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INDUSTRIAL ART



GEORGE F. KUNZ

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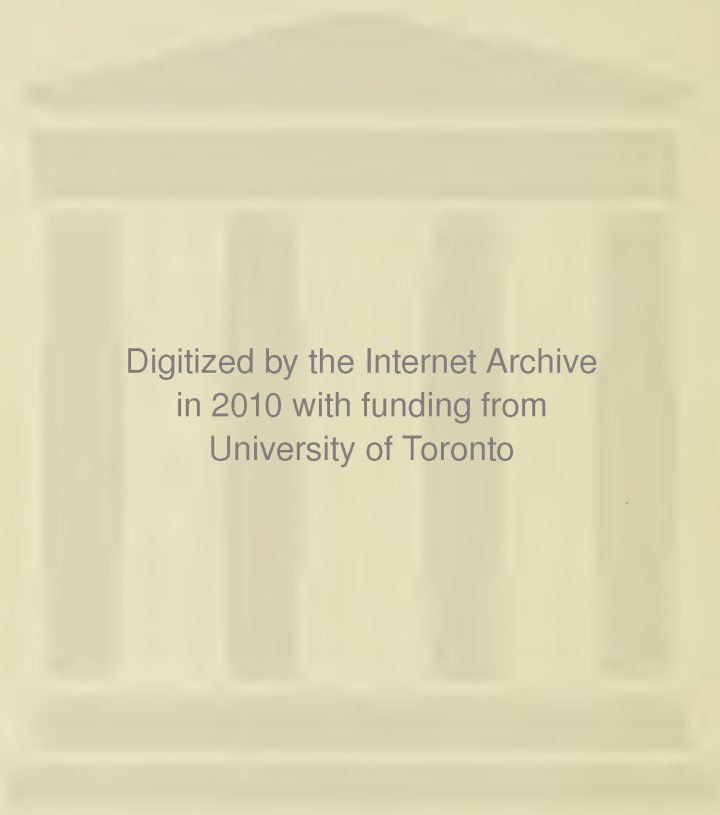
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INDUSTRIAL ART: HOW IT IS ADVANCED BY ART EDUCATION

An address



BY
GEORGE F. KUNZ M.A. Ph.D.

AT THE
45TH UNIVERSITY CONVOCATION
OF THE
STATE OF NEW YORK

In the Senate Chamber, Capitol, Albany, N. Y.
Friday afternoon, October 18, 1907

Reprinted from Proceedings of the 45th University Convocation, October 17-19, 1907

ALBANY
NEW YORK STATE EDUCATION DEPARTMENT

1908

INDUSTRIAL ART: HOW IT IS ADVANCED BY ART IN
EDUCATION

GEORGE F. KUNZ, NEW YORK CITY

The development of the industrial artist proceeds by a process of selection which results in rendering certain aspects of an environment more attractive for him than others. Just as in three-color printing, by means of a screen we eliminate certain colors, printing only the others, so, according to the manner in which the external world has been interpreted for him, the artist will see and reproduce nothing but the beautiful and the harmonious or nothing but the horrible, grotesque and distorted. This accounts for the great diversity of the manifestations of art among different peoples and in different periods.

The first school for art is nature. How few designers have had time to be in the open air and to become natural in their tastes. Why are so many plant and animal forms so unnatural? Simply because the original drawings are made from dried botanical specimens or from stuffed animals, by artists whose methods and training were altogether artificial; these in turn are colored and lithographed by photographers who are not naturalists. The designer then studies these unnatural objects and frequently distorts them still further. It is very important that the artist should spend two or three days each week in the country, not only a few weeks during vacation period; for whenever that may be, he can grasp only a few pages in the chapter of the year. He should be in a natural environment from the time the snow leaves the ground and the skunk-cabbage is first seen, until the last berries or seeds are visible on the nude branches. He should learn to understand the unfolding of the fern, the shooting out of the buds, the development of the leaf, the growth of the flower, the inception of the fruit and its successive stages until the ripening; and lastly, he should observe the tree without a leaf, this being even a more interesting study than when it is fully clothed. The same with the seashore; how many paintings have you seen of the ocean or of the seashore, even by well known artists, in which all the shells and animal life depicted were those that are purchasable at a shell shop on Fourth Avenue, in a side street of the Strand, or in some of the naturalists shops of Paris? These shells had been

denuded of their natural epidermis, and the colors were brought out as unnaturally as would be those of the human body if the skin were removed from it.

The success of Japanese art, as well as that of Chinese art, is generally due to the fact that these people are students of nature. They are lovers of natural objects; they spend days in looking at the cherry blossoms, the wistaria and the chrysanthemum. The work of the older artists and that of some of the better ones of today carry this out. I know one French artisan jeweler and one American who spend from two to four days a week in just such contemplation of nature as I have described.

A rich client of a jeweler once ordered a dozen enameled daisies for bridesmaids' gifts. He was a critical observer and when the completed work was shown to him, he seemed much displeased; no two were alike; there was either a slightly bent leaf or some difference in the smoothness and evenness of the enamel. The client was about to refuse them as unacceptable when the dealer sent for a bunch of field daisies, and asked him to select any two that were alike, saying that if there were two exactly similar ones, the enameled daisies would be made alike also. The real reason for the dissatisfaction was that the gold daisies were too similar; as painfully alike as are some twins. Each of the natural flowers was a distinct individual flower differing as much as men or women would.

There are four things absolutely necessary in the training of an industrial artist; he must give undivided attention, with his eye, his hand, his mind and his ears, when instruction is given him; for, as the saying goes, "when you are young and take infinite pains, when you are old you will have skill and can count your gains."

In the East, in India and Ceylon, every child is taught this absolute attention, which may be a precept of the Mohammedan religion. If a child is at work sweeping or polishing and a band passes, and the child looks aside, he is at once directed to his work; if some one jostles him, he must pay no attention; if there is a conversation going on, he is not allowed to listen to it. The eye, ear and mind *must* be on the work itself. As a Singalese once stated, the brass that the child polishes, the inkstand, the lamp or other object upon which he works, is worth two or three times as much as it would be worth if the child had looked or listened or had not kept his attention on the work. It is said that the children are trained to this absolute obedience so that when their religion is taught to them they shall be just as attentive; and it is probably

for this reason that these people are not only faithful to their religion, but by their thoughtful concentration produce an added value for their work.

Much of the delicate and beautiful East Indian jewelry has maintained its identity in type and character from very ancient times up to the present day; many forms resemble those peculiar to Greece, and these may have been introduced at the time of the campaign of Alexander,¹ only undergoing slight modifications. The contrast with our methods is very striking. In India, the workman is a descendant from two thousand years of jewelers and he is able to make an entire jewel. How different it is with us today! A man may work in a jewelry establishment all his life and never make or know how to make a jewel. He is occupied either at the draw press or the casting furnace; or he is a molder, a chaser, a stonemason or a gold colorer; but he can not complete a single jewel — any more than the silversmith who melts or rolls the silver, or strikes out the spoon, or shapes the bowl, or finishes out the die-strike and polishes it, can make a spoon. The result is a cheapening of the product not only in price but in quality; because as the workman often need not serve an apprenticeship as he did of old, he can not command the salary of an experienced jeweler. Yet the clever chaser or engraver or diamond setter receives today perhaps twice to four times the salary paid 50 years ago, for ingenuity is always rewarded and a novelty is always appreciated, as may be seen in the wonderful flat watches now made, which are so thin that eight piled one upon another measure less than 1 inch, each one being hardly an eighth of an inch thick, and selling for nearly \$300.

