THE ART MANUFACTURES OF JAPAN.*

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I LEFT Yokohama for Kobe, having spent a month in Tokio in studying the manufactures of that district, and in getting together such part of the representative collection which I had engaged to make as the capital and its surroundings furnished; thus I commenced my journey of nearly two thousand miles in the interior.

JAPANESE POTTERIES.

From Kobe my first excursion was to the island of Owaji, which island I first reached, and then crossed in order to see the potteries which have, for two generations, carried on a sort of independent life in this isolated situation; and here I may mention an experience which serves to show one of the numerous difficulties of dealing with Japanese manufacturers if we call upon them to meet our wants as we expect European manufacturers to meet them.

Seeing a cup and saucer with which I was well pleased at one of the Owaji factories, I asked that two complete tea-services be made for me of that particular pattern, and remarked that if they could get one made so that I could see it before I left the district, I would then, should it be satisfactorily manufactured, order others. After many and tedious calculations, with the aid of an abacus (that miserable frame, without which no Japanese trader can tell you the price of a penny toy), the manufacturer stated that he thought they could get the two services made in two years. In vain did I try to induce the owner of the factory to employ further assistance. "How," he said, "can I know that the work of other artists will please you?" and my warmest assertions that if he were satisfied I should be pleased availed nothing, and I left him with the promise that in two years I should receive two services. Upon returning to the mainland I started for Sanda, where celadon, or sage-green wares, have for many years been made. It is an outlying, mountainous district, in which I found small potteries loosely scattered over a considerable area. Next I went to the sacred city of Nara, then to Osaka—a great seat of metal and other industries—then to Kioto and Lake Biwa, next along the entire length of the great promontory of Isé, where are situated not only the great Shinto shrines, but also the seats of the leather-paper manufacture. I then went to Nagya, then Wakiyama, then Koya-Zan—this latter being a sacred mountain, on which stands a city, formed of two hundred and forty temples, and which no woman entered for a thousand years prior to the revolution of 1868; and to this hour not even a Japanese can sleep in the city without a special order from the governor of the province. Yet, with the kindness which I ever received while in Japan, I was permitted to tarry with the priests in the sacred apartments of a temple.

To enumerate the various towns that I visited, and districts through which I passed, would occupy the entire evening; and I have mentioned the few just named in order to show you that I had the opportunity of observing the same manufactures in various parts of the country somewhat widely apart, but in all parts the manufacturing processes were similar.

Nothing impressed me so much, as the result of my observations in Japan, as the smallness of everything. The pottery of Owaji was large in comparison with most of the manufactories that I saw, yet it could only turn out one decorated tea-service a year. Generally speaking, one man constitutes the entire manufacturing staff of a factory, or, if he is an old man, the father and son.

THE JAPANESE POTTERS AT WORK.

I visited, while in Japan, sixty-eight potteries, and the most interesting wares were generally made in the following way:—In a lovely little room, the floor of which was covered with mats, dwelt the potter. I may tell you that in a Japanese living-room there is not one particle of furniture—no chair, no table, no cabinet. The floor is covered with thick mats, each of which is six feet by three (their foot and their yard are each of the same length as ours, but the inches are longer, as there are but 10 inches to the foot, and every room in Japan is of the size of a certain number of mats). One mat being removed from the floor, a potter's wheel is exposed to view, but the wheel is of the simplest character, as it is a mere circular stone of the form of a Cheshire cheese, level with the uncovered floor, and working on a vertical axis which is fixed in a log of wood beneath the floor. At one side of the wheel is a clean tray bearing a lump of clay. At the other side is another tray—often well lacquered—on which the vessels, when shaped, are placed. The operator now kneeling in front of the wheel, and sitting more or less back on his heels, sets the disk in motion by whipping it with the tips of his fingers till the necessary speed is attained in its rotations. He now places a piece of clay upon the wheel and gives to it form in the usual manner, stopping to whip the stone whenever it is necessary that its speed be requickened, and in this way he shapes his wares.

