

resolve that she would break off her acquaintance with him; but it was a resolution more easily formed than fulfilled.

The sense of wrong-doing, the lack of harmony within herself, resulted in discord without. Her irritability and petulance made her more of a "trouble the house" than ever. Her sisters would declare that Juliet's ways were past endurance, and spoiled their home life. Their mother, whilst trying hard to excuse her darling, felt the justice of their complaints. Mrs. Tracy shed many a tear over her spoiled child's naughtiness, but eventually succeeded in persuading herself that Juliet "meant well," and would "come right" in the end.

Judging her life from the outside it certainly seemed that Juliet should have been good and happy for she had much to make her so. She had a rare power of attracting others to herself, and her society was much sought at this time. Invitations to garden-parties, picnics, and more formal social gatherings became more and more numerous. She grew increasingly impatient of the "Poplars" as a residence. The rooms were so small that it was impossible for her to receive her friends as she would like. One change after another was proposed and discussed; but nothing was decided upon, Mrs. Tracy still finding it difficult to make up her mind.

Wherever she went Juliet's beauty, her taste in dress, her charming bright manner attracted universal attention to her. She loved to have it so. The satisfaction of her vanity was complete for the moment when, as sometimes happened, she chanced to hear her hostess say words such as these to some guest about to depart, "Oh, don't go yet. Juliet Tracy is going to sing, and you should hear her. She has such a lovely voice. One does not often hear such singing by an amateur. It is a real treat, I assure you."

The sensation caused by her singing in private circles and the flattering comments it elicited were to Juliet a delightful foretaste of what awaited her in the future. But to few persons did she breathe a word of the hope of which she daily dreamed. For all her apparent frankness and openness there was a vein of reticence in Juliet's character. She did not wish it to be known that she wanted to become a public singer. She would like to surprise her friends, to reveal herself to them as well as to the unknown public as a new and dazzling star on the musical firmament.

With her days thus gaily occupied the summer passed swiftly on. The London season came to its end. Signor Lombardi departed for the Continent. He did not contemplate returning to give lessons in London. He had been appointed to a musical post in Milan which he had long coveted. Juliet was in despair at the departure of her master. He, too, seemed to regret the parting. He urged her to come and study in Milan, representing in glowing terms the advantages that city offered for a musical education.

"Could I get the training of an opera-singer there?" Juliet inquired.

"You could be trained for anything," the Signor answered, with a slight, curious twitch of the mouth. "You would have the finest facilities for cultivating your voice."

Juliet went home fired with a determination to go to Milan in the following autumn if she could persuade her mother to accompany her. But Mrs. Tracy was averse to a plan which she foresaw would lead to Juliet's making her *début* as an operatic singer. She raised objections and suggested alternatives till Juliet's patience was exhausted, and she declared that rather than not go she would go alone. But Mrs. Tracy was

not much afraid that she would make good her words. Experience had taught her that Juliet did not invariably accomplish all that she vowed to do. Juliet was in many things very much of a child yet. She had never taken a long journey alone. The unknown, whilst it fascinated her, was yet not without its terrors. Tenderly taken care of all her days she could not imagine what it would be to depend entirely upon herself far from the mother who had always made life smooth for her. Her heart sank and her courage failed her whenever she tried to picture herself living a lonely, unprotected life as an art-student abroad.

"If only I knew what to do! If only I had some one to help me!" she would say to herself.

She said it one day to Algernon Chalmers, when Flossie had beguiled her into a meeting with her which proved to be a meeting with her brother also. They met in one of the parks, and Flossie soon strolled off with the dogs to a pond, leaving Algernon free to talk as he would to Juliet. He made the most of the opportunity. Juliet was told that if she felt to need a helper he was at her command. There was nothing he desired so much as to serve her if she would give him the right. He could help her to the end she desired, and he would; but she must trust herself wholly to him. He loved her better than anyone else in the world. No one could love her as he did. Could she not love him a little in return?

And Juliet whispered that she thought she could. She let him take her hand and hold it in his. She even said that perhaps some day, though not for a great while yet, she would be his wife. At least, she was sure that she would never wish to marry anyone else.

