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could once get settled under such a gentleman as Mr. Wright, I would not abuse my opportunity, and all I expected I have received. I have got Bibles, hymn-book, prayer-book, and tracts; and those things I never had in my house since I have been married before. My wife is delighted. My boy goes to school, and my girl also."

Were the spirit of Mr. Wright diffused more generally through society, the number of fallen men—who, being restored with all due prudence to a generous confidence, "would not abuse their opportunity"—would tell decidedly on the statistics of our criminal courts and prisons. To labour as Mr. Wright has done, must be the prerogative of few, though all the indolent may note, by way of spur, how much a man even like Thomas Wright, poor, humble, scantily instructed, may beget of good out of an earnest will.

Mr. Wright's toil has of course chiefly been in Manchester and Salford, but he has visited also various prisons in Lancashire, Scotland, and London, and has been a friend to many of their inmates; Mr. Wright's name, like the odour of a violet, has quietly become diffused, and public journals have, from time to time, in paragraphs and notices, made recognition of his virtues. To those who needed information, we have now supplied a hint of what might be disclosed by a large narrative of obscure labours. We may revert now to the ideas with which we first set out.

On the 12th of January, in this year, the Justices of Peace at the Salford Quarter Sessions drew up a memorial to Lord John Russell, showing that Mr. Wright had devoted to the public service, unremunerated, time and labour, and even money, which he might have applied to his own private good; that for this reason, he has not, in his approaching age, any provision which will enable him to relax in toil for his own livelihood; and that the unwearied labour to which he has submitted, has impaired his strength. Having shown this, the memorial prays for such recognition from the Government as shall acknowledge Mr. Wright's past services, and enable him to devote his future labours more effectually to the public good.

A month after the signing of this memorial by the Justices of Salford, the excellent people of Manchester backed it by a public meeting. Government did not deny, we believe, Mr. Wright's title to a little pension. It is but just to the late Government, and more especially to the late Premier, to say that there has been no want of right feeling or a manly sense of responsibility in this respect. We are afraid to think how many and how great salaries are paid to public servants who keep, or don't keep, falcons, or attend, or don't attend, to other things. Mr. Wright having worked for his country in reforming criminals, saving their future gaol expense, and making them good working-men—having worked in this way for fourteen years, six

hours a day, gratuitously, over and above the close duties of his calling—having spent even his own money on the public—may be considered very well entitled to a salary of public halfpence. Gold, to be sure, is wanted for the buckhounds and the falcons; but the public, probably, will not be sorry if it should happen that the change in Downing Street does not quash the memorial from Salford, and that any little pile of pennies which may have been left by the outgoing servants on the mantelpiece, may be found labelled, "Thomas Wright's Pension," and bestowed accordingly.

The wish of the Manchester people, whose movement Thomas Wright himself has not said a word to stimulate, is to ensure to their citizen, for the remainder of his life, an income equal to that which he now derives from his employment in the foundry, or with a few pounds added—say two hundred pounds a-year. This, with the aid of Government, might probably be raised in their own town; but Mr. Wright is a man whom one would prefer to honour in the name of England, rather than of Manchester. It is very certain, that in whatever form either Manchester or England may pay to such a man a salary so trifling, though sufficient to enable him to spend his whole time upon prison labours, his exertions will give more than value for it year by year. And still there will remain the gift from Mr. Wright, of a largemass of well-spent time and most efficient, earnest labour. No acknowledgment, which this country is likely to make of services so modest, will suffice to turn the scale of obligation, and make Thomas Wright its debtor.

TIME AND THE HOUR.

PROUD as we are apt to be of our achievements in science and art, it sometimes strikes some people that we do not reverence and admire enough the results of the sagacity, patience, and courage of men of a former generation. For instance,—what an achievement is the discovery that the earth is not flat,—the discovery of its actual form,—the discovery of its relation to other parts of the system,—discoveries clenched by the fact, that we can predict future starry occurrences, account for apparent planetary errors in our own days, and explain, by means of the history of the solar system, some dubious incidents in the ancient history of man! It seems inexpressibly astonishing that men, on their little anthill, should be able to make out the facts of regions which they can never reach, and where they could not live to draw a single breath; that such imperceptible insects as they must appear, if heard of, in the sun and moon, should lay down, without mistake, and to demonstration, the laws of the sun and moon in their external relations. It is as if the aphides on a rose-bush under a

window in the Isle of Wight, were to make out, by means of some wise aphid dwelling under a vein in a leaf, the mathematical facts of the Edinburgh and Perth Railway. When we think of it, our minds reel under the burden of this knowledge.