Not unfrequently the potter, after removing from the wheel the vessel which he has formed, distorts its shape, substituting quaintness of contour for a symmetrical form, and in the pottery district of Mino I found one man who was known under the cognomen of the funny man, as he invariably gave to his wares eccentricity of character. Few in Japan can afford to burn their own wares, hence a number of potters congregate around a public kiln where their wares are fired at periodical intervals. In many cases, a potter only makes plain wares, when he sells his productions to artists, who not unfrequently reside at great distances from the potteries (nearly all the enamel blue ware is painted in Tokio on vessels made in Seto, about 300 miles distant). In this case the artist usually keeps a stall, or little shop, and paints his wares, and attends to customers, as necessary. Such a man fires his own paintings in a kiln about 18 inches high, and 15 inches in diameter, the kiln being circular and having a domed top.

Having painted a sufficient number of pieces the kiln is charged, and the small charcoal fire by which it is to be heated is lit; but the potter not only lights the fire of his kiln but he also lights his pipe, and this he recharges about every three minutes, for it is very small; he now sits the very picture of happiness, till his wares are fired. In this way things are managed in Japan, and while there are potteries with more pretentiousness to be found they are of rare occurrence, and where anything approaching European ideas has been adopted, excellence of execution is replaced by slovenliness, and the desire for gain supplants love of the work. Yet there are factories in which quantities of household vessels are made.

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CURIOUS MODE OF MAKING SCARFS.

I visited a town which was devoted to the production of curious scarfs and fabrics; and formerly the productions of this district were of the highest merit and interest. Here are some of these scarfs, and in this way they are made. Two pieces of white silk crape are taken, each of which is about three yards in length and twelve inches in width (twelve inches is the usual width of native cloths). These two pieces of fabric are placed together so that one is exactly over the other; thus placed we will regard them as forming one double fabric, and will forget that there are two thicknesses, for they are both treated as one, and the two are manipulated together, so as to effect a saving of labor. A small piece of pointed stick, resembling a common meat skewer, and a quantity of waxed thread, are the requisites of the process.

From below a small portion of the fabric is pressed upwards on the point of the skewer into the form of a little cone of, say, half an inch in height—a cone which is kept in form by the waxed string being wrapped around it; the skewer is now withdrawn and removed about half an inch from this little tuft, when it is employed to raised a second cone, which in its turn is wrapped round by the waxed thread. This formation of little tufts is repeated till the entire fabric is covered with them, when it is ready for dyeing. Thus prepared, the fabric is taken to a dye vat (a vat which in this case generally contains scarlet or pink coloring matter), and here it is dipped. The action of the dye is, at the same time, to give color to the cloth and to shrink it, hence where the dye has come in contact with the crape a shrinking has taken place; thus permanent conical eminences are formed. The wax thread is now removed, each little tuft being unwound, and not only has a curious fabric been formed, with a surface consisting of conical eminences, but also a fabric which is variegated in color, for where the wax thread was in contact with the crape the dye could not act upon it; thus, by the one operation a fabric is produced both variegated and of a rich coarsely granulated character.

These scarfs were, when single, worth about one pound sterling each. They were then such as any lady in the land might covet; but to ourselves in part, and still more to the Americans, attaches the blame of bringing comparative ruin to the town where they were made, and of destroying a lovely manufacture. "I will give you 18s. each for them." "I will give you 15s." "I will give you 12s.," and so on. This is what the consecutive foreign merchants said, till the last gave about 3d. Let me show you what this lovely manufacture has degenerated to; and these miserable fabrics are the best that can now be procured at the town where once only beautiful objects were made.

We talk, your Excellency, of the degeneracy of Japanese manufactures, but who is the cause of this sad falling off in the quality of their productions, and we wonder whether Japan can now produce what it did prior to the overthrow of the Shogoon's rule? I am happy to tell you that Japanese arts are not yet lost, and that Japanese love of the beautiful has not been stifled, for in all cases where I offered remunerative prices I got the old thing with its beauties and strange merits. But as we are thus destroying the beautiful arts of a people saturated with the refinements which spring only from an old civilization, can we wonder at that dislike to the foreigner which permeates so much of Japanese society? I do not; and were I a Japanese I should hate the foreigner with a sincere and unmitigated hatred.