Japanese art as it was, and as practised by many of its artists, was one of the most natural and truest of arts, but within the past 20 years the Japanese merchant has also taken up the production of commercial art. The demand has frequently come from communities so crude in their taste, or the buyers have so little knowledge of what is really beautiful, thinking that everything Japanese is desirable, that instead of products of Japanese art, a great quantity of the objects sent here may be termed tea store accessories. The bulk of the Japanese material shown at the Jamestown Exposition was of this character. Flamboyant would be a moderate term to use as a description of an immense, floridly enameled silver

¹Indian campaign of Alexander, 327-325 B.C. (Alexander was born 356 B.C., and died 323 B.C.)

vase that was held at \$10,000; there were cases of similar objects. This vase will probably sell as did the largest enameled vase ever made in Japan, sold at the Chicago World's Fair. There were several buildings filled with minor objects, many of them exhibiting wonderful ingenuity and occasionally good taste, and offered at prices that seemed absolutely ridiculous for skilled labor; but so many were of the more florid character that one of the jury, in speaking to an exhibitor, stated that if Japan persisted in sending such things to the United States, it would surely bring on the much discussed, but we hope never to be realized war. The jurors found it impossible to give any award from an artistic standpoint, but as these objects had been brought so great a distance, they were called manufactures, and as such were awarded a prize, just as one might be given for a water cooler, or a pair of common shoes.

The effect of art and patience has probably never been better shown than in the wonderful objects of jade and other hard stones that find so much favor in China and Japan; and thanks to the generosity of our late citizen, Mr Heber R. Bishop,¹ a collection of these is now the property of the Metropolitan Museum of Art. This wonderful collection well shows us how artistic training and infinite pains have shaped beautiful, delicate objects out of the toughest material that the lapidary encounters, jade and jadeite. In the Morgan collection in the opposite hall we can study the work of the great potters of China who have produced such wonderful objects of faultless and graceful form. It is true, they must have had inherent taste, but they were also educated to know the clay, the wheel, the colors and the glazes, and what color the glazes would be after they had once gone through the fire.

While a sympathetic appreciation of the beauties of nature is one of the principal requisites for artistic development, we must not forget the great value of a careful study of the best models.

In the 18th century there had been two potters of the same name, father and son; a grandson then served an apprenticeship, and in what is now the famous town of Etruria, he proceeded to carry on the manufacture of pottery which is still pursued by his grandsons. He became a student of ancient art and traveled extensively. He then applied the knowledge he had acquired to simple clays, engaged the services of the great Flaxman,² modeler and sculptor,

¹Heber R. Bishop, born in Medford 1840, died in New York 1902. The Heber R. Bishop Catalogue, description of, by George F. Kunz, Met. Mus. Art, April 1906.

²John Flaxman, born at York, 1755; died 1826.

and made a study of basalts or black Egyptian ware and of the fine terracottas and cameos. It was this application of art to pottery that has given us Josiah Wedgwood,¹ the greatest English potter and one who has made England known the world over. A proof of the influence exercised over him by his master, Flaxman, is the fact that he made 24 copies of the famous Portland vase which were sold for \$200 each; such reproductions readily command \$4000 each today. In Wedgwood's case it was not only art but education and application that made him the great master. It was his intense devotion to travel and study in addition to his artistic sense, that has made his name a household word. The study of classic models and of the best work of the potters have made the name of Wedgwood one that is and will be revered not only by England but by the entire civilized world.

It was not, however, always within the power of the individual industrial artist to procure for himself the proper environment, and many men gifted by nature with great artistic ability have been unable to develop their talents because of a lack of encouragement. We may note here an interesting example of what can be accomplished by a little intelligent direction.

Catherine II² of Russia, realizing that the Ural mountains were an endless treasure-house of rare decorative stones such as jaspers of many colors, malachite, rock crystal, smoky quartz, rhodinite, and granites of peculiar value, not to mention topaz, aquamarine, emeralds, tourmaline and other stones, conceived the idea of sending two Italian lapidaries to the Ural mountains for the purpose of teaching the natives the cutting of stones and the making of artistic objects. This finally resulted in the establishment of imperial cutting works at Ekaterinburg, where, by means of a few instructors and aided by the water power which is unlimited in these mountains and by the presence of the native stones, there were and are created those great vases, tables, mantles, and other rich objects which Russia has for many years used as imperial gifts of favor to such eminent men as Alexander von Humboldt³ and Sir Roderick Murchison,⁴ not forgetting our own great Thomas A. Edison.⁵ These objects may be seen in every royal household in

¹ Josiah Wedgwood, born in Staffordshire, 1730; died 1785.

² Catherine II of Russia, born in Stettin, 1729; died 1796.

³ Alexander von Humboldt, born in Berlin, 1769; died 1859.

⁴ Sir Roderick Impey Murchison, born at Tarradale, Ross, Scotland, 1792; died 1871.

⁵ Thomas A. Edison, born at Milan, Ohio, 1847.

Europe; they have been gifts of the czars for over a century, and are noted for their beauty of line and the quaintness and richness of the substances from which they are made. There are now three imperial cutting establishments; one at Ekaterinburg, another at Peterhoff near St Petersburg, and the third at Kolyvan in Siberia. These works give employment to over 500 stone artists who frequently leave the government employ to become independent masters. Thus, owing to the fact that the farsighted Catherine sent two Italian lapidaries to the Ural mountains, an industry has been created there which gives employment, in addition to those engaged in the imperial works, to a thousand and more people, and an occupation of searching for these gem stones to many hundred more; the latter and part of the former work being frequently an accessory to the tilling of the soil and other occupations when there is leisure in winter or spring and extra money is of great value. Such industries could be created in the mountains of North Carolina and California, where almost similar conditions exist. In Russia, single objects are produced, such as the immense vases of jasper, which require the work of from two to five men for four or five years, and a permanent wealth is created that probably would never have existed had it not been for this farsightedness of the Great Czarina.

In a study of the history of the jewelry industry of the German jewelery city of Hanau, I was somewhat surprised to learn that the jeweler's art was brought there by the Walloons and Huguenots 300 years ago, and that in the city there are two churches, a Catholic and a Protestant, under the same roof, the entrances being at opposite corners. As many as 300 of those who left France and Belgium were united by family ties and for three centuries they have worshipped under one roof; for three centuries the jeweler's art of France has been carried on by the descendants of her own people who were driven out in the evil hour of religious persecution.

A quarter of a century ago, the Austrian government realized the importance of art education to the artisan, and as a result of this, in such small towns as Gablonz, Turnau and Reichenbach, for 20 years there have existed schools where a boy is taught to draw, to design, to model, to hammer out, to engrave, to chase and to enamel a bit of jewelry, as well as to make a drawing of the gem and cut the gem for the jewel; this he is taught to set in the piece of jewelry he has created. He can originate and perfect an entire piece. The result is, that, differing from the custom in most jewelry

shops, he is not only taught a single part, but is taught to make every part of a bit of jewelry, so that with this artistic training, the boy, instead of becoming simply a jeweler, is very soon fitted to be foreman or manager in an establishment, and frequently to become a partner of the firm; all this through the fact that his country has given him two or three years' artistic training. This same method has been carried out in the glass districts where the boys are taught every phase of melting, designing, modeling and engraving glass of all colors. Thus, by the expenditure of \$10,000 to \$20,000 a year in these small schools, in a gem, a jewelry, a glass or other region, the government has notably increased the output of the corresponding industries.

In 1893, I asked Dr Geheimrath Lessing,¹ director of the Kunstgewerbe Museum of Berlin, why it was there were so few fine industrial art objects produced in Germany; for it already had good schools, and considerable encouragement was given to the pupils. He was not then aware that Paris, London and New York offered so much larger recompense to these people that they generally left their homes; so that although their creations were known in other countries, they were rarely credited to Germany. But in the past dozen years Germany has encouraged work of this kind, and the work of the jewelers, wood, bronze and iron workers in the German section of the exposition held at St Louis, far outdistanced that shown by that country at any other world's fair.

As an instance of the practical influence of art schools and museums on art development, I will refer very briefly to another foreign example. England, for the past 30 years, has liberally encouraged and aided the South Kensington and other museums and employed the most eminent men of the time as directors and professors therein, under the leadership of Sir Francis Philip Cunliffe Owen² and then of our own Sir Caspar Purdon Clarke.³ The result is noteworthy. At the Paris Exposition of 1867, English potters and pottery were but little esteemed; in 1878 they ranked second, and in 1889 and 1900 they equaled, if not excelled, the French.

