This article has a peculiar poignancy considering it was written just five years before the mill was finally shut down.

"GIVE HER THE MIST, JIMMY!"

by J. G. Gibb, Maintenance Manager - 1963.

The Scottish Cotton Mills were among the first ventures of James Finlay & Co., Limited and still, after over 160 years, remain a central British interest. Their fortunes have fluctuated; cotton is an industry peculiarly sensitive to political and international pressures, but the Mills provided the springboard for all the ventures of Kirkman Finlay and his successors. The trading in America and Europe and later to India was all undertaken primarily to provide an outlet for the busy Mills, or to acquire raw cotton. The following article on Catrine Mill brings out the strong family sense of belonging to a community which characterises both Deanston in Perthshire and Catrine in Ayrshire.

Workshops and stables with the author, James G. Gibb in the foreground. The works school was formerly held in the top flat on the left. The aqueduct which carried the water for the wheels is just visible, right, behind the roof.

First a background of facts; in 1786 one Claude Alexander returned from India with a reasonable fortune to invest. He went into partnership with David Dale and began building on his property in Catrine. His first Mill was demolished only this year. Powered by water, aided later by steam and by electricity privately generated, gas-lit before the streets of London or Glasgow were, with welfare provisions such as free schooling and wages paid in times of unemployment, Catrine has been in the forefront of Scottish industry and today continues a steady production of high quality household lines. The Cotton Works now consist of the Spinning and Weaving Block, built in 1950 on the site of the 1790 Weft Mill. The plans were drawn up in the worst war years, 1942 and 1943, when thoughts of building on such a scale were a bold gesture of confidence in the future not only of cotton, but of the country itself. Nearby, the Bleaching and Finishing Works operated. They were originally built by Archibald Buchanan, Messrs. Finlay's cousin and Kirkman's brother-in-law. He was that bold inventive lad who had been Arkwright's favourite apprentice and who had begun to manage Deanston Mill when he was 16 years old, moving to Catrine when it was acquired by Kirkman Finlay in 1801. He devised much of his own machinery, including an indoor bleaching system much more economical and reliable than the previous haphazard exposure to a doubtful Scottish sun. The Bleaching and Finishing Works were extended in 1935 and handle Deanston's output also. Among the complex and updated plant it is interesting to note that caustic was, until very recently, pumped through hollowed-out logs as it was in Buchanan's day according to the old pattern—nothing more suitable had been evolved.

Since Finlays acquired Shields of Perth, to form the Finlay-Shields organisation, there has been a noteworthy increase in the colour-range and in the variety the designs made. In particular many of the table cloths, napkins and place mats have been accepted by the Council of Industrial Design and in 1958 received the coveted Design of the Year Award, and are much used in modern settings all over the world.

The mills were built by Claude Alexander of Ballochmyle and David Dale of Glasgow in 1786. Two mills were built, one to provide warp yarn and one weft yarn for hand loom weavers. Archibald Buchanan, with his brother, started the task of providing power to drive machinery in the mills. He built the dam and reservoirs and brought the water to wooden water wheels at the end of each building in 1827. The aqueduct which carried the water to the twist mill is still standing. The Twist Mill stood at the top of Mill Street facing west, it was five storeys with attics, fifty yards long by nine yards wide and built of local sandstone. In those early days any heating would be by open fires as the chimney heads still showed at each end of the building. The main central staircase had an office in each stair landing and a fireplace in each office.

In the manager's office there were two clocks side by side, one an ordinary pendulum clock and the other driven by the works shafting. It was this latter clock, whose speed was dependent upon the water flow, which regulated the working hours in early days.

Drinking water was carried from a natural spring which ran from the hill behind the mechanics' shop. Cans of water were carried to each flat. Lighting was by open flame oil lamps until the advent of coal gas when a gas producing plant was installed which provided light for the two mills. These gas works were erected in 1814 by James Finlay & Co., Limited, four years before the City of Glasgow had any.

The only sanitary arrangements, until the sewage system was installed in Catrine, were small compartments on each floor at the end of the building. An open pipe connected to a larger pipe going up through all the compartments and on ground level discharged into a barrow. This barrow had iron wheels and was taken away by the night watchman and tipped on the river bank. This was always done in the night time and the tenants in the houses used to hear the rattle of the barrow wheels on the cobble stones and hoped they were not downwind of it!

