made no answer. When he was approached and examined, it was found that he was dead and rigid in the singular attitude that we have just described. It took considerable of an effort to force his left hand to release the horse's mane and to remove the rifle from his right hand. When the body was laid upon the ground, the limbs preserved the same position and the same inflexibility. This man had been struck by two balls fired from Springfield rifles. One of these had entered to the right of the vertebral column and had made its exit from the body near the region of the heart. It had left its track upon the side of the saddle, and had then dropped to the ground. The other ball had entered through the right temple, and its point of exit could not be found. The horse had remained quiet, as he was fastened by a halter.

The following is another incident: At the battle of Williamsburg, Dr. T. B. Reed examined the body of a United States zouave who had received a ball in the forehead just as he was climbing over a low fence. He, likewise, had preserved the last attitude of his life. One of his legs was half over the fence, while his body still remained behind. One hand, which was partially closed, was raised level with his forehead, with the palm forward as if to preserve himself against some imminent danger.

Dr. Henry Stillé relates that, while seated upon a freight car on the Nashville and Chattanooga Railroad, he saw a brakeman instantly killed by a ball which struck him between the eyes, a mortal wound that was given by a guerilla who lay in ambush in a forest through which the train was passing. The man thus killed was tightening the brake when he received the ball. After his death his body remained fixed, the arms extended and stiff on the handwheel of the brake. The pipe that he was smoking remained fastened between his teeth. The rigidity was so perfect, and his hands were so tightly closed, that it was scarcely possible to free the corpse and make it let go its hold.

A maintenance of the last attitude may occur under circumstances other than a sudden death produced by lesions of the brain, heart, or lungs, although an injury to an organ of great importance to life is the most frequent cause of the phenomena. Dr. Brinton has observed it after wounds made in the abdomen, and Dr. Armand, in a single case, through a wound of the thigh.

Yet this phenomenon does not manifest itself exclusively in cases where death results from wounds. It was observed in a horrible accident that happened at London in 1867, when forty-one persons, skating upon Regent's Park Reservoir, perished through the sudden giving way of the ice. The following extract from the *Times* concerning this event is full of interest:

"The attitude of the majority of the persons who were taken from the water has given rise to numerous discussions in the medical journals. In almost all cases the arms were raised, and sometimes the elbows were pressed against the sides. In other cases the elbows formed a right angle, and projected as in the act of skating. It may be concluded that these unfortunates were resting upon the ice with their arms, not daring to use their hands, and that when, on be coming exhausted, they died, it was not through asphyxia, but rather through the action of cold and fright; and this would explain why they preserved the position in which they were found."

Dr. Taylor had already mentioned the case of an individual who had for a long time held his arms extended to avoid being drowned, and in whom, after death, these limbs were found stiffened out in the same position.

It seems that carbonic acid is capable of producing that special rigidity of the muscles that maintains the trunk and limbs in the attitude that the last act of the will has caused them to assume.

In 1832 Dr. Von Graefe saw, in the grotto of Pyrmont, the corpse of a young man who had voluntarily put an end to his days by exposing himself to the carbonic acid gas that fills this cavern. The body was found half seated upon the ground. One of the hands supported the head, as if the young man had desired to avoid touching the wall, against which the upper part of his body rested. The trunk was bent toward the right. The attitude of the body had the appearance of a person asleep and reposing peacefully.

