

Ireland, and so English oppressions there are traced to Cromwell and further through the ages. Lyon was a redemptioner, and a monograph on his class is inserted. The result from such a heap of heterogeneous patches is a crazy-quilt which could not be small.

But the three bubbles which are blown up into the biggest balloons—clouds like a man's hand which spread till they fill the firmament—are, first, four months in jail and a thousand-dollar fine for printing that the President's message was "bullying," and that "Congress, who ought to have sent him to a madhouse, were more servile to him than Parliament to King George"; then, the single vote, feeding fat his ancient grudge against Adams, which shut Burr out of the Presidency; and, lastly, the spitting which brought on a beating like that of Sumner by Brooks, and which for the first time turned the national capitol into a bear-garden. These matters are dwelt on *ad nauseam* throughout more than 200 pages. Allusions to them, seemingly viewed as veins of gold enriching the vulgar earth, pervade the volume. In respect to the altercation in Congress, the author "presents its most abhorred ingredient to the eye" as persistently as Bryan forced the shibboleth 16 to 1 upon his recalcitrant votaries. By an unfair comparison with the "Merchant of Venice," the biographer would also fain extenuate Lyon's meanness.

Several dark and grained spots on Lyon will not lose their tinct. As a military officer he was cashiered by a court-martial for deserting his post, and so was nicknamed Knight of the Wooden Sword. He would have been arrested on his way to Congress, but for his privilege as a member. When one of the Council of Safety, he was impeached and condemned for concealing his accounts concerning confiscated property. Our author becomes so zealous an advocate that in his eyes the deed of his client, whatever in itself, seems wisest, virtuous, discreetest. He writes well of Lyon's activities in founding towns on the frontier fringe of both Vermont and Kentucky. His research has left no corner untouched. In the suppressed lines of the letter he obtained from the writer of an abolition booklet in Kentucky, one wonders if Lyon was shown to have become himself no less a slaveholder than Randolph had been.

In Lyon's career as an opportunist, what strikes us most is that Adams's sedition law gave him a chance to pose among the noble army of martyrs, even while gaining his heart's desire in politics and a memorable name among champions of a free press. He was the "Hotspur," not the "Hampden of Congress." This phrase, borrowed from Waddy Thompson, and forming the alternate title of this biography, suggests many a contrast rather than one solitary similarity to the spotless English hero. A sort of greatness thrust on Lyon, chiefly by the tie in electoral votes for President, turned his head. One of his sayings, when falling out with Jefferson, was, "I made him, and, by the bulls that re-deemed me, I can unmake him!"

*Acetylene.* By Vivian B. Lewes. Westminster: Archibald Constable & Co.; New York: The Macmillan Co. 1900. 8vo, pp. xxviii+978.

If, not so very long ago, when French and German chemists were disputing as to whe-

ther acetylene was most economically prepared from the bromide of ethylene or by the imperfect combustion of a Bunsen burner, some *discuss de bonne aventure* had told them that within forty years the seventh handbook to be devoted exclusively to this subject would contain over a thousand pages and yet be rather too condensed than otherwise, they could have smiled at the absurdity of the prediction. Yet here it is; and it is incomparably the best upon its subject, and one of the most thorough, intelligent, and judicious digests that have ever been made of our knowledge of a single chemical product, in a narrow sense of that term, so as not to include water, iron, and such things. It is divided into three parts—the first, Scientific, occupying 170 pages; the second, Technical, 525 pages; the third, Legal and Miscellaneous; the rest in small print, in order to show that our praise of the work is well deserved, we may mention such of the defects which we have noticed in its scientific part as are not too technical for our columns.

Considering how important Professor Lewes's own work on the luminosity of flames has been, it is singular that he should fail to remark that Edmund Davy, the original discoverer of acetylene, noticed that the fact that its flame is brighter than that of olefiant gas is contrary to Henry's theory of the luminosity of flames. Neither does Professor Lewes call attention to Davy's not noticing any bad smell about the gas, which shows that he made it purer than it was ever made afterwards down to recent years.

