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HISTORY  
OF  
INVENTIONS, DISCOVERIES,  
AND ORIGINS.

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TRANSLATED FROM THE GERMAN,  
BY WILLIAM JOHNSTON.)

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the animal itself when it opened its shell; for it is certain that testaceous animals are strong-lived, and can easily sustain any violence. It appears by the Transactions of the Swedish Academy, that some have been of opinion that shell-fish might be made to produce pearls by a particular kind of nourishment; and Lister<sup>1</sup> thinks that these excrescences would be more abundant, were the mussels placed in water impregnated with calcareous matter; but Professor Linnæus seems certain that his father employed none of these methods.

Under the name of false or artificial pearls are understood at present small beads, so prepared by art as to approach very near to real pearls in shape, lustre, colour, and polish. It appears that in Pliny's time such were not known, else he certainly would have mentioned them. The invention was not easy, and this difficulty to imitate pearls has contributed, with the reasons before mentioned, to keep up their value. It would seem that at first, hopes were entertained of finding a method to make large pearls from small or broken ones. Tzetzes speaks of this imagined art, and receipts for that purpose have been still retained in various books, where they fill up room and amuse the ignorant; for it is hardly possible to give to the pulverised calcareous matter sufficient hardness, and that lustre which belongs only to the surface of real pearls, and which, when these are destroyed, is irrecoverably lost. More ingenious was the idea of making pearl-coloured glass beads of that kind called *margaritini*<sup>2</sup>; but it excites no wonder that this was not done earlier, although the art of making coloured glass is very old; for opal colours are obtained only by a skilful process and the addition of putty, bone-ashes, and other substances. Still earlier was the invention of making hollow glass beads, which were incrustated on the inside with a pearl-coloured varnish. This method was first pursued, as far as I have been able to learn, by some artists at Murano; but their invention seems to have been considered by the government as too fraudulent, and was therefore prohibited, as we are told by Francis Massariius, who lived in the beginning of the sixteenth century at Venice, and must therefore have had an opportunity of knowing the

<sup>1</sup> Exercitatio Anatom. de Cochleis. Lond. 1694, p. 183.

<sup>2</sup> This manner of preparing *margaritini* may be seen in my Anleitung zur Technologie, p. 307.

truth of this circumstance<sup>1</sup>. Some say that an amalgam of quicksilver was used for these pearls; and if that was the case, the object of the Venetian prohibition was rather of a medical nature. After this, small balls of wax or gum were covered with a pearl-coloured enamel. These were praised on account of their lustre; but as their beauty was destroyed by moisture, they did not continue long in use<sup>2</sup>. A French bead-maker, however, named Jaquin, at length found out the manner of preparing the glass pearls used at present, which excel all others, and which approach as near to nature as possible, without being too expensive.

Jaquin once observed, at his estate near Passy, that when those small fish called *ables* or *ablettes* were washed, the water was filled with fine silver-coloured particles. He suffered this water therefore to stand for some time, and obtained from it a sediment which had the lustre of the most beautiful pearls; and which on that account led him to the attempt of making pearls from it<sup>3</sup>. He scraped off the scales of the fish, and called the soft shining powder, which was diffused in the water, essence of pearl, or *essence d'orient*<sup>4</sup>. At first he covered with it small beads made of gypsum, or hardened paste; and, as everything new, particularly in France, is eagerly sought after, this invention was greatly admired and commended. The ladies, however, for whose use it was chiefly intended, soon found that it did not entirely answer their expectations. They were displeased because this pearly coat, when exposed to heat, separated from the beads, adhered to the skin, and gave it a brightness which they did not wish. They proposed themselves, that small hollow glass beads might be covered, in the inside, in the same manner as mirrors are silvered, with the essence of pearl; and thus was brought to perfection an art of which the following account will enable the reader to form some idea.

Of a kind of glass easy to be melted, and made sometimes

<sup>1</sup> Massarii in Plinii Nat. Hist. lib. ix. Castigationes. Bas. 1537, 4to, cap. 35.

<sup>2</sup> Mercati Metallotheca, p. 211.

<sup>3</sup> These silver-coloured particles were examined by Reaumur, who gave a description of them in Histoire de l'Académie, année 1716, p. 229. [In the scales of fishes, the optical effect is produced in the same manner as in the real pearl, the grooves of the latter being represented by the inequalities formed by the margins of the concentric laminae of which the scales are composed.]

<sup>4</sup> The artist no doubt had in view eastern pearls.

a little bluish or dark, slender tubes are prepared, which are called *girasols*<sup>1</sup>. From these the artist blows, by means of a lamp, as many small hollow globules as he may have occasion for. One workman can in a day blow six thousand; but when they are required to be extremely beautiful, only twelve or fifteen hundred; and that they may have a greater resemblance to nature, he gives them sometimes blemishes, like those generally observed in real pearls. They are made of all figures; some shaped like a pear, others like an olive, and some that may be considered as *coques de perles*<sup>2</sup>. To overlie these thin glass bubbles he mixes the pearl essence with a solution of isinglass; and the more of the former he uses, the more beautiful and more valuable the pearls become. This varnish, when heated, he blows into each globule with a fine glass pipe, and spreads it over the whole internal surface, by shaking the pearls thus prepared in a vessel placed over the table where he is at work, and which he puts in motion by his foot, until the varnish is equally diffused all over the inside of them, and becomes dry. Sometimes he adds to

<sup>1</sup> *Girasol*. This word, which is wanting in most dictionaries, signifies opal, and sometimes that stone called cat's-eye, *Silex catopthalmus*, *peridopalus*, &c. *Couleur de girasol* is applied to semitransparent milk-white porcelain.

