gilded galley of Kirchhoff has floated in glittering splendor around the world. A half-page abstract of Dr. Alter's first paper appeared in the *Chemico-Jahrsberichte* of Liebig and Kopp for 1854, while the second paper of Dr. Alter was reproduced in its entirety in the Parisian journal *L'Institut* for the year 1856, page 156, and in the journal of Geneva, *Archives of the Physical and Natural Sciences*, vol. xxix. page 151. In addition to this a full-page extract from the second paper was published in Kopp and Will's (formerly Liebig and Kopp's) 'Annual Report of Chemistry,' 1859, page 107, and in the extract the statement of Dr. Alter appears that gases would be characterized just as distinctly by the light of the ordinary electric spark as metals by the galvanic light, also that all the elements could be distinguished in this way by means of the fusion. In connection with which it is to be noted that in this year the announcement of the discovery of Kirchhoff was made, namely, the cause of Fraunhofer's lines in the solar spectrum. See 'Reports of the Academy of Berlin' for 1859, page 652; 'Poggen-dorf's Annals'; 'Dingler's Polytechnic Journal'; and Kopp and Will's 'Annual Report of Chemistry,' 1859, page 646.

"And here I cannot refrain from expressing my surprise at the omission of the name of Dr. Alter by

Professor Kirchhoff in his summary of the progressive steps of spectrum analysis to the ultimate attained at the time of his writing, seeing that the 'Annual Report of Chemistry,' which contained the proclamation of his discovery on page 643, contained on page 107 an extract exhibiting the results of Dr. Alter's investigations four and five years before, results, too, which clearly comprehended his own, and I can account for it only on the ground of dishonesty and the basest of all incentives to action or inaction, ingratitude, exhibited in kicking the ladder after the house-top is gained. But Kirchhoff, in the interest of self-glorification, happily is not the only recorder of the achievements of science and the history of mankind, and I doubt not that the time will soon come when the name of David Alter will be pronounced with the same breath of praise and pride that keeps alive and revered the names of Franklin and Morse.

"It is a little matter in comparison with the above, but it is curious, and perhaps not without its use, to know that the prism with which Dr. Alter made his remarkable experiments, was made by him from a fragment of a great mass of very brilliant glass found in the pot of a glass-house which had been destroyed in the great fire of Pittsburgh on the 10th of April, 1845. Thus remotely was the burning of Pittsburgh the solution of the combustion of the sun of the solar system, and of the otherwise incomprehensible conflagrations of more distant furnace spheres in illimitable space.

"Besides the achievements of Dr. Alter referred to above, he accomplished much more that is deserving of note. Of other inventions, I may mention here a rotating retort for the extraction of coal oil from cannel coal and the oleiferous shales. With this apparatus in operation by a company with ample capital, the philosopher was on the high road to making a fortune, when, presto! E. L. Drake, at the depth of only seventy feet, in Venango County, struck oil or petroleum, and the days of coal oil and Dr. Alter's affluence were at an end.

"Indeed, from his birth to his death, the life of Dr. Alter was a struggle with poverty; but in the greater mankind in which he was merged and with which he is now immortal, he is rich in the reward which his race inherits."