Somewhat in the same way, but less eminently, we cannot but marvel at the perfection that men have reached in recording the passage of time. There are natural helps to this which diminish the wonder: but still it is a wonder of great magnitude. When we look at the matter on one side, we see that time is given out, as it were, from the magnitudes and motions of the stars; and in that view, it seems a deed almost beyond estimate, that man should have caught this product, and made it record its own lapse from moment to moment. When we look at the other side, and see how the sun presents man with a natural clock, by simply shining where a shadow can be cast, whether of a sapling or an Egyptian pyramid, our wonder lessens to an endurable degree. We know that, in fact, the sick man measures his bitter hours by the sunshine or shadow on the wall of his chamber; and the shepherd in the wilds by the ellipse he has drawn for the hours round the solitary tree; and that the old Egyptians are said to have learned much more than the time of day by measuring the sharp line of shadow drawn on the glaring sands of the desert, by the mute and immovable Pyramid of Cheops, under compulsion from the relentless sun, which there never withdraws behind clouds but by some rare caprice. Between the setting of the sun and the rising of the moon, the great dial may rest; but only then may it refuse to show the hours. From making dials, in imitation of these natural ones, to making clocks, in which the circumstance of the shadow is dropped altogether, is, however, a long stride: and there is room for rational admiration when we consider what a true and lasting relation and accord man has established between the jog of the wheels in his pocket-watch and the spinning of the planets in space; between the tick which amuses the baby ear leaning against his breast, and the harmonies of the stars in their courses. This appears a great thing to us when we meditate upon it in a walk, or when the tick of the watch tells upon the ear in the darkness of the night. But, to receive the full impression, we should go into the workshop where scores of men and boys are busy in making and arranging the materials,—the hard, dead mineral materials,—which are to give out something intangible, unutterable, as real as themselves, yet purely ideal in its connexion with us. That men by putting together brass and steel, and a jewel or two, and some engraved marks, should present to us, as in a mirror, the simultaneous doings of the stars in the sky, seems to raise the work-room into a place of contemplation or eloquent discourse.

Thus did it appear to us yesterday, when we entered a fine range of rooms, where a great number of men and boys were occupied in the business of watch-making for the Messrs. Rotherham. There was no resisting the sense of the seriousness of their work in comparison with that (though equally delicate and intently pursued) by which baubles are produced. There is something serious about the whole business. It is a serious thing that it is science and labour which gives its high value to a watch, and not the costliness of the material. A cable was put into our hands, the steel of which was worth nothing that could be specified; whereas, in its present form, it was worth two shillings. Each link, almost too small to be seen by the naked eye, is composed of five parts, each of which is made and placed for a purpose. The mere metal of the whole interior of a watch is worth, we were told, perhaps sixpence; whereas, the labour and skill worked up in it raise its value to many pounds. All is very quiet in these large apartments, where scores of men and boys are poring over their work. The quadrangle of rooms has windows completely round both sides. Under the windows a counterextends, completely round also. Almost every workman has a small magnifying glass, which he fits to the right eye, for the finest part of his work. Of course, the right eye fails, sooner or later. One man was spoken of as having worked for this house between forty and fifty years; but this was a remarkable case. The eye is usually worn out in a much shorter time than that. Besides the long rows of poring craftsmen here, we were told that there were two hundred more in their own homes, employed for the same firm. Having heard of their house as the largest watch manufactory in the inland counties, if not in the kingdom, it was with great interest that we received the details of the history and extent of their business.

It appears that somewhere about 1783, one Vale saw that there was an opening in Coventry for the making of watches; and he set up the business now conducted by the Messrs. Rotherham. From that day to this, great difficulty has arisen from the prejudice against country-made watches. If there ever was, as some say, good reason for this distrust of Coventry watches, there is not now; yet the difficulty exists, and occasions some curious embarrassments. Ten years ago, the annual production of watches by this firm was about six thousand; it is now nearly nine thousand. If we consider the durable character of a watch—that a single one generally serves us for a lifetime—this will be seen to be a large production. But there seems to be no doubt that the demand would be larger, but for the prejudice against Coventry watches, which is akin to that against Birmingham jewellery. The dispute lately pending between a great Coventry house and the Assay Office at Birmingham, is a curious illustration of the way

this prejudice works. There is an Act of Parliament, about thirty years old, which obliges manufacturers to send their gold productions to the Assay Office at Birmingham, if they reside within thirty miles of it. Messrs. Rotherham send the greater part of their watch-cases to the Birmingham office; but they feel it hard, while labouring under the disadvantage of the old prejudice, to be prevented from getting their gold assayed at any office they prefer. Their alternative is between having their watches despised on account of the local mark, and buying their cases in London. They are obliged to buy so many cases in London, that it makes the difference of thirty pounds a-week in the wages of labour that they pay in Coventry.