France has always realized the great importance of its art industries and in Paris we find homes in which a small master hires an

¹ Dr Geheimrath Julius Lessing, born in Stettin, 1843.

² Sir Francis Philip Cunliffe Owen, born May 23, 1820; died Nov. 22, 1894.

³ Sir Caspar Purdon Clarke, born in Richmond, County Dublin, Ireland, 1846.

apartment, one room of which is a salesroom, and his wife is the one who sees the clients. The husband works in his room, either alone or employing a few men; in this way many thousands of objects of gold, silver, glass, wood, leather, bronze, and other things are made, not in great quantities, but a few at a time; the family generally spending their Sundays, not in riotous living as we are led to suppose, but in going to the country and camping out; so that from the break of day until sunset they are quietly resting in that great school of art, nature. Had it not been for these industries, France never would have been able to pay Germany the five milliards of war indemnity. She did this apparently without effort; the fact that she had suffered made her but the stronger.

This education of the higher artistic sense was never better exemplified than by the magnificent and wonderful modern objects shown at the Paris Exposition of 1900. In some of these objects the artist and artisan had combined their efforts; for instance, a table of rare wood, ornamented with carved and beautifully chiseled brass figures, making the table worth \$45,000; a bookcase worth \$30,000, the natural and intrinsic value of the materials probably not representing \$50; a fenderlike fire screen, representing a row of poppies of wrought ironwork, designed by the artist and faithfully carried out by the artisan, representing \$3000, while the material was hardly worth \$10.

In Paris, some 50 years ago, a bronze founder became an art collector. He was a master of French art and bringing this knowledge into his foundry, he studied how to utilize it, and then acquired a great and choice collection; he owned magnificent enameled Arab temple lamps which brought more than \$20,000 each at the sale of his effects. Had not the great Barbedienne¹ devoted so much of his valuable time to artistic studies, his name as bronze founder and his work would perhaps not be known the world over today.

The artisan of France, who frequently receives just as much remuneration as the artisan of the United States, will not hesitate to wear his blouse even on Sunday. He is proud of the fact that he is an "ouvrier" and is usually more self-respecting than some of our American mechanics, who will buy a suit of clothes, and when it becomes too shabby or torn to be worn on a holiday — it is sometimes never mended — they wear it to go to work, and when it is too poor to be worn in that way, they wear it in the workshop.

¹ Barbedienne, Ferdinand, born at Saint Martin de Fresnay (Calvados) 1810; died 1892.

In the Paris Exposition of 1900, in a case 2 feet square, was a wonderful exhibition of ciselé art objects chiseled out of the solid mass of steel, although there was nothing that equaled the contemporaneous 12 inch statue of Louis XIV, shown in the Petit Salon and valued at \$50,000. These objects were dagger handles, scissors and knives, and were the work of a Styrian whom nature had somewhat handicapped. This man produced articles of such beauty and requiring such patience, that for a single dagger handle he had refused \$2000 from the present monarch of Austria. Without his art training, partly self-taught, he probably never would have been more than a common mechanic in a machine shop. The French secret of many of the beautiful things made in quantities is a good drawing, a carefully cut die or mold, and the cost to reproduce a beautiful object is then about the same as that of one of inferior design, while its salability is enhanced many times.

It may be said that France has always known this secret of taking something worth little, such as glass, thread, copper and tin, and creating beads, passementerie, lace, wonderful embroideries and other things, for feminine adornment; as well as magnificent bronzes, and modeled, cast or chiselled tin. From feathers and a little silk are made the most beautiful hats; with paper they make the most beautiful books. In other words, having followed an artistic model, it becomes a simple matter, with properly trained artisans, to create objects of value out of those of little cost. The result of this application of artistic education by the dressmaker or the milliner can be seen in the work of such men as Worth or Virot and others, whose dresses and hats are first designed by great artists, and are then made by trained artisans.

When I was 20 years old there lived and worked at 16th street and Union square a Frenchman, Jules Lebrethon,¹ one of the most versatile geniuses I ever knew. He was an artist, an actor, a playwright, a poet, a modeler, and a jeweler; he knew in all, nine professions. At that time he was a successful gem engraver, cameo portraits being in vogue.² Lebrethon would have been a great

¹Jules Lebrethon, died 1884.

²During a period from about 1860 to 1885, cameos were much worn in the United States, and quite a score of gem engravers existed at that time, many of whom executed most admirable portraits, which were then frequently called for. Among the most prominent of these were Louis Avet, Jules Lebrethon and L. Bonet. The latter is the only one who has survived, and he is at this time executing most beautiful specimens of the gem engravers art. Saint Gaudens was a pupil of Avet and Lebrethon.

man had he not been periodically convivial; frequently it required a week or longer to recover from a night's smash up. Leon Barre, one of my associates, who had been for many years art buyer for the house of Tiffany, knew Lebrethon, and also a Mr Saint Gaudens who was in the shoe business on the opposite side of the square. In discussing the future of young Augustus Saint Gaudens,¹ who had learned cameo engraving under Lebrethon's teaching, the father was strongly advised by his friend to send him to Paris and to give him a good art training. Had the father not realized a future for his son, had he not taken the advice of his friend and sent him abroad, and had not Augustus had the inspiration of Jules Lebrethon, it is a question whether we would have today the great statues of Lincoln in Chicago Park, "The Puritan" at Springfield, Farragut in Madison Square, the Shaw monument in Boston Common, or the Sherman monument in Central Park, not to speak of that great majestic "Grief" or "Death," as it is called, in Rock Creek Cemetery.

It was my pleasure to have known this great artist for more than 20 years. I both admired and loved him; but for a period his work came very slowly. Many knew that he had great genius, but they began to fear that he was possibly like the young man who wrote a wonderful article. It was so remarkable that he was advised to write a great book. He selected one of the rooms of his home and for years spent hours in it daily. He finally died an old man, and at his death his friends were not so anxious to know the contents of his will as they were to see the great book in this many years occupied room. All they found there were a few sheets of paper that had scarcely anything on them; he had undertaken too great a task. With Saint Gaudens, however, there was a pause of 13 years, and then he gave us the Shaw monument, the Peter Cooper and the Sherman monuments. Inquiring among his associates, I learned that he had broken up some of the models for these works from 10 to 15 times. The wonder is, how he could have accomplished what he did for the small recompense given to him, for he was never content with his work until he had fully done his best; time and the want of money did not count with him in doing the work that has brought him so much renown. And what is more, he had the courage to refuse thousands of dollars. In 1892, at the request of Mrs Potter Palmer, who took much interest in the World's Fair medal, I called on Saint Gaudens three times and urged him to design and model the award medals

¹Augustus Saint Gaudens, born in Dublin, 1848; died 1907.

for the World's Columbian Exposition. He was three times offered the sum of \$5000; he had need of the money, but each time he refused, because, he said, "there is no one in America who can make so important a medal, and surely I would not undertake the task." Later on, however, at the personal urging of Mrs Palmer, he consented. Saint Gaudens's work was acknowledged the greatest of any foreign exhibitor at the Paris Exposition of 1900, and it ranked with the first work in France. Had he produced all that was ordered of him, using assistants as some other artists have done, he might be living today, enjoying the unique title of a millionaire sculptor; but this was not the ambition of the immortal Saint Gaudens.

The first mention of Augustus Saint Gaudens, sculptor, in New York City, appeared in 1881, in which year he resided at 58 West 57th street. In 1882 his studio was located at 148 West 36th street, and his residence at 22 Washington place. These addresses appeared until 1891, with the exception of the years 1887, 1889 and 1890, when he apparently was not in the city. This also seems to be the case in 1892, and from 1893 to 1897 we have his studio address the same and his house address in the years 1893 to 1896, 51 West 45th street and in 1897, Vermont.

