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“THE PAPERMAKING TOWN”

by Andrew H. Wilson

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THE CEDARGROVE SERIES OF
DISCOURSES, MEMOIRS AND ESSAYS

#77/2024

THE PAPERMAKING TOWN

by Andrew H. Wilson

December 2024

Abstract

The town in question is Penicuik, in Scotland, where I grew up. Roadside signs at its main highway entrances for many years stated that it was *THE PAPERMAKING TOWN!*

This present paper records the histories of the town's/burgh's papermills (Valleyfield, Esk Mills and Dalmore). All three were located on the North Esk River which, over the years, they polluted badly, causing legal and business problems that were not solved before paper production ended, in the early 2000s. Technically speaking, Valleyfield was the only mill in the *town* of Penicuik. Esk Mills was in the 'suburb,' or village, of Kirkhill, and Dalmore was in the down-river 'suburb', or village, of Auchendinny. Information is given on the three mills individually, and collectively, preceded by some relevant background information.

There are a few general illustrations.

About the Series

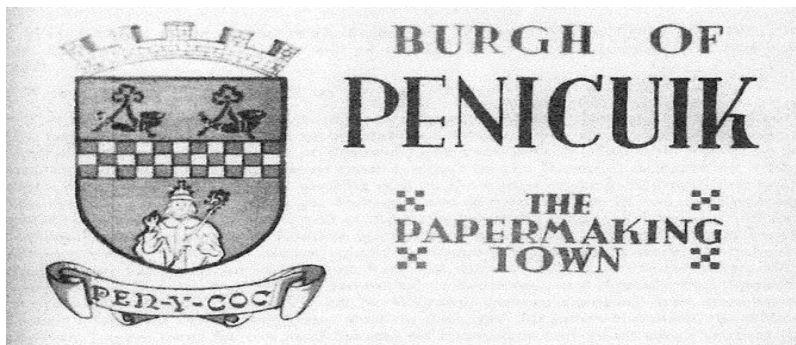
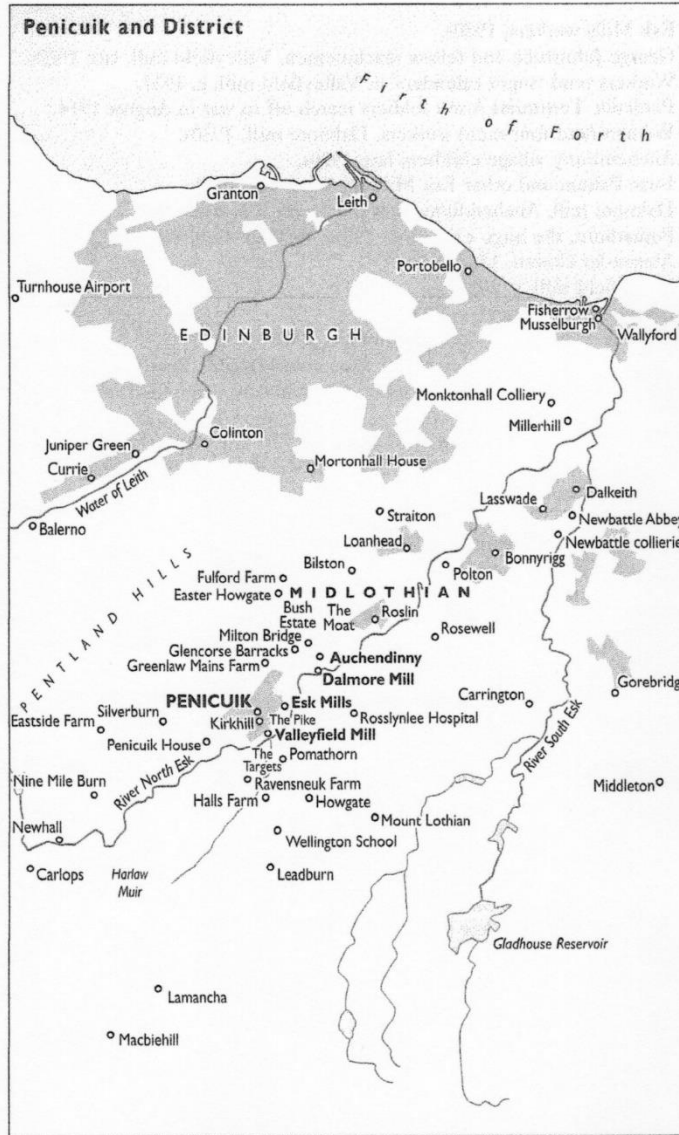
Principally, the Cedargrove Series is intended to preserve some of the research, writings and oral presentations that the author has completed over the past half-century or so, but has not yet published.