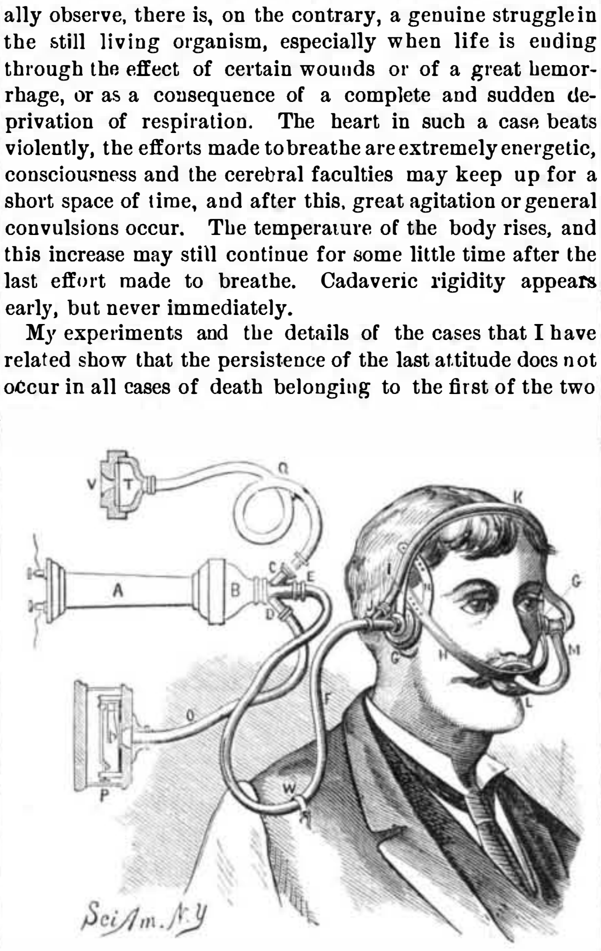
How shall we explain this curious series of facts? We know that sooner or later there supervenes a stiffness (called *cadaveric* or *post mortem rigidity*) in all the limbs and all other parts of the body where there are muscles. Is not the stiffness that occurs on the battlefield, and sometimes elsewhere, immediately after death, merely a cadaveric rigidity that has come on suddenly? Those who know the law that I have established concerning the rapidity or retardation of cadaveric rigidity after death (see my Croonian Lesson before the Royal Society of London, 1861) will find it evident that in the majority of the cases of preservation of attitude after death that I have just mentioned, the circumstances were very favorable for the prompt appearance of *post mortem* rigidity. Yet, even in the cases placed under the most favorable circumstances, death could not have come on quickly enough to permit of the preservation of an *ante mortem* attitude. This is a sufficient reason to assure us that the fact that we have to explain is not due to the sudden intervention of cadaveric rigidity. But how, then, shall we explain this fact?

Some experiments that I cannot here give the details of have shown me that it is a fixed contraction—a tonic, persistent, muscular action which then occurs, similar to that which it replaces, and which existed during life. At the very moment that death comes on, this fixed or tonic contraction occurs. It is an act of life, but the last one. I have sometimes seen this contraction exhibit itself and then disappear, and it was not till later that the true cadaveric rigidity supervened.

Death, in man as in animals, takes place in two ways that differ radically from each other. On the one hand, it may supervene suddenly, either through the influence of excitement or that of a wound or blow, or, again, through the following causes: The impression produced by submersion in cold water, or in almost icy water, and the impression produced sometimes, in persons who are eminently nervous, by the least lesion affecting certain parts of the body. In this kind of death there may not be even the least vital manifestation after the last sigh, except a feeble action of the heart that soon disappears. All the cerebral faculties give way suddenly—consciousness, intelligence, the will, the perceptive faculties, sensorial and sensitive impressions, and respiratory motions all disappear at once. There is no *agony*, and none of that struggle that usually precedes death. The body suddenly loses its temperature, and cadaveric rigidity comes late, and lasts considerably.

In the other kind of death, which is the one that we usually observe, there is, on the contrary, a genuine struggle in the still living organism, especially when life is ending through the effect of certain wounds or of a great hemorrhage, or as a consequence of a complete and sudden deprivation of respiration. The heart in such a case beats violently, the efforts made to breathe are extremely energetic, consciousness and the cerebral faculties may keep up for a short space of time, and after this, great agitation or general convulsions occur. The temperature of the body rises, and this increase may still continue for some little time after the last effort made to breathe. Cadaveric rigidity appears early, but never immediately.