(To be continued.)

## SOMETHING ABOUT TYPE-WRITING AND TYPISTS.

"The fittest is sure to survive,  
And the weakest will go to the wall."



VEN in these progressive days, when typewriters are to be found in every town in England, and we are overwhelmed with type-written circulars and letters, I find there are a great many people who have but a very

hazy idea of what type-writing is, and are quite ignorant of the important branch of industry it is becoming, and of the immense numbers of girls that it provides with steady employment. I am going to tell you something about it, and try to give you some idea of what life in a type-writing office is like.

As is well known, America is the birthplace of type-writing, and the industry there has reached gigantic proportions. It took but a short time to prove to the Americans that the typewriter is a time-saving machine; and that fact once established, the success of type-writing was assured, and our trans-Atlantic cousins have grown to be so dependent upon

it, that no steamboat or railway train is considered furnished without its machine and operator. We have not yet reached this stage in England, but type-writing is rapidly becoming a power in the land, and even now we have our trades union and our magazine.

We typists have many difficulties to contend against, and type-writing has many obstacles put in its way. First of all there is the typical conservative Englishman, who says, "What do I want with type-writing? Hand-writing was good enough for my father, and it's good enough for me!" When we have once convinced this description of man that type-writing is quicker, plainer, and more satisfactory in every way than hand-writing, he becomes at once our most ardent supporter, and wonders how he could have done without us for so long. Then there is the man who says he has never yet seen a piece of type-writing well done. He is much more difficult to answer. We are forced to agree that there is a great deal of very bad type-writing about, and manuscripts will continue to be carelessly, inaccurately, and unintelligently copied so long as girls with merely a nodding acquaintance with the "three R's" are allowed to think that a few lessons on the manipulation of the machine will make them expert typists. Such

girls, and there are a great many, can never hope to turn out very good type-writing; and it is they who get it disparagingly spoken of, by their inability to cope with complicated pieces of work. Then again, there is a great tendency to undersell. In the struggle for existence many employers are tempted to undertake work at a lower rate than has been fixed by the Union of Typists. This rate, for ordinary work, is 1s. 3d. per thousand words. The clerk gets half of this, and it is very good pay; but when the employer agrees to do the work for 1s. per thousand words the clerk only gets 6d., and it is wonderful what a difference the extra 1½d. a thousand makes at the end of the week. Before girls enter a type-writing office they should be careful to inquire if it is worked on the Union rules; if not, they should refuse to have anything to do with it. The remedy for underselling is entirely in the hands of the clerks. If they refuse to do the work for less than 7½d. a thousand, the employer will not be content with 4½d. a thousand, and will not undertake the work. An office worked on the Union rules never allows a piece of work to be sent home until it has been carefully read over and corrected; it stands to reason that people who work very cheaply cannot afford to spend time in reading

and correcting, so that work is sent out full of clerical errors. This is one of the reasons that so many people will have nothing to say to type-writing.

In these days of trade depression and lowered prices, many girls turn their thoughts to type-writing as a means of rendering themselves independent; and for those of good education, energy, and self-reliance, there is no employment more lucrative, interesting, and, I may say, amusing. It is obviously ridiculous for people with only a smattering of education to fancy that they are competent to deal with a complicated, badly-written, and, in many cases, almost unpunctuated manuscript on some abstruse subject, in anything like a satisfactory way. The girls to turn out the best work are those who have had a thoroughly-good school training, who know at least one foreign language well, and who are quick and clever with their fingers. A typist is expected to know everything; she must be thoroughly up-to-date in all respects; she must read books, newspapers, and magazines; she must visit exhibitions, art-galleries and concert-rooms, or she will sooner or later find herself wrestling with some badly-written manuscript on a subject of which she is entirely ignorant, and she will come off second-best in the struggle too.

