and songs, inscriptions, tabulated summaries, and lineages are presented in a single series in which certain broad groupings of subject matter not typographically evident can nevertheless be distinguished. These cover successively the historical backgrounds; the history of Jefferson College and of the organization of the Redstone Presbytery; Dr. McMillan's parents and their family; his career; brief histories of the churches he served or helped to "collect"; genealogies and biographical sketches of his descendants; and McMillan anniversaries and family reunions.

Of the narratives in the sections devoted to Dr. McMillan and his times, some are drawn from or based upon such indispensable sources as Veech's Monongahela of Old, Doddridge's Notes, Joseph Smith's History of Jefferson College and Old Redstone, and histories of Washington and Allegheny counties; others are contributed; and a few bear the name or initials of the compiler. Two of the many documents and papers included are transcriptions of original papers of Dr. McMillan that are still preserved by one of his descendants: one is a journal recording the places where he preached from August, 1776, to July, 1791, and the other is one of his many sermons. A facsimile of a page of the latter manuscript, two portraits of Dr. McMillan, and other illustrations add greatly to the interest and value of the work.

This is not a book to be measured with an historiographic yardstick, and it would be graceless not to welcome it as an expression of the active lay interest in local history that historical and patriotic societies seek to arouse; as a work of reference to be used as a guide to or in conjunction with sources upon which it is based; as a mine of detailed information for those specially interested in various ramifications of the subject; and most of all, perhaps, as a comprehensive and presumably authentic McMillan genealogy.

Western Pennsylvania Historical Survey FRANKLIN F. HOLBROOK

Oliver Evans: A Chronicle of Early American Engineering. By GRE-VILLE BATHE and DOROTHY BATHE. (Philadelphia, Historical Society of Pennsylvania, 1935. xviii, 362 p. Illustrations, map.)

WHEN the Historical Society of Pennsylvania, after a lapse of forty years, considers a work of sufficient importance to warrant its publication, then one's curiosity is aroused. Although the officers and council of the historical society have waited a long time, it seems to this reviewer that they have chosen wisely in deciding to reënter the publication field. This is no ordinary volume. It is

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much more than a biography of Oliver Evans. The subtitle suggests that it is a chronicle of early American engineering, and that is precisely what it is. The authors have not only interpreted the technical and mechanical improvements that Oliver Evans and his contemporaries made in the field of applied science, but they have gone further. They have explained and recounted their actual achievements, the purposes back of these accomplishments, and something of the social and economic consequences that resulted.

Oliver Evans was born in 1755 in New Castle County, Delaware. At sixteen he was apprenticed to a wheelwright. Early in life he showed marked mechanical ability. In 1773, when only eighteen years old, he announced his idea of a steam carriage, and, so far as is known, he was the first in this country to do so. At twenty-eight he announced that he would build a flour mill that would take the grain from the wagon, elevate it to the mill, and carry it through all the operations necessary to manufacture it into flour, all without the use of manual labor. Within two years he had completed such a mill, and it was in operation.

Evans' greatest work, however, was with the steam engine. He, more than any other man, saw the great possibilities of this new power. To him the steam engine was a real, practicable possibility, not a plaything, a curiosity, or something to be feared. He was the first to abandon the Newcomen atmospheric steam engine and to apply high pressure. He was the first in America to move a vehicle on land under steam power. He was the first to attempt steam navigation on the lower Mississippi River. Before making this attempt in 1802 he had shipped his engine and boiler by water via Florida and the Gulf to New Orleans. In 1803 he was the only man in Philadelphia (perhaps the only one in the United States) who ran his machine shops by steam-driven power. The following year he put his high-pressure steam engine on the market. The same year he also entered into a contract with the Philadelphia board of health to build a steam dredge to scoop up the mud and refuse along the water fronts of the city. Scarcely a year passed but that Evans came forth with some new invention or an improvement on one of his earlier inventions. In 1806 he began to use bituminous coal for fuel in melting iron and other metals. By the use of air forced into the furnace he came within one step of achieving the famous Bessemer process of making steel.

Readers of this magazine will be interested in Evans' connection with Pittsburgh. Early in 1809 he sent his son, George Evans, twenty-four years old, to install his first steam flour mill in the region. In December of the same year Oliver Evans himself came out to attend the formal opening of the mill. This

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was a gala occasion in Pittsburgh's early history. It was witnessed by "a vast concourse of people... and proved the embryo of the prosperity and grandeur of the western world" (p. 162). The mill ground nineteen bushels of wheat per hour. In 1811 one of Evans' flour mills, powered by one of his high pressure steam engines, was built at Marietta, Ohio. In 1815 the Pittsburgh Steam Engine Company, an Evans company, announced that it was able to build steam engines and could supply all kinds of mechanical articles. The company was provided with an anvil and an anchor foundry; a brass foundry; a pattern maker's shop; a boring and turner's shop; a screw-making machine; a butthinge factory, and other special equipment. The following year the first steam paper mill, equipped with Evans' improved Columbian engine, was opened in Pittsburgh. During the same year the steamboat "Oliver Evans," built in Pittsburgh, left for New Orleans loaded with passengers and freight.

Oliver Evans was not only an inventor, but an author as well. He worked for years upon a volume, *The Young Mill-wright and Miller's Guide* (Philadelphia, 1795). In 1794, upon completing it, he appealed to the Pennsylvania legislature for money to enable him to publish it. The legislature refused, giving as a reason the fact that the state needed all its funds to suppress an uprising (the Whiskey Insurrection) in the western part of the state. Evans finally succeeded, however, in interesting one John Nicholson of Philadelphia, who aided him in publishing his volume. The book went through fifteen editions between 1795 and 1860 and became an indispensable manual for millers.

Evans was indeed a versatile man. He was inventor, author, merchant, broker, and commission man. When he died on April 15, 1819, the *Pittsburgh Gazette* declared that his name would "be remembered by a nation's gratitude, when the comparatively insignificant herd of metaphysicians and conquerors shall have passed into total oblivion" (p. 273).

University of Pittsburgh

JOHN W. OLIVER

George Washington Traveled This Way. Personalized Visits to the Washington Country. By FRED L. HOLMES, author of Abraham Lincoln Traveled This Way. Foreword by Glenn Frank, president of the University of Wisconsin. (Boston, L. C. Page & Company, ¢1935. xviii, 288 p. Illustrations, maps.)

MR. HOLMES approaches his task of producing a Baedeker of the travels of George Washington with a nonchalance that one feels would not have been