

THE  
INDUSTRIES OF SCOTLAND

THEIR  
RISE, PROGRESS, AND PRESENT CONDITION.

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EDINBURGH:  
ADAM AND CHARLES BLACK.

MDCCCLXIX.

## MANUFACTURE OF SEWED MUSLIN.

ANTIQUITY OF THE ART OF EMBROIDERING—ITS ADOPTION AS A FASHIONABLE RECREATION IN THIS COUNTRY—MADE A BRANCH OF MANUFACTURE IN GLASGOW—EXTENDED TO IRELAND—IMPROVEMENTS IN PRINTING DESIGNS—HOW THE TRADE IS CONDUCTED—EMBROIDERING BY MACHINERY.

FROM the remotest antiquity ladies have delighted in ornamenting articles of dress by means of the needle. The Egyptians acquired great celebrity in the art of embroidering the linen coverings of their bodies and of the furniture in their houses. Herodotus speaks in the highest terms of the delicacy and beauty of the fine linen and embroidery of Egypt, and describes a linen corselet presented by Amasis, King of Egypt, to the King of the Lacedæmonians. The corselet was ornamented with numerous figures of animals worked in gold and cotton. The Egyptians, indeed, would appear to have had a passion for embroidering, for it is stated that even the sails of their pleasure-boats were elaborately decorated with work of that kind. The vestments used in the Greek Church have from an early period been gorgeously embroidered, and in the Anglo-Saxon Church the same fashion prevailed. The talent displayed by the Anglo-Saxon ladies, and their devotion to the ornamentation of their churches and ministers, were inherited by the Normans, by whom some remarkable pieces of work were produced. The Queen of William the Conquerer sewed the famous Bayeux Tapestry, which is one of the most interesting historic works of the kind. It became customary for persons to give proof of their piety by executing needle-work for the service of the Church; and the quantity of such gifts possessed by the cathedrals and churches of England prior to the Reformation was enormous. In Lincoln Cathedral alone there were upwards of 600 vestments of costly cloth, ornamented with divers kinds of needle-work, jewellery, and gold. Some of these were worth about L.400

each. In Eastern countries embroidering in the rich style referred to is still practised; but in Europe, except in the case of the gorgeous vestments still in use for the services of the Roman Catholic Church, only a few simple forms of the art are practised, and these are almost entirely limited to the clothing of ladies and children, and to certain articles of furniture.

In the end of last century the embroidering of muslin was adopted as a fashionable recreation by ladies in this country. The sewed muslin was a cheap and beautiful substitute for lace, and there was practically no limit to the variety of designs. At first the patterns generally were crude and inartistic; but as taste improved the beauty of the stitching was enhanced by the elegance of the designs. In course of time the embroidering of muslin became a favourite occupation for spare hours with all classes. In the early years of this century it was made a branch of manufacture by some enterprising men in Glasgow, and it is in that connection that it claims notice here. The pioneers of the trade began operations at a time when many women who had depended on the spinning wheel for a living were thrown out of work by the introduction of spinning machinery. There was, consequently, an abundance of willing hands ready to accept the new employment. The manufacturers had to proceed with caution, however, and make certain of a market before they embarked to any great extent in the venture; and it was, therefore, some years before the trade assumed much importance. Up till 1825 only two or three firms were engaged in it, but these gave employment to many hands. The work was given out to the women to be executed in their own homes. The lasses of Ayrshire showed great aptitude for embroidering, and soon made a name for the excellence of their work—indeed, for a long time the embroidered muslins were sold in the home and foreign markets as “Ayrshire needle-work.” In various parts of the county schools for teaching muslin-sewing were established. Three months were considered a fair period for training a girl; and when that term expired the pupil usually began to receive payment for her work, remaining in the school, however, for some time until she attained a certain degree of proficiency. When she began to receive payment for her work, a charge of 2d. or 3d. a-week was made for school-rent, or, as it was called, “stool-room.”

Among the earliest firms in the trade were Messrs John Mair & Co., of Glasgow, and Messrs Brown, Sharp, & Co., of Paisley, whose representatives still hold a high position for the excellence of their productions. The founders of these firms did much to establish