My experiments and the details of the cases that I have related show that the persistence of the last attitude does not occur in all cases of death belonging to the first of the two



WARTH'S TELEPHONE SUPPORT.

types just described; but facts indicate that this singular phenomenon occurs only in cases of death that belong to this type.

In one of the conclusions of Dr. Brinton's excellent memoir he says that in the cases of persistence of attitude that have been observed upon the battlefield, and that he describes, death had probably been instantaneous, without being accompanied with convulsions or agony.

It results from the facts that I have studied in this paper, and from the experiments that I have done nothing more than allude to: (1) that the preservation after death of the attitudes of life, and of the facial expression, does not depend upon the sudden appearance of what is called cadaveric or *post mortem* rigidity, but upon the production of a vital act of rigidity or tonic contraction, like the fixed spasm that we often see in hysterical or paralytic persons; and (2) that a number of causes of death, acting without the ordinary agony, may produce that strange phenomenon which is characterized by a persistence after death of the attitude and facial expression that existed at the moment of the last sigh.

A Strong Money Box.

Mr. William H. Vanderbilt's treasure vault, in which it is said he recently stowed away some $100,000,000 in securities, is one of the most redoubtable works of defense on the American continent, though you may not be entirely certain of that by surveying his mansion from the outside. Its foundations were blasted out of the rock ; the front wall is 5 ft. in thickness, and the side and rear walls 3 ft., the materials used being pressed brick with brown stone trimmings. The beams, girders, and main pillars are iron, incased in fire proof material. The doors, window frames, and minor partitions are iron, marble, and glass. No wood is to be found in the structure. The great vault is 36x42 ft., of wrought iron, steel, and Franklinite iron, is imposing in strength and proportions, and is situated on the ground floor. Its four outer doors weigh 8,200 pounds each, and have every effective and known improvement in defensive devices. A massive wall of masonry surrounds the iron work. The vault, which is burglar, fire, and water proof, constitutes a distinct building in itself.

Anti-Induction Wires.

Mr. F. N. Gisborne, superintendent of the government telegraph service of Canada, has introduced his new system to obviate the evil effects of electrical induction in underground and aerial conductors.

Experiments have been made with a section of cable about three thousand feet in length, constructed under his direction, and laid underground between two of the departmental buildings in Ottawa. The cable contains twenty indifferently insulated conductors or wires, which are divided into pairs, two conductors being twisted together in each case. Each pair constitutes a metallic circuit, one conductor being used as a "return," instead of the earth plates usually employed. The peculiarity of the invention consists in the twisting of these metallic circuit conductors, as both wires are thus made to occupy an equidistant relationship with respect to any other conductor or pair of conductors in their vicinity. By this device a current introduced into a circuit is conducted down one wire, and up the other; and, the position of both wires being the same with respect to neighboring circuits, the inductive effect of the current passing down one wire is neutralized by the inductive effect of the same current passing up the return wire.

The twisting of the wires of the metallic circuits lessens the effect of induction of the current upon itself. When the wires of a metallic circuit are laid parallel throughout, the current induced from one wire into the other is in the same direction as the current itself passing in that wire; the effect of the current is therefore prolonged, and retardation experienced in a marked degree; whereas, when the wires are twisted closely (say, two turns to the inch), the wires occupy throughout their length a position approaching right-angles with respect to each other; and the induced currents are thereby materially lessened, and retardation rendered less appreciable.

TELEPHONE SUPPORT.

The receiving telephone, A, is of the ordinary construction, and is supported in a fixed position; it is provided with a mouthpiece extension, B, having three branch tubes, D C E, for receiving flexible tubes. A curved spring, I, of nearly semicircular form, is jointed to a similar spring, H, and these two springs are kept in a fixed position in relation to each other by the brace, N, which is made adjustable in order to adapt the apparatus to the heads of different users. Attached to the ends of the spring, I, are earpieces, G, provided with tubes, F, having branches, J. The tube, F, communicates with the central tube of the extension, B, on the receiving telephone, and the tube, K, communicates with the other earpiece, and a branch, M, communicates with the mouthpiece, L, secured to the center of the spring, H. By this means the earpieces and the mouthpiece are held in position for use. The branch, D, is connected with the transmitter, P; the branch, C, is connected with the earpiece, T, to enable a second person to listen.