The first mention of his father, Bernard Saint Gaudens, was in 1852. He was a shoemaker by trade and resided at 197 Forsyth street. In 1853 he was not in the city, and from 1854 to 1859 his residence is given as 41 Lispenard street. In 1860 he located his business at 268 Fourth avenue and resided at 150 East 21st street. In 1861 his home address changed to 304 Third avenue, and this address appeared up to 1866, his business still being at 268 Fourth avenue. In 1867 and 1868 we have the same business address but his house address is not given. In 1869 we find his business located at 270 Fourth avenue, and his home at 310 Third avenue. From 1870 to 1883 his business address was 314 Fourth avenue, no house address given, and in 1884 his business was at 332 Fourth avenue. In 1885 and 1886 no business address is given but his house address was 610 North Third avenue in 1885 and 454 Third avenue in 1886.

Louis Saint Gaudens, brother of Augustus, was also a sculptor. In 1881 he resided at 58 West 57th street. We find no other record of him in the city until 1884, when from this year to 1886 his studio is given as 148 West 36th street and his residence at 80 Washington square, East. In 1887 we again have no mention of him and in 1888, 148 West 36th street again appears as his studio address, his

residence changing to 270 West 37th street. Skipping the years 1889 and 1890, in 1891 we find his studio still in 36th street, his residence not given. In 1893 to 1895 his studio is still at the old place, and his residence in 1895 in New Jersey.

Louis Avet, Augustus Saint Gaudens's first master, was a cameo worker by profession, and from the year 1863 to 1868 his business was located at 599 Broadway. In 1865 he resided in New Jersey, in 1866 at 79 West 19th street, and in 1876 at 186 Sixth avenue.

We trace Saint Gaudens's second master, Jules Lebrethon, from the year 1860. In this year and also in 1861 and 1862, his profession was that of an artist, his studio being located at 483 Broadway. In 1863 we find him a cameo engraver at the same place. In 1864 his business address was still the same, and his residence in New Jersey. In 1865 his residence changed to 199 West 24th street, and in 1866 his business address was 609 Broadway and his residence still in 24th street. In 1867 his business was at 643 Broadway, and these addresses remain the same up to and including the year 1871, and from this date to 1880 his home address is given as Staten Island. In 1878 he changed his business address to 31 Union square, where he remained until the year 1880, the year of his decease.

In 1869 we find Louis Bonet an engraver at 599 Broadway, where he worked with Louis Avet. In 1870 he is still at this address, and resided at 210 Greene street. In 1871 he changed his residence to 260 Fifth avenue, and we find no further record of him in the city until 1875, when his business address is again 599 Broadway. He remained here up to and including 1878, in which year he resided at 174 Mercer street. In 1879 his business address was 889 Broadway, where he remained until 1882, and in 1883 he moved to 927 Broadway. With the exception of four years, 1887, 1889, 1890 and 1892, we find him located at this address until 1896, inclusive. In 1897 Louis Bonet moved to 41 Union square, West, and he is still located at this address. From 1900 to 1905 he lived at 542 West 22d street, and in the past two years, 1906 and 1907, he has resided at 6 West 107th street.

Of the two greatest medallists of our time, Roty¹ and Scharff,² the former a Frenchman and the latter an Austrian, Roty is a pure idealist; he can see nothing that is not beautiful, no matter how dingy or humble a figure he attempts to depict; he sees and draws only those lines that are beautiful and pleasing, notably in his medal

¹ Louis Oscar Roty, born in Paris, 1846.

² Anton Scharff, born in Vienna, 1845; died 1903.

of an ironmaster of Mulhouse and his family. Here we have a straight row of the family portraits, and as a background the great iron furnaces with their large chimneys; but how beautifully the smoke and steam emanating from the chimneys is depicted! His fine Marriage Medal made for the French mint will always remain a pure, ideal conception of a marriage ceremony. Scharff, on the other hand, was more of a realist. His "Village Schoolmaster," and many other of his works, are pleasing realistic conceptions drawn and modeled with wonderful accuracy, for Scharff learned to draw with such a delicacy of touch that one would almost mistake his drawings for those of Albrecht Dürer;¹ he was always a realist, whether his work consisted of a model or a drawing by pen or by pencil.

In striking contrast to the works of this French and this Austrian artist, let us pause for a moment to think of the nightmare of a circular mass of copper that was given as a medal by the Centennial Exposition authorities and what someone with or without assistance, made out of the beautiful Saint Gaudens models which were given 17 years later as an award at Chicago. The Philadelphia Centennial medal was not designed by an artist, and was minted by the man who made it; the Chicago medal was modeled by an artist, but its artistic feeling was eliminated by mechanical devices.

Since the death of Scharff,—whose medals number many hundreds—the leading medallist of the Vienna school is probably Rudolf Marschall. The following list of the more prominent representatives of this school, with a mention of the prizes and decorations they have received, shows that the excellence of their work has been duly recognized.

Anton von Scharff, born in Vienna, June 10, 1845; died in Brunn, near Vienna, July 6, 1903. Grand Prix, Paris, 1900. Gold art medal, Munich, 1901. Franz Josef Order. Order of Iron Crown.

Rudolf Ferdinand Marschall, born in Vienna, December 3, 1873. Gold Fügler medal.

Josef Tautenhayn, born May 5, 1837. Large gold state medal, 1882. Franz Josef Order.

Stephen Schwartz, born August 20, 1851, in Neutra. Small gold medal, Jubilee Art Exposition, Berlin. Gold medal, Paris, 1900.

Franz X. Pawlik, born in Vienna, August 2, 1865. Two gold medals, Munich, 1901.

¹ Albrecht Dürer, born in Nuremberg, 1471; died 1528.

Josef Tautenhayn jr, born in Vienna, September 10, 1868.

Peter Breithut, born in Krems, northern Austria, June 13, 1869.

Heinrich Kautsch, born in Prague, 1859. Gold medal, Munich.

Franz Josef Order. Legion of Honor.

Ludwig Hujer, born at Willhelmshöhe, northern Bohemia.

Rudolf Cizek, born in Vienna, March 12, 1867.

Rodin¹ works in clay; the model is then sculptured in marble or cast in bronze. He has created so many things by his fine touch and his artistic conception, which is so versatile and so marvelous, that he made up an independent exhibition of these in a specially built hall, outside the walls of the great Paris Exposition of 1900. This great gathering consisted of single blocks of marble or plaster forms, representing either a hand, foot, head, back, or some part of the body of man, woman or child. These were shown as one great gathering, but unfortunately without screening or partitioning off; and while each piece represented a master's work, the general effect upon the multitude who visited the exhibition was an impression of viewing the results of a terrible railroad disaster, and the work could be appreciated only by artists. Yet Rodin has also executed great complete pieces, perhaps nothing greater or more idealistic than his "Penseur" shown at the St Louis Fair—one of the finest artistic works of any time in its quiet, strong impressiveness. This statue has been acquired by that great American art lover, Mr Henry Walters. It would seem almost an impossibility for Rodin to make even one touch of his hand on a mass of modeling clay without creating some lifelike form.

How can we raise the general taste with the least possible expense and among the greatest number? How can we reach the poorest child in the most distant mountain home, and the rich man's son residing in a great city palace? There is no way by which we can do this with less expense than by having the designs of our coins, our currency and our postage stamps the work of the most eminent artists and having them executed by the greatest engravers of the time.

There is no way of spreading a taste for pure art in a community more wide-reaching and attended with less expense than by providing a coinage of the highest type. Our coins should be the creations of our greatest sculptors and in this way our currency would represent the most beautiful forms evoked by American art.

¹ Auguste Rodin, born in Paris, 1840.

These pieces pass through the hands of all, men, women and children, and whoever sees them unconsciously absorbs the pure artistic conception, and would no more tolerate the ugly and uncouth in art, than one who has become familiar with the best in literature would tolerate a trashy novel.

