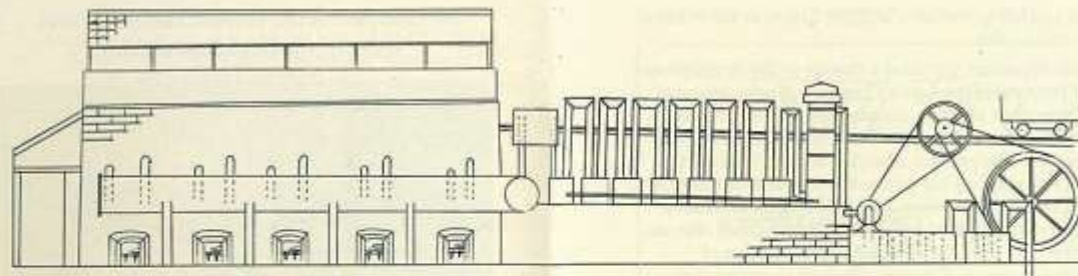


A nineteenth century attempt to exploit the vast peatlands of Lewis

THE LEWIS CHEMICAL WORKS

Dr Ali Whiteford

There is no charge for this leaflet but you are invited to make a contribution to the R.N.L.I. Donations can be made via the website www.rnli.org.uk, at the local R.N.L.I. Shop/station, collecting tins or via the author.



In 1842 James Matheson returned from the Far East where, along with his business partner William Jardine, he had amassed a vast fortune. Two years later when Matheson purchased the Isle of Lewis he had two objectives in mind: one was the improvement of the living conditions of the inhabitants after the disastrous potato famine and the second was to develop and exploit the abundant natural resources of the island. Matheson was keen on science and was enthusiastic about new ideas. So when an employee named Henry Caunter, who was a keen amateur scientist, started carrying out experiments on the distillation of peat which showed commercial promise, Matheson financed the venture. The Lewis Chemical Works was created in 1857 and ran as a commercial enterprise until 1875.

In the process peat was cut, dried and then distilled. To distil peat it is heated but without air so that it does not burn; instead it undergoes a chemical reaction and changes to produce various substances, the main ones being a thick tar, a watery liquid, an inflammable gas and a solid coke-like residue. At the time, distillation was an important process for the production of useful substances. Many substances were distilled, principally coal which produced creosote for treating wood used in the expanding railway industry; paraffin as a replacement for animal oil for lamps; and wax for candles.

Henry Caunter's first experiments were carried out next to an ornamental fish pond near Lewis Castle. Tar was produced but fish were killed and the works were moved outside the castle grounds near to the Creed Lodge. A canal was built to transport peat to the works and about half a ton of tar was produced in two years. Caunter had little practical skill and so, in 1859, Dr. Benjamin Horatio Paul was appointed as chemist in charge of the chemical works, to design and construct an operational works on a commercial scale with the principal aim of producing

paraffin. He redesigned Caunter's works and moved them 100 yards south to afford easier access to the peat banks which were connected to the works by 3 miles of tramway.

Initial trials were a failure as a result of poor kiln and condenser design and alterations were made. Paul had been involved in the development of the Irish Peat Co. in the 1840s, one of the first commercial schemes designed to produce paraffin from peat. His design for the Lewis works bore great similarity to that of the Irish works yet, curiously, he omitted all-important safety valves which lead to a large explosion which, luckily, produced no fatalities. Paul sought help and redesigned the condensers and draughting and by the autumn of 1861 the results were encouraging.

The works were not very environmentally friendly! Major problems occurred with pollution of the river Creed by the watery liquid produced in the process which killed salmon fry in this important fishing river. The prevailing winds blew the obnoxious gases produced by the process over the nearby town of Stornoway and the operating of the process was extremely hazardous to the health of the workmen who were regularly overcome by fumes when charging the kilns. In time the watery liquid was disposed of in a controlled way although a large proportion was used to produce fertiliser for the development of the grounds of Lewis castle. The problem of the smelly exhaust gas was solved when an accident led to the discovery that the gas burned. It was then used as a source of heat to raise steam and to help keep the kilns hot.

There were ready markets for the crude tar: in Glasgow as a heavy lubricant for axles and in Liverpool as an anti-fouling agent for ships hulls. Henry Caunter took out patents for these uses in 1863 and 1864. In the 1850s, James Young had started producing paraffin oil for lighting from shale mined in the Lothians. By 1861,