muslin sewing as a permanent branch of industry in the country. It was their custom to visit their workers, who resided chiefly in Ayrshire, once a-year, in order to ascertain how they were getting on, and to encourage the young people, by kind words and gifts, to strive to attain excellence in the use of their needles. This system had a most beneficial effect, and did much to maintain the celebrity of the Ayrshire muslin sewers. When flax-spinning ceased to be a domestic occupation female labour became very cheap in Ireland, and some of the Glasgow sewed muslin manufacturers took advantage of that circumstance, and sent agents into the north of Ireland in order to test the possibility of having the work done as well and at a cheaper rate than was being paid to the Scotch sewers. The experiment proved successful, and about the year 1830 the Irish work began to compete successfully with the Scotch. In order to ameliorate to some extent the condition of the female population in the north of Ireland, philanthropists of all religions aided in establishing training-schools to teach the poor girls how to sew, and a number of Scotch women were employed as teachers. A firm in Donaghadee—Messrs Cochrane & Browns—became known as the best and cheapest makers of sewed muslins in the United Kingdom; and when they removed their head-quarters to Glasgow about thirty-eight years ago, they were the most extensive in the trade. It was a member of this firm who in 1837 adapted the lithographic press to printing the outlines of the designs on the muslin. Formerly the patterns were impressed by blocks worked by hand. The blocks were necessarily of small size, and the process of printing large articles, such as ladies' dresses and babies' robes, was a slow one; and as the engraving of the blocks was expensive, the variety of designs was limited. All that was changed by the lithographic process, and a great impetus was given to the trade. The cost of production being reduced, the goods were sold at a cheaper rate, and an enormous demand was created for them not only at home, but in Europe and America. The United States merchants took large quantities, and have all along been the most extensive purchasers. Those of France, Russia, and Germany have also been buyers for many years past. Between the years 1845 and 1857 the trade extended rapidly, and in the last-named year reached the summit of its prosperity. By that time no town in the north of Ireland, from Derry to Dublin on one hand, and from Belfast to Sligo on the other, was without its sewing-agent, and in some towns five or six agents were required.

The sewed muslin trade went on increasing steadily from the

outset till the year 1857. There were periods of depression, it is true, arising from changes of fashion and other causes, but they were brief, and when they passed the trade went on with renewed vigour. The profits were sufficient to induce a large number of persons to embark in the business, and keen competition prevailed. After the potato blight in Ireland, labour became cheaper than ever in that country, and the Glasgow manufacturers gave employment to many thousands of the people. The demand for the sewed muslins kept pace with the supply for a time; but at length stocks began to accumulate, and it became apparent that a crisis was inevitable. A recent writer on the subject says:—"Public opinion said some of the houses could not afford to stop, and when the old markets were filled to repletion, consignments to new markets became common; and although it may be doubtful whether those consignments ever brought a profit to the consignees, they nevertheless created a taste for the goods where it did not before exist, and that had a beneficial effect which endures to this day." Messrs D. & J. M'Donald shot far ahead of all competitors in the extent of their business. They built a palatial warehouse in one of the principal streets of Glasgow; and when at the height of their prosperity they employed in that establishment 1500 men and 500 women, while between 20,000 and 30,000 needlewomen in the west of Scotland and north of Ireland were engaged in sewing for them. It was no unusual thing for the firm to pay L.15,000 a-month to their Irish agents and sewers alone. The value of the sewed muslin sent into the market by Messrs M'Donald was estimated at not less than L.500,000 a-year. The commercial crisis which began in America in the autumn of 1857 extended with crushing effect to the sewed muslin trade in this country, and some of the firms, including Messrs M'Donald, succumbed. The trade continued stagnant for a considerable time after that disastrous year. Manufacturers who withstood the shock found themselves with vast stocks on hand, for which no purchasers could be got, as the retailers were waiting until the stocks of the bankrupt firms were brought into the market. When the sales came, the prices were exceedingly low, and the retailers were enabled to sell the goods at little more than half the price that could have been obtained before the crisis. Sewed muslin was thus placed within the reach of purchasers of the poorest class; and the result was that the article ceased to be fashionable in the upper and middle classes of society. A prosperous trade had thus been ruined by the injudicious operations of some of those engaged in it; and though some improvement has taken place recently, the

value of the sewed muslin goods produced in Scotland and Ireland is not one-half of what it was in 1857 and a few preceding years. As might have been expected, the sudden withdrawal of such a large amount of work caused much hardship among the Irish girls who had been engaged in it, many thousands of whom were thrown idle. In Ayrshire, also, the effects of the disaster were keenly felt.