Sounds produced by the receiver diaphragm are communicated to the ears through the tubes, F K, and the earpieces; and speech uttered in the mouthpiece affects not only the transmitter through the tubes, M, K, F, and O, but also the receiver, which thus acts as a transmitter also and augments the volume of sound transmitted. To prevent the accidental jerking of the apparatus from the head, the tube, F, is attached to the clothing by a clasp pin.

This invention has been patented by Mr. N. G. Warth. of Canton, Ohio.

New Process for Preserving Meat.

Mr. Richard Jones, who has for many years devoted his attention to the preservation of meat, has now adopted a new process. The principle consists in the injection of a fluid preparation of boracic acid into the blood of the animal immediately after it has been stunned, and before its heart has ceased to beat; the whole operation, including the removal of the blood and chemical fluid from the body of the animal, only taking a few minutes. The quantity of boracic acid used is very small, and that little is almost immediately drawn out again with the blood. The preservation of the flesh is said to be thoroughly effected; the quantity of the chemical left in the flesh must therefore be very small, and can scarcely be injurious to the human system; for, as Professor Barff has proved by experiment, living animals, either of the human or other species, do not seem to be injured in any way by the consumption of it. A demonstration of the effects of the process was given in April at the Adelphi Hotel, London, when the joints cut from a sheep that had been hanging for more than seven weeks at the house of the Society of Arts were cooked in various ways, and those present agreed that the meat was equal to ordinary butcher's meat.

The Louisville Exposition of 1884.

The exhibition of last year at Louisville, Ky., was a brilliant success. The attendance was large, and there was a good representation from all parts of the country. The managers state that of 600 car loads of machinery sent there from the Eastern States, less than 100 car loads were returned, so large a proportion of the articles having been sold during the exhibition. The exhibition this year will open August 16, and close October 25. Louisville is now very near the center of population of the United States, and there is no better section of the country for the enterprising manufacturer seeking a market than is to be found within a radius of two or three hundred miles of that city.

Paper Making Materials.

The attention that has been given of late years to the very important question of the paper supply has resulted in the more general utilization of many products that were but a few years ago scarcely known. The threatened exhaustion of the esparto supply went a considerable way to turn the attention of paper makers to other sources of material, and fresh substances are now frequently brought to notice, the young shoots of the bamboo being among the most recent. The essential for a good paper is a substance that will pulp well, and at the same time possess a fiber sufficiently tenacious to strengthen the paper when finished; thus the well known India papers made from the tough, fibrous barks of Daphne papyracea and D. cannabina are celebrated for their great strength; and again the Japanese papers made from the inner barks of Broussonetia papyrifera and B. Kæmpferi are sometimes made as thin as gauze, and yet on account of the interlacing fibers they possess considerable strength.

Everybody knows how multitudinous and varied are the uses to which the Japanese apply paper. It is then to some of these well known foreign sources of paper material, the suitability of which is abundantly proved, that we ought to look for some of our future supplies. It is not impossible perhaps to export the material in the form of paper stock or half-stuff, and we might perchance get this either from the Indian daphne or the Fijian or Japanese broussonetias; besides which, the plants themselves might be introduced into some of our colonial possessions, and grown for the sake of their fibrous bark; indeed, this would seem to have been already begun by Dr. King in the Botanic Garden, Calcutta; for in his last report on these gardens he says: "The paper mulberry (Broussonetia papyrifera) grows wonderfully well, and I am trying to obtain the seed in large quantity from Europe, so as to be able to spread its cultivation in India." This, then, would seem to be a new branch of culture well worth consideration and experiment by planters in various parts of the world, for the trees might even be planted on the boundaries of plantations or as shade trees.

