

to be of English birth, a native of Vincent's own county and village.

Without the least unnecessary delay Vincent availed himself of Dr. Maple's cheery invitation.

"And so you are really my old friend Hastings Romney's son! I begin to see the likeness now—especially when your face is in profile. Ah! it was an awkward thing for your father to be disinherited. I hoped the squire would think better of his passion; but, as I said before, he was terribly self-willed. I fear the quarrel hastened your father's death?"

"It did. He only survived my grandfather three years."

"And his narrow income—pardon my inquisitiveness—is now your own?"

"All at present I am proprietor of."

"Just so. I left Holbury in the very year of the old squire's decease, and came to America. I well remember going to the manor sale the week before I quitted the village. I brought a trifling memento away with me. That inkstand yonder was your grandfather's."

Vincent's eyes followed the gesture of his companion's finger across the luxuriously furnished apartment. On a table in a recess stood a carved ebony desk-ornament of antique workmanship.

"May I look at it?" Vincent asked.

"Certainly! With the greatest pleasure."

In another second Vincent was inspecting the relic of his proud and vindictive grandparent.

"I have seen one very much like this—with a panelled pedestal of the same design precisely—in a friend's house in London," the young man remarked. "Frank Norrells picked it up at some store in Wardour Street, and vows he had a bargain. I'm never so lucky when I go *bric-à-brac* hunting."

"No doubt its age would make it valuable."

"Yes; and in my friend's ornament you touch a spring and the panel slides back. There is a hidden aperture behind. Is it so here?"

"I cannot say, I am sure. I have rarely used the toy. And a surgeon's time is too precious to spend on gratuitous and useless experiments. Hah! Hah! But we can quickly decide the point."

An examination with a strong magnifying-glass followed.

Click! Back shot the centre division of the tested

panel, and a dusty secret receptacle was in truth revealed. It was not empty!

"What is this? 'Last will and testament of Philip Romney!'" read Dr. Maple, in a startled, bewildered tone. Then he clapped the equally astounded listener on the back.

"It was not as we and everybody thought, after all," he said; "your grandfather did justice at last, in spite of his anger. By this document—so strangely hidden and so unexpectedly discovered—the manor is yours, as your father's successor; let me with all my heart congratulate you, Mr. Romney."

A further scrutiny, comparison of names and dates, sifting of evidence of one kind and another, left no ground for reasonable doubt. Vincent was indeed the heir to the alienated family estate. In a fortnight and three days he was again in England. And the first home-news that saluted his ears was that his friend, Roger Berring, was married. The event had come about very suddenly, and had surprised many.

"I hope he will be happy," gasped Vincent.

"Ay, the leddy's rich, and maybe that'll help him," replied the gossip. Now Gertrude Wynn's prospects of a large dowry had always been understood as dubious in the extreme. Here was a fresh mystery.

"Rich! Miss Wynn—"

"Roger Berring hasna married Miss Wynn, Mr. Romney. His wife, as is now, was some Lancashire lady—a friend of Miss Wynn's, folk say."

A novel dimness touched Vincent's eyes. The relief of this revelation was so great as to almost stun him. He only felt that his pulses were madly beating as with a flood of new life. His sacrifice had been needless, then! Yet not without its recompense.

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"And you were as dear to me when you left—that dull day—as now, Vincent," ruby lips murmured, after a certain inevitable question had received its answer, "money could not possibly make any difference in my regard for you."

"I am very grateful, dearest," Vincent softly replied.

Somehow the young squire of Holbury has never told his wife the complete history of his strangely recovered inheritance. The reasons for his Quixotic flight she knows but in part. But from that loving, faithful heart he has no other secret.

W. J. L.

FROM RAW FLAX TO FINISHED THREAD.

FLAX was probably the first fibre spun by man. It is mentioned in the Bible; it is found in the form of linen wrappings covering the embalmed dust of the Egyptian mummies, and fragments of it are still in existence which show association with neolithic implements of much earlier date. It is not, however, my intention to place before the readers of this Magazine an archæological treatise on this subject, and I shall content myself with mentioning these

few facts; my object being to show that thread manufacture can boast of "claims to long descent," and that it is one of the industries of man to which a pedigree is attached sufficiently lengthy to satisfy the proudest Lady Vere de Vere.

Flax is grown in many parts of the world, the finest being produced in France; Russia, Belgium, Holland, and Ireland are also countries where this useful plant is largely cultivated. The flax plant grows rather shorter than wheat; its stem or stalk is not quite

so thick. It is the outside or bark of this stem or stalk which furnishes fibre for spinning; the inner portion being a hard woody pith, which has to be threshed out, great care being taken that in so doing the fibre or bark is not damaged. When freed from its pith, the flax is sold to the mills to be converted into thread. Its price varies from £40 to over £200 a ton, yet the difference in the quality of the fibre is scarcely perceptible to an outsider; so it is very evident that any one who was not a connoisseur might make but a very sorry bargain. None but the best and most perfect flax is fit for thread-making.