About the Author

He is a graduate in mechanical engineering (1949) and the liberal arts (1954). Now in his mid-nineties, he has held technical and administrative positions in industry in the United Kingdom and technical, administrative, research and management positions in the Public Service of Canada, from which he retired in 1986.

He became actively interested in the history of engineering on his appointment to chair the first History Committee of the Canadian Society for Mechanical Engineering (CSME) in 1975 (now almost 50 years ago). He was later president of CSME and of its 'parent' the Engineering Institute of Canada (EIC). He also chaired the CCPE's Canadian Engineering Manpower Council (CEMC), the Canadian Association for the Club of Rome (CACOR), and the History Committees of both CSME and EIC.

MAP OF PENICUIK AND DISTRICT



Some background...

Penicuik, (pronounced 'Pennycook'; originally 'pen-y-coq,' hill of the cuckoo) around 1945, when I last lived there, was a town/burgh of around 4,500 people, situated in the County of Midlothian about nine miles due south of Edinburgh, Scotland's Capital, and about half-way between Edinburgh and the town of Peebles, a hub in Scotland's Border country. The town lay somewhere around 600 feet above sea level. Signs alongside the main roads into it, around this time, proclaimed it as *Penicuik the Papermaking Town*. These signs were removed by local Government order around 1975.

Penicuik originally had three papermills: Valleyfield, right in town, Esk Mill, at Kirkhill on the north-eastern edge of it, and Dalmore, at Auchendinny, about a mile further north, along the North Esk River, although the latter two have been associated with it as 'suburbs' and as separate from the town itself. All three found their main water supplies for power and processing in springs, wells and burns and in the North Esk River, which flowed on the town's eastern boundary and which, for many years, the mills polluted and made smell, as the mills washed and bleached the cotton and linen rags, esparto grass or wood pulp or whatever for the paper that they made.

My family had a hardware, grocery and feed store business in the town. The management of at least one of the local papermakers did business with us, as did quite a number of its employees. As it happened, the feed business had closed down by the 1950s, but the rest of it not until around the turn of the century.

The three principal sources for this paper have been *The Annals of Penicuik, A History of the Parish and the Village*, by John J. Wilson, (a great-uncle), first privately published by the author in 1891, and republished in 1985 by SPA Books, Stevenage, England; *Through the Mill: Personal recollections by veteran men and women Penicuik Paper Mill Workers*, by Ian MacDougall, Scottish Working People's History Trust, 2009; and miscellaneous sources, found through the Internet. They are listed below.

The first paragraphs of Wilson's 1891 book set the scene as far as the town is concerned:

Few parishes in the Lowlands of Scotland afford scantier materials for the pen of the historian than that of Penicuik. Situated so near to the metropolis of Scotland, it might naturally be expected that it would have been the scene of many stirring events in Scottish story; but such records are sought for in vain.

It lay away from the usual paths of invading armies, and it possessed no rich churches or monasteries to tempt the sacrilegious towards it for plunder...

Penicuik had, however, changed by the 21st century. With the mills gone, major employment was offered by the city of Edinburgh, only a short bus- or car-ride away. So, while the mills disappeared, Penicuik grew in the postwar years to become a dormitory for the city-employed. Its population is now (2024) in excess of 10,000. What were once farms surrounding the town, have become its new suburbs.

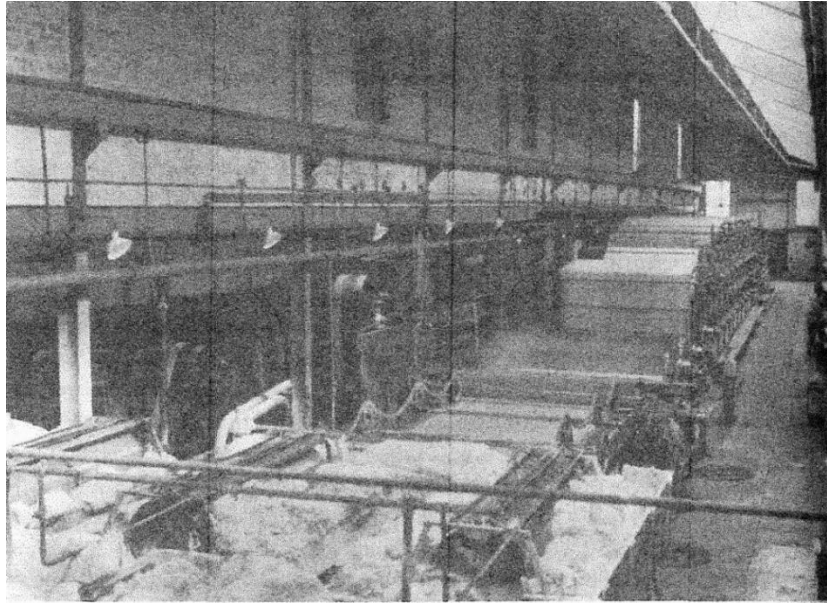
For the record, according to J.J. Wilson, the first trustworthy plan of the Village of Penicuik dates from 1796. It encompassed several streets around what was then, and still is, the High Street. The present Bridge Street existed between the High Street and the North Esk River, a half mile to the south. Part way down, on the left, was the turnoff to Valleyfield mill. The direct road from the river, south to Peebles, was not opened until the early 19th century. Until then, the two 'main' roads between Edinburgh and Peebles bypassed Penicuik, some way on either side of it. In these early days, also, the main road to Edinburgh from Penicuik passed through Kirkhill, to its north.