This process of tying the cloth into knots is used as a means of placing a spot, or curious pattern on fabrics, not only in Japan, but also in India, and the silk pocket handkerchiefs which were in common use by gentlemen about thirty years since, were spotted in this way. Here is a specimen from India showing the nature of the process.

HOW THE JAPANESE PRINT ON CLOTH.

While speaking of fabrics, let me try to describe to you various processes which I witnessed in one of the largest print-producing establishments in Japan; and what struck me as remarkable here was that most processes consisted in the combination of hand work and of mechanical methods.

First, I saw blocks which worked in pairs: the one was simply a heavy piece of wood with a perfectly smooth surface, the other had the pattern which was to be placed on the cloth cut into it; thus the figured block had the pattern wrought in intaglio upon it. From the deeper portions of the intaglio figure holes were bored through the block to its outer surface, where they were enlarged into funnel-shaped tubes.

In order that the fabric be figured, it is stretched over the plain block which has its smooth side upwards. Upon this lower block the figured block is inverted, hence the fabric lies between the smooth surface of the plain block and the figured surface of the upper block. Pressure is now employed so as to bring the surfaces of the two blocks as near to each other as possible, and a dye is poured down the funnel shaped holes and thus comes in contact with the fabric wherever the block is engraved. When the fabric has become saturated with the dye the blocks, while still in close contact, are inverted, so that the surplus dye is poured off, and the fabric has received its pattern; for the pressure has been sufficient to prevent the "running" of the dyes, and thus the disfigurement of the fabric. We, in our own calico print works, employ a process similar to this.

The next process was that of placing a pattern upon the cloth by simply stenciling the pattern instead of printing it, the stencil plates being formed of paper rendered non-absorbent by oil or some similar body, probably by Japanese lacquer. But of this process there are two methods, for in certain cases the pattern is stenciled in the ordinary manner, a dye being used as we use paint; in the other a "resist" is stenciled on the cloth, and the entire fabric is afterwards immersed in the dye-vat, when it becomes dyed in every part save that which was protected by the "resist." "Resist" may be starch or gum, or any material that will cover up the surface of the cloth and prevent a dye-stuff from coming in contact with it.

Another process consists in reversing the common operation of stenciling; thus in ordinary cases if we wished to stencil a leaf in red upon a white ground we should cut from a sheet of paper a leaf of the shape desired, when we should have a hole in the paper from which we cut it of the same shape as the leaf cut out. In this case, we should use the sheet of paper from which the leaf had been cut, and by dabbing our red color through this hole should get a copy of the leaf in red. But the method to which I now wish to draw your attention consists in using the leaf-like bit of paper which has been cut from the sheet, and placing it on the cloth, and spreading over it, and that portion of the cloth which surrounds it, by the agency of a sort of trowel, a paste-like "resist." This done, the leaf-shaped piece of paper is picked up from the fabric, together with that portion of the resist that covers it, by the agency of a point, or pin, and thus the fabric is left exposed where the paper leaf was. As many leaves as are desired are placed over the fabric, and the whole is covered with resist; the various leaves are now picked out and removed, and upon the resist becoming dry, the fabric is immersed in a dye, when the exposed parts—the leaves—acquire a color, say red. This operation being completed, the resist is removed from the cloth by the action of water, and we have red leaves on a white ground.

JAPANESE PROCESS FOR THE ORNAMENTATION OF SILK.

Now I have to describe to you the process by which the more expensive fabrics receive figures, and I hope that I may make myself understood; but, as the process is difficult to describe, and as we, so far as I know, have no analogous process, I fear that I may fail in making the method of manufacture clear to you.

First, the fabric (always silk, I believe) is given to an artist, who draws the pattern upon it as carefully as if he were designing an historical cartoon. The pieces of fabric are about 40 ft. in length, and 12 ins. in width, and on the entire piece the artist either places a varying or a repeating pattern, as may be desired. This pattern he draws with a preparation of indigo, which can readily be removed from the fabric by washing; and he not only gives outline, but also carefully adds depth, or shade, or whatever may enable him to produce a desired effect.

Thus, at the outset, the whole pattern is drawn by hand, and this we should think a sufficiently costly mode of producing a pattern; but in the process which we are considering, the work is only now in its first stage of development.

