

quite agree with you, Mrs. Waters—the girl is only artful and demure. Did you see how she reddened if a gentleman did but glance towards her?”

Mrs. Vaudrey was annoyed, and so was Miss Boyle. The latter had a spice of sarcasm in her composition. She could not forbear saying, with quiet point,

“Dear me! Are red cheeks artful, Miss Fisher? I was not aware of it!” which, somehow, set the ruddy cheeks still more aflame.

“I think, ladies,” said Miss Jane, fresh from a hasty toilette, with very unusual severity, “the Christian ceremony of the day might have suggested worthier matter for conversation than backbiting a poo—”

Backbiting in the drawing-room and reverie in the nursery were alike broken in upon by a sharp cry, a rolling fall downstairs, and a general commotion.

(To be continued.)

## GIRLS' WORK AND WORKSHOPS

By RUTH LAMB.

### CHAPTER I. INTRODUCTORY.



PERHAPS there are few subjects which have occupied more attention during the last few years than that of finding useful and remunerative employment for women and girls. When this subject is under discussion, I often wonder whether the persons who talk, I had almost said clamour, about the right of our sex to put a busy finger into every kind of pie, have considered how very large a share girls have long claimed in the work of the world—claimed, seized, and kept it too; and their share is daily increasing, not only in amount, but in importance.

In what a number of handicraft trades are girls employed, and almost every fresh invention finds them more work to do. The pen with which I write has, in all probability, passed through their hands; the paper has been manipulated by other girls. I take up a book and find the name of a female writer on its title page; I admire an illustration, and, lo! the initials of a lady artist are at the bottom.

Very likely the block from which the impression has been produced was cut by the firm fingers of a girl wood-engraver, for I have seen girls doing excellent work in this line. One quite young lady's face flushed with pleasure as she told me of commendations she had received; but she did not tell me how filial love had been the grand motive which had induced her to take up a work requiring such nicety of sight, delicacy of touch, patience and perseverance in the carrying out. But she had found her reward in seeing the look of anxiety fade from the face of her widowed mother, and the increased comforts her labour had won for their modest home.

If I turn to the clothes worn by the family, I find that the machinery by which the raw material has been fashioned into beautiful fabrics of silk, wool, and cotton, has been worked by girls in almost every stage of its development. The lace which adorns our clothing, the stitches which join its parts, tell of the taste and industry of female fingers.

If we have been unfortunate enough to lose our natural teeth, the artificial ivories, if of the very best quality, have probably been shaped by lady workers in this peculiar branch of industry.

Were I merely to give a list of the trades and various kinds of work in which girls and women are employed, I should fill a chapter at once. There are so many in which a large share falls to their hands, and in some very important branches they have a monopoly. I prefer, therefore, to go from shop to shop, factory to factory, show my girls at work, describe their employment, and give some idea of its effect on health and feminine character, and of the wages which may be gained by industrious workers.

#### THE FIRST WORKSHOP.

As a dweller in Manchester, it seems natural for me to start in a Lancashire mill, where girls are so largely employed in the manufacture of cotton. From the very moment that the great bales are opened, and their downy contents exposed to view, female hands begin to operate upon the raw material.

The workshop or mill, as a rule, is not a handsome building to look at, either outside or in, though of late more attention has been paid to its external appearance; and the rooms, which used to be very long and narrow, are now in new mills made double the old width, to admit of improved machinery. They are also loftier, and consequently healthier to work in, though the rooms in which some of the operations are carried on are kept very warm. In these the temperature is often as high as eighty or ninety degrees, as a matter of necessity, to preserve the elasticity of the cotton. The rooms are heated by steam-pipes, and the steam is always running through these, even when no work is going on, for if the air were allowed to cool the cotton would become brittle, and would be continually breaking during the very fine spinning and doubling processes.

Cotton, though such a homely material as to be in use everywhere, is yet one which requires very delicate treatment. It is as susceptible of any change of temperature while in process of manufacture as is a dainty hot-house plant. It is simply unworkable in many climates, and, strange as it may seem, our moist Manchester and its lesser neighbouring towns, are found to suit it better than infinitely more attractive places.

Look at the Lancashire mill girls going to their work in the early morning. They are not to be found very neat and trim on working days. They go to their daily toil in short stuff skirts—generally of cheap winsey. Sometimes there is a waist as well; sometimes there is only the high pinafore, made of coarse “flax,” as it is called, which covers the undergarments and protects them from the oil with which the machinery is lubricated, and with which they cannot help coming in contact.

Many of the girls—half-timers especially—wear wooden clogs, and clatter across the pavement in them. Some, indeed, go barefooted about their work and bareheaded to and from the mill in moderate weather. The almost universal covering for the head and shoulders is a common woollen shawl, which does duty in cold and wet weather for bonnet, cloak, and umbrella. It is really the best kind of wrap for girls employed in such hot rooms, as it covers well the head, throat, and chest, and diminishes the chance of cold from the sudden change of temperature as the girls pass out into the wintry air.

When the great bale of cotton has been swung up by the hoist and landed on the floor of the mill, where it is to be opened, the contents are pulled out. The great package vary in weight according to the countries from which they come, the United States sending the heaviest bundles or bales, which some-

times contain from 450lb. to 500lb. in each. Brazil, Egypt, the East and West Indies are the other countries which send the work material for our girls to operate upon with their nimble young fingers.

If you were to handle the cotton as it is turned out of the bale, you would find that, creamy white as it looks, a good deal of cleaning is needed before it can be spun into thread. Most of the refuse matter—such as stalks, husks, and seeds—was removed before the cotton left the country where it was grown, by means of a machine called a saw gin, or by rollers, so there are only bits of it here and there amongst the soft fluffy stuff which the girls are drawing from its coarse wrapper. If the contents are not to be mixed with another variety, the cotton is placed on the feeding apron of a willowing or a blowing machine, and is drawn under the great iron rollers which pass it on to the beaters. These beaters whirl and thresh the cotton with prodigious speed and vigour, so that a great portion of its impurities is removed. The process is repeated by the second pair of rollers and beaters, and these iron-workers, kept flying by the great steam engines, do in an amazingly short time what would otherwise require many hands and many days of tedious labour. This used to be done by women who beat the cotton with sticks, and they were called “batters.”

The whirling of the beaters causes such a draught that if you and I were to be long exposed to it we should suffer from cold. But the girls who feed the machines are used to it, and seem neither to be disturbed by the noise nor the little hurricane to which they are subjected.

Next they carry the cleaned cotton to the spreading machine, through which it passes out in fleecy sheets, which are wound on large wooden rollers, ready to be carded. To look at it you might think the cotton was straight and smooth enough for any purpose. But no. The fine hairs, called the staple, and which may be long or short, must be daintily combed out and made to lie parallel to one another, just as do the hairs which cover your heads when they have undergone careful brushing.

Formerly this carding or combing was done by hand, now it is done by beautiful machinery. Once it used to be necessary to stop this last machine in order to clean the teeth of the card, which became clogged; now the comb itself is combed whilst at work, and the obstructive particles travel down at the back, forming what looks like a breadth of fine gauze, which grows with every revolution of the machine.

The mass of cotton no longer travels in a broad sheet, but passes out through a tube in the shape of a loose band, and coils itself neatly into a long tin case, prepared to receive it. A number of these belts, called “slivers,” as they are called, are now put together, and twisted into one band as they pass through the drawing frame, and are again dropped in coils at the other end into a tin as before. All inequalities have been reduced in this process, and the cotton bands are now ready for slubbing.

The cotton passes in turn through slubbing, intermediate jack, and either throstle or mule frames, according to the purpose for which it is required. The warp, or lengthway thread, in a piece of calico is usually spun on what is called a throstle frame; the weft, or crossway thread is spun on a mule frame. In all these processes the cotton bands are again combined, lengthened out, twisted and reduced in size, whilst the strength is increased.

The self-acting mule frame or “cast-iron spinner,” as it is sometimes named, is a really beautiful machine, and those in large



modern mills have from one to two thousand spindles on each. The frame runs out a distance of six feet, carrying with it and twisting at the same time its thousand or more of threads. It runs back to its place, and as it runs the thread is wound on to the spindles until they are filled. The spindle full of cotton is called a "cop," and this is next doffed—that is, the cops are taken off, placed in neat rows in the "doffing tins" or cases, and carried off to be weighed and the work entered to the credit of the spinner.

These cops go to be variously applied. Some go to the weaver, as weft for the shuttle; some to the dobler, to be made into thread for lace making, the manufacture of sewing cotton, or for reeling into hanks which are then formed into bundles, weighing about ten pounds each, and packed for sale or exportation.

The degrees of fineness are marked by the number of hanks which go to the pound, the lower figures marking the coarse counts, just as they do on our cotton bobbins.

Let me give you one instance of the wonderful fineness to which cotton can be spun. A single pound of cotton has been made into a thread one thousand miles in length.

I have named, without particularly describing, each process through which the cotton passes, in order that I may give you an idea of the surroundings of my factory girls whilst they are at work, and tell you what share they have in the manufacture as it passes from stage to stage.

Children, both boys and girls, are employed in most mills. Those under thirteen years of age are called "half-timers," two of them counting as equal to one "hand." They thus get half a day's schooling and half a day's work, unless they have attained such proficiency that they have passed the standard required by the School Board. But, however clever they may be at books, a merciful law prohibits them from working more than half time until they are turned thirteen.

These youngsters are employed to fetch and carry, also as piecers and as doffers in the throstle rooms. You would be surprised to see how rapidly the threads are joined by their nimble fingers. In drawing out the cotton the threads often break, especially when a poor quality is being spun, but, quickly as the machinery moves, the ends are joined again by the piecers without stopping it, unless an extraordinary number are broken at once.

Girls and women mind nearly all the frames I have mentioned. They keep the frames supplied with material, remove the bobbins as they are filled, and pass them on for the next process, until the twisted cotton is ready for the mule or throstle-spinning. As a rule, the mule frames are tended by men called "ciphers"—I suppose because the machine does so large a portion of the work. The ciphers are assisted by male or female piecers, who work at the middle or end of the mule, and whose wages vary.

Doubling has hitherto been done wholly by girls and women, but men are now employed in some places because the law permits them to work longer hours. The weaving is also chiefly done by females, each of whom has from two to four looms in her charge, according to her skill.

The average wages paid are from 5s. 6d. to 11s. 6d. per week, the doffers getting the lowest sum, and jack and throstle-tenters the highest. The weaver gets 5s. per week per loom, but if she has four looms she requires a helper, to whom she pays about 4s. 6d. per week.

Winders, reelers, and gassers get about 11s. per week; but I have not yet told you what the gassers do. If you were to take a hank of doubled yarn in your hand before it had

undergone this process you would see that it had a downy appearance. In spite of all the twisting that it has undergone, the minute ends of the fibre are visible, and cause this slightly rough surface. For some kinds of fine lace and other work very smooth thread is required. In these cases it must be gassed.

The gassing-frame is fitted with a number of tiny gas jets, and each thread is run rapidly through one of these from its bobbin and wound on to another. The operation is so rapid that the down is singed off without injury to the thread. This is a noiseless operation in comparison with the clatter going on in most of the other departments.

The weaving sheds are the coolest, but the noisiest of all. The clatter is almost deafening. When the Shah of Persia was in Manchester a few years ago he was taken through one of the finest mills in the neighbourhood. I believe few things astonished him more than his experience in the weaving shed. All the many hundreds of looms were started at the same instant; and, whilst he was utterly bewildered with the noise, they were as instantaneously brought to a stand, and there was perfect silence.

Now, dear girls, if you have followed me thus far, you will have realised in what way many thousands of young people like yourselves are earning their daily bread: out in the early morning, passing their days amongst the rattle of ceaseless machinery, with the smell of oil pervading every place, and beginning this, too, at an age when so many girls have never known what serious work is.

There are many drawbacks in connection with the life a factory girl is compelled to lead. The mixture of sexes is one of these, for boys and girls, young men, and young women, are often indiscriminately employed. Girls hear and see much of which it would be better for them to remain ignorant; and many know almost nothing of the use of the needle, of cookery, or domestic duties of any kind. Yet the very fact of their being able to earn their own living renders them too soon independent of parental control, and I have known many instances of their leaving home rather than yield to the reasonably-exercised authority of a mother.

This independence has another bad effect in some cases. It is apt to destroy family unity. I remember being told by a clergyman, who was a regular visitor in his parish, the population of which was largely composed of factory workers, that many of the young people took their meals separately, and bought their own provisions, paying only a trifle for lodgings. He spoke on the subject to a mother who answered, "Eh, sir! We cut four loaves at this table!" The four separate loaves represented as many separate interests in that small household.

Again, being so long confined in the close atmosphere of the mill, the girls, naturally enough, like to get into the open air when working hours are over, and sometimes they parade the streets, talking and laughing noisily, and using words that we regret to hear from the lips of girls. They make acquaintances, sometimes in the street and sometimes in the mill itself, and the mere boy and girl "hands" think if their earnings are sufficient to support them separately they will be richer when united. So they marry, often before they are out of their teens, and when they are not only ignorant of household duties, but have never had a thought of the solemn responsibilities on which they are entering, or which will follow.

Then, when the girl-wife becomes a girl-mother and her earnings are stopped for a time, the young husband is unable to support them all in decent comfort. She goes back to work when she ought to be tended at home, and the infant is left, perhaps, with the tender-hearted mother whom the girl-wife set at de-

fiance a year ago, or with some elderly neighbour, who, for a trifling payment, takes charge of the little ones whilst the parent is at her work.

I know THE GIRL'S OWN PAPER goes into the hands of many a young worker for daily bread. I wish I could send a message through its pages to every thoughtless girl who is so ready to take upon herself the solemn duties of wife and mother. Oh, that I could induce such to pause, to listen to parents, to think for themselves—above all, to pray for guidance to Him who has said, "I will instruct thee and teach thee in the way which thou shalt go."

I have seen so much sorrow and misery, such neglected homes and sickly, ill-tended children, so much trouble that might have been saved for want of listening, thinking, and praying, that I should indeed rejoice if my words could induce young and thoughtless girls to pause before they run headlong into similar difficulties.

Yet, on the other hand, I thankfully bring to mind the face of many a dear young wife and mother, whose early days have been spent in a mill as a factory operative, yet whose conduct adorns her Christian profession. And it is a pleasure to think that many of these have been influenced in the night-school carried on by Christian women and girls, whose hearts were full of love for their hard-working sisters.

In my next chapter I hope to tell something of this school and its scholars, and to follow some of the thread which they have helped to manufacture and see it turned to account in a Nottingham lace factory.

## VARIETIES.

THE GOOD INFLUENCE OF GOOD WOMEN.—There is nothing by which I have through life more profited than by the just observations, the good opinion, and the gentle encouragement of amiable and sensible women.—*Sir Samuel Romilly.*

SEEN THROUGH A MICROSCOPE.—She suffers herself to be seen through a microscope who allows herself to be caught in a fit of passion.—*Lavater.*

WHAT THE NIGHTINGALE SINGS.  
MANY attempts have been made to reduce the song of the nightingale to words and letters. The most successful is that of Bechstein, a German whose name must ever be connected with singing birds, and he gave it in the following way. However uncouth it may look, it must be acknowledged by all acquainted with the song to be a very remarkable imitation, so far as the usual signs of spoken language can represent the different notes and modulations of the nightingale's performance:—

Tiouou, tiouou, tiouou, tiouou,  
Shpe tiou tokoua;  
Tio, tio, tio, tio,  
Kououtio, kououtiou, kouotiou, koutiouio  
Tokou, tskouo, tskouo, tskouo,  
Tsi, tsi, tsi, tsi, tsi, tsi, tsi, tsi, tsi, tsi,  
tsii,  
Kouorror, tiou, tksoua, pipitksouis,  
Tso, tso, tso, tso, tso, tso, tso, tso, tso, tso,  
tso, tso, tsirrhading.  
Tsi, tsi, si, tosi, si, si, si, si, si, si, si,  
Tsorre, tsorre, tsorre, tsorreki;  
Tsatu, tsatu, tsatu, tsatu, tsatu, tsatu, tsatu,  
tsi,  
Dlo, dlo, dlo, dla, dlo, dlo, dlo, dlo, dlo,  
Kouiou, trrrrrrritz,  
Lu, lu, lu, ly, ly, ly, li, li, li, li.

THE STAY AND SOLACE OF MAN.—As the vine which has long twined its graceful foliage about the oak and been lifted by it in sunshine, will, when the hardy plant is rifted by the hunderbolt, cling around it with its carressing



## GIRLS' WORK AND WORKSHOPS.

By RUTH LAMB.

## CHAPTER II.



BEFORE leaving the cotton mill, which is the workshop of so many thousands of girls, it may be interesting to notice a few of the articles which will be wholly or partially made of the thread which has passed through their hands.