Also for the record is some information on the making of paper as it was during the lifetimes of the Penicuik mills. Hand-made paper, made one sheet at a time, was the rule until the installation of the *Fourdrinier* and *Dickenson*, the first practical machines in 1807 and 1809, as the result of which, initially, a week's hand production could be made in a day. There were three main parts to the process: the pre-machine preparation of the raw materials, the progress of the raw material through the long machines, which had a wet end and a dry end, and the post-machine finishing, checking and packaging of the product.

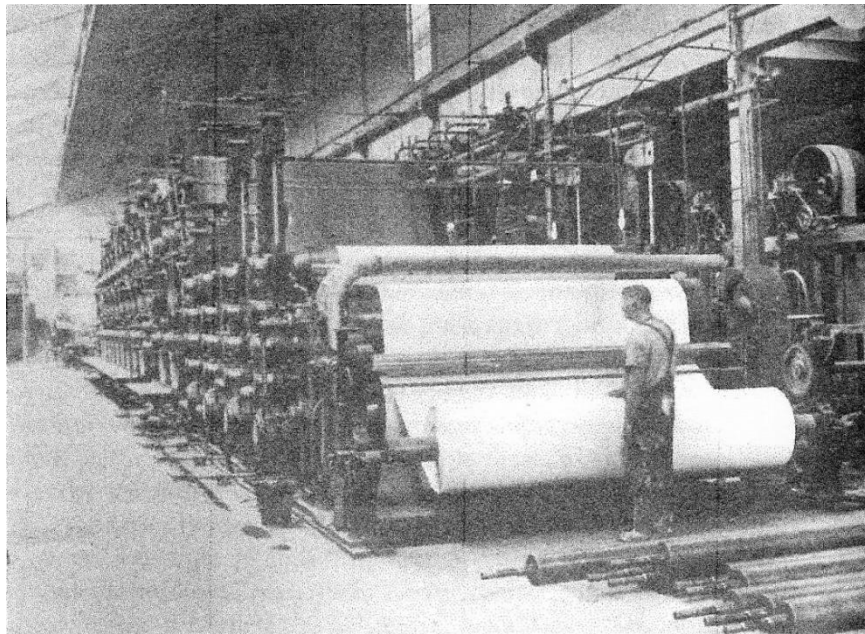
The basic materials were cotton and linen (but not wool) rags from local sources, including Edinburgh, esparto grass from North Africa (not always available), wood pulp (some of it from Canada), waste paper, and de-inked recovered paper, again from local sources. Machines called potchers and beaters were used, with water and chemicals such as caustic soda, to break down the raw materials, align the fibres, and produce a 'porridge-like' suspension of cellulose fibres for the type of paper that was being made. It could then be pumped to a continuous wire screen at the wet end of the main machine. The 'porridge' then travelled the length of the machine, was mixed with more chemicals and other materials, again to create the kind of paper required and, at the same time, was being pressed, dried, formed and collected at the dry end of the machine as rolls of paper product. Then followed the calendering process (a series of heated rollers), by which the surface properties of the roll were improved. If needed, the paper could then be coated on one or both sides in a special machine to enhance its properties for special uses. (By 1875, for example, coated paper was being made for use in halftones and the photoengraving process.) The paper was then dried prior to cutting to size, inspecting (overhauling), packaging and shipping. The operatives for this process were men, except for overhauling, which was done (on piecework) by women, and except during World War II, when some of the men were called-up.

Also, there were *two* engineering companies named *Bertram* in Edinburgh that served the Penicuik mills: one was W. & G. Bertram Ltd., of the Sciennes, founded in 1821 to manufacture papermaking machines. It closed in 1985. The other was James Bertram & Sons Ltd., of Leith Walk, established in 1845 by the third Bertram brother, to make 'machines.' It closed in 1975.

It should be noted that, in Scotland, *engineering* during the later years covered by this paper was a trade as well as a profession. It was one of three main trades in the Penicuik papermills, along with electricians and joiners, and was based on apprenticeships lasting at least five years. Some former apprentices spent their working lives 'getting their hands and coveralls dirty,' working basically as fitters and/or turners.



Wet end of the Valleyfield #2 machine



Dry end of the same machine