Names are the typist's *pons asinorum*. What bad times I have had over carelessly-written articles, full of names of people and places I had never heard of! How I have regretted my ignorance of the subject under discussion! Every doubtful name has to be looked up and verified in encyclopædia, gazetteer, or biographical dictionary. It is worse than useless to put down "what it looks like;" bitter experience has taught me and, doubtless, scores of others that, in hand-writing more than in anything else, "things are not what they seem." All time spent in "looking up" is absolutely lost, as far as remuneration is concerned, for we are paid by the piece, and time is not taken into consideration at all, except in very exceptional circumstances; so it behoves us to be careful and accurate, and lose as few precious moments as possible, or, when pay-day comes round at the end of the week, we shall find that there is not much gilt left on the ginger-bread.

I have spoken of bad writing and of the trouble we very often have in deciphering it; and I think all typists will bear me out in saying that I have not over-estimated the difficulty. I suppose we ought to be grateful to it to a certain extent, instead of grumbling at it, for writers would hardly go to the expense of having their work type-written if the printer had no difficulty in reading it. I have heard authors say that type-writing more than pays for itself: they are saved a long bill for "author's corrections," besides having their "copy" beautifully clear and easy for the printer to read, thus giving him only one set of proofs to correct. Nevertheless it is very trying to the typist. I suppose authors were taught to write in their youthful days; as a class they do not reflect very much credit on their instructors, and some of them have forgotten their spelling too! Probably a good many suffer from writers' cramp, and I fancy that with some of them their ideas come faster than they can put them on paper, so that they hurry their writing to try to enable the hand to keep pace with the brain. Be that as it may, I could name several celebrated authors whose calligraphy would disgrace a school-board boy of ten. Practice helps us very much in the deciphering of bad writing; we get quite expert after a time, and what we found quite illegible a year ago is fairly easy work now.

Mistakes do sometimes happen, but they are generally discovered and corrected before the work leaves the office. A rather amusing

blunder occurs to me. An author was giving an account of the wedding of his heroine, and said that "the bride looked bright as a May-day morning." The typist described the lady in question as looking bright as a "mad dog moaning!" Such stupidities are, I am glad to say, very few and far between.

I think that if I had known of half the difficulties I should have to encounter I should not have been so eager as I was to take up type-writing. First of all there is the mechanism of the machine to master. If you do not understand how it is put together you can't keep it in order. I will not enter into a description of the type-writer here, for it is such a complicated arrangement of type-bars, keys, wheels, cylinders, springs, and other contrivances, that I could never make you understand the ingenious way in which it is all put together. Such a thing must be seen to be understood.

After mastering the mechanism of the machine, the next thing to do is to learn the position of the keys on the keyboard. This is slow work at first, for the letters are not placed in their alphabetical order, but are arranged in such a manner that those in most frequent use are all close together in the middle of the keyboard, and just under the fingers of the operator, while those that are not wanted so often (such as q, z, +, etc.), are put farther off. After a time you get to know the keyboard by heart, and have no occasion to look for the letters, but this happy state of things is not attained in a week or a month, but, like speed and accuracy, is only gained after long practice. A beginner's first attempt at something more important than exercises is rather a curiosity in its way; mine was very much like this:—

"Hoe doth thw little busybee  
I,prove the aining gour  
Abd gather homey aal the daj  
From evry openinh flowre."

When you arrive at this stage you generally feel like giving the whole thing up, as something far beyond your powers. You get despondent and depressed, and think you can never, never reach the giddy heights of proficiency which your neighbours have attained, and whence they are looking down on you with sympathetic and compassionate faces, as if to say, "Poor thing, I pity you; I have been through it all myself." A little perseverance and things soon improve, and after a few more weeks the average girl can turn out some fairly creditable work.

Even then all is not smooth sailing. Every kind of work has to be learned separately, as no two kinds are set out in the same way. For instance, law work and theatrical work differ entirely from each other in their arrangement, and a magazine article, such as this, differs again from both.