The paper mulberry grows everywhere in Japan, and is a valuable tree, as furnishing the bast from which a large portion of the Japanese paper is made. The plants are reproduced in quantity by subdividing the roots, and in two or three years are ready to be cut. This work is done in November, and the branches, 7 to 10 feet long, are made up into bundles 3 or 4 feet in length, and steamed, so that the bark is loosened, and can be more readily stripped off. This is washed, dried, and then again soaked in water and scraped with a knife to remove the outer skin, which is used for inferior kinds of paper. The bast, when cleaned, is washed, repeatedly kneaded in clean water, and mixed. It is then bleached in the sun until sufficiently white, after which it is boiled in lye, chiefly of buckwheat ashes, to remove all gummy matters. The fibers are now readily separated, and are transformed into pulp by beating with wooden mallets. The pulp is mixed in vats, with the necessary quantity of water, to which is added a milky substance prepared from rice flour, and a gummy infusion of the bark of Hydrangea paniculata, or of the root of Hibiscus manihot.

The "couches" on which the paper sheets are produced are made of bamboo, split into very fine sticks, and united in parallel lines by silk or hemp threads, so as to form a kind of mat. This is laid upon a wooden frame, and the apparatus dipped into the vat, raised and shaken, so as to spread the pulp evenly, after which the cover is first removed, then the bamboo couch with the sheet of paper, and in returning the operative lays the sheet upon the others. When a number of sheets have thus been prepared they are pressed, to exclude the water, and afterward spread out with a brush upon boards and allowed to dry. The sheets are only about 2 feet in length, but sometimes sheets 10 feet long are produced.

On all sides the question of finding substitutes for rags for paper making is acknowledged to be one of the most important. In Bavaria, according to a recently issued government report, the paper makers are directing earnest attention to the discovery of some substitute for rags, " and largely adopting wood, which has not tended to improve the paper; and they still desire to see the export duty re-established, as though the duties on paper under the new tariff may give them the home market, they are desirous of improving their paper and exporting to foreign countries."

Again, in a report from the Consul at Christiania, we read that the produce of wood pulp increased immensely during 1882, causing prices to fall considerably. Many mills were extended, and several new ones were erected during the year. Some of the mills established in 1881 only commenced working in the beginning of 1882, at a time when the sale of wood pulp is, as a rule, very limited. The manufacturers tried to force the sale of their produce, and thus large quantities were rather suddenly thrown upon the market, causing a considerable fall in prices. While the consumers in 1881 had to pay from £5 to £5 7s. 6d. per ton for wood pulp containing 50 per cent of water, delivered free on rail at Christiania, the average price at the close of 1882 only amounted to £3 10s.; and in the summer the best wood pulp was sold at even £3 5s. per ton. Manufacturers found it difficult to dispose of their large stocks, and as wet wood pulp could not be well preserved for a longer time considerable quantities were damaged, and sold as inferior goods at prices varying from £3 to £2 15s. per ton. In consequence of this many mills stopped working until their stock of pulp had sufficiently diminished. In November, 1882, a meeting of manufacturers was held in Christiania, when several subjects connected with the wood pulp industry were discussed. Thus it was proposed to restrict the produce, but no practical result in that direction was arrived at, except that a committee was elected for a further consideration of the matter. It seems that, while in 1875, 8,540,000 tons of wood pulp were exported, the quantity had risen in 1882 to 59,033,000 tons.

From Drammen the Vice-Consul also reported that the exportation of wood paper pulp showed a considerable increase. As only a very few mills, however, gave a reasonable profit, the owners were compelled to avoid all possible expense, and therefore a large proportion of the pulp was exported from Drammen direct, instead of *via* Christiania, in order to save the cost of railway carriage between those two places. Since all the paper pulp mills are situated along the railway line from Drammen up to Konigsberg and Randsfjord, the only reason for exporting the pulp by way of Christiania, and paying heavy railway charges, is the convenience which the regular lines of steamers from Christiania to the great places of import afford to shippers. A regular line of steamers from Drammen to a convenient port on the east coast of England ought to pay, especially if a reasonable return freight could be relied on.