Beside all the varieties of calico, bleached or unbleached, plain and twilled, a vast number of materials are made from cotton yarn. Our daintiest muslins, serviceable prints, and the exquisite sateens which have found such favour of late, and rival silk in beauty, are pure cotton. It is hard to believe that from the very same material, but differing

in texture, dye, and method of weaving, come the substantial fustians and corduroy, as well as the velveteen now brought to such perfection that it rivals in appearance the silken produce of Lyons and Genoa.

Counterpanes, toilet-covers and mats, sheets, window-blinds, bed-ticks, white Turkish towels, fringes, braids and many other trimmings, linings for our dresses, stockings, &c., have all passed through the busy hands of our mill-girls on the way from cotton bale to yarn for weaving.

Cotton feeds the sewing-machine and every kind of needle, keeps hundreds of thousands of busy hands at work, and clothes the teeming millions who inhabit the globe, to a greater extent than any other material used for the same purpose.

Cotton forms part of almost numberless fabrics. Many so-called woollen materials have cotton warps, and it is combined—not always in a straightforward way—with silk and linen.

We can hardly over-estimate its usefulness, but we like it to look what it is—honest cotton, not sham silk, wool, or linen. All our lace and muslin window-curtains are cotton products, and the union damasks are a combination of cotton with wool.

Once the surgeon would only be satisfied with linen rag for use amongst his patients; now he finds cotton equally useful in dressing wounds.

It is a very ancient fabric, though we find no mention of it in the Bible. It has been made in India from time immemorial, is early named in Egyptian history, and has also been long in use through all Africa as well. Columbus found it when he discovered a new world; but in this country the cotton manufacture has grown up within a century or so. So long since, a pound of yarn, which to-day would cost half-a-crown, was then worth thirty-eight shillings, and at the end of last century you would have needed a long purse to buy calico, for it was six shillings a yard.

At about the same date only 300,000 bales came annually into this country. Sixty years later it required nearly two millions and a half to keep the machinery going and the hands at work in the mills, for the cotton manufacture occupied 415,000 persons by that time, and continued to increase from year to year.

In my former chapter I said we would follow

some of the very fine doubled yarn to Nottingham, and see what the girls do with it there. Nottingham is the great centre of the English lace trade, and, thanks to the caprices of modern fashion, her looms are now flying rapidly, some, indeed, working night and day.

Before I went into a lace factory, I confess my ideas as to the mode of its production were extremely confused. I knew that what are called "imitation laces" were really machine-made, and woven instead of worked by the hand. But I never pictured them in any shape but in narrow strips, as we are accustomed to purchase them.

I got my first lesson at the railway station. On going into the waiting-room to rest a little until the arrival of the train, I saw a girl, as I thought, busily engaged in clip, clipping at what seemed almost endless lengths of lace. She had quite a pile of it lying loosely in a shallow basket at her side.

I asked permission to look at her work, and then I found that the long strip at which she was clipping had been severed from a wide breadth composed of many such lengths all woven in one.

Then I saw that in the weaving the thread had been slipped from one little knot, leaf, or star in the pattern to another, and left on the wrong side. It looked like rows of tacking threads, done with perfect regularity, and the work which occupied the young person was that of carefully cutting away all these threads, and scolloping out the top edge, without injuring the little fringe which heads the lace, and is called the purl.

The work seemed very tedious and tiring for the fingers, but practice makes it easy; and I was told that girls of fourteen could earn eight shillings a week at it. My informant told me that she was only a beginner, though she seemed to me to work the small scissors, with their blunted points, very fast indeed, and she had clipped a great many yards, at intervals, during the morning. From the very low price paid for some of the woven laces, it is evident a vast amount of snipping must be done for every shilling earned.

"I lost my husband through an accident on the line," said the young woman. "And I have been put in charge of this room by the Company to enable me to earn a livelihood. When the cleaning is done in the morning I have many hours only partially occupied, so I have taken to the lace-clipping to fill up my time and earn a little money. It is so easy to take up and lay down, as there are no needles, and nothing to get entangled by a quick movement. And," she added, with a sigh, "I have two little children—the elder under three years old—so I am anxious to make the best of every spare moment."

So I found that she whom I had taken to be a very quiet-mannered girl was a young mother, and alas! a widow, utilising every minute by means of the clicking scissors, and so carving out bread for her little ones.

The girls who work in the Nottingham lace factories present on week days and during the hours of labour a strong contrast to our Lancashire mill-girls. They wear no clattering clogs or greasy pinafores, and instead of shawled heads, you see neat hats and jackets as their outdoor trim. But each must dress according to her work, and our Lancashire lassie can and does look equally attractive on Sundays with her Nottinghamshire sister, who takes up the hanks of yarn which have first passed through her nimble fingers.

In one great lace factory—that of Messrs. Elcey—which I had the privilege of inspecting, I found that girls were only employed in two branches of the work—as cop winders and curtain menders. All the designing and preparing of patterns is done by men; though the gentleman at the head of this depart-

ment said there was no doubt that girls with artistic tastes might do the work equally well.

"But," he said, and I heard this with much pleasure, "in our establishment we never mix our male and female workers. The girls who wind work are under the superintendence of female overlookers, and the same in the mending rooms."

Though girls were not acting as pattern designers, it may interest girl readers to glance with me over the shoulders of some of the *employées* in this department. Here, to my astonishment, I saw a curtain which depicted a bull-fight. This was intended for the Spanish market. It would never be offered to an English buyer. Others had lace valances to match the curtains. Those were intended for French purchasers.

I had often seen these in France, and thought how pretty they were, and how much I should like to see them in this country also, little imagining that they had been made at Nottingham.

Another designer was planning a curtain to match some wall-paper, and so on, tastes of all kinds—national, fashionable, and individual—being consulted.

To describe the loom in which the work is carried out, and which is on the Jacquard plan, would be lost time. The arrangement is so complicated that even a looker-on at the progress of the work can do little except wonder at the intricacy of the machinery and the beauty of the articles produced by it, without understanding the why and wherefore of its various parts. It must not only be seen, but studied again and again, to be understood.

But I saw the looms working out, in the shape of curtains and breadths of lace, the designs prepared with such taste and accuracy. Some webs were as much as 200 inches wide, and would separate into two, three, or four curtains, according to the width and quality required. In order to make a fast, purl edge the loops are worked over a strong thread, which, when drawn out, leaves them intact, and separates the web into breadths.

It is only after the curtains leave the looms that they pass into the hands of girl workers, in order that all broken threads or missed stitches may be repaired. If a stitch has been missed in one part of the pattern, the break is pretty sure to occur again all through the web at the corresponding portion. The overlookers pass the curtains across tables or counters with black-stained tops, and a glance suffices to detect the smallest break in the pattern.

A knot is tied to mark the defect, and the curtains passed into the menders' hands. A few rapid stitches repair the mischief, and when all the marked places have been attended to the curtain undergoes a further examination on the dark surface of the table. If found complete it is bundled away to undergo with thousands of others the bleaching, stiffening, finishing, and packing process. Accustomed as we are to touch lace curtains in a respectful manner, it seemed strange to see them hauled and bundled about so roughly.

I was particularly pleased with the neat, well-to-do appearance of the young lace menders, both as they sat at work, and when in the streets. They looked a bright, intelligent set of girls, and their outdoor manners were quiet and modest. They earn all round—winders and menders—about fifteen shillings a week.

The menders' occupation is certainly rather monotonous and sedentary; but the working hours are of a reasonable length, the rooms are large, and there is plenty of society.

Our kind conductors told us that a number of ladies were in the habit of visiting the lace mills for the purpose of reading to the girls



whilst they were at work; there being no whirling machinery to prevent them from listening though their hands were busy. After the reading they would sing hymns, and we all felt what a pleasant break such visits must prove for the young workers.

Indiscriminate singing was not, however, permitted, lest it should interfere too much with work.

I could not help feeling that for young girls who know no anxiety with regard to the supply of their daily wants, it *should* be a delightful employment to lighten the hours which are spent by their less favoured sisters in bread-winning. What an opportunity would be afforded for showing sympathy, conveying information, and cheering the heart of the young workers! And, as their voices joined in singing God's praises, how insignificant would social distinctions appear while they stood before a common Father, acknowledging the Lord as the Maker of them all, and alike owning their dependence on Him for the supply of every want.

I was told a little story to illustrate the effect of a turn in the fashion upon a particular branch of industry.

Every girl knows that Spanish lace is the lace of the present, but perhaps many are not aware that most of what goes by that name is actually made in Nottingham. Indeed, some of it is sent from this country to Spain, rechristened there, and brought back as if it were the production of Spanish workers.

Some time before the present rage set in, a Nottingham manufacturer was almost at his wit's end to find work for his hands. He was most anxious to keep them together, both for their sakes and his own, so he set himself to consider what could be done. He had capital, but if he were to spend it in manufacturing lace for which there was not likely to be a demand, the result might be ruinous to himself and his family. So he reviewed the successive fashions in lace for several past years, and then decided that, as all the other kinds had had a turn, Spanish lace would be the next to come into favour. He accordingly set all his hands

to work to make Spanish lace, though he had not a single order or even a prospect of one.

As the neighbouring manufacturers observed what he was doing, and saw his warehouse gradually filling with goods for which no one came, they thought he must be insane. But the tide turned, and when the demand came like a torrent, only our far-seeing manufacturer was ready to supply the new want.

He soon emptied his warehouse, and filled his purse, as he well deserved to do for his sagacity and his kind consideration for his workpeople.

I am afraid to say how many thousands of pounds he gained; but, at any rate, the profit was a most satisfactory one, and proved that it is a good thing in these days of competition to be able to look ahead.

I did intend in this chapter to give a little account of Christian work amongst the mill-girls, but I must reserve it for my next.

## A DAUGHTER NAMED DAMARIS.

By MAGGIE SYMMINGTON.

### CHAPTER VII.

MONSIEUR ETIENNE.



HAVING wheeled his mother's chair up to the hearth and rung at her bidding for Angelique, Monsieur St. Just left them immediately to return to his brother.

The Marquise confessed herself to be unusually fatigued, and retired to her own chamber as soon as Angelique appeared.

Damaris was left alone.

She sat down sadly upon the hearth, where the wood ashes still smouldered. But for those whispered words of Monsieur St. Just, she would have obeyed the impulse which bade her fly to the sanctitude of her own room as soon as the Marquise had departed, there to indulge her mortification and anger to her proud heart's content.

But something in those few commonplace words soothed and controlled her in spite of herself. The tone in which they had been spoken was authoritative, as well as beseeching, and she never dreamed of evading either the one or the other. There, where she sat, she must remain until Monsieur St. Just came to set her free from the obligation, no matter how many hours passed in the interim. Damaris, being strong-willed herself, felt the force of a stronger will than her own more decidedly than a weaker nature would have done, and, being true in her own nature and honourable-minded, she divined at once these same qualities in another. A few hours ago she had no idea

of what manner of man Monsieur Etienne St. Just was, and now she was resting in that calmness of repose which implicit faith in another person gives. At first sight there was something infinitely more attractive in the manner and appearance of Monsieur le Marquis, but she had felt a hesitation, a growing doubt, the wherefore of which she could not explain, which had not troubled her for one instant with respect to his brother. She had a curious feeling with regard to him that they were not meeting as strangers—that they were renewing an acquaintance, not beginning one.

Finding that plenty of time was given her for reflection, Damaris naturally began to review her position with respect to its change of aspect from the events of to-day. It was not to be all roses and lilies, as she had imagined. There were quicksands also.

Now that she had cooled down a little, she began to regret that she had allowed herself to feel such hot vexation, and still more to show it, at the badinage of Monsieur le Marquis. Had he intentionally provoked her, and was this to be the usual style of intercourse with him? If so, would her life be endurable with the Marquise, who seemed so very indulgent to the faults of her son Jerome? She dared hope nothing from the intervention of Monsieur St. Just. Had he not treated her several appeals with marked indifference? Besides, if he were able and willing to put himself between her and all further annoyance, she had learnt from the Marquise and from Angelique that it was a very rare thing indeed for him to come to Paris. On this occasion she supposed he had come solely upon his brother's account, from the few words with reference to his visit which had been spoken in her presence. Did the Marquise reside the whole year round in Paris? That she did not know yet, but she supposed that, if she went

away, it was only for a short change during the summer months.

And Monsieur le Marquis? Well, she feared that his headquarters were always in Paris, and that the infliction of his visits was a thing to which she dared not hope to find any end. She was more hurt than she liked to admit, because the Marquise had treated her son's obstinate determination to discuss the personal attractions of her *dame de compagnie* before her face more as a jest than anything else, and instead of promptly checking what Damaris in her indignation considered an unwarrantable liberty, had only lightly striven to divert his attention. Damaris's experience as a dependent had not been of long duration. In the seclusion of Frau Welbeck's establishment no indignity of this kind could, of course, have been put upon her. There her position was clearly defined, and she had been thoroughly respected in it.

Here all was different. She had come to Paris with the heroic determination to put up with every humiliation. She knew that it was a species of domestic servitude to which she was giving herself, in which her will must become subject to that of her mistress, the Marquise. But she had never calculated upon her submission taking the present form. When she thought of the Marquis's fulsome compliments, of his gross flattery, her pride seemed to suffocate her. She started from her seat and began to walk agitatedly about the room.

She heard the murmur of voices and the occasional clinking of glass in the neighbouring *salle à manger*. Monsieur St. Just and his brother still lingered over their wine and dessert. When would he come? When would she be free to go to her room? She began to chafe under this feeling of restraint, even while she knew it could not be evaded. All her pride was in arms, and it began to suggest to her that.



As I looked at her I felt that her days were numbered. There was also a strange alteration in her manner. She seemed dull and indifferent, and showed little pleasure in meeting me again.

I inquired where she was living, and she replied, with her mother. Her father, she said, was dead; her young brother living in Glasgow with her other sister. "And is Joe with you?" I asked, almost trembling for the reply; but Laura answered without any emotion—"He left me long ago—more than a year ago. I don't know where he is; I never wish to see him again." "Oh, Laura!" I said, "he is your husband!" A curious expression flitted over her face; the colour came into her thin cheeks. "I could have forgiven everything," she said. "All my own misery and starvation and ill-usage—but—this child." Here she pointed to the little boy. "You remember him as a baby, such a beauty as he was—the only one I ever had. Look at him now—a cripple for life, and all done by his own father's hand. In a drunken fury one day he threw my darling across the room; for weeks I thought he would die, but no, he struggled through it all, when, God knows, I sometimes had not bread to give him. And now he is a cripple for life! Can I forgive that? Would you forgive that?" . . . Her increasing agitation alarmed the little boy, whose wistful eyes were turned first upon me and then fixed upon his mother's face. She saw the look and the heightened colour of the child, and, picking him up in her arms, she kissed him fondly and whispered a word in his ear. It was the one trait of womanly feeling she had shown. Every other emotion seemed to have died out of her, but the mother's heart was there yet.

Very little now remains to be told of poor Laura's history. I said that I had thought her days were numbered, but I little imagined how very quickly the sands of her life were running out.

I saw her several times after this, and she was also visited by a faithful City missionary, who earnestly endeavoured to lead her to repentance, submission, and faith in the tender Saviour, whose own promise is that none who come to Him will ever be turned away. Laura listened, and was sometimes moved to tears, but she said very little in reply. Sometimes it almost seemed as though her troubles had seared her heart. And all this time the end was very near.

One day while she was engaged in her usual work of turning the mangle, which was her mother's only means of support, she suddenly stopped, and, with a slight cry, fell to the ground. Medical assistance was close at hand, and everything was done for her that was necessary, but all was in vain. She had burst a blood-vessel on the lungs, and never spoke again.

And so passed away the once bright and happy Laura, who, five short years before, seemed to have all the world before her, and whose life might have been so different. Ah those words—"might have been!" Will any young girl, who may read this story, take warning by the sad fate of Laura Heywood? Oh, young people, life is a serious thing. See that your life is begun with Jesus. Commit yourselves to Him; seek His guidance and blessing; and, as you value your happiness here, and it may be your eternal welfare also, turn away from the companionship of any one—man or woman—who has entered upon any downward path. Don't imagine, in the pride of your inexperienced heart, that you could never behave as poor Laura did, but remember the words of the great apostle, "Let him that thinketh he standeth, take heed lest he fall."

D. B. McKean.

## GIRLS' WORK AND WORK-SHOPS.

By RUTH LAMB.

### CHAPTER III.

CHRISTIAN WORK AMONGST THE WORKERS.



OUR Lancashire mill girls greatly resemble the material amongst which they work. They are somewhat like the cotton in the rough, very valuable even then, but needing to pass through many refining processes before the higher qualities are brought into play. But the means used should differ very widely. The cotton necessarily experiences very rough usage, but the young workers improve most under the gentle influences of refined, loving-hearted Christian women and girls.

I have had an opportunity of observing the effect of Christian work amongst these young people for the last twelve years, and though teachers have had patience sorely tried by some amongst their scholars, they have also been permitted to see much precious fruit in return for the seed sown and the labour bestowed.