While we are speaking of legislative impediments which annoy the manufacturer, we may as well mention two or three more, which would be scarcely credible in our day, if they did not happen to be true. There seems to be a natural relation between the English and the Swiss, in regard to watch-making. Though the law does all it can to part them, they are perpetually at work in combination; a combination which it would be convenient to make honest and easy. The tools—various and most delicate—used by watch-makers, are purchased chiefly from Warrington in Lancashire; but the best of them are fashioned in Switzerland. Iron is sent over from England, and returned by the Swiss in the shape of tools so exquisite, that we cannot rival them. Swiss watch-makers live in Clerkenwell, to make the faces of our watches; an article in which fashion is as capricious as in any department whatever. Now, it would be much easier and pleasanter for these Swiss to live at home, and work in their own beloved dwellings, as numbers of their countrymen, and many more of their countrywomen, are always doing. But, while Swiss watches are admitted entire into England, at a duty of ten per cent., the importation of parts of watches is totally prohibited. Swiss watches, as a whole, are not to be compared with English; but in the making of some parts, the Swiss excel us. By this absurd prohibition, we must either buy entire watches, to help us to the parts we want, or we must try to smuggle; or skilled Swiss must come and live here. We need not say that the one thing which we never think of, is going without anything which is proved to be the best of its kind. We, on the other hand, are excluded altogether from the European trade in watches. The prohibition, as regards all Europe, is complete; while we trade with Asia, Africa, and America. In the United States, again, there is a duty which so affects the importation of watches, as to give rise to a whimsical state of things. Our watches go "in the frame," packed naked, as it were, and they are clothed with cases there. The Americans cannot compete with us in making the works; but the making of

the cases is now an important business with them. What confusion, and trouble, and waste, are caused by all these legislative meddlings!

It is painful to see that further difficulties are made by the selfishness of certain persons at home, concerned in the making of watches. One cause of the cheapness of Swiss watches, which preserves their popularity, in spite of their inferiority to ours, is the comparative cheapness of their production. Throughout the valleys of Switzerland, there are multitudes of women busy in their own homes, about the delicate processes of watch-making. No work can be more suitable for women. The fineness of sight and touch required seems to mark it out as a feminine employment; and it can be pursued at home, if that is desired, just like needle-work, or any other feminine business. But the men of Coventry will not allow women to be employed. The employers desire it; the women desire it; all rational observers desire it; but the men will not allow it. The same man who sends his wife and daughter to weave at the factory, will not hear of their engraving "brass-work" at home. It is a curious thing to pass in forty minutes from Birmingham to Coventry, and to mark the difference between the two places in this matter. In the one, we see hundreds of neatly-dressed and well-behaved women, doing work suitable to their faculties and their strength, and earning the means of support for themselves, and education for their children, by making screws, gold chains, and many other things; while, in Coventry, the workmen will not allow a woman to paste bits of floss silk upon a card, or to mark the figures upon the face of a watch. With regard to the ribbon manufacture, they have had to give way. At the reels and looms we see women employed by hundreds. The rest will follow. The women will obtain whatever liberty of occupation is reasonable, because whatever is reasonable becomes practicable, sooner or later. We know of a beginning made, no matter where, or by whom. The respectable and educated wife of a superior mechanic chooses to aid her husband's earnings, by employing her leisure in a process of watch-making—that of "engraving" the "brass work" in the interior of a watch. As soon as it was discovered that she was thus employed, an outcry was raised. Every opposition was made, but she has persevered. A sort of case of apprenticeship has been made out, by witnesses having affirmed that, in their presence, she had seen her father do the work she had undertaken. She would have preferred another branch of the work; but she found there was no chance of her being permitted to do the same thing that her husband wrought at. She is instructing her two daughters, however, in her own branch; and there can be no doubt that her example will be followed. At present, hers is considered a singular case.