In a report from Rome dated at the close of the past year, under the head of paper, it is stated that " this industry, for which considerable hydraulic force is necessary, meets, in the province of Rome, with the most favorable auspices, yet there are surprisingly few manufactories; indeed, there are only eighteen moved by 510 hydraulic horse power, and employing 347 men, 157 women, and 103 children. The production of paper is a little over 16,000 quintals (31,520 cwt.), though it might be at least 25,000 quintals (49,000 cwt.). The materials used for making it are rags of vegetable texture, and straw. A manufactory in Tivoli makes use of asbestos for the production of cardboard. At present the manufacture of paper in Italy exceeds the demand as to quantity, but not as to quality. The newspapers of Rome are printed on paper obtained from manufactories on the river Livi, distance about seventy-five English miles from Rome."

Among the most recent materials applied to paper making are the fibrous stems of the sugar cane after they have been passed through the mill, and the saccharine juice expressed; this, which is known as *bagasse*, has hitherto, in most cases, been used as fuel. In America, however, fuel of all kinds is cheap, so that in Louisiana, for instance, *bagasse* is seldom or never used for burning, and it is a worthless product, some planters, indeed, not knowing what to do with it. Recent experiments have shown that the hitherto useless *bagasse* contains a fiber that may be utilized for paper making. A ton of the material will yield about 650 pounds of fiber, while every ton of the latter can be converted into 1,500 pounds of pulp.

It has been estimated that each planter who makes 400 hogsheads of sugar might realize no small portion of his yearly expenses by working his *bagasse* and extracting its fiber. A company was formed in New Orleans about a year ago to make paper out of cane fiber. Their numerous experiments have satisfactorily ascertained that paper of an excellent quality can be made from this substance, and that the material is so inexpensive that it can be profitably worked. Certain planters have offered the company all the *bagasse* on their places for from five to ten years gratis. They hope to see this new industry started, so that they will be able to sell their *bagasse* to the factories. Others propose to extract the fiber themselves, for, if once paper factories are established, it will become a marketable product.—*John R. Jackson, Museum, Kew; The Gardeners' Chronicle.*

Manufacture of Porcelain at the Royal Works, Dresden.

These works are at Meissen, near Dresden. The china for ornamental pressing is not used in a clay state, but as a liquid, slip-like, thick cream. This is poured into the orifice of the mould left for the purpose, and then allowed to stand for a short time; when sufficient slip has adhered to the mould, the remainder is poured back into the casting jug. The slip having remained in the mould for some minutes becomes sufficiently solid to enable the workman to handle it. He next proceeds to arrange all the pieces on a slab of plaster before him. He then trims the superfluous clay from each, and applies some liquid slip to the parts, and so makes a perfect joint, each part being fitted to its proper place, until the whole figure is built up as it was before it was moulded; as each joint is made, the superfluous slip is removed with a camel's hair pencil.

The object is next propped with various strips of clay having exactly the same shrinkage and is then ready for the oven. The shrinkage, or contraction to which we have alluded is one of the most important changes, as well as one of the greatest difficulties encountered in the art of pottery. The change will be more or less, according to the materials used and the process employed in making. Thus, earthenware will not contract so much as porcelain, and a pressed piece will not contract so much as a cast one. The contractions are sufficiently well known to the modeler, and he makes allowance in the model accordingly, the design being fashioned so much larger than is actually required; the shrinkage from the original model to the finished object being sometimes equal to 25 per cent.

The ware up to this point in all the stages of manufacture we have described is most tender, and can only be handled with the greatest care.