The artist hands the fabric to a workman who has prepared for himself a material of the most tenacious and ductile character—a sort of glutinous bird-lime. This mucous matter he forms by boiling the finest possible rice flour with lime water of a particular strength. Having previously prepared his glutinous matter he warms it slightly and rubs it on a board with a sort of putty knife; but it appears to me as difficult to rub as warm india-rubber would be. A piece of this bird-lime about the size of a small pea is placed on the end of a wooden point, or skewer, and a portion of the fabric is stretched flat by bent pieces of cane; thus all is ready for work.

Holding the frame over a small charcoal fire, and with one hand (the left) under the fabric, so as to raise any portion of it, and with the point of wood, on which is the little ball of plastic matter, in the other hand, the operator commences his work by touching the fabric at some point of the pattern, say at the base of a leaf, with the mucous ball, which at once adheres to the cloth. The ball of mucus is now drawn to some little distance from the surface of the fabric, say a foot, but between the fabric and the ball there now intervenes a thread of this mucus, for so ductile is the material, and so sticky that it will adhere to anything, and draw out to a thread some yards in length without breaking.

By certain dexterous movements of the right hand, in which the wooden point by which the plastic matter is supported is held, and by the middle finger of the left hand raising the cloth when necessary, a thread is constantly being formed of the plastic matter, and is as constantly dropped upon the fabric as an outline to the pattern. With the utmost skill leaves, flowers, and even the small parts of the flowers, as the stamens, are outlined with this mucus, which falls upon the cloth as a thread of about the thickness of an ordinary pin-shank. The whole pattern, however small its detail, or however finely serrated its leaves, is outlined in this manner.

But as this outline is not sufficient, means are adopted for thickening it, hence a conical tube of oiled paper is formed of about four inches in length, and with an orifice at the broad end of about an inch. At the small end this tube terminates in a tin nozzle, in the apex of which is an opening such as would be made by a darning needle. This tube is charged with the mucus, and through the fine opening in the tin nozzle the plastic matter is pressed in such a manner as to thicken on the outside, and also to raise, the outline already formed. All this has afforded a means of preventing the "running" of dyes which are now to be used, and when thus prepared the fabric is ready for the next stage of the process.

This consists in the painting, with dyes of various colors, of the spaces inclosed by the little bank of the now dry, but formerly mucous, material, and a care is bestowed upon this painting, such as if a highly-finished water-color drawing were being produced. In this way the pattern is wrought. The dyes having dried, the colors are exposed for about six minutes to the action of steam in a steam bath (which is a sort of kitchen "steamer," placed over a pot of boiling water), and then the mucous matter is removed by the fabric being gently rinsed in a vat of clean water.

If it is desired that the ground be colored, the whole of the pattern is now painted over by a "resist," and the fabric is then dipped in the dye vat, the ground receiving its color, as it is unprotected.

Many fabrics are made by combinations of these processes, as I have already said. Thus, some are in part stenciled, and in part wrought by this last-mentioned method. To me it appears that the means of producing an effect which I have just described is the most laborious of any that I have known, but while it is a laborious means of achieving an end, the result gained is in the highest degree satisfactory, for what could be more delicious than parts of these fabrics?

JAPANESE WEAVINGS.

Before we leave the consideration of the means by which fabrics receive their figure, or pattern, I will just say a word on the loom, as some of the Japanese brocades which receive their pattern by the loom are unsurpassed in beauty by any fabrics in the world.

I was taken to a factory which now receives a government subsidy by the Mayor of Kioto, and here there were, perhaps, twenty looms weaving the richest of tissues. In some of the looms eight or ten shuttles were employed, each carrying gold or some bright colored silk. Now the Jacquard apparatus, if I may term it such, by which figure was given to the fabric, consisted of a youth of about seventeen summers, who, perched on a beam near the ceiling of the weaving-shed, gathered up the harness as necessary, and when all was collected, lifted it up and shouted to the weaver below to throw the shuttle across. This process of collecting the harness was gone through between every throw of the shuttle, and in this laborious manner the exquisite brocades of Japan are produced.

In the same shed with these primitive looms stood the newest Lyons loom with its perforated cards, and even the

newest card-stamping machine, but the work produced by this latter was not comparable in beauty with that wrought by the more simple native contrivance.