To show the great number of art objects that could be made in a year, we give the following official report of the coinage of the United States for the fiscal year, ending June 30, 1907:

COINAGE EXECUTED AT THE MINTS OF THE UNITED STATES DURING
THE FISCAL YEAR 1907

Denomination	Pieces	Value
Double eagles	2 208 441	\$44 168 820 00
Eagles	2 846 812	28 468 120 00
Half eagles	1 171 611	5 858 055 00
Quarter eagles	450 937	1 127 342 50
Total gold	6 677 801	\$79 622 337 50
Half dollars	12 274 679	\$6 137 339 50
Quarter dollars	13 436 525	3 359 131 25
Dimes	34 780 635	3 478 063 50
Total silver	60 491 839	\$12 974 534 25
Five cents	47 642 750	\$2 382 137 50
One cent	93 731 568	937 315 68
Total minor	141 374 318	\$3 319 453 18
Total coinage	208 543 958	\$95 916 324 93

Number of bills representing money payable to bearer, printed and delivered to the Treasurer of the United States, in the fiscal year ended June 30, 1907:

UNITED STATES NOTES AND CERTIFICATES PAYABLE TO BEARER

Denomination	Number of bills	Value
\$1	107 296 000	\$107 296 000
2	25 392 000	50 784 000
5	31 056 000	155 280 000
10	10 220 000	102 200 000
20	4 196 000	83 920 000
5 000	4 000	20 000 000
10 000	4 000	40 000 000
Total	178 168 000	\$559 480 000

NATIONAL BANK NOTES PAYABLE TO BEARER

Denomination	Number of bills	Value
\$5	17 508 776	\$87 543 880
10	10 666 438	106 664 380
20	2 829 530	56 590 600
50	97 923	4 896 150
100	97 923	9 792 300
Total	31 200 590	\$265 487 310

SUMMARY

Denomination	Number of bills	Value
\$1	107 296 000	\$107 296 000
2	25 392 000	50 784 000
5	48 564 776	242 823 880
10	20 886 438	208 864 380
20	77 025 530	140 510 600
50	97 923	4 896 150
100	97 923	9 792 300
5 000	4 000	20 000 000
10 000	4 000	40 000 000
Total	209 368 590	\$824 967 310

The above is exclusive of the following:

UNITED STATES GOLD CERTIFICATES, PAYABLE TO ORDER

\$5 000.....	1	\$5 000
10 000.....	12 000	120 000 000
	<hr/>	<hr/>
Total	12 001	\$120 005 000
	<hr/> <hr/>	<hr/> <hr/>

These lists that have been very courteously furnished by Hon. G. B. Cortelyou, Treasurer of the United States, and statistics given by Hon. H. von Meyer, Postmaster General, show that the United States government issued in the fiscal year ended June 1907, 208,543,958 coins, 209,380,591 bills, 6,923,875,575 postage stamps, 805,568,700 postal cards, and 1,368,323,750 stamped envelopes; in other words, a total of 9,515,692,574 coins, bills, postage stamps, postals and stamped envelopes in a single year. It requires but a glance to show that if the government would spend \$100,000 per year on an artistic rendition of these objects, much could be done in an artistic way by this expenditure.

The following recommendations were prepared by a committee of the American Numismatic Society, of which the writer was chairman, and were presented to President Roosevelt for his consideration, with the hope of formulating a method to permanently obtain the best results.

ON A FUTURE IMPROVEMENT OF THE UNITED STATES COINAGE

In view of the great advances that France, England and other foreign countries are making in the matter of artistic coinage, we beg to offer the following suggestions for your most careful consideration:

That Congress be petitioned to authorize an entirely new coinage, which shall be artistic in design.

The entire coinage of the United States consists of ten denominations.

In order that the designs for the new coins shall be truly artistic in character, the best artistic talent of the country must be enlisted; and to this end it is necessary that these artists should receive a just recompense for their designs. We recommend therefore:

I That the sum of ten thousand dollars (\$10,000) be appropriated for each special coin model, without regard to the monetary

value of the coin to be issued, whether a cent or a twenty-dollar gold piece, as it is as important to have the smallest coins artistic as the highest.

II That the six best designs received for each piece shall be awarded \$1000 each from the above sum of ten thousand dollars, and that the committee, hereinafter proposed, shall have the right to select the best of the six designs, and to accept the model with or without modification by the designer, paying the successful competitor an additional sum of four thousand dollars. The cost of the dies for each coin would, then, not exceed \$10,000.

III Artists may submit designs for each denomination in each metal, but an artist receiving a first award in one of the metals will not be permitted to compete for the other denominations in the same metal.

IV That the committee to pass upon the models for the coins shall consist of the President of the United States, the Secretary of the Treasury, the Director of the Mint, one member each from the Senate and the House of Representatives, three numismatists, one sculptor, and one painter.

The following further suggestions may also be presented as of practical importance:

V The coins need not necessarily be in very high relief. Some magnificent works of art have been executed in very low relief, as shown in the medallic art of the later centuries.

The coins should be of such size as to be commercially convenient, and should not be so irregular in surface as to afford opportunity for the accumulation of germs, and the consequent risk of spreading disease.

VI By no more direct means is it possible to awaken an artistic taste among the people than by an artistic coinage. The art educating value of such a coinage will be at once apparent, and the poorest child in the most obscure hamlet, or poorest tenement, would thus have the opportunity of knowing and seeing the works of the best living masters.

VII With regard to the expense involved, the National Gallery at London, the Louvre in Paris, and our own Metropolitan Museum of Art, would not hesitate to spend \$100,000 for a single very important painting, on account of the educational and artistic value of such an object. The price of a single painting of this kind would replace our entire metallic currency with a coinage that would probably be unequaled in both beauty and utility by any nation on the

globe, and would do much to remove from the United States the reproach that we are not an artistic people.

VIII Without entailing an additional expense in minting our coins, if they were made of a metric weight, diameter and thickness, a coinage so stamped would aid this country in attaining a greater commercial rank, and assist in educating the children in metric values, a knowledge of which is absolutely necessary for them in the transaction of business in any other than an English-speaking country.

In this connection, we must not forget to acknowledge how much we owe to President Roosevelt for the encouragement he has given to the advocates of this cause and for what he has already accomplished in the direction of raising the artistic standard of our coinage.

France has long realized the importance and value of an artistic coin as a means of educating all the people in the least expensive manner: therefore such eminent medalists as Roty and Chaplin have designed her coins. The Austrian government also has recently encouraged artistic coinage in a limited way by ordering a die made of a coin on classic lines, a limited number of coins to be distributed to collectors at a somewhat higher price than their face value.

Verily may it be said that he is a wise sculptor who can recognize his own medal after his model is altered into a medal. It is just as essential for the artist to understand this as it is for the potter or enameler to know how his colors will appear after the firing and to know the final glaze that will be applied. For this very reason many of our modern sculptors are more successful when their models are cast in metal or cut in marble or stone by a cutter of another nationality and feeling, and when the artist is assured that his work is to be recast, the same size, so that his final touches and lines will be retained and not eliminated by means of the file or hammer by a caster who may wish a smooth finish on all his castings, thus destroying all of the sentiment and feeling of the work. The final color or surface on bronze, gold, silver or other metal objects is of the greatest importance and a series of the Saint Gaudens 1893 World's Fair medals offered startling contrasts when finished in different ways in various bronzes and colors.

With wonderful precision the modern reduction machine, under the guidance of an artist, will reduce a plaster cast made for the machine from an artist's model in bronze or iron, from a size of 12

or 16 inches in diameter to the dimensions requisite for a medal. But it is absolutely necessary for the artist modeler to have a thorough knowledge of the differences in tone value between modeling wax, plaster and metal, when the subject he models is to be changed to one fourth or one sixth of its diameter and then reproduced in a medal of red, brown, golden or other bronze, or in bright or oxydized silver, in bright or dull yellow, green, or gold.

The coin of the future should be designed by a great medalist, if not by a sculptor of large work. Some men can never conceive a work of magnitude, but their product may possess the delicacy of a forget-me-not in contrast to a great sunflower; and medallic models need not be large. The die cutter of old, who worked with hammer and chisel, or with a free-hand graver, produced work that is today unrivaled. Did not Michelangelo cut his design directly from the great rough block of marble? He did not leave this to be done by a stonecutter, who smooths down or modifies the work of the sculptor to what seems to be perfection to his eye.