The watchmakers are now supposed to be to the ribbon manufacturers, in Coventry, as one to ten. The proportion will, probably, have changed before the next census. It should be considered, however, that the ribbon-weavers are distributed over neighbouring districts, while the watchmakers live within the city.

Various parts of the watch come hither from widely distant places. We have said that the most delicate tools are made in Switzerland, and the ornamented faces of the watches in London. The jewels come from Holland. The diamonds are cut abroad, but their framing in steel is done at home. We saw many hundreds of them in a little box. We saw some rubies, rough and some cut, round and very small; some chrysolites, also. The cutting can be done only with diamond dust. The engine-turning of the cases is done in private houses, in Coventry; and so is the making of enamelled faces. The glasses come chiefly from the neighbourhood of Dublin, where they are made more cheaply than anywhere else. No place, but Newcastle-upon-Tyne, can compete with the Irish glasses. The smallest wheels are made at Prescott, in Lancashire. All the other parts of the watch, if we remember right, are made in the establishment.

We saw the strip of stout brass out of which the "frames" were to be cut. The cutting these brass circles, piercing them with the necessary holes, joining them, inserting the jewels into the holes, fitting on the wheels and the chain, inserting the spring, engraving the brasses and the gold, making the cases, and finishing off the whole;—this is the work done here. One boy may be seen fitting the pinions into the frames; another polishing the pinion with his small fiddlestick—for such his tool appears to be; another delicately handling the escapement; another showing to us a hair-spring, as an instance of the value given by labour to a material of low cost,—this almost imperceptible string of steel being "more valuable than gold," as he says. The careful workman covers his work from dust (such of it as is finished, or waits) with a little inverted tumbler. The apprentice lads earn about four shillings and threepence a week; the higher order of workmen average twenty-eight shillings, or thirty shillings. We were curious to know how low and how high the price of watches goes, here in the wholesale establishment. The lowest we heard of was three pounds; the highest thirty-five pounds; but few are sold of a higher value than twenty pounds, wholesale price; which mounts up to a good deal more in London shops.

The most interesting class of watches, to us, was that of the agricultural labourers. We were glad to hear that agricultural labourers bought watches; a fact which we should hardly have suspected. The number demanded is rapidly decreasing. If one hundred and fifty

watches are made weekly, eight or nine of them may be for agricultural labourers; and the proportion was formerly much larger. They are of a wondrous size; about two inches thick. There is silver to the value of two pounds in a watch which costs four pounds. The thing looks as if it could never be lost—hardly broken; and it is inconceivable that damp or soil could get in. On its broad face is painted a gay picture—Speed the Plough, or the Foresters' or the Odd Fellows' Arms. Next in bulk to these are the watches for the Scotch market. The Scotch seem to like to feel that they have a watch in their pocket. In remarkable contrast with them are the watches, scarcely bigger than one's thumb-nail, which are intended for presents to very little ladies. As little ladies' time is not supposed to be very valuable, it is not insisted that these should go well. From these the article reaches in value to the thirty-pounds watch, exquisitely chased, back and face, and of beautiful form and proportions. Of the watches for exportation, those made for the market of Alexandria are perhaps the most remarkable. They are, in form, hunting-watches; the marking of the hours is Arabic; and there is no ornament whatever. No figures of any living thing must be looked at by a Mohammedan; and it appears as if, to make all safe, the Arabs would not countenance any graven image of fruit or flower, leaf, or tendril. While talking of the wide transmission of this delicate article of manufacture, we were surprised to find how many watches are sent about the kingdom by post,—not for cheapness, but for security. It is an expensive method, but a convenient one. This house sends out by post sometimes thirty in a week.

Having never seen engine-turning, and having, in truth, not the least idea how it was done, we gladly accepted an invitation to a neighbouring dwelling, where an elderly man and a boy were busy about the process. The neat apartment, the shining machine, the courteous old gentleman in his spectacles and clean apron, anxious to show us whatever we wished to see, made a very pleasant impression upon us. The principle of the process is understood at a glance; but not the less wonderful does it appear to us that any man should ever have thought of it. The invention is French, and nearly a century old; but it is only lately that it has reached its present perfection. The machine is expensive, costing about one hundred and seventy-five pounds. Fieldhouse is admitted to be the best maker. The main part of the machine, to the eye of the novice, at least, is a barrel, which is bound round with strips of copper of various patterns, sinuous, or undulating, or other. The revolution of this barrel, with one of the strips pressing against a steel tip or bolt, causes a vibratory motion, in accordance with the copper pattern, in whatever is connected with the vibrating steel. The

watch-case is so connected. It is fastened at the end of a bar; and, while it is vibrating there, a graver is brought up to it, on a sort of miniature railway; and it peels off the gold in the pretty pattern required. We saw a ribbon-like circular pattern; concentric rings, and vertical ornamentation; and we were told that by the combination of the patterns provided for by the machine before us, as endless a variety might be obtained as of changes from a peal of a dozen bells.

