



A & R Tod's Steam Mills before the 1874 explosion



The flour mills of East Scotland: Part two

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As the National Convention in 1902 took place in Edinburgh (see my article in last month's *Milling & Grain*), the local mills and their owners attracted a lot of attention. I am therefore moving on from the mills of Fife to those in Edinburgh and Leith, a short distance north of the capital city. Over half of the local reception committee came from the two main milling families of the area, the Tods and the Herdmans.

Leith Flour Mills: Messrs A&R Tod Ltd

In 1851, Robert Tod entered into partnership with his brother Alexander as corn merchants. After a year or two they leased several small mills and in 1859 they built the Leith Flour Mills.

For many years these were the largest mills in the country, having at one time 80 pairs of millstones in operation, more

than any other mill in Scotland. The mills suffered a flour dust explosion in 1874 in the stove room situated above the boiler house and, sadly, six people lost their lives in the fire.

Alexander then retired and Robert carried on the business, converting it into a private limited company in 1894 with himself as chairman until his death in 1897 and his sons Thomas and George as managing directors.

The mill was reconstructed, divided into separate blocks as a safeguard against the spread of fire. The walls were all of solid stone and the floors concrete. In 1882, roller mills were installed and two years later a flour dust explosion blew apart an outside wall with the debris killing two people in the street.

The capacity of the mill was 45 sacks-per-hour and it was arranged in three plants, one used for soft and two for hard wheats.

A & R Tod's Leith Mills in 1902



Robinson's 'Humphrey' elevator for operatives



Ruins of the stive room and boiler house after the 1874 explosion



John Herdman & Sons' Haymarket Flour Mills, Edinburgh

Plants one and three together had 70 sets of roller mills, many of which were doubles, and 13 were of the Turner's latest pattern, all fitted recently.

Both plants had only been installed since the turn of the century and were driven by Douglas & Grant engines. The mill manager had full charge of the mills and had been with the firm for 31 years; it was suggested that it would have been possible to run the mill, bar accident, for a year without stopping, although Mr Tod had it rested every Sunday.

The dressing, dusting and grading machinery consisted of 16 Robinson large size iron frame centrifugals, and 12 other makes. There were also five large oblong 'Haggenmacher' plansifters, nine reels and eight sifters each about 10 ft x 18 inches.

Invented in 1888 by Hungarian miller Carl Haggenmacher, the sifter was a productive innovation that avoided the excessive gyration found in earlier designs and produced more grain from a single bushel than previous sifters. The break rolls and some of

the reductions were connected to fans for cooling purposes, and cyclones were used for dust collection.

Plant two was for grinding hard wheat and its roller surface was spread over 30 mills. The five breaks had a large share of the surface and worked well. The purifiers, 12 in number, were double machines; five were Higginbottom's 'Victoria' dustless pattern.

The dressing was done on Robinson's centrifugals, and the grading and dusting on sieves and reels. The power for driving plant two was a converted beam engine with Corliss valves and jet condenser. The roof of the plant was flat with a large tank over one end.

One of the staircase towers rose above the roof surmounted by a high-pressure water tank, beneath which was a well stocked pigeon-cote. The wheat and flour stores were capable of storing a vast quantity, but the flour was not long in the store as demand was high, as their A, B and C hard wheat flour were difficult for competitors to equal.



Mr John Herdman



Messrs James and J Herbert Herdman



Advert from 1900 for the Higginbottom 'Victoria' dustless purifier

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AUTOMATIC 'VICTORIA' DUST-COLLECTOR
 WITH
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Accepted by the Fire Insurance Companies INSIDE Flour Mills FREE OF CHARGE.

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Haymarket Mills, Edinburgh: Messrs John Herdman & Sons

John Herdman ran a watermill at Ford in the heart of Midlothian for over fifty years. The mill was passed to his son George and then to his two grandsons, John and James. Shortly after they took over, they purchased the Haymarket Mills.

They were widely recognised as skilful millers and their commercial expertise established a reputation for high-class stone-ground flour. By 1884, they had moved from working a combination of rolls and stones over many years to complete adoption of the roller system. In 1902 Robinsons had installed a new, enlarged roller mill system comprising two separate large capacity plants, one for hard wheat and one for soft wheat.

The basement for the hard wheat plant was arranged with five-line shafts for driving five lines of double roller mills on the floor above. Ten of these were of the Robinson new patent diagonal type, which had fast rolls, three inches greater in diameter than the slow.

This method caused the fast rolls to work nearly as cool as the slow; the greater area of metal absorbing any warmth generated by friction on the feeds. This equality in temperature of both rolls assisted in grinding and explained why Robinson's new diagonal rolls were much favoured at the time by millers.


The soft wheat plant, still in the course of erection in 1902, would consist of five double Robinson diagonal roller mills, two double Koh-i-Nor purifiers, eight single 'Rochdale' centrifugals along with reels and sifters.

The scalping of two of the four breaks would be done on Robinson rotary sieves and the third and fourth on reels and centrifugals. In the cleaning plant, a great improvement over the older forms of dryer was to be the 'Rochdale' dryer and cooler with the hot and dusty air conducted by tubes and fans to a settling receptacle instead of being allowed to enter the room.


A feature of this mill was the "Humphrey" passenger elevator, running from the basement to the top floor. It provided an endless band with projecting ledges for a passenger to stand on, enabling three men to ascend at the same time.

The whole premises were surrounded by railway sidings, those on one side for the wheat trucks, which having emptied their cargo into the wheat receiving house, would be passed around the mill to the loading stages where they would be filled with flour and offals.

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