It is, I believe, about thirteen years since some of these classes had their beginning in the part of Manchester chiefly occupied by factory operatives. It had been ascertained that a very large proportion of the mill girls could neither read, write, nor sew—that the fingers so skilful in the manipulation of the thread were wholly unaccustomed to handling the needle or the pen; so the young folk were invited to assemble and devote one evening in the week to learning these very useful employments.

At first sight it might seem that the teachers who undertook the task of operating upon this raw material would make the greater sacrifice. But after all it required some self-denial on the part of the scholars also. After being up so early in the morning, and spending so many hours in the heated rooms, it was not easy to give up the stroll in the open air, even though it could only be breathed in the streets of the city.

When the attention has been, perforce, incessantly exercised in order to keep pace with the ever-whirling machinery, it is not easy to begin to plod over the alphabet, or to exercise patience in shaping the letters at a first writing lesson, or learning to direct the needle when working hours are supposed to be at an end for the day. To make another beginning when every instinct and longing of the young creatures must have been pleading for rest and freedom out of doors, needed no ordinary effort.

But a beginning was made, teachers volunteered, numbers increased, tens grew into hundreds, and there was no lack of scholars. But our young mill hands require peculiar management, and not a little tact is also needed in those who teach. Past the age of mere children, with a sense of independence which is a natural result of the ability to earn their own livelihood; outspoken alike to companions and teachers; shrewd and quick-witted, from beginning the battle of life so early; all these things in combination called for special qualifications in those who were to deal with the human material in the rough.

Then, again, our young mill girls have a great idea of reciprocity. If they confide their private affairs to the teacher, they consider

that she should be perfectly open with them also. This was amusingly illustrated on one occasion when a very warm-hearted Christian girl, who had been a regular and devoted teacher, was engaged to be married.

There was great consternation at the idea of losing Miss Annie, as well as a strong feeling of interest in the approaching wedding. But beyond and above all was a sense of the injury inflicted on her pupils by her want of confidence, and she was roundly reproached for not having even told them that *she was keeping company*.

There is little doubt that when the girls first began to attend the classes they considered they were rather conferring a favour by coming, and that when there they ought to do pretty much as they liked. I well remember hearing a girl complain to the lady superintendent that she "*had been sauced by her teacher*," because the latter had objected to loud talking when she was reading to her class on the sewing evening.

As punctual attendance was absolutely necessary if progress were to be made, prizes were offered for this and for good conduct. Some extra ones were also given by the lady superintendent for Bible knowledge. These gifts were greatly valued, and some of the girls would soon make almost any sacrifice rather than be late. I remember on a winter's evening seeing one of the younger scholars sitting in her place nearly an hour before the usual time for assembling.

"It is only just past six," I said. "You will have a long time to wait. Did you think it was seven?"

"No, teacher, I always come soon. I come straight from the mill, after I've washed my hands."

"Have you not been home, then?"

"No, teacher. I live too far off, I couldn't get home and back before school, and I should lose my mark for being early if I went to my tea first."

It turned out that the girl habitually came straight from the mill to the class-room, in order to get her mark for punctual attendance, and having had her dinner between one and two, went without food until she reached home at night, which, as the scholars were dismissed at nine, would be at least half an hour later still. She looked upon this quite as a matter of course, and would not have mentioned why she was present so early had she not been questioned.

It is, however, usual for the hands to take an early tea, which is carried to them whilst they are at work by persons who receive a small weekly payment for doing this and supplying the boiling water.

As a matter of necessity, classes for factory operatives must be held in the heart of the mill district, and hence arises a difficulty as regards young teachers.

Educated Christian girls, daughters of well-to-do people, generally have their homes as far as possible from the factory chimneys. The little working lassie is used to trudge the streets in the darkness of a winter morning, piercing the dense fog as best she can, at hours when the girl teacher is sleeping on her comfortable bed, with no care or anxiety as to the wants of the growing day. In the evening, when some girls of like age are carefully escorted home under trusty guardianship, the mill-hands troop through the streets—their own caretakers. Some go steadily on, some with loud voices and careless laugh, ready to exchange jests with any passer-by, or, perhaps, attracted by the sound of street music, they will begin to turn round in pairs on the wet pavement. As you glance at them, you wonder at the graceful movements and almost noiseless touch of the feet on the flags, even when they are cased in clogs. And you wish that each of these dear, hard-working young



girls—the ages, perhaps, of yourself and your sisters at home—could be brought under the sweet influences of loving teachers such as you have had, or that you could help in the good work yourself.

But you live so far away, and there is the going and coming at nights which you feel sure your mother would never permit. Then the weather might be wet, and there are, in short, so many hindrances that you are afraid to offer even whilst you would like to help.

So classes are often without teachers, and the plenteous harvest cannot be gathered for want of labourers who, perhaps, hardly know how to pass the time at home.

The young mill girl, however, does not at all understand why, if *she* can be out in the streets at night, another girl, older than herself, better shod and protected from the weather, and, withal, able to pay for a seat in a tramcar, cannot turn out too.

I remember one fearfully foggy night, two hundred and fifteen girls were in their places, and scarcely a third of the teachers made their appearance.

A scholar came to the superintendent to complain of the absence of hers, and told her tale with an aggrieved face.

"I am very sorry, dear," said the lady. "I suppose it is the fog which has prevented her."

"But you've come, and I've come, so she *might* have been here if she'd wanted to. It's no good coming if there isn't a teacher." And she went disconsolately off to form an item in three classes joined into one.

On another night, when a pouring rain kept most of the teachers away, a scholar made a similar appeal.

"Hadn't I better go home?" she asked. "My feet are *just* *sopping*, and the room's full of steam with the wet shawls hung on the form-backs to dry. I wouldn't care if only teacher was here, but she hasn't come out because it rains, I expect."

"I daresay her mother was afraid she might get cold. Sometimes when teachers would come their mothers prevent them, because of the distance, you know," replied the superintendent.

"She said she would be here to-night," persisted the girl. "If *she* could get cold, so could I. And I've walked to the mill and back to-day, beside being on my feet when I was at work. And I live as far off here as teacher does, every bit; and she rides mostly, while I have always to walk."

"But you see, dear," said the superintendent, "you are more used to being a great deal out than your teacher is, and that makes some difference. Still, there is no doubt you ought to get your wet clothes off, so you must run home as quickly as possible."

A teacher of the right sort is sure to become interested in her work and to like it too well to absent herself, except in a case of absolute necessity. Many of those who take classes at the Mill Girls' School consider the evening on which it is held as dedicated to God's service in a special manner. No invitation, no prospect of an evening's amusement will entice them to leave the work undone which they have undertaken. This is as it should be; for how can we exact punctual attendance from our scholars unless we set the example? All work should be thorough, but especially such work as this.

When the Mill Girls' classes were commenced, many who were almost young women could not read. But the last seven years' work of education amongst the masses has produced fruit, and nearly all the younger scholars who ask admission are fairly taught, whilst the older pupils still need the instruction. At recent examinations plenty of juveniles—half-timers—have taken excellent

places, and doubtless mere book-learning will be acquired elsewhere.

It the reading, writing, and sewing have not been the most valuable things taught. Twelve years ago a tea-party was given to all the girls attending the classes.

The school was then in its infancy, and those who were present will not soon forget that gathering. The girls showed such a taste for tawdry finery, adorning the hair with white camellias and streaming ribbons, and putting necklaces of mock pearl or coral on dingy stuff frocks, held together at the backs by large pins. At tea the uproar was almost deafening. The girls pocketed the provisions, shouted for more, and declined to listen to anybody who attempted to address them. So someone started a hymn. Then the clamour ceased, and the young voices, instead of making discord, joined harmoniously in the well-known words.

Under cover of this the tables were cleared, and when the first speaker rose the girls listened quietly and attentively, though during the evening they showed a determination not to accord the same attention to all.

A year later and a marked improvement was visible, and even at that first riotous tea-party there were samples of conduct well worthy of imitation by the majority of the girls.

A dear friend of my own superintended these classes for eight succeeding years, continuing her loving labours almost to the end of her life. She appealed to the girls in a way which went to their hearts. She told them that the girl who worked the hardest for her daily bread might still be a true lady in her conduct and manners, both at table and in all her occupations.

That meekness, kindness, modesty, and thought for the feelings of others—in short, all those qualities in which Jesus set such a perfect example—were the best ornaments for young and old in every station of life. The beautiful Bible lessons which, with a hymn and short concluding prayer, occupied the last half hour in each evening made a deep impression on many of the young people, and produced abiding results. The gentle silvery voice, the refined manners, the earnest teaching were not lost. Look in now at one of the annual tea-parties. You will see nearly 300 girls and young women, distinguished for neat, quiet, and tasteful dress, modest manners, orderly behaviour. If there are any untidy or noisy ones, you may be sure that they are comparatively new scholars, and that in a little time they, too, will be influenced by the examples around them.

Though a dozen years have passed away, and other Christian workers superintend and teach in the place of some who are gone, there are yet left both teachers and scholars who began with the classes. Some dear, good girls are wives and mothers now, and carrying into practice in their modest homes the lessons they have learned, and setting a bright example to others.

Some have in turn become Christian workers as Sunday-school teachers, and some have gone to their eternal rest, rejoicing in the finished work of Jesus.

The dear lady superintendent to whom I have alluded shortly before her death addressed a touching letter to her "Dear Mill Girls," as she used to call them. It was circulated throughout the classes only, and was specially intended to guide the young people in the choice of life-partners, and to a course of conduct which would commend them to those who would be likely to make them happy in married life.

As I know that THE GIRL'S OWN PAPER goes into the hands of tens of thousands of working girls, I will quote the concluding portion of the letter alluded to, in order that the words which have been blessed to

many may have a still wider influence for good:—

"Let me give you some advice to guard you. I want you to be steady and quiet in the streets. Some of you who dance and sing in the streets are just those whom foolish and wicked young men would feel are the very kind of girls with whom they might take liberties, *while those who walk quietly and steadily, as ladies do, are not likely to get into trouble. 'What we sow we reap,' in this, as in everything else.*

"Shall I tell you the kind of young man I should like my dear girls to have for a husband?

"He should be a man who fears God, who fears to do wrong, but who does not fear to be laughed at for doing right. I should like him to be afraid of the public-house and of the companions he would meet there; but not to be afraid of saying *no* to these men when they tempt him to join them.

"I should like him to have been a good son to his father and mother, and one who has loved his home. I should like him to have been a steady workman, whose master speaks well of him, and one who is careful of his wages.

"Above all, I should like him to be a man who trusts in Christ for salvation, who reads the Bible and prays to God daily, who keeps holy the Lord's Day, and goes to the 'house of God.' I should like also that husband and wife should pray together and read the Bible together; and then I trust you would be walking in the path of the just, that shineth more and more into the perfect day. Then you will have begun a happy life together on earth, that will be continued by faith in Christ through all eternity.

"I am, my dear girls,

"Your sincere friend,

"SOPHIA BROWNE."

Very lately, a girl whose behaviour at that first noisy party was an example to others, and who has gone on winning prizes from year to year, and ever advancing in the right way, lately made just such a marriage as is described above. In alluding to it she went over the items one by one, saying joyfully, "See, I have just the things that dear Mrs. Browne wished for us girls! Ought I not to be very thankful and happy?"

The spread of education will probably soon render these classes unnecessary as regards mere book-learning.

But I feel sure that the girl workers in spinning-mill or weaving-shed will still need just what refined Christian women and girls can give—the example of unaffected piety, the Bible instruction, the refined manners, the unobtrusive attire. And the young workers who labour in very different spheres may all be workers together with Christ, and showing sisterly sympathy here may look forward to an eternal union where all earthly distinctions are forgotten in the Father's home above.

In my next chapter I shall show you the girls at work in the silk-mills.

(To be continued.)





Stella is the very luckiest girl there ever was. Here she is just home from London, where she has been seeing all there was to see; going to picture galleries and attending concerts—how I should love to go to a concert!—and dancing at parties. I don't mean real grown-up parties, for of course she hasn't come out yet; and then she has got such hosts of the loveliest dresses you ever saw—evening dresses and travelling dresses, and every other kind. Mrs. Branscombe seems to think nothing is too good for her; and the squire has just bought her a most lovely horse, and a set of pearls that I am sure have cost ever so much, besides a whole host of birthday presents. I think it would be so nice to be made as much of and to be as pretty as Stella is. She has such a quantity of golden hair, and such a fair complexion, and such blue eyes. It does feel hard that one girl should have so many advantages and another so few. It doesn't seem fair!"

"Discontented, Katy?" asked her mother, gently. "Have you been seeing all the nice things Stella has got, and been growing dissatisfied with your own lot? You must not say it is unfair, my love. It is right that some should be rich and some poorer, but I assure you that happiness does not consist in wealth. If Stella has some advantages you have not, perhaps she has many other things to grieve and trouble her that you know nothing of."

"But she can't have," Katy replied, decidedly. "What more could any girl want than she has? Beautiful dresses, a fine house, plenty of servants to wait on her, a horse to ride, and, oh! mother, she is so pretty with it all."

Mrs. Marston looked down into the little flushed, eager face, but she did not give words to the thought which passed through her mind that the clear, sun-burnt complexion, the dark shining eyes, and the wealth of unruly brown curls were, in their way, quite as lovely as Stella Branscombe's blonde beauty. She only replied, as she gently stroked the flushed cheek—

"Do you remember that little poem I gave you to learn the other day about the daisy and the buttercup?"

"You mean the buttercup that wished she was a daisy, because she was tired of always dressing in 'the same old tiresome colour,' and had always wanted to wear a nice white frill. Oh, you naughty mother, you mean I am the discontented buttercup. I don't mean to be, but I afraid I am," she added ingenuously. "And what did the robin say to the discontented buttercup?" questioned her mother, with a smile.

And Katy repeated—

" 'The swallows leave me out of sight;  
We'd better keep our places;  
Perhaps the world would all go wrong  
With one too many daisies.  
Look bravely up into the skies,  
And be content with knowing  
That God wished for a buttercup  
Exactly where you're growing.' "

Katy's voice took a lower and more reverent tone as she repeated the last two lines, and the cloud lifted a little from her face.

Mrs. Marston went on, "I always like that little parable; it teaches so much. And you may be very sure, little daughter, that if God wants to have a buttercup growing just where He places it, that He knew quite well all about it when He put Stella Branscombe in her place as the squire's only child and you as the doctor's daughter, your brothers' kind, helpful little friend and your mother's right hand. Won't you try to be content to be a buttercup, Katy, and leave the daisies to bloom where God has placed them?"

Katy made no reply. She bent her head over her work, but she could see neither needle nor thread for the tears which were

filling her eyes. Of course, mother was right; she always was, and then Katy relieved herself by a burst of quiet crying on that loving mother's breast, while Mrs. Marston laid her work aside and talked to her little daughter wisely and tenderly as they sat alone in the gathering twilight, until Katy's eyes were once more quite dry and the little evil spirit of envy and discontent had been exorcised for the time being.

To be mother's great comfort; mother's right hand; yes, that was better even than Paris dresses and pearl necklaces; better even than a journey to Switzerland. Yes, she would be content to be a buttercup and bloom where God had placed her.

(To be continued.)

## GIRLS' WORK AND WORK-SHOPS.

By RUTH LAMB.

### CHAPTER IV.

#### SILK CULTIVATION AND THE SILK MILL.

SINCE this series of papers was commenced, I have entered into conversation with numbers of persons who handle the fabrics from which our clothing is made, and have been surprised to find how little those who sell, sew, or wear them, know about their history or mode of production. This fact has induced me to step a little outside the lines I at first marked out, and, not merely to describe the girls' share in the different manufactures, but to teach the workers themselves something about the material before it reaches them and after it has passed through their hands. If I were a girl working amongst silk, cotton, or any other material, I should not be content to understand merely that stage of its development in which I was practically engaged. I should want to know how it came into the state in which I received it, and what would be done with it after it left my hands.

Almost every one who reads at all, knows that silk is produced by a species of caterpillar, and that to the labours of this insignificant little creature we owe all our richest, most costly, and beautiful articles of dress.

It is quite worth any girl's while to procure a few silkworms' eggs, hatch them, and watch the growth of the insect and its mode of producing the raw material, though the climate of this country is too cold and too variable for silk cultivation on a large scale to be remunerative.

The eggs are hatched at a temperature of about 82 deg., and the tiny worms, for the purpose of experiment, may be fed on young lettuce leaves—those of the mulberry not being easily procurable in this country. They are very small at first, like little dark moving threads; but they have fine appetites and grow rapidly, changing their skins four or five times before they reach maturity.

Each change of skin is a trying period for the worm, which ceases to eat before it takes place, and many die during the time of casting their covering.

A full-grown, well-nurtured worm in its native land is nearly three inches long and of a greenish-white colour. It is a stop-at-home creature; all it seems to care about is the having plenty of food to supply a voracious appetite.