The manufacture of thread is not confined to any town, district, or country, but in this particular industry we certainly hold our own, for in this "tight little island" are to be found the largest and finest thread-mills in the world.

In the production of the best thread it is not easy to say which is the most essential, the selection of the flax, the perfection of machinery employed, or careful manipulation in the many and various processes through which it passes. It is certain, however, that one machine not in perfect order, one careless worker, or even one imperfect roller, will in a short time do as much damage as any obstreperous bull in a china shop; for most assuredly a very considerable quantity of the most carefully prepared materials would be ruined, and passed on in such a state that it would be condemned when coming under the eye of the all-seeing overlooker, as not being up to the necessarily high standard.

To begin at the beginning, the first process that the flax undergoes, after making its *entrée* into the mill, is that of "hackling," by which the broken, tangled, or imperfect fibres are combed out. The operation is very similar to that of a lady combing out her hair, when it has become very knotty and entangled, only that in place of one comb there are hundreds, the teeth being of steel, and steam-power instead of hand performs the necessary operation. I could safely recommend the "hackling" machines to any lady as capable of combing out the knottiest tresses, but I would not guarantee that after the operation was finished there would be much hair left to adorn the head. The next operation takes place in a "sorting room," where the flax, now called "line," is still further relieved of any impurities by men who carefully look it over and then sort it into the "numbers" into which it will spin.

"Preparing" is the next process of manufacture, which is one of the greatest importance in the production of a perfect and regular yarn. The small locks of the "line" are laid by girls on a slowly-moving strap of leather, each lock overlapping the one before it so as to form a continuous ribbon one or two inches wide, which is carried by the motion of the strap into the first "drawing-frame." The principle of the drawing-frame is this: the ribbon of material passes between a pair of slowly-revolving rollers, which hold it while they pass it forward, and it is then taken by another pair of rollers, which, revolving at a higher speed, draw the ribbon out

to a greater length, and in consequence make it thinner. But since a long fibre when pulled away by the drawing-rollers might catch and entangle the fibres near it, a beautiful mechanism (which must be seen to be understood) was invented by flax-spinners, and afterwards adopted for spinning silk, worsted, and other long staples, by which a number of fine needles are pushed through the ribbon of fibre between the first and second pair of rollers, and travel along with it, giving it a support and preventing the fibres from being snatched away prematurely.

The ribbon, or "sliver," as it is called, when it emerges from the drawing-rollers is smaller than that made by hand, but is far too irregular in size to be spun into yarn, so four or more of these are wound together into a can, a receptacle not unlike the milk-cans that we see on railway platforms. And the sliver thus produced goes through a series of similar drawing processes, at each of which a number of slivers are laid together and drawn out to a smaller size, that is, more nearly to the size of the yarn required. As many as 50,000 slivers are thus laid together, and all the irregularities of the first hand-made ribbon equalised, before a first-class thread-yarn can be produced.

The next process is "roving," which is the first twisting of the sliver, or band which has been formed out of the flax. Previous to the twisting, the sliver, or very thin narrow ribbon as it now looks like, has no strength; the slightest pull would break it asunder. It is, therefore, twisted and wound on a large bobbin, and is then ready for the spinning-frame. There are two kinds of spinning, hot-water spinning and dry spinning. In the former, the "rove" of flax, as it is now called, is made to pass through a trough of hot water, the object being to moisten the gum natural to flax. Thread-yarns vary in size from 3,000 to 30,000 yards to the pound, and some small quantity is spun as fine as 60,000 yards to the pound.

The utmost scrutiny is given to the yarn in order that all flaws or knots may be detected. Men examine these yarns, which are hung on a pole in front of a window. They hunt for knots as though their very life depended on it—indeed to a certain extent it does, for if they allowed any to pass them undetected, they would at the end of the week be unpleasantly reminded of that fact, by finding that a fine had made their wages rather shorter than usual. But they are sharp eyed men, and it is very seldom they are caught napping. If, however, they detect any fault, the girls who have passed it on are of course fined. This strict system of fining is most necessary, as a knot in a thread, as our readers well know, would often snap a sewing machine needle.