I must now leave the consideration of fabrics, but to what shall we turn, for the manufactures of Japan are as varied as they are interesting?

HOW FINE JAPANESE FANS ARE MADE.

Here is a fan, or screen, which I bought in the lovely old city of Nara; it, like most of the fans made in this district, is perforated, and it is not only perforated but is formed of silk; some of these fans, are, however, made of paper.

I observed the process by which these fans are made, and the perforation of the silk, or paper, is achieved simply by hand. Six thicknesses of the material are placed one above the other, whether it be paper or silk, and through the six thicknesses the perforations are at the one time cut by a knife; and however fine or intricate the pattern, and however large the order that has to be executed, six thicknesses only are cut at a time, and the cutting is entirely by hand.

JAPANESE METHOD OF PREPARING MOULDS FOR ORNAMENTAL CASTINGS FOR VESSELS, BRONZES, ETC.

Shall we now visit the metal-workers, and see how they conduct their manufactures, for what we shall here see is as remarkable as the means by which fabrics are figured?

This kettle is characteristic of what is in general use in Japan. I sincerely wish that it was characteristic of the kettles in general use in England. It is an object of pleasant form which is covered with conical protrusions having a geometrical arrangement. While the eminences by which the heating surface is so ingeniously increased are very numerous, and while they are so accurately disposed upon the surface that we can scarcely detect the slightest displacement of any one dot, they are yet the result of hand labor. A hollow mould which is to give form to the outer surface of the kettle is made of sand, but it is yet smooth, and has been shaped on a block of wood of the required form. The mould-maker now takes a small bar of iron, about three inches in length, with an end so formed as to represent exactly one of the eminences which he wishes to have on the sides of the kettle. With this he makes depressions in the mould, which has up to this time been smooth, and the positions of the depressions which he makes, and the degree of their depth (depressions which, when the pot is cast, will become eminences) he determines by eye, without the aid of any measurements whatever.

It is not uncommon to find Japanese bronzes, and even iron pots, with flowers, or birds, or a dragon in almost full relief upon them. The casting of such objects by us would be accomplished by "piece moulds," and casting by piece moulds is always expensive; but the Japanese will cast a chrysanthemum, with its numerous juxtaposed petals, as perfectly as a more simple ornament, and such a casting no piece-mould could enable us to produce.

Whatever is to be cast is modeled in wax: if a flower is to protrude in almost full relief from the sides of a pot, it is first modeled in wax. It is then attached to a wooden block of simple form, such as would, if the wax flower were not attached to it, drop from the sand were it used for the formation of a mould.

The model, consisting partly of wood and partly of wax, being ready is carefully brushed over with a pulp formed of sandy clay. When this is dry, a second coating is given of a pulp containing more sand, and perhaps a third and a fourth. When these are dry, sand is piled up around the mass and pressed into the interstices between the parts, but these are already largely filled by the previous applications of semi-fluid matter. When sufficient sand has been pressed around the model to form a solid mould the mass is taken to a sort of kiln or muffle and is there exposed to a degree of heat sufficient to melt out all the wax, which first becomes absorbed by the sand, and then dissipated as gas from the mould. The wax of which I am speaking is not wax simply, but a mixture of wax and resin. The mould is now prepared, but I did not see the actual casting.

One of the largest bronze manufacturers in Tokio kindly offered to give up a day in order to show me the entire process, but I was, unfortunately, so occupied that I could not avail myself of his kindness. I was, however, told that the moulds were warmed before the casting was made, so that the metal might not be chilled while running along the smaller channels of the mould, and this, I think, very likely, but as all my information had to be gathered through interpreters great difficulties were experienced, for in some instances excellent interpreters do not happen to know the technical terms which belong to special trades and manufactures. For the interesting castings now before us I am indebted to Messrs. Jackson & Graham.

If a thousand vases had to be cast, each with a flower in relief on the side, and if each vase was to be of precisely the same pattern, a separate model would yet be prepared for the casting of each, and the same labor would be expended in producing every one that was expended on the production of the first.