Even when reared on mulberry trees in the open air, the little creatures do not wander, and a cardboard tray lined with clean paper, which should be changed from time to time as it becomes necessary, makes a suitable dwelling for a girl's stock of worms.

The creature has a large head, a sort of horn

on the last joint of its body, and within it, and extending nearly the whole length, are two tubes containing and secreting a sticky substance from which the silk is spun. These tubes unite near the opening whence the thread issues in a single cord. Our little worker is, however, both a spinner and a doubler in its own person, for, on examining the thread through a microscope, we find it is composed of two distinct filaments; one produced by each tube, and joined together as they issue from the body.

When the worm is ready to spin, it ceases eating and commences its work by attaching coarse fibres to twigs placed for the purpose. In Italy, little trays divided into square cells are used for the worms to spin in, or they may be placed separately in paper cones, which they will speedily line with silk. At first you may see them working away as within a veil, but the screen thickens, the walls of the cocoon increase rapidly, and the worm is finally lost to sight to be seen no more in the same shape. The spinning occupies five days.

The work finished, the caterpillar becomes a chrysalis, and this in turn changes into a velvety white moth, which will eat its way out of the cocoon in from two to three weeks, if not destroyed. This is allowed to a certain extent, as sufficient moths must be preserved to lay eggs for the next season. The shape of the cocoon tells the sex of the moth enclosed within it, and an equal number of males and females are carefully selected.

The moths, like the worms, move but little from the spot in which they were perfected, taking almost no food and rarely using the wings as a means of locomotion. Their life in the last stage is short, and they seem to exist as moths only to continue the species and to leave eggs to be hatched when summer comes round again.

When the cocoons have been selected as above, the others are placed in ovens sufficiently heated to kill the moths, for were these allowed to eat their way through the silken wall it would be greatly deteriorated and could not be wound. Should the worm die before its work is finished, a change is observable in the shape of the cocoon, and the silk will be of inferior quality.

The thread produced by a single worm is sometimes 1,100 feet in length, and it is usual to obtain 300 yards of good silk from a single cocoon. But you must not suppose that the fibre, as it comes from the worm, is thick enough to be wound singly, though it is already double.

The cocoons are placed in water heated by steam, and gently stirred with a twig, from time to time, until the gum with which the silk is impregnated dissolves sufficiently to set the ends at liberty. Four or five of these are taken together and gradually twisted into one as they run through a glass eye in passing from the cocoons to the reel. As they travel the moistened animal gum dries again, and the fibres adhere and form a single thread. The important part this gum performs in dyeing will be shown hereafter.

We are accustomed to regard silk as a very dainty material, and cotton as a comparatively coarse one, but it is astonishing to see what rough usage the former will bear in comparison with the latter. It is extremely tenacious and elastic, and will endure a strain to which a cotton thread of the same size would be quite unequal. The cause is self-evident. Cotton thread is made up of an immense number of short hairs, combed and twisted together. Silken thread is composed of several fibres, each one of which measures 300 yards or upwards.

The silk reeler should be very attentive to the work in hand to secure an even thread. If one of the number she is reeling should break or run out it should be joined imme-



diately, for, fine as are the filaments, the silk will be unequal and much less valuable should this duty be neglected. Want of care in this respect greatly depreciates the Chinese silk in value. It is the whitest, and ought to be costly in proportion, but bad reeling spoils it for many purposes. The winders are so careless that they will allow half the filaments to break, and will only join them when there are not enough running to go on with. A lump is made by this wholesale knotting, and these inequalities are frequent and require much time and labour to remove. It is only necessary to examine a piece of soft silk woven in China to see how the web is affected by careless manipulation at the outset.

Yet, if the improvements in a manufacture did but keep pace with its age, Chinese silk ought to be the best in the world. It is said that silk cultivation had its origin in China, where it was commenced 2,600 years B.C. It only began in Europe in the sixth century, or A.D. 530, so far as the cultivation of the worm was concerned. The eggs were introduced into Europe from China by some Persian monks, who had penetrated into that exclusive country as missionaries.

Webbs of Chinese silk had been brought by the Phœnicians and Persians before that time, and raw silk had been conveyed to Greece, where it was woven and subsequently sold in Rome, at almost fabulous prices. Horace and Virgil, who wrote in the last century before Christ, are the first Latin writers who mention silk. Its price per lb. in the reign of Aurelian was 12 ozs. weight of gold, and it is said that this Emperor refused his wife a silk dress on account of the cost.

China is undoubtedly the native country of silk, all others which now produce it having been originally supplied with eggs from thence. Even after the fabric was made use of in Europe, several centuries elapsed before the secret of its mode of production became known. Some supposed it to be a fine kind of wool; others a down obtained from trees, and after it was known to be the work of a worm, a long time elapsed before the method of preparing it was understood.

It may interest the girls who work amongst silk to-day to know that thousands of years ago the Empresses of China, with their attendant ladies, amused themselves in their leisure hours by hatching silkworms, and weaving their produce into dainty veils. Though silk is named in the book of Genesis, the best commentators believe that the fabric referred to is fine linen, such as the mummies are wrapped in—no silk being found about them. It is not named in connection with the luxurious times of Solomon even, or the decorations of the Temple or Tabernacle.

The silk-producing countries of Europe are Turkey and Greece, the earliest to begin it; Italy, France and, in a less degree, Spain and Portugal.

Long before the silk reaches the hands of English girls in our mills, it has passed through the fingers of other girls in the countries where it is grown and reeled. Being work requiring delicacy and care, it is specially suited for female fingers. But my young countrywomen and girls need not envy the condition of their sisters in southern Europe.

Look, dear girls, at the word-picture I am going to give you, and thank God that your lot has been cast in this land—foggy and damp though it may be—rather than in the sunnier climes where the silkworms are hatched and tended, and their produce wound by other children's fingers.

I have obtained this information from the Report of a member of the Royal Commission, appointed to inquire into the state of certain industries on the Continent a short time ago.

"The children enter the silk factories, visited by the Commission, at about seven years of age, and receive in wages from 3s. to 7s. 6d. per week. *They commence work at five o'clock in the morning, and cease at ten o'clock at night.* They are allowed 15 minutes for breakfast and an hour for dinner, and after that the machinery is not stopped, but the operatives have to take their evening meal as best they can, and while the machinery is working.

"Their breakfast consists of black bread, cut in small pieces and steeped in water; their dinner of thin broth and black bread; and their supper also consists of black bread *steeped in the same water in which silk cocoons have been steeped.* The rooms in which they worked are heated to 85 degrees, and they sleep in rooms where there are fifty beds, two in each bed.

"There are no bedroom utensils or provision for washing, and the workers have to go into a courtyard and wash in a trough. *They do not undress, but throw their weary limbs on the bed and sleep in their clothes.* In addition to all this, a certain quantity of work is exacted from each child daily, and if it is not performed she is instantly dismissed."

The gentleman who kindly arranged for me to visit the silk workshops of this country also described the above state of things to me, he having seen the Italian children under similar circumstances. He said the stern overlooker walked up and down between the rows of young workers to notice and punish any amongst them who might loiter or look off for a moment. It reminded him of slave-driving rather than of a factory in a professedly Christian land. "And," said he, "by this incessant toil from early morning until dark, the best amongst them only gained about an Italian franc—less than a shilling—for her long day's toil."

I was exceedingly glad to hear, a few weeks ago, that France is going to reduce the hours of labour to eleven per day for all workers under eighteen years of age. And that is an hour longer than women are allowed to work in mills in this country.

Silk-weaving has been done in England for centuries, principally by French refugees driven out of their own country by religious persecution. Fifty thousand Huguenots, mostly weavers and craftsmen, came over here in 1685, driven from their homes by the revocation of the Edict of Nantes, by which their lives and properties had been protected, with some interruptions, from the close of the preceding century. They came to England beggared as regarded property, but bringing with them knowledge, as artisans, far in advance of what was possessed in this country. They were kindly received, warmly welcomed, and to aid the most needy of them a grant of £15,000 per annum was given by Parliament.

The skilful craftsmen did not take it long. They set up their looms and began to work, and in twenty-eight years after the silk manufacture of this country employed 300,000 persons. But though weaving was done here, the material was all prepared ready for the loom in the South of Europe until 1718, and in that year the first silk mill was built at Derby.

By a silk mill I mean the workshop in which the raw silk is received as it comes from the countries where it is produced. It has still many processes to pass through, and here begins the work of our English girls.

It is a source of peculiar pleasure to me that of the two kind and courteous gentlemen who devoted a day to showing me every-

thing connected with work amongst silk, that lay within reach in the same town, one is a lineal descendant of a Huguenot refugee. His name, a pure French one, has been preserved un-Anglicised, and to-day in his mills, beautiful silk goods are produced, the family having carried on the manufacture to the present time without interruption.

It is not his mill, however, that we are about to enter; we hope to visit that by-and-by to see the weavers at their work. This factory belongs to our other companion, and in order to make the routine of work intelligible he pauses on the threshold to write down the names of the processes we are about to witness, in their regular order—sorting, washing, winding, cleaning, doubling, spinning, throwing. With the exception of spinning, which is done by men, women and girls are employed in the various operations.

The mill formerly well known as "David Holland's," and noted for the fine quality of work produced, is an old building, but fitted with excellent machinery. And what a contrast it presents in many respects to a cotton mill! Everything is so exquisite in its cleanliness, that it really seems as if it would be a matter of difficulty to soil one's fingers. The workers deal with a dainty material, and it is necessary both for their persons and clothing to be scrupulously clean. The rooms, snowy with whitewash, are kept at an agreeable temperature, and the air is fresh and pleasant as we pass through them.

First, we enter the sorting-room, where the bales are being opened. The Chinese bale contains twelve large bundles called *books*, and each book is made up of a number of hanks called *mosses*. The sorters' business is to unpack the bale, divide the books into hanks, and each hank or *moss* into four smaller ones. The band—a small skein—which ties each *book*, is of inferior silk, and is not worked with the rest. These bands are collected in bags with other waste silk and sold separately.

Here I had an opportunity of seeing a sample of Chinese sharpness, as well as of reading some Celestial advertisements of a very amusing description.

When one considers that it takes the work of 1,600 worms to make a pound of silk, it is easy to imagine that the pure article is very costly. A very poor quality is worth two shillings an ounce. John Chinaman lauds his silk to the skies, and he uses a good packet of paper to express his enthusiasm on the subject, which he tucks in amongst the silk, thus adding considerably to its weight, and making the consumer pay for his advertisement.

I daresay most of us have heard the



expression "first-chop," and considered it as a slang term to describe something of superior quality. But "chop" is the Chinese term for "trade mark." Amongst these the "dancing bear chop" is a great favourite, and a very remarkable-looking quadruped he is in the Chinese illustration before me. Another chop is the "flying fox."

A story is told that a gentleman wishing to



purchase silk, telegraphed to his agent to buy him a quantity of "dancing bears." Agent replied, "Cannot procure 'dancing bears,' but will get you 'flying foxes.'"

The telegraph clerk was greatly puzzled when he was bidden to "wire" back and secure the latter, imagining that the intended purchaser must be forming a menagerie.

But he was still more perplexed when, later in the day, another telegram from the agent stated that he had failed to obtain "flying foxes," but had bought "blue lions," instead.

In the advertisements we find a funny mixture of words, as for instance, in the following:—

"The proprietors of these silks (which have now been steadily produced for the last five years) are disappointed at the small amount of 'kudos' as yet acquired by their chop tickets, and they therefore insert the present additional paper in the hope of leading buyers to take more notice of them.

"As these silks are bought in Nanjing and carefully selected, it is evident that they must give a more satisfactory result to manufacturers than whiter and worse quality silks from the Linghoo and Sinoze districts—but these latter from some unaccountable reason are greater favourites!!!"

#### "FEI LOO."

Another tells that his silk can be confidently relied upon to keep up its character as a *classique* quality.

A third gives a list of unpronounceable words—his peculiar "chops," the deciphering of which is quite beyond me. So here I will lay down the packet.

In my next chapter I hope to show our girls employed in a variety of pretty operations in connection with silk.

## SCREENS, AND HOW TO MAKE THEM.—II.

FIG. 1 represents a two-fold screen; each leaf would, in actual measurement, be about 2 ft. 3 in. by 5 ft. 6 in. high. The upper panels, containing the heads of Shakespeare and Dante, are separated from the lower part by cross-bars of wood, and as these heads are meant to be painted in oil or water colours, two wooden panels should be made to fit into the framework, and these can either be painted upon or papered over. If the panels were oak it would look well to leave the wood in the background, simply painting the faces and drapery in oil colour. Gold grounds would have a rich effect, or those who paint tapestry might execute the heads by that process, given in a former number of THE GIRL'S OWN PAPER. The Chandos portrait of Shakespeare

was the model for the one given in the illustration, but there is a characteristic and quaint portrait taken from the 1623 edition, and republished in the "Leopold Shakespeare." The head of Dante is the well-known type of Italy's great poet, based upon the wall-painting in Florence by Giotto.

The lower portions of the screens are designed to represent *appliqué* needlework, and are drawn in the quaint, somewhat stiff manner, to facilitate the designs being carried out in that style of work, for unless the design

lower for the fish. The rose, as will be seen in the illustration, tells as dark on a light ground, while the bottom and top panels are the reverse. A very good material for embroidering on is the Umritzur cashmere, sold in Regent-street, and as it is made in every shade of colour, from dark olive-green to lightest yellow, all tastes can be suited. The birds and fish panels should be treated rather in outline and in one tone of colour, say blues for the birds and browns and yellows for the fish. The use of gold thread to indicate the

water or clouds would greatly enhance the effect. The rose is drawn very ornamentally, and should be worked in nice tones of green, the stems in reddish brown, and the flowers in light pink silk, with a darker red outline and yellow centres. The butterflies should be chosen from those with few colours, such as the whites, sulphur, and clouded yellow. These, like the tortoiseshell, peacock, and red admiral, would look well if carefully worked, but they take a long time to embroider, and are not effective unless well done. The colour of the ground might be light lemon yellow or yellow green, or even a salmon tint, and the flowers and butterflies must be made darker or lighter, as looks the more effective.

The advantage of dividing up the leaves of the screen into two or three panels is that you gain variety by being enabled to treat each panel in a different way. If each leaf be all in one panel, it is difficult to avoid monotony, whereas by introducing birds and fish, as in fig. 2, or heads, as in fig. 1, it gives additional interest, and does not add much to the amount of work. The frame itself is improved, too, and is certainly made stronger, the cross-bars giving great support to the uprights. The addition of a little peg-rail, as it is called, as in fig. 1, is a nice finish.



FIG. 1.

is kept pretty flat and simple in treatment *appliqué* work is not successful. The same designs might be executed by other means, such as outline embroidery; but we think it would be more effective to carry it out as we suggest. The back of this and other screens can be covered with any nice-coloured textile—such as cretonne and tapestry, or some nice wall-paper, or imitation leather-paper is effective and by no means costly.

Fig. 2 is designed expressly for needlework, and should be executed in crewels and silks. Each fold of the screen is divided into three panels, the upper one for the birds, the middle portion for the rose design, and the

cloaked old Kentish dame once found her way into the tent occupied by Queen Charlotte at a Volunteer review held shortly after her coming to England, and after staring at the royal lady with arms akimbo, observed, "Well, she's not so ugly as they told me she was!"—a compliment the astonished queen gratefully accepted, saying, "Well, my good woman, I am very glad of that." Probably her Majesty forgave her critic's rudeness as the outcome of rustic ignorance and simplicity.

IF THE WORLD KNEW WHAT I KNOW.—If the world knew what passes in my heart, what would it think of me? I know it; what do I think of myself?

## VARIETIES.

### AN HONEST CRITICISM ON A QUEEN.—A red-



the front gate of the *château*, sketching. She had shown more talent for drawing than for any other accomplishment, and so I had striven to cultivate her powers in this respect, and she was beginning to show, by the skill with which she handled pencil and brush, that I had not taught in vain. I stood by her as she worked, and every now and then her clear, star-like eyes would glance up at me, and she would pause in her work and talk to me a little. She had got used to speaking to me of all her most secret thoughts and feelings and fancies, and she would relate them to me whenever they came into her little head, as simply and easily as a bird sings. To-day her words were chiefly about her mother, of whom she retained a most vivid remembrance, and of whom she would often speak to me.

"Do you know, I had a dream about mother," she said, rather thoughtfully, "this morning just before I woke; it was a happy, pretty dream I know, but I can't distinctly recollect it; it is, somehow, all confused in my mind with the morning sunlight which was coming in at my window when I first opened my eyes, and the note of a blackbird who was sitting in a tree just outside."

"You must try to be better and better, and cleverer and cleverer, that your mother may have still more reason than she used to have to love her little Alba when she comes home."

