

1870 Wonders of Glass-Making in all Ages.

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CHAPTER XVI.

BEADS FOR NECKLACES, BRACELETS, AND CHAPLETS.

THE manufacture of beads for necklaces, bracelets, and chaplets, whilst presenting great similarity to that of jet, in as much as both are produced from tubes of colorless or colored glass pierced through the centre, yet differ in one particular; as the former are simple oblong tubes, while the others must from their destination receive a form more or less spheroidal.

It is this latter work that we are about to describe.

The tubes, of a diameter proportioned to that of the beads which are required, are at first cut into cylinders of a height equal to their diameter, and are then placed in a pear-shaped drum of beaten iron containing a mixture of plaster and plumbago or of charcoal dust mixed with clay. The drum being placed on a furnace, the workman gives it a continuous rotatory movement by means of an iron axle which passes through it, so that the tubes softened by the heat lose the salient parts of their extremities, from the constant friction with each other, and take a spherical form.

The office of the plaster and charcoal in this work

is to prevent the tubes, at the time of the softening of the glass, from adhering together.

When cool, the tubes are taken out of the drum and sifted, in order to shake out the pulverized matters which have entered.

1318; and according to M. Lazari,* "the manufacturers, called by the name of paternoster-makers and pearl-makers, were established either at Venice or at Murano, and already formed a sufficiently numerous society to be regulated about the commencement of the same year by a special statute."

Although this manufacture already produced immense profits to the Republic by the exportation of its works to the East and to barbarous countries, we cannot but believe that it had not yet attained its greatest height; for the same author adds: "The fabrication of false pearls by the enameller's lamp renders the name of Andrea Vidaore immortal, as to him is owing, in 1528, the perfecting, if not the reinvention of them."

Although these two words, *reinvention*, referring doubtless to ancient manufacture, and *perfecting*, both applied to Vidaore, and the two dates 1318 and 1528, are all that we can discover about the history of the false pearls of Venice, a still greater ignorance prevails as to the mode of their manufacture, for not a single author, as far as we know, says a single word about it.

It is this gap that we shall endeavor to fill up.

MANUFACTURE OF FALSE PEARLS.

The workroom of the pearl-blower is most simple. It is composed of the small table about a yard in

* *Notizia delle opere d'arte e d'antichità della raccolta Correr. Venezia, 1859.*

length, on which is placed a lamp with a large wick. This lamp, fed either with oil or lard, gives a long jet of flame blown by a pair of bellows under the table, which are put in motion with the foot.

On this table are placed tubes of hollow glass of two kinds, some of common glass, which serve for the manufacture of common pearls; the others, of a slightly iridescent tint, approaching opal, are only employed for the finer pearls, designated in commerce *oriental pearls*.

The secret of the composition of this latter glass due to the researches of M. Pierrelot, a chemist who died a few years ago, now belongs to the firm of Valez and Co.

The first material being known, let us now seek to understand by what means from a tube of hollow glass, in every respect like those which children use as pea-shooters, the makers succeed, without using any mould,* in making pearls of all sorts, from the most common to those which in shape and opalescence imitate perfectly the most splendid pearls of the East.

The blower seated at his table has his lamp before him, and at his right hand are placed tubes of about $\frac{1}{4}$ of an inch in diameter and one foot in length. The thickness of the tube to be employed being necessa-

* The only exception to this is for the pearls called fluted, which must be done in a mould. As they are now out of fashion we shall say nothing more about their manufacture, which belongs more to the subject of blown and moulded glasses.

rily in proportion to the size of the pearls to be made, the first labor of the blower is to draw out the tube, that is to say, to increase its length by diminishing its thickness.

When the tube is made of the size desired, he breaks it in fragments of from four to six inches; afterwards he takes one of these, and brings one end of it to the lamp. As soon as the glass begins to melt, he blows gently through the tube, which although drawn out has always preserved its internal bore, and the air soon dilating the heated extremity, a ball appears.

It is this ball that is to become a pearl, but it is still only in a rudimentary state. Three operations are necessary to make it a pearl.

1st. The piercing of two holes, for round pearls intended to form a necklace; or of a single one if they are round or pear-shaped, to be set either for necklaces or earrings, or for buttons or pins, etc.

2nd. To give the form, round or pear-shaped.

3rd. The interior coloring.

The double piercing, indispensable for the cord to pass through which unites the pearls and forms a necklace, is done at the moment when the spherical glass adhering to the tube is still ductile. The first hole is made in the lower part of the pearl by the breath only of the workman; and the second is naturally formed by the opening to the tube when the pearl is separated from it by means of a light blow.

This work is required in the preparation of all

beads; but before passing on, we would call the attention of the reader, and especially of ladies, to one kind, we mean *oriental pearls*, which as their name indicates must be the most exact imitation possible of those produced by nature.