When the models for the new eagles and double eagles, ordered from the late sculptor and member, Augustus Saint Gaudens, through President Roosevelt, were submitted to the Director of the United States Mint, it was found impracticable to strike these coins in the relief in which they had been modeled by the sculptor. However, dies were made from the models and trial coins were struck. The models were then returned to Saint Gaudens, who executed new ones. Dies were made and trial coins were minted from these second models also, but they too were returned to the sculptor, and the gold eagle in circulation is from a third die.

The Director of the United States Mint caused two eagles to be struck from each of the first two dies, on the condition that they should go to some numismatic society. The double eagles from the first and second dies were also in high relief.

Through the courtesy of its vice president, Mr J. Sanford Saltus, these coins were presented to the cabinet of the American Numismatic Society, and will remain in its custody, except for the brief time during which they will be placed on view at the Augustus Saint Gaudens Memorial Exhibition of all his obtainable works, to be held in the Metropolitan Museum of Art, from March 2 to April 2, 1908.

As I have stated, the authorities of the mint found that the first eagle and double eagle were of too high relief; they also lacked a

proper stacking edge; that is, they could not be stacked with the ease that is necessary when large numbers of coins are to be handled in banking. In addition to this, with our present system of minting, the cost of minting a high relief eagle is greater than for one in low relief, and it is absolutely required that the coins shall only slightly vary in weight, although they are cut from plates of metal rapidly rolled out. The eagle must always weigh 258 grains, 900 fine, and the allowance for waste is only one thousandth, equaling about 1 cent on each piece. The actual waste in the gold coinage of the Philadelphia Mint during the fiscal year ending June 30, 1905, was only 6.97 per cent of this allowance. Hence we find there are some difficulties in executing artistic coins in high relief, such as the ancient Greek had abundance of time to produce and ample leisure to admire.

The thanks of the American Numismatic Society are due to Director Leach, of the United States Mint, for his uniform courtesy and for making it possible for these trial pieces to find a home in their collection, where they will be even more accessible to the numismatists of the country for examination than they would be in the United States Mint.

The United States Mint has now devised a machine which will weigh 100 coins per minute; this will be a great saving even over the rapid hand machine. They have also introduced a machine for opening and closing the sectional collars in striking the coins.

A metal chaser who has acquired a great and well deserved reputation is Jules Brateau of Paris. The following details are taken from an advance sheet of *La Bijouterie Française au XIX^e Siècle* by M. Henri Vever, to whom and to the publisher, M. Fleury, we are indebted for this communication.

Jules Brateau was born in Bourges in 1844. In 1858, when he was 14 years old, the family moved to Paris, and he entered the workshop of Honoré, a master chaser, as Brateau himself puts it, "just as I might have gone to a shoemaker or to a tailor." However, he soon gave proof of his artistic aptitudes, and after serving his apprenticeship with Honoré, he followed the courses of the *École des Arts Décoratifs* and also frequented the studio of Nadaud. In 1869 he executed a fine bust of his master Honoré Bourdoncle and he was soon overwhelmed with orders from the first houses in Paris. During his long career he has executed an immense number of artistic objects, not only after designs that have been given him, but more frequently according to his own conceptions.

He has always been passionately devoted to his art and his fine and subtle talent has never failed to win appreciation; and although he has never confined himself to any school, he has often drawn his inspiration from the great masters of the Renaissance.

Many fine specimens of work in the precious metals bear the signature of Brateau, and a splendid sword executed by him was presented to M. G. Berger, director of the Musée des Arts Décoratifs, but he is best known as a worker in tin. It was toward 1878 or 1879 that he took up the tradition of François Briot, whose works he had long studied with care and attention. His first production in this metal was a Renaissance plate designed after an engraving by Théodore de Bry; this was exhibited on the occasion of a competition instituted by the Union Centrale des Arts Décoratifs in 1884 or 1885. He soon gained a complete mastery of the art, as was shown by his success at the Paris Exposition of 1889. Numerous beautiful objects such as ewers, goblets, plates, salt cellars, etc. have been made by him, and all are praised by both artists and amateurs. Almost all the leading museums of Europe have acquired specimens of Brateau's work, and in the Musée des Arts Décoratifs a special case is devoted to his productions. His mark is curious and ingenious; it is a gibbet (French, *gibet*) in allusion to the initials of his name; J. B. He was a member of the jury at the Paris International Exhibition of 1900 and was an exhibitor *Hors Concours*. His case of "Etain" was one of the features of the section of modern decorative art, and the collection of about 75 pieces, in its entirety, was acquired by one American art firm.

Some years ago a French collector brought to this country a medal or rather a locket, after the type of the Syracusan medallions. On it was a head of gold, not unlike that of Arethusa, which was classic in every respect. To carry out his idea that the medal was modern, and was a locket, he bored a great hole through one end and through this passed a heavy gold ring. An American collector saw this locket, and someone suggested that it looked like an antique. The collector seemed interested in the object, but when he heard it was modern, he laid it aside, all interest gone. Thereupon the dealer remarked: "Do you wish a man to be as dead as the artist who modeled the Syracusan medal before you appreciate his work?" This locket is now in the collection of the connoisseur who would have refused it but for that argument.

One word here about encouragement by an art lover that it was my pleasure to know; I mean the late Alfred Morrison¹ of London,

¹ Alfred Morrison, born in 1821; died in 1897.

who believed it possible that the finest things could be made at any time provided an adequate appreciation was given by the connoisseur to the worker. He was a great friend of Zuloaga,¹ the Spaniard who made such wonderful damascene metal work. They were together when they examined a wonderful key of the Strozzi Palace; one of the Rothschilds had paid £1200 for it. Morrison inquired of Zuloaga: "What do you think of it?" the reply was: "I could make a finer key." Morrison said: "Make it." And Zuloaga did make it, without the price having been considered. It was so satisfactory that Mr Morrison, upon seeing it, said: "Make a casket to go with it." When Zuloaga completed the casket it cost some £10,000. Morrison pursued the same course in his purchases of rugs, Oriental and European; or of lace, of which he had finer specimens than he could find in any museum; he was a prince of collectors and drew out the latent ability of the ironworker, the jeweler, the lacemaker and many others who had never before found such a friend.

There lived in London at the same time an Italian jeweler who was wonderfully clever in making quaint enameled and jeweled Renaissance rings. For many years one collector bought nearly one half of all his product, saying that some day it would be impossible to buy this man's work, and this collection has never been offered to the public.

It was at the Paris Exposition of 1878 that silverware of such beauty was produced that it brought an award of the grand prize to an American silversmith. The award of the grand prize and the cross of the Legion of Honor to the great jewel firm was mainly due to the fact that Edward Chandler Moore² had for many years applied himself to artistic studies, more especially to the Persian, the Greek and the Oriental. More than 20 times he had visited Europe and studied the art collections there and had become familiar with the beauties of the art of Persia, Japan and the Orient in general. That he was an art collector is evidenced by the Moore Gallery of the Metropolitan Museum of Art, bequeathed to the institution at his death, and that his artistic studies increased the value of his handiwork is felt to this day; and since that time American silver-smithing has held its own with that of the world, rivaling that of Germany, England and Austria.

This American silversmith, who received the grand prize at the Exposition of 1889, when asked whether the workmen were French,

¹ Placido Zuloaga, born in Madrid, 1833. His father, Eusebio Zuloaga, born in Madrid, 1808, was also a metal and bronze worker.

² Edward Chandler Moore, born 1827; died Aug. 2, 1891.

German or English, replied: "We are employing the third generation of men who were our apprentices, and we have on our books the names of thousands of men who served an apprenticeship five years before we termed them masters."