"When mother comes home, when mother comes home," sang the child, making the words into a little tune, and keeping time to it with her small feet. Then a slight shadow passed over her face as she added, in a low tone, "But when will that be?"

Strong as Alba's affection was for her mother, she neither wrote to her herself nor received any letters from her. Mr. Bridlington had forbidden any such correspondence being carried on. He said that he would do all the writing to Mrs. Rothsleigh, and at regular intervals he sent Alba news of her, now saying that her health was a shade worse, and now a shade better. I always wondered a little at this arrangement, but the old gentleman insisted on it. Indeed, neither Alba nor I knew Mrs. Rothsleigh's address in India.

"I hope she will come back to you very soon," I answered; "but I daresay I shall be sad enough when the day comes, for then I shall very likely have to leave my child."

"No, no," she cried, flinging one arm round me, "I will have mother and you too; then I shall find it doubly easy to be good."

After that she returned to her drawing, and I took a few turns up and down the avenue. Once when I came back towards the entrance gate and the place where she was sitting, the girl startled me a little by saying—

"Just now, when you were at the further end of the avenue, a woman came and stood close to the gate, and looked in for a minute or more. I wonder what she could possibly want? I half thought of asking her, but before I could get up and go to her she had slipped away."

"What sort of a looking woman was she?" I asked, rather uneasily.

"Oh! there was nothing particular about her. She wore a grey cloak, and had a thick veil down, so that I could not see much of her face."

Mr. Bridlington's words did, certainly, come into my mind, but after a few minutes' thought I felt that I was troubling myself unnecessarily. What could be more probable and natural than that a lady, who had driven out from the town of Avranches, which was not many miles distant, should pause to look at the picturesque old *château*. Indeed, I had seen tourists doing so two or three times this summer.

Just at this moment one of the servants came to call me in to see a young woman who wanted to take the situation of cook in the *château*, as our present one was going to leave. The girl begged me to make haste, as the young woman was, she said, in a hurry to get back to Avranches that night.

"Come in at once, Alba," I cried, as I went; "it is getting late and cold for you to sit out."

"Yes," answered the child, in her usual docile way.

(To be continued.)

## GIRLS' WORK AND WORK-SHOPS.

By RUTH LAMB.

### CHAPTER V.

IN THE THROWING-MILL AND DYE-HOUSE.

THERE is something rather puzzling in the term "silk-throwing," and we have to go back to our Saxon ancestors for the origin of the word. The Saxon *throwan* meant to twist and turn, and amongst our Scotch neighbours we sometimes find the term *throwan* applied to individuals who are crooked in person or ill-tempered and contradictory in their ways. Additional point is given to the latter mode of using the expression when we understand that, in silk-throwing, the combined threads are twisted in an opposite direction from that in which the separate strands or *singles* were twined in the earlier operation.

But we have only seen the raw silk unpacked and sorted. Clean and dainty as it looks, it must be washed as soon as it leaves the sorters. After a careful ablution in soap and water, at a temperature of 110 degrees, it passes from the drying-room to the winders.

The winding machinery consists of a number of light reels called *swifts*, which by a simple contrivance can be made smaller at will, so as to stretch hanks of varying sizes. From these the silk runs on to bobbins to be cleaned.

"What!" says a young reader. "More cleaning, when the silk, pure and pretty-looking to begin with, has already been washed?"

The next cleaning is, however, of a very different character, and is to remove knots and inequalities in the thread. The bobbins are fixed on spindles, which allow them to turn round without the smallest strain, and from these the threads pass through the cleaners to other bobbins at the opposite side of the frame.

This is a pretty and delicate process. The cleaner consists of two upright steel blades set edge to edge, and so close to each other that no knot or inequality can pass. Thus the thread is stopped between the blades, and the inequality must be removed and the ends joined before the silk can pass on its way to the opposite bobbins.

Doubling, as in cotton, is the combining of a number of strands—two, three, or four being joined, according to the purpose for which the silk is to be used.

Thus far the work has been done by women and girls, except that a few little boy-half-timers may be seen amongst the younger hands. But the spinners are youths and men. The machines are high, having three tiers of bobbins, about fifty in each row, and the spinner stands on a little platform, which forms the top of a double set of short steps. This little double step ladder runs on wheels, and a slight movement of the spinner propels it from place to place—wherever the bobbins are requiring his attention. Its height, three steps from the ground, enables him to reach the top tier of bobbins with ease.

The silk is, of course, twisted in the spin-

ning and throwing processes. In the latter it is carried from the bobbins to the reels, and thus again formed into skeins or hanks.

By a beautiful mechanical contrivance, called the self-acting count guider and stop motions, the length of silk run off is registered. When the exact quantity—2,000 yards—has run off, the machine moves the guider, and alongside the first skein runs off another and another until the reel is full, when the machine itself comes to a standstill.

This ingenious piece of mechanism seems almost human in its way of working, or perhaps one may say it is more than human in its unvarying exactness.

The fineness of the silk must be determined before the hanks are made into bundles, for a bale of raw silk often contains as many as eight different qualities.

This is not done by touch or sight, but by weight, and as each skein contains exactly the same length of thread, it is classed according to the number of deniers or drams which it weighs. The weighing-machine is such a delicate little thing—just a small spiral spring attached to a registering frame.

Though all the bands and inferior portions of raw silk are put aside—nothing but the best quality being operated upon in this mill—we are much struck with the economy practised on all sides. Every bit broken off when a new join is made, and the ends of threads used in tying the hanks—in short, every scrap is preserved. There are pins in the walls, across which the workers hang these odds and ends, which are passed into the waste bags and utilised elsewhere.

Sitting in the window recesses, women and girls tie up the hanks as they leave the reels, and when sorted, by weighing, they are made into bundles for sale, after which they go into the dyer's hands.

The terms used in connection with the manufacture of silk are quite different from those applied to cotton. No one seems to know whence they are derived, and some of them are not to be found in any dictionary.

For instance, the lengthway thread or warp is, in silk, called "organzine," and receives more twists per inch in the throwing than does the "tram," or weft.

The male overlooker in each room is called the steward, and he is the only grown-up man amongst the female hands employed there. There are, however, four women in each large room, called "danterers," who superintend and instruct the younger hands and beginners. It does not seem very difficult to guess the derivation of this title, though Webster and the other great "men of words" tell us nothing, nor even mention the word.

It is evidently from "to daunt," or keep in check, these women being answerable for the order, industry, and good conduct of those committed to their oversight.

All the workers are paid by time, none by piece—a wise arrangement, considering the delicacy and costliness of the material which they manipulate.

If piece-work were given the hands might be tempted to hurry it in order to get a greater quantity finished, and in silk the smallest flaw causes a great reduction in value. One of my companions took up a thick hank, and as he passed it through his fingers he pointed out one tiny knot which had escaped in the cleaning process.

"See," said he, "a buyer, noticing that, would knock off eighteen pence a pound in the price on account of it"—an illustration which enabled us learners to appreciate the necessity for all the care taken to insure perfect evenness in the thread.

Half-timers begin to learn at ten years old, and at the end of a month get from a shilling to three and threepence per week, according to proficiency.



They may reach five shillings, and at thirteen years old they become full timers. The wages of good hands vary from 8s. 6d. to 11s. per week. The women who tie the hanks get eight or nine shillings per week.

Girls who work amongst silk have many advantages over those in cotton-mills. The exquisite cleanliness of the workrooms, the absence of oily smells, the comparative freedom from noise, the beauty of the material, and the fresh, pleasant atmosphere so different from that of the heated cotton-mill. In the latter, however, the work is much more regular, and not liable to the same interruptions, the production of silk fabrics being affected by the ever-varying fashions in a much greater degree than the materials made from cotton.

The young people we saw were fine specimens of healthy, modest, intelligent-looking English girls. The employer remarked of them, with pardonable pride, that there was not one amongst them whose character would not bear looking into, and that most of them were joined members of some Christian congregation. As we passed up and down the long rooms we saw the bright young faces, and heard the sweet voices making pleasant melody, as they sang hymn after hymn together, while the busy hands kept at work, and the attentive eye was scarcely turned, save for a moment, from the frames they were tending.

I wished much to make the closer acquaintance of these young folk, and it was with no little regret that, a few weeks later, I was compelled to decline a kind invitation from the millowner to be present at a tea-party he was giving to them. A postscript—"The above request comes from the workpeople"—made it very hard indeed to send the negative which could not be helped.

Before passing out we cast one more glance at the bundles of hanks, and are bidden to notice the beautiful beaded appearance of the twisted silk which, when held up to the light, looks like a fairy necklace, or cobweb strung with hoar frost. The thread is very sensitive to changes of temperature. Though it does not need great heat, a certain amount of moisture is favourable to it and greatly assists the working. A keen March wind will diminish the quantity that can be turned out in the same time by about a fourteenth part.

So we turn our backs on the throwing-mill, I carrying with me three dainty hanks—of China "organzine" and "tram," and "organzine" made from Japanese silk, which even my inexperienced eye can now pick out from the produce of other countries by its peculiar tint—less white than Chinese, less yellow than some French and Italian; though some of the latter is now very like it, as Italy had to obtain fresh supplies of eggs from Japan, when her own worms were destroyed by disease a few years ago.

Though the dyeing of silk is not done by female workers, we should have to leave out a very important link in the manufacture were we to pass the door of the dye-house without entering. Those neat bundles which we saw made up, change hands before they come here to receive a thousand different shades and colours.

"What!" say you again. "Talk of a thousand hues, when you may number the primitive colours upon your fingers! Impossible!"

By no means impossible. The varieties and combinations produced by the dyer's art seem almost countless, so numerous and beautiful are they.

Before any of these hues can be given to the silk, the bundles are undone, the hanks shaken out lightly, tied together in dozens—the band used being of a particular kind or colour to denote the owner—and then slipped

into coarse white-netted bags. Through the meshes the suds can pass freely to the skeins within, for the silk has now to undergo another washing and boiling process to separate it from the animal gum put in by the original spinner—the silkworm. I was told that out of every sixteen ounces of China silk there are three and a half of this gum. In some cases the whole of this is boiled out; in others a portion is left in, according to the kind of silken fabric which is to be made from the thread.

The great dye-house is furnished with rows of bright copper baths, containing many coloured liquids, and offering a combination of odours, in which a powerful acid predominates. The first bath, however, is filled with thick suds of a creamy colour and consistency, caused by the gum aforesaid. The suds are boiled by steam, a pipe being turned into the bath when it is ready charged with bags of silk, soap, and water.

"We used to have a fire below," said the master of the dyeing establishment, "but we had a great quantity of silk spoiled through the ignorance of one of the men. He put in the soap, which he allowed to sink to the bottom of the bath and form a thick layer. It never mixed with the water, but burned to the bottom; the silk stuck to it, and was scorched in turn. So from that time I have boiled the thread by steam only. Before we leave this creamy-looking mixture, however, I must tell you something of its value. Perhaps you would think that having taken so much pains to separate the gum from the silk the suds would be worthless. On the contrary, they are simply invaluable to us for mixing with the aniline dyes. By putting a pailful of the suds to each foot depth in the dye-bath the other ingredients amalgamate without being curdled by the vitriol, as would otherwise be the case. So, you see, along with the silk itself the little spinner has furnished us dyers with the only material yet discovered which enables us to use these beautiful aniline colours."

By means of the gummy suds the silk absorbs the dye, and it is a curious fact that all the researches of chemists have failed to discover any substitute.

Rods are passed through the skeins of silk and placed across the baths containing the dye, each portion of the hanks being immersed in the liquid until the whole are equally coloured.

To remove the moisture after being dripped, the silk must not be wrung, or the colour would be streaky; so it is dried by a very ingenious contrivance. The hanks are packed in thick masses round the inside of a sort of metal drum, which, when full, is set whirling at a prodigious speed. The motion makes the water fly out of the silk, and we see it escaping through perforations and running in a rapid stream from the bottom of the drum.

But when dry the silk is not bright. Like our linen before it is ironed, it has a rough, stiff appearance, but, unlike our linen, the ironing process cannot be made available to restore its beauty. This is done by very rough usage indeed, and here we have a proof of the wonderful strength and tenacity of what looks only the size of a rather coarse hair after all its combinations.

When brightening is done by hand the hanks are hung on a wooden pin, like an extended arm. The workman slips a rod through the bottom and then pulls, drags, and twists the mass of skeins with all his might again and again, shifting the position and repeating the process, till an ignorant looker-on would think that half the threads must be broken.

If the reeling were unevenly done, this might be the case; but it is not. So the strain is resisted by the mass—not by isolated

threads—the whole of them remain intact, and the silk under this violent treatment becomes soft, bright, and beautiful, like the daintiest floss in appearance. Brightening is also done by powerful machinery, which renders the operation a much more rapid one; though it increases our wonder that the thread can bear the wringing of those great steel arms.

We—for I have a young friend as much interested as myself, who is delightedly absorbing all the information so kindly given, and who is another descendant of that same Huguenot ancestor, and very proud of it—we, I say, now glance at the materials used to produce the colours.

That dirty pool of brownish black is a compound of muriatic acid and old iron. In other words, muriate of iron, and is the first bath used for black silk dyeing, though other ingredients follow this.

We are let into a secret about the weighting of black silk in dyeing, and are astounded to find that 14 oz. of pure silk become 32 oz. by the addition thus made; and that it is possible to make a pound of silk into 90 oz. of what is called such before it leaves the vats.

I look bewildered, and ask if such a thing as real black silk is still in existence, and am told "Yes," and that feminine purchasers are alone to blame for the adulteration. If we will pay the price for honest silk, and not insist on having an appearance which does not properly belong to it, but is only a sham, we can still get a pure and durable article.

The substances used present very varied appearances. Here is a bright green substance glittering like metal. This is used for dyeing majenta! Those sparkling brown granulates make a fine naval blue. This coppery-looking stuff is from carbolic, and makes a fine orange colour. We see huge piles of logwood, and find that as it dries the surface exhibits a variety of hues, just as a drop of gas tar does when floating on water and revealing its hidden treasures of colour.

The master of the place, genial and kindly, tells us funny stories about silk, and of the secrets of his trade.

Of the tricks of the working dyers too, who, being much plagued by a number of lads who persisted in snowballing them on their way to work during the late cold winter, caught some of the offenders and tinted their cheeks, noses, and hair in a manner Nature never dreamed of. Though it is fair to say this was only done after much patience had been exercised, and threats and remonstrances proved unavailing. It, however, cured the culprits, who were obliged to go to work with their queer-coloured faces, and suffered so much from the jokes of their companions that they have ever since been anxious to give the dyers a wide berth.

We now reach the office and inspect the pattern-books. It is only needful to see the samples ranged in order to realize that an allusion to thousands of shades is no exaggeration. Here are, for instance, thirty-two shades in a row of a single brown, so close that it is difficult for the inexperienced eye to detect a difference between any one and its next neighbour; so distinct, that if the latter were woven in place of the former a stripe would be plainly discerned. Think of all the varieties in any colour and of thirty-two shades in each variety, and you will soon count your tints by the thousand.

We leave the dyeing establishment, further enriched by the gift of a pattern-book full of exquisite shadings, and as we pass along to obtain some needed refreshment and an interval of rest, we review what we have seen and wonder at the very pleasant memories we carry away from the dye-house. There is still plenty of 'delightful and profitable girls' work in connection with silk to be seen after dinner.



He was always devising little pleasures and outings for her, in the hope of diverting her thoughts and cheering her, and he rarely came home without some trifle to show how she had been in his thoughts all day.

One evening he returned rather earlier than usual, and asked her to dress for a concert that night for which he had secured tickets.

"Do not put on any earrings, Madge; I have brought you a pair that I should like you to wear to-night," he said. And when she came down in her pretty evening toilet he placed in her hands a pair of tiny, sparkling diamond stars. Her face lighted up, as what hitherto-diamondless girl's would not! But the smile soon faded away, her breast heaved, and her eyes were full of fast-coming tears.

"Don't you like them, darling?" he asked, as she remained silent. "I have had my eye on those for months, do you know; but only to-day, by scraping and screwing, have I felt I could be justified in buying them."

"Like them!" she cried. "Oh, Wilfred, they are perfect! I love them! But it's too much; you are too good to me. Oh, if only I deserved it, what a happy girl I should be! but I am—a wretch, I am, indeed. And to think of your depriving yourself of things for me!" and it was only with a strong effort that she kept back the rising sobs that seemed to choke her.

Poor Wilfred was inclined to wish the jewels were back in their original resting-place, so different was their effect on Madge from what he had intended. He hoped they might act as a sort of wholesome tonic, and here was Margaret sighing over them, and saying she was not worthy of them, which was a piece of modesty hitherto quite unparalleled in his experience of female character. He made her take some restorative, whilst he was inwardly showering anathemas on poor Tom's head; but by the time they reached the concert room Margaret had regained her composure sufficiently to enjoy the music, and also, it may be surmised, to enjoy the wearing of the diamonds.