Professor Lewes says: "In 1830 Torrey noticed in the gas mains of New York, which at that time were made of copper, the formation of a brown deposit which could be exploded by a blow or by heat, and which was probably the acetylene-copper compound." This does not do full justice to Dr. John Torrey. One of the workmen engaged in replacing the old copper pipes by iron ones, took up one of the old pipes, raised it to his mouth, and blew through it. Instantly, an explosion shattered his jaw, so that he died in a few hours. Some pieces of the pipe having been sent to Dr. Torrey for examination, he came to the conclusion (not stated by Lewes) that the brown explosive powder they contained was a compound of copper with some hydrocarbon, and he would have gone further had not Mr. Chilton claimed a prior right to investigate the problem without being able to advance towards its solution, himself, in any measure, great or small.

Prof. Lewes says that "during 1859 Boettger made some researches," etc. But in fact these researches were commenced in 1852, and were published in 1858 in the *Jahresbericht des physikalischen Vereins zu Frankfurt-am-Main*. And he not only "was of opinion" that the precipitate formed by leading lighting gas into an ammoniacal cuprous solution was "a compound of copper with a hydrocarbon," but he proved it, and proved further that the hydrocarbon in question was one not well known to chemists, and that it existed in small proportion in the illuminating gas.

The fact that Adolphe Perrot made acetylene in 1858 is not mentioned; but it was hardly worth mention, since he failed to recognize its true nature.

The first of Berthelot's researches is said by Prof. Lewes to have been published in 1860. In fact, a note by him on the subject appeared in *L'Institut* for 1859. This is worth

mention, because three days before Berthelot's first note was presented to the Académie des Sciences on April 30, 1860, Victor Sawitsch had shown that monobrom-ethylene treated with caustic alkali would give this new gas, as it was then understood to be, Davy's discovery having been forgotten. Lewes does not mention this paper of Sawitsch, nor does he mention that Baccolgio in 1860 detected acetylene in illuminating gas. Other facts not noticed are Vohl's method for preparing acetylene from American petroleum, proposed in 1865; Thénard's discovery of the conversion of acetylene into a horny substance by the silent electrical discharge; Coquillon's studies of the combustion of acetylene made in 1878. The question of how far acetylene is poisonous is fully discussed, though Hutton's observation that it does not act upon bacteria is omitted. The physiological action being treated under "Chemical Reactions of Acetylene," contrary to the general usage of chemists, it would have been well to refer to the discussion in the index under Acetylene, Physiological, and Poisonous, and not merely under Toxic. Nothing is said about the refrangibility of acetylene, investigated by Mascart in 1878, and shown by Brühl in 1887 to have an important bearing upon the problem of its chemical constitution. But this all-important problem is not attacked at all by Professor Lewes. For that reason the discussions of Paternò and Peratoner, in 1890, of the iodization of acetylene are passed over in silence.

Some of these faults are certainly to be regretted; but the fact that we can bring no more serious criticisms will be sufficient to show how admirably Professor Lewes has executed his task.

*The Story of John Adams: A New England Schoolmaster.* By M. E. B. and H. G. B. New York: Charles Scribner's Sons. 1900.

Thousands of young eyes have gazed with admiring awe on the fine portrait of which a photogravure makes the frontispiece of this book. It hangs in the great hall of Phillips Academy at Andover, and is an enduring proof of the existence of qualities in our Puritan ancestors that commanded respect and reverence. No erring boy could have looked into these steel-blue eyes without quailing; and we may judge from what is here told us that there was reason for trepidation on the part of all who deviated from the straight and narrow path. The records available for the construction of this story were meagre, but they have been skilfully used. The particulars of John Adams's life are not in themselves of deep interest, although it is certainly remarkable that, after many years of service as Principal of Phillips Academy, he should begin life again as a pioneer settler in Illinois. After he was seventy, he labored actively for twelve years, establishing during that time no less than three hundred and twenty-two Sunday-schools. The nine years of life that remained to him after retiring from active missionary service were spent in well-earned repose, under peaceful and happy conditions.

While there are many incidents here detailed that bring the life of our forefathers clearly before us, the conditions of society in Andover are most vividly presented. It is difficult to read of the grim severity of those days without a shudder. The physical pri-

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