A notable instance of the effect of travel and observation upon a mind naturally inclined to artistic studies is that of an American whose father was a merchant and jeweler; a successful man, known the world over. His father's profession had no attraction for him, and the father, with much foresight, allowed the young man to gratify his artistic taste. He traveled extensively in Spain and Morocco besides making the usual European trips. He became interested in painting, then in fabrics, stained glass windows, in woodwork and in bronze; for years he experimented with glass, producing quaint forms and wonderful combinations of color and iridescence, vieing with anything that had ever been found in antiquity. Later he combined glass with bronze, making industrial objects such as lamps and other ornaments, giving to each his artistic touch; and lastly he came back to his father's profession, jewelry. In a period of 30 years he has made for himself a name almost as widely known as his father's and has probably, directly or indirectly, produced more artistic objects of glass, wood, bronze and the various combinations than any one that has ever lived; I refer to Mr. Louis C. Tiffany.¹

The work of Charles L. Tiffany, the father, his business career and that of the house of Tiffany & Company are fully described by George Frederic Heydt in his book "Charles L. Tiffany and the House of Tiffany & Company."²

William Baumgarten realized, on the abandonment of the former Royal Windsor Tapestry Works, that their usefulness had been allowed to die out gradually, owing to a lack of artistic management — and surely proper encouragement should have been given in England to a product so high in decorative value. Baumgarten, therefore, bought the plant and brought over some of the leading men to manage it. He took a personal interest in establishing it in the old snuff works on the Bronx, and trained young boys from the Catholic Protectory who showed an aptitude for careful loom-work, eliminating those who did not. The result is that for some 10 years the annual product has exceeded in value that of any single year of the original tapestry works, and some of the best

¹ Louis Comfort Tiffany, born in New York, 1848.

² Published New York, 1893. 8vo. 9 illus.

work of the century that now graces American salons is the product of the reincarnated Royal Windsor Tapestry Works.

We do not always realize the immense addition made by art to the worth of the materials used in artistic work, and how much is added to the value of the skilled mechanic's labor if he be trained in the execution of such work.

The German ironmasters of Munich, the Armbruster brothers, who obtained the services of an artist to design a great eagle grappling with a dragonlike monster, found an ironworker who could strike a blow with a sledge with such precision that he made an object which was given the leading place in the Court of Honor of Germany's great exhibit, and is now one of the principal ornaments at Mr George Gould's¹ Georgian Court. The same amount of material forged into horseshoes by the same man probably would not have netted more than \$100 or \$200; as it was, the object could not be reproduced for \$20,000.

A clever Japanese artist took \$25 worth of silver and enamels, made an artistic drawing and faithfully reproduced this group of iron, in the form of transparent enamel, in a bowl of silver, making the object worth some thousands of dollars and creating a thing of enduring value, enough so to find a home in the collection of Mr Henry Walters of Baltimore.

In the same way the ancient wood carvers of box, pear, apple, olive and other woods, who carved them into medals with the exactness of their having been minted, or who carved groups of figures such as we see in the Waddeson collection in the British Museum, by their artistic education and application, have created out of a bit of wood, worth at the most a fraction of a dollar, objects of art that readily command at a European sale today, from \$200 to \$1000 each, centuries after they were made.

As John Ruskin² truly says: "All works of taste must bear a price in proportion to the skill, taste, time, expense and risk attending their invention and manufacture. Those things called dear are, when justly estimated, the cheapest; they are attended with much less profit to the artist than those which everybody calls cheap. Beautiful forms and compositions are not made by chance, nor can they ever, in any material, be made at small expense. A composition of cheapness, and not for excellence of workmanship, is the most frequent and certain cause of the rapid decay and entire destruction of arts and manufactures." My experience has proved

¹ George Jay Gould, born in New York, 1864.

² John Ruskin, born in London, 1819; died 1900.

that the American people are always willing to pay for costly articles if they have merit and their value is not an exaggerated, fanciful one; and in every capital of Europe there is a coterie of art lovers who maintain art in every form.

There are certain men who, through a natural aptitude and an inherited genius, or by intense application, become finger deft or finger wise; in other words, they have a touch in their fingers which they themselves can not explain, yet they can produce things with this touch that their minds can not see. It is this touch, whether applied by the pencil, the brush, the graver, the chisel or the hammer, on the canvas, in iron, or in plastic clay, that differentiates the artist from the mechanic.

In 1880 there lived in Dresden a German named Blashka, who devoted much time and thought to glass blowing. He later became interested in the reproduction of artistic and lifelike forms, and his son also became interested with him. He reproduced the Medusa, the Holothurians and many rare marine forms, magnifying microscopic things and reproducing them as faithfully as those that were of natural size. He became interested in plants, in fruits, flowers and seeds, and both he and his son reproduced them with equal aptitude. They took a trip of more than six months to the tropical oceans to study the marine forms. They were discovered by Professor Sargent of the Harvard Collection, and one of them devoted the larger part of his life to reproducing the plant forms which are shown in this wonderful collection.

Another instance is that of a man named Mueller who, some ten years ago, made small poppies and other flowers for table lamps; tiny candles were placed in them and they were objects possessing considerable merit. As the American Museum of Natural History desired a worker in glass to reproduce fine and delicate animal forms, he later became connected with this institution and his continued application and study led him to prepare a great collection for the Museum, which, like that of Arnold Arboretun of Harvard, shows what proper training will do for a talented and experienced glass blower who only requires the technical study which these men both enjoyed and furthered.

The models executed by Mueller were designed to illustrate soft-bodied animals which could not be preserved, more especially those which were of great scientific value because of structural peculiarities. These models have been made in the laboratory of the Department of Invertebrate Zoology, of which Dr W. M. Wheeler is

curator, although Dr B. C. Dahlgreen has immediate charge of this work.

Among the Protozoa, the models illustrate the various forms of Radiolarians, Infusorians, etc.; glass has also been used for the spicules in the representations of the sponges. In the collection of Coelenterates; anemones, hydroids, corals, jellyfish, etc. are beautifully and faithfully represented, and in the flat-worm alcove, we have enlarged illustrations of this group, so interesting to scientists and yet so little known popularly. The Rotifers and Polyzoa are shown by models largely composed of glass, and among the Echinoderms, the Holothurians. Besides all these, we have many models of the oyster and the quahog, and, lastly, the ancestral vertebrates are illustrated by representations of the Tunicata.

A quarter of a century ago, Sir William Crookes lectured annually at Edinburgh. At one of his lectures he exhibited some beautiful specimens of Venetian glass. A Scotch mechanic heard him lecture and a year later Sir William was surprised to find that the mechanic had taken up glass making. He became very much interested in the glass-making art and for many years made splendid specimens of this work, some of which Sir William bought annually, and which are still highly prized, although the glassmaker who made them has long since gone to the home of his fathers.

Bohemian glass. For over twenty-five years the Lobmayers, of Vienna, have paid strict attention to the reproduction of the most graceful and delicate forms of glass, which were engraved with such exquisite delicacy and perfection that the engraving has rarely been equaled even on rock crystal. They created objects of wonderful beauty and many of them were marvelous for their artistic lines and the technic of the graver's wheel. About ten years ago, however, this firm realized that it was almost impossible to obtain men who would take the infinite pains needed to do such work, finding that many preferred to devote their time to the swifter and more commercial work for which there has always been a greater demand with more recompense.

As early as 1885, the late E. C. Moore became interested in the engraving of glass in rock crystal style, and he created patterns, drawings and models and had them engraved; he interested the Webs of London, and they in turn instructed and encouraged a brilliant set of artists.

The work of Tschmar, who for a period was a most successful worker in transparent enamels combined with metals, found a home

in the greatest collections of America and Europe. His work possessed a character that was peculiarly his own, and his yellows, his blues and his reds were blended as no one had quite blended them before, and reminds one of some of the enamelled Arab lamps of the twelfth to the fifteenth century, that today are held at many times their value in gold.

No one has shown more appreciation for industrial art in the United States than has Mr Russell Sturgis.¹ An architect by profession and a born collector, he has a love for the artistic no matter of what material the object is made. His wide range of appreciation is well expressed in the chapters of his great contribution to this subject. This we learn by simply repeating the titles of chapters in his monumental work: *A Study of the Artist's Way of Working*, which is arranged into four divisions:

1st, The Nature of the Inquiry. The Work of the Lower Civilizations.

2d, On the Five Mechanical Processes; Carving, Modeling and Embossing, Painting, Staining and Dyeing, and Drawing.