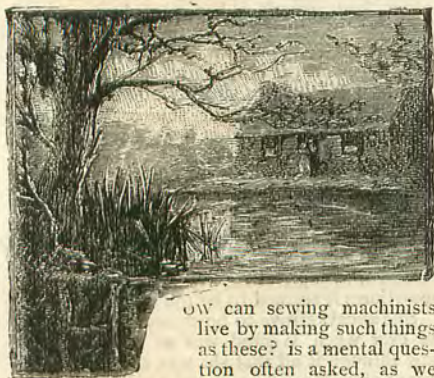
(To be continued.)

## GIRLS' WORK AND WORKSHOPS.

By RUTH LAMB.

### CHAPTER VI.

SEWING MACHINISTS AND NEEDLEWORKERS.



How can sewing machinists live by making such things as these? is a mental question often asked, as we look at various articles exposed in the shop-windows or recommended to our notice by the assistants. We see underclothing adorned with almost endless rows of tucks and really fine machine stitching, and trimmed with effective needlework edgings and insertion. We make a mental calculation as to the price we should pay for materials alone, and are apt to conclude that no one could

possibly make a livelihood by putting together underclothing sold at such low prices.

There seems almost no margin for machinists' wages, and we perhaps sigh as we think of the workers and shrink from purchasing, lest we should deserve the reproach contained in the oft-quoted "Song of the Shirt":—

"It is not linen you're wearing out,  
But human creatures' lives."

There are still many workers with the needle who are as badly paid or, perhaps, even worse than their sister-stitchers were when Hood wrote his famous poem. But the introduction of the sewing-machine and the many ingenious improvements in and additions to it have made it possible to produce a great show of work at a small cost, and without the wearing labour attendant on hand-sewing. Not only so, but, if the workers are quick at learning, and industrious, they can, under certain circumstances, make good wages in regulation working hours.

In calculating the cost of producing the cheap articles alluded to, we must take several things into consideration, which perhaps do not strike us at first. The materials are purchased direct from the manufacturers, and thus warehouse and shop profits are saved. The needlework and cheap laces are all machine made, and it is only for very high-class work that hand-wrought trimmings are used. Labour and time are economized by a number of mechanical appliances, of which home-workers could hardly form an idea.

I have to-day visited a factory in which from eighty to a hundred girls are employed in making-up only two classes of articles—aprons and underskirts, though in almost countless variety and ever-changing designs.

The materials used are good washing prints and many cheap laces. Some aprons are tiny things trimmed round with braid edging for little children, others with gathered bibs and pockets and several yards of lace garniture—smart, tasteful things, suitable for wear at afternoon tea.

Similar materials were being used for cheap summer skirts, as also striped woollens, unions, and all-black or white fabrics. In black they are quilted, trimmed with kiltings, box pleatings, gatherings, flouncings, with braid in many lines or scallops, and with embroidery done by the Bonnay machine. In short, picture a collection of all the sorts and sizes of skirts and aprons that you have seen displayed for sale in the materials enumerated, and you will get an idea of what is done in this purely girls' workshop.

Permitted to walk through the rooms and speak freely to the girls, I am struck with the way in which time is economized by the young workers. In every department there are effective but simple appliances for labour saving. The cutting out, for instance, is very quickly done. Patterns are laid on a length of material; the shapes are rapidly chalked or pencilled out. A number of other lengths are hung on a row of hooks at the side of the room, with the marked one at the top. They are shaken straight, the edges brought together, and then spread on a long table in which is a metal groove. The marks are in turn brought over this groove, and a single stroke of a sharp knife cuts through all the layers at once. Thus the shaping of eight sets is done as quickly, and the whole preparation effected with less of time and labour than one article would cost if done with scissors in the ordinary way.

Again, in cutting out the tens of thousands of strips which are in constant request for kiltings and flouncings, ordinary scissors would be all but useless, and tearing would stretch the material, besides taking up too much time. The stuff—several folds in thickness—is

brought under a great knife, which slices off the strips, just as paper and the edges of books are cut to perfect evenness. The width is regulated by a movable gauge. The strips are joined and passed, if for kilting, to one of four machines, each of which is worked by treading, and tended by a little girl who earns about five shillings a week. One of the machines does box pleating very beautifully.

A simple but ingenious addition has been invented and applied to the ordinary sewing-machine, by the mechanic of the establishment. By means of this flouncers are gathered, drawn, and regulated at the same moment, and much time and labour saved. The brass eyelets are fixed in skirt-bands by another little machine. The material is placed over a low metal peg. By one movement of a lever the presser is brought down and a round bit cut out. Then a stud is placed on the peg, the hole in the stuff over that, and another movement brings the presser down again. This fixes the brass eyelet so firmly that it could scarcely be removed without tearing the material.

Now let us glance at the girl machinists—all young, bright, and intelligent-looking—neat in dress and cleanly in person—girls that it is a pleasure to look at. How rapidly the work passes through their deft, skilful fingers! It is surprising to learn that there is absolutely only one pair of hands employed in preparing work in this establishment, and these do nothing but place the sheets of wadding between stuff and lining for the quilted skirts. All the rest is done by the machinists as they sew.

These place the edges together, adjust the trimming, put in pleats, at corners and where fullness is needed, so very quickly that the interruption to the movement of the machine is often barely perceptible. The work is beautifully accurate, and bears testimony to the proficiency of the girls—picked hands, as I was told—of whom the employer speaks with much kindness.

With the exception of the kilters and the one fixer, all the hands are paid by piece.

"They can earn," says my guide, "very fair wages—from twelve to fifteen shillings a week, and, in a few cases, even up to a pound. Two or three—for special work—make more, and during the busy season are very profitably employed. If a girl earns no more than ten shillings a week we begin to consider whether she is worth keeping. We want workers who will do well for themselves, and, at the same time, for us. When we get hold of a real good hand, who earns high wages, we try to keep her, because here a girl gets just what her work is worth. So, if we are slack in her department we put her to something else in the meanwhile, rather than part with her. She learns to turn her hand to the other branch of work, and gets two things in her fingers in place of one. The hours are from eight to eight, with the usual intervals for meals. The young people like this better than starting earlier in the mornings. They attend to their work, for it is to their own interest to do so; and what little fixing they have—such as turning in edges of bands—they do as they sit chatting during the dinner hour, whilst the engine is stopped. You notice the size of the rooms, which are wide and lofty. The moment the girls go upstairs to dinner the windows are all opened, and the places get an hour's thorough ventilation."

The care taken in this respect no doubt contributes to the health of the young people. Nearly all stand during working hours, as the machines are worked by steam, and only stopped and started by a little movement of the foot on the treadle.

Next we go to a corner of a room where all the braiding is done. One girl puts the braid on in straight lines, and has just sent down a



pile of work. She is now lining skirt bottoms; but she puts these aside, saying to my guide, "May I show her?" And having received permission, runs on line after line more quickly than I can tell about it, while another worker close by places on the braid in scallops, regularity being insured by the use of a little addition to the machine—a hand guide. Most people are familiar with the chain stitch embroidery produced by the Bonnay machine, and which has the effect of fine braiding. The machine is worked with one foot, and the needle runs round, having a reversible motion, so as to form all sorts of pretty curves at the will of the guider. The machinist sits to this work. Some workers have the pattern marked on the material and simply follow the lines.

But our bonny, bright-looking lassie relies on her own true eye and steady hand, and I am told she would be "bad to beat" in her own line. Taking up a cutting of material, she folds it and produces pattern after pattern, seeming as if she could go on for any length of time. Not wishing to hinder proper work, I thank her and turn away with a pleasant memory of the kindness so promptly shown by these young people who gave their time for my instruction.

A few minutes later a young messenger places in my hand the scrap of stuff with three of these improvised patterns upon it, that I may take them with me. Another bit of voluntary kindness to a stranger.

A savoury smell comes from the little kitchen at the top of the building, where there are stoves and two cooks to prepare the rows of little dinners which are shortly to be consumed in the adjoining room.

In another apartment the articles are ironed and folded, ready for the packing room. None are put into boxes. "We make paper do. Everything is cut so fine nowadays that our customers know the expense of boxing the goods would narrow still further the small margin of profit," says our guide.

If it were not revealing a trade secret, I should like to tell for how little that dozen of children's aprons can be purchased wholesale. And yet, I am told, everybody who has helped to produce those aprons has been fairly paid, and can really live by the work.

After witnessing the rapidity with which they were put together, anyone can well believe this.

The machines being worked by steam, the work-rooms are noisy, and talking is rendered almost impossible. "A good thing," says my companion, "both for the girls and us; they get so much more work off and waste no time. But they sing. They *do* sing, and there are some lovely voices amongst them."

As to the work, it all goes to London, whence it is again scattered through the provinces, some of it returning to be sold in the very town where the articles were made up.

This skirt and apron factory is just a sample of the many places in which girls are employed as sewing-machinists, and it is a very favourable one.

Not far away is another workshop, where the dainty lisse, tulle, lace, and muslin frillings are made up.

Very delicate machinery is used, and from the nature of the materials the workers must be extremely cleanly in their persons. But the wages gained are not large. We are told from six to ten shillings a week, and that "a girl must do an awful length of stuff, and work very hard to make twelve."

Then waistcoat-making, from the finest kinds to the roughest fustian, is done by girls and women—sometimes on the premises—but a vast quantity of all sorts, by cottage workers.

In some of these cottage workshops perhaps a dozen girls are employed by the mistress, who also teaches the business to beginners.

One set do the machining, others the button-holing and finishing, thus dividing the labour.

Let us look into a cottage workshop. Here a dozen females are making-up strong fustian and moleskin trousers and waistcoats for working men.

The price paid per dozen for these sounds small to inexperienced lookers-on. Eightpence or eightpence halfpenny seems very little to pay for that pair of strong trousers, lined through and completed from the first stitch to the last button! But this is a good price as things go, and pays better than many other kinds of work. For fine cloth waistcoats about twelve shillings per dozen is paid.

The mistress finds rooms, machines, needles, and all the little etceteras, and pays for machining, threepence; for finishing, fourpence each garment.

All the cost of wear and tear, needles, oil, rent, fire, lights, &c., must be covered, and the profit made out of the odd penny or three-halfpence left after paying the sewers. But the mistress of the shop speaks very highly of the manufacturer for whom she works, and says that industrious hands can do fairly well and really live by this branch of business.

There are, however, two classes of combined needleworkers and machinists for whom, in writing, I feel the deepest sympathy. They are the coloured shirt and white duck jacket-makers.

Probably some who read this paper will doubt the accuracy of my statement, or wonder whether I can be telling the simple truth about the amounts paid for the work done. Let me assure them, I have seen the work, I know the workers who execute it, and have been told the prices, both by employers and employed.

For making twelve strong blue and white-checked shirts, from beginning to end, one shilling and fourpence is paid! The outdoor worker finds machine, needles, thread, everything but buttons. Each shirt has machine-stitched collar, wristbands, front-strap, &c., and, beside the ordinary parts of such a garment, has a good-sized breast-pocket put on, so that the workman who has doffed coat and waistcoat can deposit in it any little articles that he does not choose to leave about.

Six buttonholes have to be made in each shirt, and eight buttons sewed on it. The collar is not a mere band, but turns down with pointed ends in front. Taking off cost of articles used, wear and tear of machinery, fire and light, which must be provided in winter for those who work early and late for the barest bread—what does the weary worker get for her dozen of shirts? Perhaps, calculating very closely, a penny and half-a-farthing each shirt at the outside! Thirteenpence halfpenny per dozen!

A somewhat poorer class of shirts, with rather less work in them, were until lately paid for at the rate of a shilling a dozen. They have just been dropped to elevenpence by some of the employers!

The work is, of course, cut out, and the sewing is of the roughest sort; but the payment is utterly inadequate, and, as we look at these figures, we feel tempted to express our sentiments about them in writing. Better, perhaps, to let facts speak for themselves, and readers judge from them what wearing work some girls and women have to do for a bare existence!

I may add that the duck jackets are made for three-and-sixpence a dozen, and it is hard to say whether these or shirt-making is the worse employment to be engaged in.

Before leaving the needleworkers and machinists I should like to give them a word of advice. I am told that they have in some cases conduced to the state of things last described. In their eagerness to obtain work when making a beginning, they sometimes

offer to take it at something less than even the low price usually given for outdoor work. The offer is accepted, and, in consequence, the older hands have to bend to the same terms. This is an age of keen competition, and the spirit of it has entered alike into employers and employed.

In some cases outdoor workers merely occupy their spare hours at the machine. It is not a bread-winner to them, and they look upon the little weekly sum gained as extra pocket-money, which will enable them to dress better, or buy little matters of personal adornment. They do not sigh wearily after the odd penny knocked off the price of a dozen shirts. But the girls who perhaps work with a widowed mother, early and late, for bare bread, may well groan at the reduction of one penny out of only twelve.

In all the kinds of work enumerated there is a slack season, and here indoor hands have the advantage. It is often almost as costly a matter to close a workshop and let the machinery stand as to keep it going. Therefore, those who work at their own homes are certain to be the first discharged. The employer will keep his engine going and his factory hands together if it be possible.

The indoor machinist has the disadvantage of having to stand at her work for many hours. But the steam engine furnishes the motive power, and she has only to stop and start the machine and guide the work. She must be at her post the livelong day, whilst the home-worker can choose her hours. But then she is more sure of employment, and it often happens that the home-worker keeps later and earlier hours, while she earns less, in consequence of the interruptions to which she is subject, and her less advantageous surroundings. She may sit at her machine instead of standing, but she must use far greater bodily exertion, since she furnishes the power by treading with her feet, whilst her hands do the guiding.

It would be easy to name other girls' workshops where machinists and needlewomen are employed. Machine work is divided into so many branches, and wages necessarily differ according to the quality and quantity done. As samples come under notice, the imagination will easily picture girl workers at their posts and producing each variety amid similar surroundings to those described.

In my next paper I hope to show braid and trimming makers in their workshops.

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him and ask who made him his censor, and what business it was of his. He felt that submission would have cost himself very dear, and he was touched by it and almost pained to see Denzil yielding it so unresistingly. Perhaps he lacked imagination, for he could not realise how rejoiced Denzil was to be anybody's business but his own—that Denzil was not he, nor Denzil's ways his ways. A racehorse admiring the patience of an ass is apt to forget that he himself is prepared to run without blows!

"No, I did not see any of my own regular chums; just some chance acquaintances—Scotch fellows," Denzil answered.

"The twice-cursed drinking habits of our race!" groaned Robert Finlay, bitterly. "Alleyne, I'm afraid there will be no safety for you except you abstain altogether. If I were your sister, that is the promise I would exact from you when you asked my forgiveness."

"I'm sure I'd do that in a moment; it wouldn't really cost me anything to do that," said Denzil, eagerly.

His head was aching, and he felt thoroughly sick and sore.

"It will cost you more than you think, but not more than it is worth," answered Robert. "Then when you tell your sister the whole truth, you will tell her that you are prepared to do this? If there is anything that can soften her pain, that will. We can bear almost anything in the past, if it is not to re-echo down the future."

"I'll promise Faith that at once," said Denzil.

"Ah, but I mean rather more than that," explained Robert. "I mean that you ought to tell her you will take the solemn pledge of abstinence."

"Have you taken it yourself?" asked Denzil, quietly, with a sort of affected carelessness.

"I have never touched whiskey in my life," answered Robert, "except once, when I had been out for hours in a Scotch mist on a mountain, and when we came at last to a little hut, there was no coffee nor any other comfort to be had except 'grog.'"

"But you have never taken the pledge?" persisted Denzil.

"No," said Robert.

"And yet you've been able to keep from touching the stuff?"

Robert felt that Denzil's thought, whether he should utter it or not, was "then why should not I?"

"And I'm sure if you have abstained so rigorously as that," Denzil went on, "it shows what can be done without a pledge. You don't need any."

Robert's mind was already fully made up. But he felt that if it had not been so, he would have found himself at an awkward corner, either unable to urge on Denzil to the step which he felt was the one chance of safety for his facile nature, or else driven to resort to the Pharisaical declaration "that he himself was not as other men," and to the Pharisaical expedient of binding burdens on others which he would not touch with his own little finger.

"I think I will take the pledge to-night, Alleyne," he said; "if you will come, too, we will take it together."

"Will you, now, really?" echoed Denzil, delighted. "If you'll do it, that will make it all right: one can't help being afraid of making oneself peculiar and being clapped on the back and hailed as a repentant brother by all sorts of cads! And if anybody happens to hear of a fellow's taking the pledge, they're so apt to think he's just been off the square, don't you know? But if you go too, that's perfectly splendid! And it's awfully good of you. I know you are doing it just to get me to do it, and I wouldn't let you do so; I'd do it all by myself, only after what you have told me about your habits hitherto, it really won't cost you any sacrifice."

"But you are quite sure that you feel in your own heart that it is the right thing to do, and that you will put all your will and power to keep it?" reiterated conscientious Robert.