The manufactured objects being now ready for baking, are taken to the placing house of the biscuit oven, where may be seen some hundreds of seggars of all shapes and sizes. These seggars, which are made of fire clay and are very strong, are the cases in which the ware is to be burned. Common brown wares, when the fire is comparatively easy, may be burned without any protection, as the fire or the smoke cannot injure them; but for porcelain or white earthenware these cases are necessary. The seggars are made of various shapes to suit the different wares. Flat round ones are used for plates, each china plate requiring its own seggar and its own bed in it, made of ground flint very carefully prepared, for the china plate will take the exact form made in the bed of flint. Cups and bowls are placed, a number of them together, in oval seggars, ranged on china rings to keep them straight. These rings must be properly covered with flint to prevent them adhering to the ware burned upon them. The seggars when full are piled one over the other most carefully in the oven, so as to allow the pressure to be equalized as much as possible; this is absolutely necessary, as when the oven is heated to a white heat (calculated as equal to about 25,000° Fah.) the least irregularity of bearing might cause a pile to topple on one side, and possibly affect the firing of the whole oven, causing a great amount of loss. Calcined flint is used for the purpose of making beds for the ware, because being pure silica it has no melting properties, and will not adhere to the china.

The form of oven seems to have been much the same in all ages, viz., that of a cone or a large beehive. A china oven is generally about 14 feet in diameter inside. It is built of firebricks, and is incased several times round with bands of iron to prevent too great expansion from the heat inside. There are generally eight fireplaces around the oven, with flues which lead directly into the oven in different directions A china oven takes about forty hours to fire; it is then left to cool for about forty-eight hours. In order to test the burning, the fireman draws small test cups through holes in different parts of the oven made for the purpose. These tests show, both by contraction and the various degrees of translucency, the progress of the fire. The test holes are carefully stopped with bricks, so that cold air cannot be drawn into the oven.

The porcelain having been burnt is now in the state called biscuit; it is translucent and perfectly vitreous. Having had the flint rubbed off the surface and been carefully examined, it is sent into the dipping room.

The dipping room is supplied with large tubs of various glazes, suitable to the different kinds of ware. The glaze is really a kind of glass, which is chemically prepared of borax, lead, flint, etc., that when burned will adhere to the porcelain, and will not craze or crackle on the surface. This glaze is ground very fine (being on the mill for about ten days) until it assumes the consistency of cream. The process of glazing is simple, but requires a practiced hand, so that every piece may be equally glazed and the glaze itself equally distributed over the surface.

From the dipping room the ware is brought into the drying stove, where the glaze is dried on the ware. It is then taken by women into the trimming room, where any superfluous glaze is taken off, and defective places are made good. From this room it is taken to the glost oven placing house, where the greatest care and cleanliness are required, as should any dust or foreign substance get on the glaze it will adhere in the fire, and very likely spoil the piece.

The glost oven is of the same construction as the biscuit. It takes sixteen hours to fire, and the tests are made in the same manner as in the biscuit oven. The average heat is equal to about 11,000° Fah. In about thirty-six hours the oven will be sufficiently cool for the ware to be removed. It is then sent into the white warehouse, where it is sorted and given out to the painters and gilders, to be decorated according to the orders on the books.

Visitors generally look forward with pleasure to the mysteries of the decorating department. It is interesting to watch the painters, some on landscapes, others on birds, or flowers, or butterflies. All are interested in their work, which to the uninitiated may appear at first sight to be very unpromising, the colors being dull, and the drawing unfinished. As the work advances, it will be better understood. After the first "wash in" has been burned, and the painter has worked upon it for the second fire, the forms and finish, both in style and color, begin to appear.

The colors used are all made from metallic oxides; thus copper gives green and black; cobalt, blue; gold, purple; iron, red; etc.

The painters are trained from about fourteen years of age under special instructors; they thus acquire a facility of drawing and general manipulation of the colors which is found almost impossible to attain at a later period of life.

The gilding process is carried on in rooms adjacent to the painting. The elaborate and finely executed patterns in gold are all traced by the hand. The workmen require special training for this department also, correct drawing and clean finish being absolutely necessary. For the purpose of getting correct circles and speedy finish on circular pieces, a simple mechanical contrivance is used. A small table or stand with a revolving head receives the plate or saucer or cup, which is carefully centered so as to run truly. The time required for enamel kiln firing is about six hours. —*Pottery Gazette.*