We work very hard in our office; there seems no end to the variety and quantity of the work. We type a good many plays. We make the prompt book; that is, a complete copy of the play with the addition of stage directions and "business." It is used by the prompter at rehearsals, and at every performance. We pick out the various actors' parts and "business" and give them their cues, and we type the *mise-en-scène*, which includes a picture of the stage and gives the place of every piece of furniture on it, besides showing the positions of the characters at various stages of the play. Besides plays, we have all kinds of law-work: briefs, agreements, wills, leases, marriage settlements, evidence, etc.; balance-sheets, specifications, tales, poems, lectures, sermons, reports, addresses, petitions and letters, besides longer pieces of work, such as historical, biographical, and scientific works and novels. In fact, we type everything under the sun that can be written or printed. Besides

wanting a good knowledge of everything, we are supposed to understand printers' signs and lawyers' abbreviations; the latter a long and tedious list to learn.

We type a good deal from dictation too. People sometimes send for us to work for them at their houses. This makes a pleasant change from office routine, and we are always glad when we are sent out, as we are brought in contact with all sorts of clever people whom otherwise we should only know by name. To have seen and talked to an author always gives a greater interest to his works, or rather adds a new one. One not only seems to know the man himself better through his work, but to understand the work better through the man.

A curious variety of people come to the office, many of them well known in the world of art and literature. A great many, Americans especially, come to dictate letters and all sorts of business documents. Americans must be a very confiding people, for they dictate aloud matters which would seem quite secret and private to us. They seem to repose great confidence in us; if I were not afraid of betraying that confidence I could tell funny tales of some of them. Besides these we have Frenchmen, Spaniards, Dutchmen, Turks, Canadians, even African negroes. These last are even more difficult to understand than the Continentals, for they speak very indistinctly and generally in a half whisper. Occasionally we have taken French dictation, not a very easy matter for English girls, for, besides managing the machine we have to understand and grasp the meaning of what the dictator is saying and think of our French grammar and spelling at the same time. We very often have translations to make, mostly from or into French or German. Some of us understand stenography too, and take down letters and documents and report lectures, etc., in shorthand and transcribe on the type-writer.

In spite of all this multitude of work, much of it done against time, we still manage to get plenty of fun between whiles. Our hours are from half-past nine to half-past five, with an hour for lunch, and half-an-hour for tea. Sometimes we go out in the middle of the day, but nearly always have lunch at the office. We find that that arrangement is much more comfortable than going into aerated bread-shops, or places of that kind and fighting for food, for everybody wants lunch at the same time, and the shops are crowded. We always stay in for tea, however. Tea is a great institution with us; so are birthdays. We each have two birthdays, the anniversary of our birth, and the anniversary of our entry into the office. On each of these occasions we give a birthday party; that is, we provide a festive tea. The health of the donor is always "eaten" in cake with much solemnity, and on the anniversary of her birth she is wished, "Many happy returns of the day." This latter ceremony is always carefully omitted on an "office birthday," for, although we are very fond of our office, we do not look forward to spending the rest of our lives there. Much ingenuity is displayed in varying the entertainments and finding something new. The "boss's" birthday parties are always delightful; they come in the strawberry season; but perhaps the event of the year is the office's own birthday, for it always celebrates the anniversary of its birth, and gives us a grand tea.

We also have "funeral teas." They are given when a girl leaves the office for good, and are, luckily, of very rare occurrence. These "funerals" are not quite such dismal affairs as their name would imply; in fact, they partake somewhat of the character of an Irish "wake." In two cases out of the three at which I have assisted the "funeral baked meats have coldly furnished forth the marriage

table," so perhaps weeping and wailing would have been somewhat out of place.

As I have mentioned above, we are paid by the piece, and get for ourselves half what we make for the office. Ordinary work is charged 1s. 3d. a thousand words; of this we get 7½d., and consider from 10,000 to 12,000 words a good day's work. Law work is charged 1½d. a folio (seventy-two words). Plays cost 5s. an act of eighteen pages, with an extra charge of 3d. a page afterwards. Of course the amount of work a girl can do in a

day varies very much. A great deal depends on what she is copying; when the subject is an easy one and the manuscript well written she can cover a good deal of ground. Very difficult or very complicated work is charged extra to make up for the long time it takes to copy. It is somewhat difficult to say what our yearly earnings are, but I think that, taking one week with another, about 30s. would be a good average for the week; that is, of course exclusive of holidays.