Although made in exactly the same manner as the most ordinary beads, these pearls are yet distinguished from them, not only by the employment of opalescent glass, but still more by the care the blower takes in their formation, as well as by the different coloring they receive in the interior.

As for the shape, every one knows how rare it is to find a pearl without defect; and defects not in material but in form, and still more in color.*

The work of the blower being, as we have said, to imitate nature as much as possible, his talent consists not only in destroying the exact regularity obtained by the blowing, but also in producing on the false pearl the defects usually found in natural ones. This work requires much practice, and is only the fruit of long observation. The good blower, the artist, should be sufficiently acquainted with natural pearls to execute on his own only the defects which

* A single example will suffice to show how difficult it is to find many pearls almost alike in form and tint. The pearl necklace belonging to the Empress of the French is only composed of thirty-three pearls, and in order to complete this limited number, it is scarcely possible to believe, that after having chosen from amongst all the most perfect ones French merchants could offer, it was necessary to have recourse to those of England!

may increase the value of his work by skilfully prepared reflections. To obtain this important result, the blower, profiting by the moment when the pearl still adheres to the tube, takes a very small iron palette, with which he strikes lightly certain parts of the still malleable pearl; and it is only by this last operation, which places here a protuberance, there a flattening, both almost imperceptible, that he succeeds in producing a pearl which, losing its mathematical regularity, becomes the perfect imitation of nature.

There the work of the blower ceases; for it is then that the pearls which, it should be remarked, are still only objects in colorless glass, are to pass into the hands of workwomen charged to color each of them. But before dismissing the blower, we must be allowed to go a little into statistics. The reader, however, need not be alarmed: we shall be very brief. We merely wish to say that a good workman can make three hundred pearls in a day, and is paid from two shillings to two and sixpence the hundred.

COLORING OF FALSE PEARLS.

STORY OF JACQUIN.

Although the work of coloring of which we are about to speak is the same for all pearls, it will be easily understood that since pearls are divided into ordinary and oriental pearls, it is necessary to have

two sets of work-people. This labor is generally entrusted to women; some specially employed in coloring the common, and others the finer pearls.

We shall only occupy ourselves with the work of the latter, which, we repeat, merely differs from that of the other from its greater finish.

Each workwoman has before her a series of small compartments, containing altogether several thousand pearls, arranged so that each of them should present the side having the orifice pierced by the blower.

Before introducing the coloring substance, which would be too easily detached from the glass if it were not by some means more firmly fixed, every pearl has to receive inside a very light coating of a glue which is perfectly colorless, being made from parchment. This layer being equally spread over the interior of every pearl, the workwoman takes advantage of the moment when the glue is still damp, and begins the work of coloring, properly so called.

Before detailing the method of coloring as it is done now, we must take one retrospective step, which will prove that if, following the progressive march of so many other manufactures, the coloring of pearls has undergone a striking improvement, it is to a Frenchman that it is owing.

Reader, I could tell it you in two words, but a descendant of the fortunate inventor, I should say *finder*, having related to me the legend, which he had heard from his father, who had also received it from his father, who, etc., etc., I ask your permission

to tell it to you as it was related to me, assuring you beforehand that if it differs from the version usually received, it is merely in certain family particulars which do not affect seriously the historical authenticity of the narration.

Amongst the paternoster-makers and pearl-makers, who as we know formed in the last century one of the numerous trade-corporations established in the good city of Paris, was Maître Jacquin. An intelligent man, of exemplary probity, and renowned everywhere for the elegance of his necklaces and earrings of false pearls, he had attracted to his shop all the women of fashion in the court and town.

Possessing a gable over the street, a chest filled with good crowns, a most prosperous trade, having an only son who was going to marry demoiselle Ursula, the daughter of his friend and neighbor the apothecary, he had everything to make him happy; and yet Maître Jacquin was far from happy. It was a strange, inexplicable thing! His melancholy, unlike that of merchants generally, increased in proportion as he became rich; in short, the more he sold, the more full of care did he become. His son even remembered having heard him say these alarming words one day, when he had just sold a complete set of false pearls to dame Roberte de Pincelieu, his son's grandmother: "To her also! . . . infamous man that I am! . . . My God! grant at least that this crime be the last!"

Astounded at these sinister words, his son was

seeking a favorable opportunity to obtain a dreadful confession from his father, when suddenly joy and gayety returned to the face of the old man, who giving free course to his delight, constantly repeated as he rubbed his hands: "Ah! France has at last gone to war with Flanders. Long live the king! for, thanks to him, no one I hope will think for a long time of buying necklaces and earrings."

Such an anticommercial speech would certainly have induced the son to believe that Jacquin had gone out of his mind, if the approach of his marriage had left him any other thought than of his coming happiness.

Everything was going on well in the house (selling alone excepted), when an event very slight in appearance was on the point of overthrowing his contemplated happiness.