With all its prettiness, this process, and every other connected with the ornamenting of the watch, was less interesting to us than those which relate to its time-showing properties. We were not sorry that the last stage of our sight-seeing was the preparation of the enamel face, with its indices of hours and minutes.

We went to the little workshop of a superior artisan, who works here, but lives in the country. His intelligent daughters help him in the lettering department of his little business; and very pretty work it is for them. The affair is simple enough. Round pieces of copper are cut, with scissors, out of a strip which comes from the rolling-mill; the size being determined by a brass pattern. The edges are slightly turned up, in order to hold the enamel, when melted; and the necessary hole in the middle has its edges turned up, on the same side, for the same reason. The enamel is made of putty-powder, and several other materials. In its unground state it looks just like a bit of thick earthenware;—the white very white; the cream-colour very pure. This is ground down in a mortar extremely fine, mixed with water, to about the consistence of soft clay, and spread smoothly over the copper ground. Half-a-dozen of these faces are put down before the open mouth of the little furnace, to heat gradually, in order to avoid the irremediable mischief of a crack. When they have done reeking, they are ready for further cooking. With a little pair of tongs, one at a time is carefully placed upon a stand in the furnace. Presently it begins to shine. It is turned round and round, that the whole may be equally done. When it is all one white heat, it is brought out, and another is put in. When cool, the surface is rubbed smooth with sand; inequalities are filled up; another coating is given; it is "fired" again, and then polished to the degree we are accustomed to see.

Then comes the part which the novice must be extremely shy of undertaking, so very important as it is,—the marking the hour figures. The face is throughout placed on a little wooden platter, which revolves with a touch. On this platter it receives its polishing and all other treatment. It is now turned round, to be ruled with the utmost exactness, with as many radiations from the centre as are wanted. Thick strokes are laid on where the figures are to be, of a metallic paint, com-

posed of copper, iron, and other ingredients, prepared in a peculiar manner. The decisive figure-strokes are then cut in with the help of an essential oil; and the surplus paint brushes off with a touch of the brush. There is a mystery in most houses of business. The secret here is how the minute-face is sunk in the hour-face. We could understand, however, how the excessively small figures were done, though hardly how human eyes could stand such a trial. Our host proved to us what the faculty of sight becomes capable of, by relating an achievement of his own. Some years ago he wrote, in enamel, "the Lord's Prayer, with every *i* dotted, and every *t* crossed, in the space of half the wing of a house-fly." He keeps it framed as a locket; and it is the wonder of all strangers who see it. He was advised to send it up to the Exhibition; but he dreaded its being lost. He paid very dear for his enterprise, as we should think; but he seems rather to glory in the result than regret it. By working in a blaze of sun-light he "aged" his sight thirty years in a single fortnight. He now requires strong magnifiers to work at all.

We observed here the glass globe of water, whereby the gas-light is concentrated for evening work, which is seen among the Birmingham burnishers. It is sad to think how the senses and faculties of some are overstrained to minister to the luxuries of others. If we could reconcile ourselves to this at all, it would not be in the case of any toys, be their beauty and the money value of them what they may; but in the production of this exquisite talisman, the watch, which can tell us, in the intervals of tides and sunsets, where the stars are, and what they are doing, behind the veil of the noonday light and the midnight cloud.

A GENTEEL ESTABLISHMENT.

IN my hot youth, I once wanted some money. I do not mean to say that this was the only time that I have ever experienced a similar want during that excited period. But I have particular reasons for referring to that especial occasion.

I had not arrived at the age which is known as "years of discretion;" indeed, even at the present moment it is the opinion of some of my friends—But that is a consideration into which it is needless to enter. Let it suffice to state, that my money was "locked up" in the hands of a guardian—a gentleman of the old school, who devoutly believed that he was acting the part of my best friend by depriving me of any free agency in the management of my own affairs, and letting me spend as little as possible. Accordingly, through this very considerate conduct on the part of my "best friend"—who was personally a perfect stranger to me, living in a distant and absurd part of the country—I found myself unable to touch a guinea without his permission.