The mode in which the trade is conducted is this:—The muslin is prepared for the sewers at the headquarters of the manufacturer. It is received in an unbleached state, and is cut up into certain lengths, on each of which is printed the design for one or several articles according to their size. The artist who supplies the designs draws them out carefully in full detail. The drawings are then passed to copiers to take off the outlines on transfer paper, and from that an impression is taken on a stone for the lithographic press. Most of the designers have been trained at the School of Arts, and their productions show a great advance on some of the early work. There is considerable scope for variety of designs, and many of those produced are remarkable both for their intricacy and for their exquisite beauty. The largest pieces at present in vogue are baby robes, for which the sewed muslins and cambrics are admirably adapted. The cloth for insertions and trimmings has the design printed on it by means of a small engraved cylinder of wood, fixed in a hand machine bearing a self-inking apparatus. This machine is called a "monkey," and is worked by a girl, who, after stretching on a table a piece of cloth about three yards in length, passes the "monkey" over it from end to end, leaving a certain space between each impression. On every piece of cloth is printed the number of the pattern, the number of days allowed for sewing it, and the price to be paid provided the work be well done. The cloth is divided into portions suitable for distribution among the sewers, and is then made up into parcels, along with the thread required to sew it, for transmission to the agents, who are stationed in convenient localities. At first the Scotch manufacturers sent over men to Ireland to act as agents, but latterly most of the agency work has been done by natives. In some cases the agents are paid fixed salaries, and in others receive a commission of about  $7\frac{1}{2}$  per cent. on the amount of money which they pay to the workers. Their duty is to receive the prepared cloth from headquarters and find women to sew it, taking care to select the best hands for the finest work. They are responsible to a certain extent for the quality of the work, and the sewers are punished for faults by being paid less than the promised price when they do not exercise sufficient care. On the other hand,

should the work be done in a superior way, something more than the ordinary price is paid. There is a slight difference between the modes in which the Scotch and Irish agents act. The Scotch agent is usually within a convenient distance of headquarters, and before the sewers receive payment their work is sent thither, and the price fixed. In Ireland such a system would be inconvenient, and there the agent judges of the merit of the work, and pays accordingly. When the sewing is completed, the agent returns the cloth to headquarters. On opening the parcels, it is found that almost every piece of cloth is besmudged with smoke and grease, and that the whole is odorous of a compound of "peat-reek" and bacon. This insanitary condition of the goods is explained by the fact that most of the women who sew are the home workers of their respective households, and have to relinquish the needle whenever there is cooking or cleaning to do, and snatch it up again when the interrupting job is completed. Their hands are thus frequently soiled as well as their clothing; and when to that is added the palpable atmosphere of an Irish cabin, the state in which the goods arrive is easily accounted for. In the warehouse the separate pieces of work are stitched together in webs and sent to the bleach-field, whence they return as pure as snow. The various articles are then cut out, finished, and dressed, when they are ready for the market.

About fifty firms in Glasgow are engaged in the trade. The census return for 1861 showed that there were in Scotland at that time 7224 women engaged in embroidering muslin; and as that return was made at a time when the trade was still suffering from the effects of the crisis of 1857, it is probable that the number at present employed will not be under 10,000. The occupation is a sedentary one; and in order to make good wages, the sewers have to apply themselves closely to it. About thirty years ago it required from fourteen to sixteen hours' work a day to make 12s. a week; and the writers of the "Statistical Account of Ayrshire" at that time refer to the occupation as being tedious and unhealthy. One describes it as "an employment which, in most instances, unfits women for other occupations, and, besides, it frequently injures their health, and leaves them very helpless, when they get houses of their own, as to the management of their domestic concerns." It was said to have a prejudicial effect upon the chest and the eyes. The scale of payments is lower than it was prior to 1857; but many women who are not robust enough for factory work find muslin sewing to be a light and convenient, if not very remunerative occupation.

Many ingenious attempts have been made to supersede hand-sewing in the flowering, sprigging, and pointing of muslin, but as yet no thoroughly efficient piece of mechanism has been produced. The most successful attempt was made by M. Heilmann, of Mulhausen, whose embroidering machine, though limited to a particular kind of work, effects a great saving of labour. It is chiefly adapted to figuring muslin window-curtains, and similar work. The machine is thus described in "Chambers's Encyclopædia:"—"Although the details of the construction of this machine are rather complex, the principle of its action may be easily understood. The needles have their eyes in the middle, and are pointed at each end, so that they may pass through from one side of the work to the other without being turned. Each needle is worked by two pair of artificial fingers or pincers, one on each side of the work; they grasp and push the needle through from one side to the other. A carriage or frame connected with each series of fingers does the work of the arm, by carrying the fingers to a distance corresponding to the whole length of the thread, as soon as the needle has passed completely through the work. The frame then returns to exactly its original place, and the needles are again passed through to the opposite set of fingers, which act in like manner. If the work were to remain stationary, the needles would thus pass merely backwards and forwards through the same hole, and make no stitch; but by moving the work as this action proceeds, stitches will be made, their length and direction varying with the velocity and the direction in which the work moves. If 140 needles were working, and the fabric was moved in a straight line, 140 rows of stitching would be made; if the work made a circular movement, 140 circles would be embroidered; and so on. In order, then, to produce repetitions of any given design, it is only necessary to move the fabric in directions corresponding to the lines of the design. This is done by connecting the frame on which the work is fixed to an apparatus similar to a common pantagraph, or instrument so constructed that one end repeats on a smaller scale exactly the movements which are given to the other. The free end of this is moved over an enlarged copy of the design, the movement being a succession of steps, made after each set of needles has passed through; and thus the work is moved into the position required to receive the next stitch of the pattern."