Profiting by the moment when all the principal relations assembled at his house were signing the marriage contract of his son, Maître Jacquin, addressing himself to Ursula, said:

"Come here, my darling, and let us talk of something more agreeable, for you have no doubt noticed that in your contract they only speak of death; that is what they call *expectations*. Well, in six days you are to be married at the church of Saint-Nicolas de Chardonnet. As there will be a fine and numerous company, I wish, my darling, that you should appear handsomely dressed, as suits the condition of the two families. Tell me then, my daughter, what gift would

please you the most ; speak without fear ; for, there is nothing I would not grant to the wife of my much-loved son, I give you my word."

"Well, my dear father," replied Ursula, "now that I have the honor of entering your family, there is only one thing I wish for. Give me one of those pretty necklaces that you make so charmingly."

At these words a cold perspiration covered the forehead of the old man which had a short while before been so radiant. He stood as if spell-bound, not being able even to pronounce the *yes* that Ursula was expecting with downcast eyes ; and who knows how either would have extricated themselves from this embarrassing position, if by a fortunate chance the relations, who had all signed the contract, had not broken the silence by insisting on an immediate departure on account of the late hour of the night. And indeed eight o'clock had just struck on the clock of St. Nicolas.

Left alone in his house, the poor paternoster-maker passed the night in thinking by what means he might reconcile the promise, made so formally to Ursula, with the moral impossibility he felt of fulfilling it without committing a fresh crime. Scarcely had the day dawned, when Jacquin, who, as may be imagined, had discovered nothing yet, finding himself more tired than a gold-fish which has swum for twelve consecutive hours around its glass bowl without changing its direction, went out, hoping that the change of air would open a new horizon to his imagi-

nation. Like all men running after an idea, his first thought being to flee all mundane distractions, he turned towards the banks of the Seine, which he followed by chance.

If the body was awake, the mind, alas! still slept; for having arrived after two hours' walking at the place where the bridge of Asnières now stands, and notwithstanding his frequent invocations, addressed alternately to God, to his patron saint, and to his good angel, the poor Jacquin was no further advanced than when he left Paris.

Harassed with fatigue, but still more desperate, he was perhaps thinking of making a resolution of breaking off his son's marriage, if Miss Ursula persisted in demanding the necklace, positively promised by him, when, oh prodigy! there appears suddenly on the water a mass of iridescent matter giving the reflections of the finest eastern pearls—it was what he sought.

If he had known Greek our pearl-maker would assuredly have repeated the famous word *eureka*, pronounced by Archimedes on discovering the theory of the circumscribed cylinder; but as he knew no more of Archimedes than of Greek, he contented himself with calling a fisherman and making him throw his net over a considerable quantity of fishes; for what in his astonishment he had taken for an inert mass, was nothing else than a kind of little fish known under the name of bleak. To receive them from the fisherman, take them home to his laboratory,

take off their scales and make them into a paste, were his sole occupations until the evening. The day had scarcely appeared ere Jacquin, who in his delight had not closed his eyes during the night, hastened to descend to his laboratory. Oh misery! This paste, yesterday so brilliant, so silvery, to-day is only a sort of black glue. Certainly any other than our pearl-maker would have gone mad after such a disappointment; but he was a man of sense, and instead of wasting his time in despair he went to the chemist, who advised him to replace the simple water which he had used to triturate the scales by ammonia.

This advice was followed, and three days afterwards Jacquin, who, thanks to science, had at last found the composition he had sought so long, radiant and satisfied, fastened round the neck of Ursula the most beautiful necklace that had ever left his shop.

A few words will explain the just apprehensions of Maitre Jacquin and the importance of his discovery, which only dates from the year 1686. It is enough to say that if the use of false pearls now presents no danger, from the coloring matter being perfectly harmless, it was not certainly the case formerly, since their coloring was effected by means of quick-silver, the deleterious emanations of which must have brought grave disorders into the economy of the human frame.

Now that we know the substances employed in the manufacture of false pearls, and also that the inferior coloring is obtained by means of a paste made

with the scales of bleak, let us take up the subject where we had dropped it, that is to say, at the moment when the parchment glue, still damp, is waiting for the workwomen to add the coloring matter, and let us see in what this fresh work consists, which, as we shall see, requires great skill added to extreme rapidity of execution.

After having again taken up the thin and hollow tube, and soaking it in the bleak paste, the workwoman introduces a certain quantity into each of the pearls by her breath; and would you know how many she must do in a day to enable her to earn the moderate sum of from two and sevenpence to three and fourpence? Forty thousand! For every thousand glued and filled with the paste is only paid at the rate of about one penny.

Colored beads are done in exactly the same way, but instead of the bleak paste, a paste of the color desired is blown into them.

For certain other beads or chaplet grains which are not obtained by blowing, we refer the reader to the article on tubes.