Above the main entrance was the mill bell which rang to start and stop the mills, it was also used for village timekeeping, being rung at stated times in the evening. On Sundays it rang for Church services. After the First World War, it was rung for the two minutes silence, observed at eleven o'clock on Armistice Day.

Apprentices on the maintenance staff were given the job of tolling the bell every ten seconds, by hand, on the belfry roof. November 11th, 1927, was a very cold frosty morning. One apprentice was up in the bell with a hammer, another one kept the watch, while another signalled when the tolling was to start. The first peal made on the bell did not sound right, so, with cries of "hit it harder" the lower apprentices encouraged the top lad for the next peal, but although he had cleaned the bell and polished his hammer head, the next peal was right 'cracked'. In fact the bell *had* cracked, probably the unusual striking with the very cold morning had caused the metal to fracture. The apprentices were not allowed to forget this incident for a long time. The bell now bears the inscription "Catrine Cotton Works, (Twist Mill built 1787; Bell cast 1788. Recast 1928)".

The ancillary buildings alongside the mill included the iron and brass foundries set up by the Buchanan brothers make the mill machinery on the spot. Most of the original gearing was made of wood.

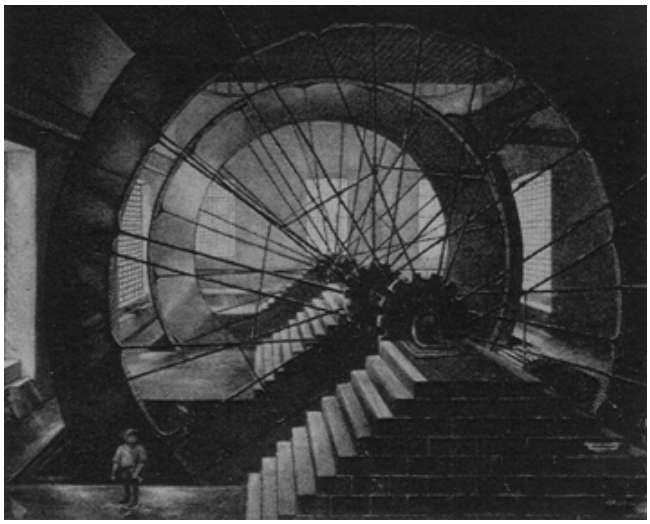
It was always the rule that nuts when taken off bolts were kept very carefully and always replaced on the bolts they came off. This was because in those days no standards were worked to. The tools to make these threads had all to be made in the Mechanics' Shops and were not standard sizes. The older men used to talk of "Big Rat", "Wee Rat", "Big Mouse" and "Wee Mouse", these were the terms used for certain sizes of nuts still in use since the very early days.

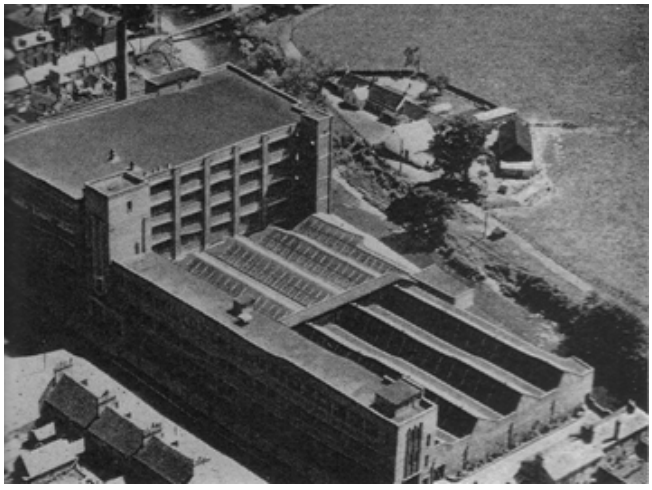
These buildings also included the "Transport Section" —rows of stabling for fine cart horses that took the cotton to Paisley for despatch and brought coal in and, on the top flat, the first school in Catrine. This was the Works school and young people up to the age of eleven went half day to school and half day to

work (the writer's grandmother amongst them).