"Of course, I do; how can you doubt it?" and Denzil looked at him with those trustful eyes of his. His face was pale, too, and his lips quivered.

"I don't doubt it," said Robert Finlay, compunctiously—a mighty yearning rising within him that whatever strength he had should be held at the service of weakness struggling, and of sin repentant. He stretched forth his hand and grasped Denzil's—a grasp so strong that Denzil's was powerless within it. Then he strode from the room.

He went straight to Miss Milne's kitchen. She was up and had her fire lit, and was already stirring the porridge over it.

"I've seen him," he said, "and he is to tell his sister himself; and he is to come with me to take the pledge to-night—we are both going to take it!"

Miss Milne looked up at him.

"Well," said she, "that's a good morning's work—so far."

"Is it not quite as much as one could expect?" asked Robert.

"More than one could expect," said Miss Milne, heartily.

"In fact, what more could there be?" Robert asked again.

"Nothing," she said; "only time, and time takes time."

If Miss Milne had any other feeling than that of unmixed satisfaction, certainly she did not express it. If Robert had any consciousness of a little doubt or uneasiness, he attributed it to his own fears lest he had not acted and spoken quite wisely and kindly throughout the interview—had either said too much, or else left something unsaid.

Perhaps, if he had not been in such a glow of enthusiasm, it might have struck him that though he had thus obtained a hold on Denzil Alleyne—the hold was all in his own hands—there was no responding grip. No suggestion of well-doing had come from Denzil himself, and though he had answered questions, he had made no spontaneous confession—no spontaneous statement—had told no frank story of his fall.

But perhaps we cannot afford to be too wise, too early, but must press on, guided by the leaping flames of enthusiasm, until they settle down into the clear fire of patience and faith. Our wild hopes, which bloom and wither in

a day, may yet serve to keep up our courage till experience has taught us to be content to bury our hopes in silence and darkness, with the assurance that we shall gather their fruit in the kingdom of God.

Presently, Miss Milne and Robert heard Faith go and knock at her brother's door. They could not hear what he answered her, but they heard that she opened the door and went in. She stayed there a long time, and Robert Finlay lingered in the kitchen. But when he saw Miss Milne had nearly finished her breakfast preparations, he thought he must return to his own parlour.

Just as he was crossing the little hall, Faith came noiselessly downstairs. He tried not to seem to see her, but she stepped in front of him. She had been crying, but on her face now there was a light such as we may see in the sky after a storm.

"Mr. Finlay," she said, "I can never thank you! But you'll believe it, won't you?"

(To be continued.)

## GIRLS' WORK AND WORKSHOPS.

By RUTH LAMB.



BELIEVE that the commonest things in daily use—those which are always around us—are the ones respecting the production of which we rarely bestow a single thought, much less a second.

For instance, the window cord, the tassel with which I have just drawn down the blind, the more ornamental ones which adorn the cushion on which my head rests, the handsome fringes and pendants which greet the eye when, at its first opening, it glances upwards at the bed drapery in the early morning. Which of us, if asked, could describe how these are formed into their present shapes, or even give a guess at the number of hands each passes through before we see it as it is?

I remember that when I was a child I was greatly astonished at the number of persons who could each claim a share in making one of those pins, about the loss of which I was so careless. It is quite as astonishing to know how many processes each of the little articles named above must pass through before they are exhibited for sale.

Why, even the bit of loose braid at the bottom of my dress which nearly cost me a fall just now, and must be instantly repaired, would have been a puzzle to me a few days ago. But I can now take you, in imagination, to a workshop where braid is made.

You would be surprised, if actually in the room, at the noise made by the comparatively



small machines. I was warned that, once inside, nothing but shouting at the very top of the voice will enable us to hear or be heard. When in the midst of the clatter, we feel that permanent deafness must result from spending any length of time there.

A needless alarm! The girls who work here are quite unconscious of the noise, except as a hindrance to conversation.

Imagine a circular frame, round the outer rim of which are placed two rows of spindles each carrying its bobbin of yarn. They look like a double circle of dolls dancing in and out, and plaiting the thread as they go. Having thus travelled round, they turn and journey in the opposite direction until they reach the point whence they started. Long steel fingers extend from the outer rim to the centre, and in the weaving process every thread passes over these, and is thus held tight so as to secure an even plait. All the threads meet in the middle over a pipe, called the drawing-off iron, and down it the completed braid travels. The number of threads varies from 16 for window cord, to 105 in the largest of these machines. An even number makes round, and an uneven flat braid, but by adding or removing a bobbin the machine can be used for either kind. The little window cord machines are especially pretty in operation. Sixteen little red or green clad bobbins dance in and out round a strong perpendicular cord, and weave the coloured yarn upon it, exactly as we have seen little girls at a May Queen festival plait ribbons round the maypole as they danced about it. Above eighty patterns can be produced on one machine by varying colours and changing their positions; for instance, place two black at equal distances amongst white threads. These will make a diamond pattern on the light ground. Put them together, and you will get a wider stripe, but half the patterns only.

Girls wind yarn, fill bobbins, piece threads, gas the woven braid, block it for the dyer, and afterwards make it up into knots and packets for sale. One good hand can mind several machines. All are paid by piece except learners, and those who know their work and do it earn from thirteen to fifteen shillings a week. Except for the noise, the work is of a pleasant kind, light and cleanly. In the little gassing room, when the braids are undergoing the singeing process, the smell of burned worsted is not agreeable.

The manager, however, complains that his girls give him a good deal of trouble by frequent absences, and says it is much easier for the young people to obtain employment, than for him to keep them steadily at work. Indeed, the more I look into shops and factories the more firmly am I convinced of the almost countless openings there are for really industrious working girls. The number of businesses and handicraft trades in which girls perform the principal parts is perfectly astonishing. I could fill pages with mere lists of these, without going into details or out of the circle in which cotton, silk, flax, and wool furnish the materials used.

On our way from the braid factory we will look into another where tassels, cords, fringes, and gimps, for upholstery purposes, are made.

We must peep into the basement; for though girls are not working here, the materials for their work are in course of preparation. A man and a boy are making fancy silken cords—an altogether different process from braid making. Let us look on whilst they make a length of ordinary "feather," as it is called, such as we use for sewing round cushions.

A length of thin cotton cord is attached by one end to a wheel, on a movable stand; by the other, to a hook at the opposite corner of the room. The man stands by the wheel, while the boy proceeds to overlay the cord with strands of silk. He has his jack-frame strapped round

him (that is, a wooden breastplate with projecting steel spindles to hold his bobbins), and he will put on four threads each time. The man fastens the four together to the wheel-end of the cord, and the boy goes backwards and forwards with the fine silk until the cotton is overlaid with this dainty coating.

A looker-on thinks it cannot be evenly placed round the cotton cord, for the man only gives it a little twirl with his fingers now and then. About seventy strands of silk are needed to cover the cord. Then the wheel is set in motion and the twist given. This shortens the cord, and we understand why the wheel must be movable, so as not to break it in the twisting. It looks rough and fluffy; but the man gives it a rub from end to end with a bit of clean paper, pats and strikes it with the palm of his hand, the boy lays on two more sets of silken threads, the wheel is again twirled a few times, and the cord is completed.

Four thicknesses of it are placed together and receive an additional twisting, and it is ready to trim a cushion with, if you please. Use shaded silks, combine colours, vary their arrangement and the twist put into them, and you produce patterns almost without end.

Perhaps you have sometimes wondered that tassels and fringes retain their twist. If, however, you take a length of cord in both hands, twine it tightly, and then bring the ends close together, the hanging loop will be instantaneously twisted. This process, on a large scale and by the use of a wheel, prepares the yarn for fringe, and the ends being constantly secured, the twist cannot come undone.

Girls weave fringes in hand-looms, and by means of a number of treadles, according to pattern and colours used. A narrow warp forms the heading, and the loop is made by throwing the weft over a thin steel rod or mesh, which is fastened parallel to the warp at the distance required. The loops twist of themselves as they run off the mesh on to the receiving-reel below. Upholstery gimps are also woven in similar looms, the loops being regulated by hand.

Now let us see a tassel made. It will be a very cheap thing when done, being intended to attach to coloured holland blinds, and is made of red, white, and grey cotton. Each worker has a jack before her—two upright pillarets of turned wood—on which she hangs her loose silk or yarn. The pegs are pierced at the top, so that a spindle can be passed through and a bobbin suspended between them.

The tassel-maker threads her needle with fine, strong, white cord; places a peg in the lower part of the wooden mould she is going to cover, and then fastens her thread round it. Then she carries the cord firmly round the ridge nearest the top of the mould, and thus makes a foundation for her work. Passing her needle through this, she covers the top of the mould with a pretty buttonholed pattern. Next she cuts a length from a skein of knitting-cotton, places a thread across its centre, combs it evenly out, and then ties it round the mould below the worked portion. The upper half is turned down over the lower, and thus the second part of the mould receives a double coat of cotton, the ends being firmly tied down in the ridge beneath.

All this has been done with white material. Next a length of fine grey cord is cut off. No threading needles at random, but just enough to make a pretty grey network over the white. When this is finished the tassel is ready for the "skirt," or fringed portion.

A girl is making skirts at a little distance. She has bobbins of twist beside her and must take care to keep the ends fast, so that it may not untwine itself. She uses wire, and two little appliances for skirt making—a "twirler" and a card. The latter is a short broad mesh to regulate the length of the

skirt; the former like the handle of an old-fashioned corkscrew, to the ends of which fine wire is attached. The wires also pass through the holes in the jack in front. The cords are passed over the mesh, and the wire is used to secure each loop, a turn of the twirler fastening it firmly in its place. When the proper length is done the wire is cut and the skirt ready.

The length is just sufficient to go twice round what we may call the "waist" of the wooden mould. As it is put on, we see the importance of using wire instead of thread. It keeps its place better, is firmer and much more easily fastened, the outer end being simply pushed under the heading. A row or two of fancy cord often made on wire also completes the tassel.

Having seen one, we can imagine any number of kinds in silk, chenille, thread or wool, so we turn to the next worker, who is covering the various moulds to be used in making a long ornament for bed-hangings, and the tips for heavy fringe. The silk is in two colours—crimson and maize—and is invariably put on by hand. It is not passed through the moulds—this would increase the expenditure of material—but caught just within the top and bottom apertures and secured there. The fine silken bands round the hollow parts of the moulds are run on with a winding wheel.

The covering of a small flat button is quite a pretty operation. The tiny mould is placed on a pivot, the silk fastened to it, and wound on by a winding wheel. The bright coating creeps over it so rapidly that the effect seems almost magical.

Some hands are busy tying fringes, whilst others make the daisies to be attached thereto, and thus the various articles grow to completeness and beauty. The work is pretty, cleanly, easily learned, and fairly remunerated. A good hand can earn good wages in a pleasant way, and those workers to whom I spoke expressed themselves well satisfied both with their employment and the remuneration received.

There are many kindred businesses in which girls are the workers; but to go over these in detail would only be wearisome and unprofitable. Girls are to be found in macintosh factories, fashioning and finishing all sorts of indiarubber articles for domestic and personal use. But the needle is little employed, the seams being made and joinings effected by moistening the edges with the rubber itself, dissolved in a powerful spirit. The spirit evaporates very quickly, but not without first acting on the solid rubber upon which it was spread, so that when dry, the edges are not only joined, but actually amalgamated.

Again, in glass works, though not employed in the manufacture itself, girls pack the brittle ware, and quite little ones do the roughening process. I have seen them busily scouring away at gas globes, sugar basins—all sorts of articles which have the milky, semi-opaque appearance called frosted glass. The little people use short glass rods, which they dip into wet sand, and by their vigorous scrubbing the surface is rapidly roughened.

Once in each week I pass a girls' workshop, into which I could scarcely muster courage to enter. In it girls and women are sorting rags, waste paper, and all the miscellaneous odds and ends which are collected in highways and byways for re-transformation into new (?) paper. Yet they look healthy and merry enough over their—to my mind—very disagreeable task.

In cocoa and chocolate factories girls do the packing, &c., and are also largely employed in making fancy wrappers and boxes for enclosing these and other articles.

Christmas, New Year, Easter, and birthday cards, valentines, and perfumed sachets furnish endless scope both for the taste of the designer



and the occupation of the clever fingers by which these pretty souvenirs are put together.

The tablecloths embroidered in silk or decorated with appliqué work at the corners are all done by girls; two youngsters thread the row of needles in the embroidery frame, and do the sewing by standing at each side of it, and pulling it backwards and forwards.

The action of the needles is controlled by the pentagraph, which is worked by an older girl. The buttonholing of the scalloped edge is done with the sewing-machine. I remember a girl once told me that she received a halfpenny for thus edging a large tablecloth with gold-coloured silk. The time it took was so short, that it only needed

plenty of work to pay her extremely well. In the same factory numbers of girls also found employment in fringing articles with another exquisite variety of the sewing-machine, the invention of the proprietor. The work was done by a horizontal spindle, with a hooked end, which caught the strong thread that formed the fringe, and twisted it as it ran backwards and forwards. The same movement of the treadles worked two sewing-needles, which stitched the fringe down and formed the heading.

Many other hands did the fastening off and finishing, whilst other girls did the cutting-out and folding. The book-keeping was entirely in the hands of a bright young girl, whose

handwriting was equally legible and beautiful; and to her was also entrusted the calculation of wages and nearly all the correspondence of the establishment.

In my next chapter I purpose showing other girls at work where you would little expect to see them. With it I shall close these papers, as a series. I hope, however, with the editor's permission, again to be your guide, as from time to time I have an opportunity of seeing for myself any kind of girls' work which is likely to interest and give you information. The ground occupied by workshops in which young females are employed is so wide, that hitherto our researches have not extended beyond a mere corner of it.

## A DAUGHTER NAMED DAMARIS.

By MAGGIE SYMINGTON.

### CHAPTER XXXVIII.—Continued.



ND now Damaris must part from her last reminder of St. Aubin. She explains to the landlord of the *Café de la Reine* that she has been called away and is obliged to depart by the early train; gives him the key, and says that Monsieur St. Just will send for it and

the pony. Then she turns away to take leave of Jacquet. There is no onlooker, so she puts her arms round his neck, and lays her cheek for one moment upon his shaggy mane. Her tears are falling fast now, but she must deny herself the luxury of indulging them for the present. Again she braces herself and moves onwards. Jacquet, deserted, gives an expressive whinny, then consoles himself with his corn, which has been bountifully served to him. Damaris has parted with one of her few precious coins to secure it to him.

In her extremity her heart has turned instinctively to that spare chamber of her old nurse Justine; the thought of it is as of a sanctuary where she may remain unquestioned until the cloud upon heart and mind is lifted, and she can think what to do with her future. She had rather meet fond, ignorant Justine now than Lilian, who would be sure to probe her wound too inconsiderately, and blame, because she could not comprehend, the reasons for her flight.

A stupor is upon her all day; the incidents of her journey occur as in a dream. That she has need of some physical refreshment does not strike her until she is passing down one of the streets of the picturesque old town of Le Puy, searching for the office of *la patache* from Puy to Yssengeaux. The mingled odour of cakes and coffee greets her nostrils from the open door of a *con-*

*fiserie*, and an idea presents itself to her dulled senses.

"If I were to eat something perhaps I should feel better. If I am taken ill now whatever will become of me? Maybe, also, the people here can direct me to the bureau of the coach."

She crosses the threshold and demands, "*Une petite tasse de café.*" The stimulant revives her, and she eats too, furtively the while examining the few coins left in her portemonnaie, to see if she will be able to pay for so much as she needs.

The *confiseuse* is inclined to be chatty, and informs her that *la patache* does not start until evening, but that if she is *étrangère* she will do well not to leave Le Puy without seeing the cathedral, which is like a dream of beauty.

Damaris's strength and courage are so far revived by eating and drinking, that she gratefully accepts the suggestion of the *confiseuse*, and bends her steps in the direction indicated.

It is pitiable, but true, that a heroine in distress should be so far dependent upon the common necessities of life as to find existence take a wonderfully improved aspect after the gross requirements of nature have been attended to. Damaris is so deplorably human as to feel altogether a new creature when the *confiserie* is left behind. Hope has revived in her breast; she seems to be alive once more.

The exertion of mounting the steep elevation on which the cathedral stands sends the blood coursing quickly through her veins, brings the life-hue back to her cheek. She enters the stately red pile, which rises out of the lava rocks as though it were a freak of nature, or as though one of her soaring religious expressions had been caught and perpetuated in stone.

Damaris seats herself in the dim obscurity which reigns amongst the clustering pillars of black marble, under their stormy cupolas, and in one moment she is carried in thought back to that first evening at St. Aubin, when Monsieur St. Just, by the fervency of his words, had transported her here in spirit.