I have spoken of the difficulty of gathering information through an interpreter: with the view of illustrating this statement I will give you one example. When viewing the enormous bronze figure of Daibutz (Buddha) at Kamakura, together with Mr. Mountsey, who had kindly taken the chief native interpreter from the embassy at Tokio with him in order that I got the fullest possible information respecting what we might see, I observed two large metal loops jutting out from the back of the figure near the scapulæ or shoulder blades, and asked what purpose these served, as I could see no use for them. The immediate reply was, "For the shine, for the shine;" I confess that I was puzzled, and after making many guesses at his meaning gave up all attempts at discovering the purport of his remarks.

By the roadside, as we journeyed homewards, was a celebrated Buddhist temple which we stopped to see, and in it were many images with nimbi. No sooner had our interpreter caught sight of a nimbus than he exclaimed, "The shine, the shine," when we at once discovered the use of the loops on the back of the great Daibutz, which were fixings for the nimbus, and wondered at our ignorance, for have we not the word "shining," which is akin to "glory?"

While speaking of interpreters, I would take the opportunity of mentioning the fact that the gentleman, Mr. Sakata, or, as they would say, Sakata San, who was appointed by the government as one of my escorts through Japan, and who acted as my interpreter during my long journey in the interior, scarcely ever failed rightly to render even technical terms. Without doubt he was the most skilled interpreter that I ever met with, and he was also a most charming gentleman and companion.

I had hoped to have told you how that wonderful process of enameling on earthenware is managed, for while we know how to make cloisonné enamel work on metal (Messrs. Cristoffle, of Paris, having sent a man to China to acquire the art and we getting it from him), the manufacture of cloisonné on earthenware is an art peculiar to Japan. I have, however, seen the whole process, and through the kindness of Dr. Raretz, of Nagoya, am possessed of illustrations of the manufacture in every stage of development, and I have also got samples of every material used in the manufacture, but as I have not yet been able to analyze the various substances, I cannot give you the information which I had hoped to have given you on this occasion, but at this I feel less regret than I otherwise should, for I fear I am almost pledged to write a large work on Japanese processes of manufacture.

THE JAPANESE LACQUER MANUFACTURE.

Perhaps the most characteristic and the most beautiful art of Japan is the lacquer manufacture, for what can be more lovely than some of the specimens I am, through the kindness of Messrs. Jackson & Graham, enabled now to show you? Some of these are very old, and all have merits, while for delicacy of treatment, attention to detail, and exquisite finish, some are unequaled by any works, so far as I know, that any other people have produced. Lacquer is, with the Japanese, an old art. In my judgment its best period was from 600 to 400 years back, and I had every opportunity of judging, for in the Mikado's private collection of antiquities in Kioto—not the collection at Nara of which I before spoke—are many examples with authentic dates. As a manufacture it reached its highest development from about 300 years to 100 years since, but while the workmanship achieved the highest excellence at this period the drawing of the decorations is not so pure and good as at the earlier date; and I was informed by the keeper of the royal collections at Kioto that formerly the patterns were drawn upon the objects by artists and not by lacquer-workers, whereas, during the later period, the lacquer-workers were also the artists.

This old lacquer has now great value. For a box about six inches square I was asked in Japan £100 sterling, and Lady Parks told me that fine specimens were, in Tokio, bringing their weight in gold. Messrs. Jackson & Graham have the good fortune to possess the only considerable collection of old lacquer that is for sale in Europe, and fortunate they indeed are in their possession, for old lacquer is rising in price rapidly and is now almost unknown in Japan. The taste for lacquer work is also setting in among us, and surely no objects are more worthy of admiration than the beautiful works in lacquer which during the last 600 years Japan has produced.

I have here a piece of lacquer which has rarely been equaled, and perhaps never excelled, in its own way. The Japanese are great admirers of cherry blossoms; indeed, they like all flowers that they have to look up to, but the cherry blossom is a special favorite. Here we have the cherry-tree with a profusion of blossoms mingled with young leaves; but it is not to the poetical thought associated in the Japanese mind with the cherry-tree that I would call your attention, nor to the pleasant reminiscences of picnics which have taken place on the cherry-clad hills during the season of the flowers—reminiscences common to all Japanese—but to the simple excellence of the work, whether it be regarded as a mere piece of manufacture or as a work of art.