<sup>2</sup> *Coques de perles* are flat on one side, and are used for ornaments, one side of which only is seen. By Pliny they are called *physemata*. Artificial pearls of this kind have, for some time past, been employed in making ear-rings. Our toymen, after the French, give these pearls the name of *perles coques*; but the following account of Pouget in *Traité des Pierres Précieuses*, Paris 1762, i. p. 20, makes me dubious respecting them. "*La coque de perle*," says he, "is not formed in a pearl-shell like the pearl; it is procured from a kind of snail found only in the East Indies. There are several species of them. The shell of this animal is sawn in two, and one *coque* only can be obtained from each. The *coques* are very small, and one is obliged to fill them with tears of mastic to give them a body, before they can be employed. This beautiful snail is found generally in the sea, and sometimes on the shore." May not Pouget here mean that kind of snail which others call *burgeau*, the shells of which are, in commerce, known by the French under the name of *burgaudines*? Should that be the case, the animal meant would be the *Nautilus Pompilius*, as may be concluded from *Histoire des Antilles*, par Du Tertre, ii. p. 239. For the author says, "*C'est de leur coque que les ouvriers en nacre tirent cette belle nacre qu'ils appellent la burgaudine, plus estimée que la nacre de perle.*" Irregular pearls are called *baroques*, or Scotch pearls, because abundance of such were once found at Perth in Scotland. Some years ago artificial pearls of an unnatural size, called Scotch pearls, were for a little time in fashion.

the essence some red, yellow, or blue colour; but as this is a deviation from nature, it is not accounted a beauty. To give these tender globules more solidity and strength, they are filled with white wax. They are then bored through with a needle, and threaded in strings for sale. The holes in the finer sort, however, are first lined with thin paper, that the thread may not adhere to the wax<sup>1</sup>.

The name *able*, or *ablette*, is given to several species of fish; but that which produces the pearl-essence is the *Cyprius alburnus*, called in English the bleak. Professor Hermann, at Strasburg, was so kind as to send me one of these fish, which was caught there for the purpose of making pearl-essence, and which was dried so carefully that the species could with certainty be distinguished. It corresponded exactly with the figure given in Duhamel<sup>2</sup>, which has almost a perfect resemblance to that given by Schoneveld<sup>3</sup>. May not the *alburnus* mentioned by Ausonius among the inhabitants of the Moselle, be the same? At any rate, the bleak is to be found only in fresh water; and on account of its voracity bites readily at the hook. It is caught for the use of the French manufacturers in the Seine, the Loire, the Saone, the Rhine<sup>4</sup>, and several other rivers. To obtain a pound of scales above 4000 fish are necessary; and these do not produce four ounces of pearl essence; so that from eighteen to twenty thousand are requisite to have a pound of it. In the Chalonnois, the fishermen get for a pound of washed scales fifteen, eighteen, and twenty-five livres. The fish, which are four inches in length, and which have not a very good taste, are sold at a cheap rate, after their scales have been scraped off. At St. John de Maizel, or Mezel, in the Chalonnois, there was a manufactory in which 10,000 pearls were made daily<sup>5</sup>.

<sup>1</sup> A complete account of the art of making glass pearls is contained in a book, which I have however not seen, entitled, *L'Art d'imiter les perles fines*, par M. Varenne de Beost. An extract from it may be found in *Dictionnaire des Arts et Métiers*, par M. Joubert, iii. p. 370. See also the articles *perle* and *able* in the *Encyclopédie*, i. p. 29; xii. p. 382.

<sup>2</sup> *Traité Générale des Pesches*, par. ii. p. 403, tab. 23, fig. 1 et 2.

<sup>3</sup> *Ichthyologia*, Hamb. 1624, 4to, p. 12, tab. 1, fig. 2, albula.

<sup>4</sup> In the *Almanach de Strasburg* for 1780, p. 76, among the commodities sold there were, *Des écailles d'ablettes dont on tire l'essence d'orient employée pour les fausses perles*.

<sup>5</sup> *Description Hist. et Topogr. du Duché de Bourgogne*, par M. Courtype, tom. iv. A Dijon, 1779, 8vo, p. 534.

The first makers of these pearls must have laboured under a very great inconvenience, as they were acquainted with no method of preserving the fishy particles for any time. They were obliged to use the essence immediately, because it soon putrefied and contracted an intolerable stench. The great consumption, however, required that the scales should be brought from distant provinces. Attempts were made to preserve them in spirit of wine or brandy; but these liquors destroyed their lustre, and left them only a dull white colour. In the like manner brandy spoiled a real pearl, which, with the animal and the shell (*Mactra lutraria*), was sent to me by Dr. Tauben at Zell. It was therefore a very important discovery for this art that these animal particles can be kept for a long time in solution of ammonia, which is now alone used, and which perhaps could be used for many other purposes of the like kind.

That the inventor of these pearls was called Jaquin, and that he was a bead-maker at Paris, all agree; but the time of the invention seems to be uncertain. Some say that it belongs to the reign of Henry IV.<sup>1</sup>; and Reaumur mentions the year 1656. These pearls, however, in the year 1686, when Jaquin had an assistant named Breton, must not have been very common; for we are told in the *Mercure Galant* of that year, that a marquis possessed of very little property, who was enamoured of a lady, gained her affections and carried his point by presenting her with a string of them, which cost only three louis; and which she, considering them as real ones, valued at 2000 francs. The servant who put the marquis on this stratagem, declared that these pearls withstood heat and the moisture occasioned by perspiration; that they were not easily scratched, had almost the same weight as real ones, and that the person who sold them warranted their durability in writing. Jewellers and pawnbrokers have, therefore, been often deceived by them. Jaquin's heirs continued this business down to a late period, and had a considerable manufactory au Ruc de Paris at Lion at Paris.

<sup>1</sup> Pouget. 4to, l. p. 19.