What a strange circle events are

describing in her life! Is it possible that she has been led here without any volition of her own, for its completion? And is all shaped to an end—the past, present, and future being one unbroken chain? When she thought she was taking her fate into her own hands on leaving St. Aubin, was she, after all, nothing but the shuttlecock of circumstances?

In her present mood she is half inclined to admit something more than a partial truth in those gloomy views which Monsieur St. Just had propounded to her, but which her mind, in its healthier condition, had at once repudiated.

The force with which they present themselves to her now, with doubled attractiveness, being his, alarms her. Surely they come in the form of a temptation, and savour of those principalities and powers of the kingdom of darkness which muster in unseen array about the steps of those who are seeking to find the True Light!

Through the sombre thoughts that assail her, a little thread of silver light shines.

"All things work together for good to them that love God."

Here is at once the cause and the assurance. To them that love Him, who choose the light instead of darkness. The will is so far free that a choice can be made—"Our wills are ours to make them Thine," "My sheep know My voice, and they follow Me."

Has she made the choice? Does she know the voice that speaks through her conscience, know it so thoroughly as to follow unhesitatingly?

Alone in that mighty temple, Damaris searches her heart as she has never searched it before, and learns that with its fullest strength she does love the living God, now in His attributes of truth, and purity, and holiness, hereafter to follow on to know Him more and more as she learns His will by doing it.

Then, like oil on troubled waters, comes the blessed assurance, "*All things*"—not one stray event here and there. And the end—"good."

So she arises and goes on her way comforted, having seen more than all



interests and wishes she would be bound to study and respect. On the other hand, if he held on uprightly and diligently, and if she continued her teaching and sketching, and any other profitable pursuit which might open up to her, she would have resources with which to help and serve him, and so give him the strongest assurance of her approbation and renewed confidence. And these plans, she felt, could be better carried out where she was than anywhere else, for she would again make her dwelling under the safe and kindly protection of Anne Milne, and she was already forming a connection for her modest enterprises. Besides—and it was odd how some subtle feeling of that kind often makes the balance in our considerations—Denzil's failure and ruin would seem less utter and less disastrous if she remained where she had gone with him, until, perhaps, he rejoined her there, his past redeemed by honourable success in another sphere.

And so first her uncle departed, and then Denzil. Faith did not dare to say much to her brother before he went away, for he seemed to chafe under every expression of kindness as if it jarred him. But her love made mute signs in many thoughtful little contrivances for his comfort when he had gone away.

It was bitter to feel how little the silence and loneliness of her life were deepened by his departure. Her love for him had long been driven in upon its own ceaseless watchfulness and life-long prayer, and these remained, in a way, the same though he was out of sight. She made up her mind to write to him twice a week, and told him the days on which he might always expect those letters. She would not have expected so much from him among new scenes and people. She would have been quite satisfied with a promise of one letter a week. But she could not get that. He should only break it, if he made it, he said. He would do his best; his letters would not be very much worth, he dared say.

The poet strikes a deep chord when he says:—

"There is a comfort in the strength of love  
Which makes a thing endurable, which else  
Would break the heart."

Love, however neglected, or wronged or insulted, feels only its own pain—the keenest pang being regret that the beloved can be so cruel! It knows none of the stings of pride or malice or envy which fasten on unhappy relationships wherein the love is not true.

And so Faith braced herself for the duty of each day, patient and cheerful in fulfilling little social obligations, diligent in making and saving money "for Denzil's sake," faithful in doing with all her might whatever came to her hand to do.

Months passed into a year, and then the second year went on. Her letters to Denzil never failed: his were brief and few enough. And oh, what a difference there was between his dry, hasty notes, which revealed nothing of the life around

him or of the life within him, and Robert Finlay's letters, which, coming though they did at rare intervals, kept one in pace with him in all his advances, changes, and re-considerations!

Faith and Denzil saw each other occasionally. She went south and visited him. She always came back, Mrs. Galbraith noticed, going very softly, and with her cheerfulness damped. But hope ever soon resumed sway, and sweet, strange hope, which somehow God never forbids to those who are doing their utmost to make it come true.

Only, at last, just as Faith was beginning to wonder how Denzil meant to make an independent start in life, and whether they might not again set up a common home somewhere—for which home her industry had made ample provision—there came for her two telegrams, actually handed in at the same time.

"And God forbid that I should ever see such a look on any other face as hers wore when she read them!" said Miss Milne afterwards.

The two telegrams were both on the same subject; the first which Faith read was from Denzil's employers, the second was from her uncle in the south, with whom they had communicated first. And the purport of the telegrams was that accounts had been found falsified, money abstracted, and that Denzil Alleyne was gone, and none knew whither!

(To be concluded.)

## VARIETIES.

**A ROMANTIC MARRIAGE.**—The story of the marriage of Lamartine is one of romantic interest. The lady, whose maiden name was Birch, was possessed of considerable property, and when past the bloom of youth she became passionately enamoured of the poet from the perusal of his "Meditations." For some time she nursed this sentiment in secret, but, being told of the embarrassed state of Lamartine's affairs, she wrote him, tendering him the bulk of her fortune. Touched with this remarkable proof of her generosity, and supposing it could only be caused by a preference for himself, he at once made an offer of his hand and heart. He judged rightly, and the poet was promptly accepted.

**IN BOOKISH COMPANY.**—"When I am reading a book," says Swift, "whether wise or silly, it seems to me to be alive and talking to me." Such is the feeling of every student who appreciates the author he reads.

**HOW TO SUCCEED IN CONVERSATION.**—Cultivate a talent for directing the conversation in a proper channel. Never change the conversation from a profitable subject. Much is to be learned, both in discipline of the mind and in the collection of facts, by much conversation on the same topic. Never interrupt a person who is speaking, and be silent if yourself are interrupted.

**IN PURSUIT OF GOLD.**—A vain man's motto is, "win gold and wear it"; a generous man's, "win gold and share it"; a miser's, "win gold and spare it"; a profligate's, "win gold and spend it"; a broker's, "win gold and lend it"; a fool's, "win gold and end it"; a gambler's, "win gold and lose it"; a wise man's, "win gold and use it."

## GIRLS' WORK AND WORKSHOPS.

By RUTH LAMB.

### CHAPTER VIII. AND LAST.

PROBABLY the civilized world cannot show a more desolate, ugly, unattractive-looking district than the great mineral fields of Staffordshire, best known and described as the "Black Country." A desert to look upon, a barren waste as regards vegetation; but yielding incalculable riches to those who have penetrated into the deep lying recesses of mother earth.

Of the Black Country it may be said that it is "a land whose stones are iron and out of whose hills thou mayest dig"—if not brass, coal in almost measureless abundance. Wherever the surface is not occupied by mechanical appliances for separating the mineral treasures from the dross with which it is mixed, it is covered with the refuse cast aside in the process. By night its appearance is weird in the extreme, for then the flaming furnaces and glowing ovens show themselves with a distinctness and grandeur which can only be dimly shadowed forth in the light of day.

This land of mining, smelting, puddling, forging and casting; of flame, smoke and clanging hammers; of alternating heaps of dross, and hollows, filled with slimy stagnant water; of ruined dwellings and of buildings banded together and seeming to be engaged in a perpetual struggle to regain the perpendicular—this Black Country seems the last spot in the world where girls and women should be looked for amongst the workers.

Yet here, amongst all the gloom and barrenness incidental to the works which are going on, we may see, as we flit by rail across the country where few of us would care to tarry long, female figures engaged in rude, unfeminine toil.

Further on, when we reach the boundary of the county and stand on either the Staffordshire or Worcestershire side of the Stour, we shall find girls' workshops where we should least expect to see them. Which of us who has noticed the iron chains by which the backs of carts are fastened, the cows attached to their stalls, the posts connected to form a railing, or used in a hundred other ways, would guess that they had been fashioned by the hands of girls?

Heavy to handle and calling forth much strength in the making, formed out of iron rods about, say, a quarter of an inch in diameter and with links an inch in length, they seem strange things to furnish employment for females. A loving mother, as she glances at the fair face of her young daughter, whose fingers are straying over the piano, guiding the pencil, or occupied on some elegant trifle which she calls *work*, would shudder at the idea of her darling's white hands blowing the bellows and wielding the hammer on the glowing iron.

And yet girls—as young and perhaps as fair as she who knows no harder toil than is involved in *getting through her day*, amid all the luxuries that wealth can furnish—bonny, bright lasses work at making iron chains, and sing around the glowing fires, beating time the while with their clinking hammers.

Each worker in the shops I saw had a complete set of appliances to herself. Her own hearth and bellows, her bundle of rods, anvil, and hammers. She has several irons in the fire at once, and taking out the rod which has been longest in—after having brought it to a white heat by a vigorous use of the bellows—with two rapid movements she measures the exact length for a link, cuts it off with a single blow on the sharp edge of the little appliance



attached to her anvil, and seizing the fragment, hammers it into shape, leaving the ends open.

The unfinished link is then slipped through the last completed one and again thrust into the fire, where it is held by the tongs with the left hand whilst the bellows handle is vigorously worked with the right.

When heated it is whisked out, the ends are brought together and welded by dexterous strokes, the end rounded neatly by a grooved hammer used for shaping and smoothing, and then the length of chain is dropped until another link is ready to be added.

Except perhaps sewing machinists, I hardly ever saw more incessant work than that carried on by the young chain-makers. Their movements are so rapid and regular that they remind a looker-on rather of those produced by mechanical action, than of the motions of human workers.

Well may the toil be incessant when we know how small is the amount to be won in the shape of wages. A few, very few shillings a week can be earned by the deftest and most diligent amongst these girl-smiths. Those under fourteen, who begin at seven in the morning, must cease work at the same hour in the evening, but older girls and women are under no such restriction, and sometimes begin at five or six o'clock and continue until seven or eight.

One girl, a very hard worker, said she had earned seven shillings in the week, out of which she would have to pay a shilling for firing, &c., so that her nett wages would only be six. Some of the young workers receive regular pay—half-a-crown a week—but most are paid according to the weight of chain turned off.

The mistress of one of these shops lamented, not that the girls should be employed in such rude work, but that there was not enough of it to find occupation for all the willing hands. "We have not more than half our fires going, and we are stocking all we make at present," she said. "It used to be so nice to see all the hearths ablaze, and hear the girls singing at their work."

The memory of her words about the singing brings vividly before my mind's eye a group of girls who were in one of the shops. They were rosy, healthy, cheery young folk, and extremely cleanly, considering their occupation. Their voices were ringing out in the frosty, November air, as they sang together, "Shall we gather at the river?" the hammers clinking a not unpleasant accompaniment. But there was one exception, one sad face, one silent voice amongst them.

I could not help noticing the expression of that girl's countenance—it was so patient, yet so hopeless. She worked with astonishing rapidity, as if life depended on her speed. And so it did, indeed, two lives—those of her child and herself.

"Poor lass! you would not think it with her young face, but she is married, and to a drunkard," said the mistress, with a glance of pity. "She was as likely a girl as you would wish to see three years ago, and could sing with the best of them. But she married this good-for-nothing, who earns as little as he will can, and spends every penny he gets on himself, leaving the wife to earn bread for their baby as best she can. It is two years old now, but ever since it was a few weeks, she has had to leave it with a neighbour and come back to the chain-making. She is here first in the morning, and is always the last to leave working, and for—bare bread. *He* would take what she earns from her if he could, and never mind if his wife and child were starving!"

No wonder the poor young wife—still a girl in age—looked pale and thin; that her face was careworn and her tongue silent. What young creature would not bend under such a burden? But she had not seated herself with

folded hands to weep over what she could not mend, but bravely worked, with all her might, to earn a livelihood and feed her little one.

Girl nail-makers are not so numerous as they used to be, owing partly to the introduction of machine cut nails; but a large number still work at this business.

Girls have their share in connection with pin-making, though the little article which once had to pass through so many hands is now made by machinery. A wonderfully ingenious piece of mechanism is fed with wire and turns out pins. By its movements a coil of wire is gradually unwound and made to travel under a kind of chopper, which works up and down with great rapidity. Every time it descends it cuts off the proper length for a pin, which directly afterwards receives a blow that forms a solid head. Another part of the machine seizes the pins in turn and suspends them, a few at a time, so that they are rubbed against a grindstone and pointed, when they are ready to join the stream that is continually running from an opening below into the receiver.

The machines are tended by girls, but, though the shaping of the pin is completed, it must pass for a short time from their hands to receive the bright dress which it wears when ready for sale. Men do the plating or silvering, which is effected by boiling the pins in an acid compound in which tin is dissolved, or, in some cases, silver. After leaving the silvering vats they are dried and polished by being placed for a short time amongst bran in a barrel which is kept revolving. Then they go back to the girls again to be papered, folded, and packed, or weighed out into boxes.

If pins had to be stuck out papers by hand, the work would be extremely tedious; but here again machinery comes in. Another curious piece of mechanism is fed with finished pins, which it in a fashion counts and arranges in rows, so that the attendant girl has only to present her paper for their instantaneous reception. Where the sheet is to be filled with one size only, she presents it until the proper number of rows has been inserted. Where there are graduated sizes, she does her one or two rows at each end of the sheet, then passes it on to receive the next size from another machine.

The folding and packing are rapidly done, the young fingers seeming almost to fly as they go through this portion of the work.

Hooks and eyes and hairpins are all made by other wire-devouring machines. The black ones receive a coat of lacquer instead of being silvered.

In button and steel pen factories, girls do by far the larger portion of the work. Regiments of young females from the age of childhood to womanhood are constantly occupied in cutting out, stamping, shaping, and putting shanks on to metal buttons. Or in drilling the holes, placing the various portions which make up a covered button ready for the stamp that amalgamates the whole, to say nothing of the stitching on cards, sorting, boxing, and packing for sale.

In like manner the pens are cut out from the thin strips of steel, slit, bent into the required form, stamped with the maker's name, ground, point and back, by girl hands. Men conduct sundry intermediate operations which make the steel elastic, as well as the varnishing and polishing; but a girl gives the final slit to the nib which finishes the pen itself.

At Messrs. Elkington's electro-plating establishments, girls attach copper wires to the articles, which are then suspended in vats containing acids in which are placed plates of silver. The articles are kept revolving, and the silver is dissolved and spread upon their surfaces with perfect evenness by the action of a powerful electric current which is constantly passing through the vats. The final burnishing is done by girls.

Delicate and ingenious machinery performs nearly every operation in making the small wares which have been named; but girls find the feeding and directing power. Some machines, notably those for pin making, are excessively noisy, and all factory work is somewhat monotonous. It cannot be otherwise, where the same operations are constantly repeated in one unvarying fashion.

But with the exception of the nail and chain making, which we would fain see wholly confined to masculine hands, the work is cleanly, useful, and fairly remunerative. The girls engaged in it look bright, healthy, and happy, and they have the pleasure of ministering, by the articles which pass through their busy fingers, to the wants, comfort, and convenience of people in every rank of life. The first lady in the land, as well as the most poverty-stricken toiler, must be indebted to their busy hands for the wherewithal to hold her garments together.

Who knows how many human hearts may be stirred to nobler thoughts and higher aims by words that have been recorded through the use of a single pen? One out of that stream of tiny implements, flowing out of the great factories by millions! The young worker who gave it the final touch could not guess at its destination. But, doubtless, the pens have been used to carry back many a precious message to those who shaped them, by recording the thoughts and teachings of the wise and good.

Just a few closing words to express my gratitude to the girl-workers with whom I have been brought into contact. Whilst going in and out amongst them I have received much valuable information and experienced great pleasure. In every case, the girls with whom I have conversed manifested a hearty desire to assist and inform me in every possible way. If by giving some of the time, which to them meant money, they could enable me the better to understand either work or machinery, they cheerfully devoted it to my service. So, as I never entered a workshop in which THE GIRL'S OWN PAPER was not known and appreciated by at least some of the young people, I should like to register my hearty thanks to them on its well-known pages.

I will finish with a little anecdote in connection with one of my visits. A particularly sweet-looking girl had conducted me round a very interesting factory, over part of which she had the superintendence. She was a delightful guide; for she told me about one branch of the work, then left me to look at the process and talk to the operatives at will, returning as soon as she saw me ready for something else.

When I had gone all round and was about to leave the place I offered her, according to custom, a little *douceur*, and thanked her for the great kindness she had shown me.

"No, no, thank you!" she said, "I could not take anything. It has been a real pleasure, and if you have liked seeing what we had to show, that is quite enough for me."

The face looked so bright and sweet, so beaming with kindness and goodwill, that my motherly instincts were stirred, and putting my arm round her neck I gave the rosy cheek a hearty kiss.

"Ah!" said the dear lassie, as she returned the kiss, "I would far rather have that than money!"

I know she meant it, and I am convinced that many a one to whom we offer money in exchange for little acts of kindness would rather receive our acknowledgments in kind than in coin, and that a clasp from a friendly hand, though empty, accompanied by words of goodwill coming straight from the heart, would be valued far beyond the gold or silver with which we usually think to settle our obligations.