In this paper I have only given my own

experiences; I have not said anything about typists who are employed as correspondence clerks in houses of business. Their work is neither so varied nor so interesting as ours, but many prefer a fixed salary to being paid by the piece. I cannot imagine anyone who has once tried life in a type-writing office with its many interests ever leaving it for a post in a commercial house where she has to transcribe her own shorthand notes of business letters every day of her life from half-past nine to six.

## WOMEN AND GIRLS AS INVENTORS, AND DISCOVERERS.

### PART II.

A WISE man once said, in reply to one who boasted of rising very early in the morning, "Your getting up early is not of much consequence; the question is, how much you do when you are up?" This was the practical view of the matter. And so also it is comparatively of little consequence how many sciences are studied, how many distinctions have been gained at school or university, nor how many letters you may inscribe after your name; but rather, how much have you accomplished by means of all this learning? Whom have you benefited? But few of my readers have both the capacity or the means for attaining to any of these distinctions, and, therefore, have the less "talents" to trade with and less responsibility; but no amount of knowledge, however small, is without it, and none should be unproductive. Even amongst the stars that glorify our sex, and we have an increasing number continually rising, all have not constructive ability; and so the devising of little things for the use and comfort of their fellow-creatures may be left, in a multitude of cases, to less highly-gifted, less extensively-cultivated minds. Whatever you may have learned, cultivate that knowledge to the utmost of your power, with a view—not to self-glorification nor entertainment, but to its practical use, for either the private advantage of the home-circle, or of the outer world beyond it.

Between the years 1637 and 1852, that dark period in the history of our sex as regards educational advantages, I find a list of fifty-six patents taken out by women. A gap occurs, so far as my own information goes, from 1852 up to 1892; I am sure, however, that no *hiatus* occurs in the history of women's original thought, and practical use of the same. Indeed, so far from any diminution, no less than 400 patents were taken out by them, in this country alone, within a period of about twelve months; last year, and the year before.

In 1637 we find one Amye Everard, widow, whose acquaintance with chemistry and the art of distillery, enabled her to produce a preparation of tincture of saffron and of roses, etc., which she patented; and two years previously, viz., in 1635, Sara Jerome, assisted by William Webb, patented an engine for cutting timber into pieces. In 1675 we have an example of inventive power on a perfectly different line, when Rebecca Croxton, together with two coadjutors, William Fanshaw and Gabriel Cox, produced point-lace, after the manner of the *Point de Venise* and *d'Espagne*, and in 1678, Amy Potter produced woollen lace, then used for trimming shrouds. It was in this year that the Act of Parliament was passed for "burying in woollen stuff, or a kind of thin Bays," or Baise (according to Misson, whose words I quote), "which they call Flannel; nor is it lawful to use the least thread, or Silk. The Shift is always white . . . and the sleeves at the wrists purfled." This garment was tied round the ankles, so as to make a "purfle," or deep frill, covering the feet, which were

bound together. Thus it occurred to Amy Potter to produce a garniture of the same material for those who could afford a little extra tribute of regard to the departed. Whether this "woollen lace" were pillow-made, or knitted, I cannot say; but probably the former method was employed, as the knitting of lace was a German invention, first introduced about the middle of the sixteenth century, at St. Annaberg, by Barbara Uttmann. She died 1575, in the sixty-first year of her age; the number of her children and grandchildren amounting to sixty-two. That she invented this art is unanimously affirmed by all the annalists of Saxony—some five or more histories.

It must not be supposed that the art of knitting was originated by this lace-maker. It is of much earlier date, the term "knit" being derived from the Anglo-Saxon *cnittan*, meaning "threads woven by the hand." But it was an art that seems to have been forgotten in England, though practised both in Italy and Spain, until the sixteenth century. A tradition exists that it was first introduced in the Shetland Islands, when the ship commanded by the Duke of Medina Sidonia (of the Spanish Armada) was wrecked at Fair Isle, and the rescued sailors taught the art to the natives; and no modern knitting exceeds in beauty of texture that produced at Unst, Shetland Islands.