The hanks of yarn are next taken to the dye-house, and are first boiled in water to which has been added an alkaloid. This process is to cleanse the yarn of its gummy matter, and leave nothing behind but pure fibre. Were it not for this process, the yarn would ferment and rot. The hanks of yarn are next washed by being hung on a revolving bar of wood, with their ends dipping in the water, and the bar slowly revolving. Next follows a machine somewhat resembling a huge

wringing and mangling machine, which squeezes out all the water from the hanks, even more effectually than the hardy muscles of our grandmothers wrung dry the family washing.

After being duly washed, the hanks do not get their hair combed like good little boys—for that has been done previously—but are treated to a dip in the dye. In a huge cauldron, round which the witches of *Macbeth* might have felt quite at home, is brewed a liquor which, if not composed of such odd and varied ingredients, has sufficient in it to impart to the hanks a good clear colour. The liquid contents of the cauldron are conveyed along little wooden troughs to the receptacles in which the hanks are placed. They are made to turn as in washing on a revolving beam, their ends only dipping in the dye, and it is owing to this continuous movement that an evenness of colour is obtained. Those who dye articles at home would do well to note this fact.

Having been dyed the required colour, the hanks are next taken to the "drying-room"—a not very enviable place to be in, in sultry weather, as it is usually kept at a temperature of about 220° Fahr. Different colours require different temperatures; some will stand great heat, while others would run were the air too hot. After the hanks have become well dried, they have to undergo an important process—that of finishing. The hank is wound on to a bobbin, and then passes through a polishing solution; different threads requiring different polishes. Before being polished the thread is dull, but when it has passed through the machine it is glazed, smooth, and firmer to the touch. In the machine which polishes are small brushes, and fine plush rollers, the material covering the latter being more costly than any worn by Belgravian belle. In some cases the thread is polished in hanks. When such is the case, they are dipped in the solution, and polished with flannel-covered rollers.

Some hanks are polished simply by the friction gained by twisting or wringing. Youths with large iron hooks, and suitable machinery, twist and wring them about in tortuous positions as eagerly as if they were officers of the Inquisition bent on extracting a secret from the luckless being in their hands. Other threads, such as those used for boot-sewing, and all that are waxed by the user, would be ruined by being polished, and are therefore, "finished" in other ways, the secrets of which are only known to the initiated.

The old-fashioned skein threads in pound packets are put up by boys. These young gentlemen sit at wooden benches, each one having in front of him small wooden pegs, fixed upright into the bench. Between them they arrange the skeins in layers, and tie them round tightly with another skein. With a little skill with the fingers, and by the aid of sundry

taps given constantly with a wooden stick, a nice firm pound packet is produced. First, however, in order that the thread when made up may present a neat and tidy appearance, the knots which tie the skein are arranged by little girls so that they shall be all in one place. The skeins are stretched across a frame, and the children pull the knots round till they are all of a row. The skeins are next made up into pounds by girls and papered up. Of course a large quantity of thread is not sold in packets, but on reels or spools. These, which have to be turned with the utmost regularity, are generally imported from Canada, Norway, and a few other parts. They are made in many shapes and many sizes.

Perhaps the "last stage of all that ends this eventful history" is that of winding the thread on to the spools, or reels, as they are called in every-day parlance. This operation is of course done by machines. In order that every reel may have its exact length, a system of checking is adopted, and every morning two or three reels or spools are taken at hazard from those wound by each girl during the previous day, and having a private number affixed, they are taken to the overseers to test the measurement. "Balling" is also done on machines which are self-measuring, and the balls too are constantly weighed by the attendants, each one of whom has her scales as a check on the machine.

Referring to threads for sewing boots and shoes, we may mention that hemp is sometimes used instead of flax. The fibre is very similar to flax, though the plant is botanically very different. The finest hemp is grown in Italy, and is used for coarse shoe-threads. The finishing of wax threads is different from that of ordinary threads; they are not glazed, and are so finished that they will readily absorb the wax.

The labels for the spools or reels, which are ready gummed, are stuck on by little girls; and instead of making the tongue perform the damping operation, as is customary when affixing a postage stamp, the child damps the label on a narrow brass cylinder, which is made to revolve slowly while the lower half of it is in water. Strange to say, the children have in many cases a strong prejudice against this useful little machine, and prefer the far more injurious plan of moistening the gummed labels with the tongue.

A journey through a thread-mill—for indeed it is a journey, so large and extensive are such places—is most instructive and interesting. The ear of the visitor is no doubt subject to a continuous hum, whirl, and buzz of machinery; but he quickly becomes so wrapt in amazement at the marvellous mechanical appliances used—which are the most ingenious the human brain could invent—that the discomfiture of the ear is soon unnoticed. When at length one reaches the open air, the quiet is such a contrast to the interior of the mill, that at first it seems unnatural.