Nothing could be more perfect than this work is. In drawing it is excellent, in delicacy of treatment most tender, in consistency all that could be desired. Our merchant princes give £1,000 for a painting, or even £5,000, and yet they have up to the present time hesitated to give £200 or £300 for a work so noble and so pure as this. Believe me the time is not far distant when, through better art education, the superior merits of these lovely works will be so fully appreciated that the keenest competition for their possession will take place; indeed, this competition has already set in. And this is certain, that the world can never see many works so lovely as this and others that Messrs. Jackson & Graham have so kindly placed around me, and many are of nearly the same excellence.

I am glad to be able to tell you that at the present moment lacquer wares can be made having the best qualities that lacquer wares ever possessed; but if good, they must be very expensive, even more so than the present prices of the old pieces, for the method of production is most laborious, and the cost of labor has of late years so greatly increased in Japan, that the sum of money that will now buy a poor man one pair of sandals, would ten years since have bought him twenty-seven pairs.

Under the auspices of the Japanese Government a company has been established with the view of redeeming the arts from the corrupting influences of the large European and American demand, and in this company the Hon. Mr. Sano—to whom I am indebted for so many acts of kindness, and for much information, as I before told you—takes a warm interest. This company may do much to maintain the excellence of Japanese manufactures, and I wish it well, but its management must be conducted with care, as I fear that even the Japanese ministers have but an imperfect idea of the enormous demand which Europe makes upon Japan for excellent works. If, however, Japan can produce works of the highest quality in sufficient quantities, Europe certainly can furnish the market for their sale, for we know the excellence of their works and love them.

THE PROCESS OF LACQUER MANUFACTURE.

At to the process of lacquer manufacture. First, a wooden object is prepared, for nearly all lacquer is worked on wood and not on papier-maché as some suppose. If common objects are to be formed small pieces of paper are stuck over any little defects which the wood may present. Then the whole is coated with lacquer. This coating being dry, little roughnesses are rubbed off with a lump of coarse charcoal, and another coat is added, which in its turn is rubbed smooth. Four or five repetitions of this process complete the object, unless it is to be decorated.

If a gold spray is desired on a common vessel it is first drawn in a lacquer, the lacquer being used as a gold size, and when the lacquer is in part dry, gold bronze (powder) is sprinkled upon the drawing, which gold bronze adheres to the wet size.

REMARKABLE QUALITIES OF JAPANESE LACQUER.

What I have said only describes the process of making common lacquer objects, and before I proceed to show how the finer work is produced let me say that lacquer is a thick fluid which often resembles in appearances pale treacle, or what is called golden sirup. I think that it must flow from the vessels of the tree which produces it, for it is more nearly allied to gutta-percha than to a gum resin. It is unhurt by hot water or ordinary acids, resisting alike the action of strong vinegar and boiling water. I find that it will resist the action of boiling acetic acid, and of the strongest caustic potash, hence no ingredients used in cookery could hurt it. It is, when in its fluid state, highly corrosive, for if one solitary drop comes in contact with the skin it produces a wound which generally eats itself through to the bone; even from visiting a lacquer factory some persons take a kind of fever. How it dries, or whether it dries or not, in ordinary air I did not learn, for it is always dried in the factory in a cupboard the interior of which is brushed all over with water every day so as to produce an atmosphere saturated with moisture; in this damp air it dries in from eight to eleven hours.

CURIOUS METHODS OF DECORATING LACQUER WORK.

A good piece of plain (undecorated) lacquer work has already received about eleven coatings of lacquer, and has been carefully ground down after receiving each separate coating. This object being now prepared for decoration a pattern is transferred to it by an outline being made on a piece of paper in lacquer which has been warmed or boiled (this heating having the effect of retarding or preventing its drying). The pattern being thus drawn the paper bearing it is placed face downwards on the object to be decorated and rubbed at the back, when a transfer of the outline to the lacquer surface has been effected just as we copy a letter, or as an engraver takes a proof impression from a wooden "block." The paper is now peeled off and can be used again if it is desired to repeat the pattern, for several transfers can be made from the one drawing.