In 1684 we find that Mary Marshall devised the production of a stuff, and the method of staining and colouring it, so as to resemble tapestry, and as a substitute for it. To work the latter demanded years of labour; whereas the painted or stained cloth was comparatively quickly produced. Proficiency in ornamental needlework was, according to the Lady Wilton (in her *Art of Needle-work*), "an absolute requisite in the accomplishments of a country *belle*;" but "the Arras looms," in the time of Queen Elizabeth, "superseded the painful fingers of notable dames in the construction of hangings for walls . . . intermingled and varied in the Palaces and nobler mansions by painted cloth." Thus we gather that to this Mary Marshall was owed the discovery of how to supersede, or at least supplement, the use of the "painfully"-produced tapestry hand-work, and the woven hangings of the Arras looms. With this example of inventive power, most usefully applied, I must limit my list of patents for the seventeenth century.

Perhaps none of my travelling and picnicing readers are aware that they owe to one, Jane Tasker, the happy thought of protecting flask-bottles with a casing of plaited rushes and straw. For this bright idea she took out a patent in 1709. The utilising of straw was further carried out in a very pretty way rather more than a hundred years afterwards by Grace E. Service, who patented a method of manufacturing work-boxes and other articles with it, combined with some description of gauze. Much pretty work of this kind, applied to similar purposes, comes to us from the far East, that land of distinctively original art,

out of whose book we have taken a good many beautiful as well as quaint ideas.

In 1731 we find a still more important invention when Elizabeth Coppin devised a method of extracting silver from mundic, and of fluxing it into a metal. This word "mundic," I should explain, is that employed by the Cornish miners to signify "iron pyrites" or "arsenical pyrites." Had such a woman as Elizabeth Coppin lived in these days, when colleges for scientific education are open to women, with how much more might the world have been benefited by her genius, that so battled with, and triumphed over, the tremendous odds against its efforts and success?

In 1762 we find a benefactor to the shipwrights in Elizabeth Taylor, who produced tools for making blocks, shivers, and pins for the rigging of ships; and again, another mechanical genius in (1789) the person of Mary Hewson, who invented boilers for distilling; and worthy of mention amongst these, Ann Still, who, in 1769, patented a stirrup. We find a very valuable gift to the public produced in the form of a suitable bed for invalids, invented by Henrietta Caroline Bentley (1794). Two more women gave us bedsteads for general use, viz., Elizabeth Guppy in 1815, and Elizabeth Beveridge, who struck out a new idea in 1831.

It is a curious fact that women have shown much inventive ability in the department of mechanics at a time when no advantages whatever were available for their instruction. Elizabeth Bell patented machinery for making pottery used for chimneys and drain-pipes (1807), as also some appliance for sweeping the former, and in 1809 Mary Townley produced something for curing smoky ones. This record offers a suggestion to others of our sex to devise some means of deliverance from smoke in this London of ours, which need not to be as great and aggressive as it is, supplementing so grievously the natural ground-fogs of its original swamp. Elizabeth Peryman invented a street and hall lamp (1809), and in 1805 Isabel Levi (in conjunction with John R. Irving) patented an apparatus for determining the specific gravity of fluid bodies. In 1818, Mary Sedgwick patented a method of obtaining certain products from refuse, slime or wash of starch, and the year following a machine for cutting corks was patented by Sarah Thompson. Two appliances were produced for the purpose of teaching music by women, one (1801) by Ann Young, consisting of a game, and the other (1832) by Harriet Grant Gillitter, an instrument for beating time, and in the same year (last-named) Caroline Burgess made a contribution for the furtherance of a sister-art consisting of an apparatus for drawing. I have already recorded the name of a woman who served the interests of shipbuilders, and should not omit that of Janet Taylor, who, in 1834, produced a nautical instrument for the measurement of angles and distances. The year 1838 gave us two practically scientific