The old Weft Mill stood on the site of the present new building. It ran from North to South and was of the same size and construction as the Twist Mill. At the Mill Street end was a separate building which housed the first wooden water wheels used to drive this mill. The water from these first wooden wheels was taken away in an open lade or waterway down the centre of the street. In 1826 Sir William Fairbairn was commissioned to build new wheels at Catrine. He designed a building with four wheels, two to be built at that time and two at a later date. The wheels were of iron and were fifty feet in diameter by ten feet wide, running at one and a half revolutions per minute developing two hundred and fifty horse power (500 H.P. nominal). This was the first time power had been concentrated in one house and distributed by shafting. The original intention to build four wheels was never completed, but as more power was needed for the mills the speed of the two wheels was raised to three revolutions per minute. This meant that, with a periphery speed of eight feet per second, two hundred tons of water per minute was passing over the wheels. The wheels had a very imposing effect when viewed from the entrance door, elevated in stone piers with wooden stairway and galleries, visitors could view the wheels from all angles. Coach parties passing through Catrine always paid a visit to the "Catrine Water Wheels".

Starting up the wheels was quite a performance. The wheels were directly coupled to all the shafts in the two mills. This meant they could not turn unless there was a considerable weight of water in the buckets. To get the wheels to start within a controlled time some method had to be devised. This was done by inserting a heavy wood and iron prop bar between the teeth of a gear wheel and the wall of the wheelhouse. A minute or so before starting, the sluice was partly opened and water allowed to fill the buckets, this meant the wheels were loaded and ready to go, only being held back by this prop. The attendant then had to drive out this prop. He had to tap slowly till the prop was almost out, then with a 'mighty swipe' he drove it clear of the gear wheel. If this last blow was not a good one the gear wheel caught the prop and tossed it up in the air and the attendant had to be very quick off his mark to escape injury.





Aerial view of the Catrine Cotton Works 1965

The upright shaft in the Twist Mill had wheels with wooden teeth driving the shafts in each flat. This was necessary because of the noise iron wheels would have made. These 'Cog Wheels' had the teeth renewed by the maintenance staff, a job done every year during the holiday week.

The shaft driving to the Weft Mill had to go in under the dwelling houses in Mill Street, then under the roadway. The bearings on these shafts were oiled twice a day, and the oiler had to get into one of these houses and lift hatch covers in the room and kitchen and oil them, needless to say the tenant had a very small rent to pay for this house.

Steam power was used to assist the wheels when there was a dry spell and low water, the steam being produced by a Beam Engine. This type of engine was of a very early design and could have been built by Fairbairn after he built the wheels. It had two low pressure cylinders and then, as more power was needed, it had two high pressure cylinders added in the McNaughting style. This process, the invention of Mr. McNaught, consists of nearly doubling the power of a condensing engine by the introduction of a high pressure cylinder attached to the same working beam. The valve gear had been altered from the original but most of the

engine remained the same. The engine was only used when water was scarce and the engine attendant was an old semi-retired worker. The engine house was always clean and tidy with the metal parts polished and wood work painted and clean. A bust of James Watt, the inventor of the steam engine, stood in the corner of the engine house, as was the case in most engine houses at that time.

Most of the maintenance on the engine and wheels had to be done at night or at week-ends. On completion of the repair, the men used to share a bottle of whisky which was very cheap at that time. Once, at an engine repair, the mechanics had started on their usual bottle of whisky while the apprentices took down the ropes and tackle used for the repair. For a safety precaution during the job the engine beam had been tied to the roof and the apprentices forgot to remove this rope. When the mechanics returned, in very good spirits, to test the job, everything was cleared away and they told the old engine-man to open the throttle. This he did, but nothing happened. Some of the men got a pinch bar and tried to bar the flywheel round but still the engine would not move. The foreman, very surprised now, shouted "Give her the Mist, Jimmy!" and the old Engine Man spun the throttle further open. With all this pressure the rope holding the beam broke. Before it broke it caused the wooden beam in the ceiling to bend down, this broke the ceiling plaster and all the dust and plaster showered down on to the men in the engine house. At the same time the engine freed now from the rope, started up, gaining speed rapidly. The men on the pinch bar when the engine started suddenly fell on their backs. This all happening suddenly had a very sobering effect on the men who, with a wild scramble, rushed out the doors. After the steam was shut off and the dust had settled, nothing had been damaged in the engine, but the old engine-man had plenty to say about his engine house. Needless to say the apprentices got all the blame. The only thing broken was the bust of James Watt, the head was knocked off, but with some plaster it was soon repaired although the repair left his neck a little thicker. The term "Give her the Mist, Jimmy!" was often used afterwards when opening up steam valves after some repair was completed.