This done, if the ornament is to have a gold outline, the lines of the transfer are followed by a fine brush containing lacquer which acts as a gold-size, and I noticed that the lacquer used for these outlines dried so rapidly that no sooner was a leaf outlined than the gold powder was dusted upon it. I also observed that the gold used for this best work had the appearance, when shaken upon the work, of a gray powder, and looked rather like an oxide than a pure metal, but when, after adhering to the lacquer, it was rubbed, it at once became bright and gold-like.

The variety of surfaces that the lacquer worker achieves appears to be endless. If a solid gold surface is desired, it is produced by a fine gold powder being sprinkled upon, and somewhat rubbed into, a surface which has been covered with wet lacquer. If clouded gold is required it is formed by gold dust being shaken through a reed, which is about four inches in length and the end of which is covered with fine silk. If a colored ornament is required with a clouded gold surface the ornament is first painted in the required color or colors, and upon this color the gold dust is sprinkled. By this means some of the richest effects of lacquer are produced.

On many fine pieces of lacquer we find little squares of gold; these are about the thickness of ordinary writing paper, and are cut from a sheet of gold by a sort of knife. When a quantity has been cut they are placed upon a little tray which is held upon the thumb in the manner that a gilder's pad is held, and from this the little tesseræ are taken one at a time by a pointed skewer of wood which is pressed upon them—the mere pressure causing them to adhere to it—and are placed on the lacquered surface. Over the gold work, however the gold has been applied, if the lacquer ware is anything better than common, from one to several coatings of lacquer are placed according to its excellence; the first is ground off every projection, however small, and remains only between the grains of metal, the rubbing down being most carefully effected by a woman who employs for that purpose a small piece of charcoal. A coating of transparent lacquer is now given, which in its turn is ground down, and then another, till finally the work is polished by the agency of the ash of deer's horn applied with soft leather.

Raised work results from the application, first in a rough form, of lacquer mixed with bone-dust; this is, in all cases, applied by a brush, and is never the result of cutting or carving. When this heaped-up lacquer begins to assume the desired shape, owing to repeated applications, its form is carefully modified by grinding with small lumps, or strips, of charcoal, and for this purpose charcoal of about 20 degrees of hardness is employed. By repeated painting and grinding form is given to the raised parts, which are often truly works in *alto rilievo*, and when brought to their shape they are colored, painted, or dusted with gold, as the case may require.

I could say more on lacquer work; and I have mentioned only a few of the manufactures of Japan, but I have exhausted my time and your patience, I fear; yet I cannot close without making one remark, which is this, that while the art processes of Japan are such as render the production of quantity impossible, if excellence is to be attained, they yet secure the highest degree of art merit. I have watched the poor artisan laboring at his work with an earnestness and love such as I never beheld out of Japan, and the very features of the workmen testify to their happiness, and to the love with which they perform their pains-taking labor. No thought of gain appears to enter their minds, and no touch is spared which will make the work more lovely; this is how the beautiful works which we delight to look upon are produced. They are works born of loving labor; they are the children of happy contented men who love their labor as they love their lives, and who, separated from the former, would part with the latter. How different are these from our workmen! The one supremely happy, the other always unhappy, for he who seeks to do the least work possible for the largest amount of gain can never know peace; the one perfectly contented with the simplest of fare, the other always craving after more while yet well fed. If our workmen could but see the dear old men of Japan engaged in their various handicrafts they could not fail to learn that happiness is not found in short hours and high pay, but in the love of our work. And this is the reward which these poor men receive—perfect happiness! The Japanese handicraftsman, owing to his happiness, content, and skill, have the friendship and patronage of the lords of the land (the Daimios), who will converse with them and receive them at their palaces, while no merely moneyed man—even the richest of merchants—has any status in Japanese society; but we must ever remember that through his virtues the workman has made himself worthy of the friendship of his lord, and a fitting companion for him.

ETCHING FLUID.—A German contemporary recommends etching with a preparation of 250 grammes of perchloride of iron, which is allowed to slowly decompose in half a liter of water. The advantage of this preparation is said to be that it has an effect on metals of all sorts without giving off noxious vapors. The object will need constant cleaning with a brush. The solution is rectified with oxide of iron when choked with metal; the etched ground is cleaned with turpentine.