3d, On the Several Fine Arts of Hand Work; Ceramic Art, The Vitreous Art, Metal Work, Leather Work, Textile Art, Embroidery, Building, Plastering, Joinery, Inlay and Incrustation. Mosaic, Engraving, Printing in Flat with Stenciling, Gem Engraving and Die-sinking, Calligraphy, Printing, Representative Sculpture and Its Kindred Arts, Representative Printing and Its Kindred Arts.

4th, On the Fine Arts Not of Hand Work; Decorative Treatment of Buildings, Decorative Treatment of Interiors, Decorative Treatment of Landscape, The Ignored Fine Arts, and Conclusions.

His delicate expression of appreciation of the workers is feelingly shown in the lines in dedication of these volumes, which read:

Dedicated with admiration and undying gratitude to the many artists and skilled artisans—to the sculptors and carvers, printers and draftsmen, silversmiths and blacksmiths, potters and glassmakers, masons and joiners, printers and engravers, architects and decorative designers, who, during 40 years, have been my teachers in fine art.²

Among our American Indians, the Utes and the Sioux have been unusually expert in the manipulation of beads as applied to leather

¹ Russell Sturgis, born in Baltimore, 1836.

² Russell Sturgis Ph.D. A.M. *A Study of the Artist's Way of Working*, 2 v. xix, xvi. 666p. plates. 8vo. Dodd, Mead & Co., New York, 1906.

and to cloth; you are all familiar with this work. Some American ladies, among them Mrs Bayard Cutting, Miss Townsend, Mrs J. P. Morgan and others, conceived the idea of educating these Indians in a more artistic employment — of directing their ingenuity to the making of lace. That they have succeeded is well shown by the exhibits that were made in Paris and in Buffalo, a gold medal having been awarded in Buffalo for some laces that are well worth a place in the greatest household in the land. And what about the Indians in our New York State reservations?

Never have the homes of the rich in any land contained more remarkable decorations and furnishings, and perhaps many of them never in better taste, than at the present time in America. This has been the result of the habit of buying rooms of special periods, furnished from villas, churches, monasteries and palaces, and a single architect, who died in 1906, purchased dozens, if not hundreds, of such interiors. In this way, the work of the greatest carvers of wood and stone, of the greatest forgers of iron and bronze, and of the weavers of ancient looms, has been collected, single pieces selling for from \$10,000 to even five times that amount.

Those wealthy Americans who frequently visit Europe, who know the world and its products, past and present, and who often cause costly objects to be created for them, are acquiring the choicest art treasures of Europe. The foreign museums, as well as collectors, are viewing this situation with such alarm that laws have already been passed, and they will be made even more strict in the future, to prevent the exportation of specimens of ancient or renaissance art. This is notably the case with the French government. This taste on the part of our people is reflected in their growing desire to have finer modern home decorations, and the architect, mentioned before, who died in 1906 and who supplied the furnishings for many rich homes, told me in 1905 that he had at that time 12 orders aggregating \$3,000,000, an average of \$250,000 each, for interior decorations and furniture, exclusive of either paintings, the house itself, or the land upon which it stood.

It seems clear that from Colonial times to about the period of the Civil War, our taste in architecture, furniture, metal work, and many similar branches of art manufacture, was far superior to what it has been with few exceptions since. Yet we have been glorifying in our growth of population, and our production and wealth. What reason can be found for this decline of taste? Perhaps we

may trace it in the very elements of our rapid growth, which has been in quantity at the expense of quality. May this not be due to two principal causes: the great influx of foreigners, largely of the mechanical but not of the artistic classes, and the consequent division of labor? Thus, where formerly were found neat, tasteful dwellings, fitted with furniture made by a village artisan, and with fireplaces ornamented with delicate brass and ironwork, perfect after a century of use, we now find that no one in the same village can do anything but the crudest work. The furniture, the woodwork, the fireplaces, the whole house and its contents, are put up, and put in, by wholesale, as it were, from the products of manufacturing companies, and all opportunity and inducement for individual taste and skill are gone. Contrast a Colonial house, or a modest mansion of only half a century ago — with its graceful ornamental hinges, its carved panelings around door and window, its moldings on ceiling and stairway, albeit in plain materials — with the modern house that is put up by the real estate company, “in lots to suit purchasers,” and which in every part is turned out by machinery and delivered to the contractor by wholesale. In my own home, in a village 5 miles from Peekskill, there is a mantle and some woodwork in the hall which are better than anything that has been made in Peekskill in the past 20 years; the house was built for Abijah Lee in 1820. I recently bought another similar mantle from an old rectory in the same village. These were made some 80 or 90 years ago by carpenters of the village Hiram Mabie and Theodore Strasbury, who were carpenters and wood carvers for a period of 30 years, who had seen only Colonial woodwork, and whose minds had not been corrupted by the sash, blind, and woodwork factories which have made the objects of which nineteen twentieths of the village is built. They are veritable wood butchers; it seems impossible for them to make a pure line, yes, more impossible than it would be for a savage whose taste is natural.

In the past quarter of a century the industrial art outlook has changed for the better; at our American Museum of Art, the Fine Arts Museum of Boston, the Chicago Institute, the Pittsburg Carnegie Museum, the Drexel Museum, Pratt Institute, Armour Institute, and dozens of others, in every large city, there is some opportunity for the young to see what has been done in the past; but to find a place for modern things, to place them by the side of the older models, is a task that rests with the present generation.

Most of all, the study of nature must be fostered and every endeavor must be made to advance to the utmost the industrial art of this country, both as a matter of credit and also for the gain which it will bring to our land.

There is no reason why we should not have art schools in this country for iron and glass in such places as Pittsburg or Birmingham; there is no reason why we should not have schools for leather and woodwork in St Louis or schools for gem-cutting and carving in Los Angeles. We already have textile museums in Fall River and New Bedford, and there are many other places in New England where a small technical school would do much to increase the value of the work of its inhabitants, enriching the community and paying back the investment many fold. It is important, however, that when the word "artist" is spoken of, it should not be construed in the sense that a portrait painter should teach a worker of brass or iron, or that an illustrator should teach a worker in wood or carving; they should be "industrial artists."

There is an industrial art unrest at work, and we read of attempts in this direction in London, Edinburgh, Buffalo, and in many other places. The arts and crafts are awakening to the necessity of more serious work. This will surely result in the development of competent artists, especially if they have an appreciative sustaining clientele.

Though much of the work of the Renaissance is incomparable, at the present time there is as admirable industrial work executed as there has been at any time. Varying periods, and new artistic conditions, have produced results that are equally satisfactory and are quite as unique, because they neither copy nor imitate the works of former periods. The fine ciselé work of the present time has never been excelled. Diamonds and precious stones have never been cut with such perfection, and some are so minute in size that they weigh from 150 to 250 to the carat, or from 15,000 to 37,500 to the ounce. They are set in designs with great accuracy of mechanical skill combined with artistic manipulation. Large and effective pieces have been made, containing many hundreds of stones that are set with a delicacy that has never been attained at any other period. It is the same in many other fields.

In silver, gold, or other metal, when the product is the work of an artist, a clever artisan will make combinations such as we see in fine chasing or repoussé work, or inlaying with other metal, producing an object that is worth from 20 to 50 times the cost of the

metal, and one can be sure that this will not be sacrificed to go into the melting pot of either the goldsmith, silversmith, or bronze-worker. Many such objects have been preserved for centuries because of their beauty.

In every community there may be men who are not physically strong, perhaps cripples, who could model an object of clay, engrave a piece of glass, or hammer out a piece of wrought ironwork. Artistic training given to these men would not only make them useful citizens, but would probably make them of more value to the community than their stronger brothers.

The word "artistic" need not necessarily mean French art, classic Greek art, Roman art, the Renaissance, Russian, Chinese, or Japanese art; it may mean any one of these, for if the artisan is taught by one of artistic perception, he may, with the same expenditure of energy and frequently with less, increase his usefulness from one to twenty times, and create articles of artistic value and not of common merchandise out of marble, bronze, gold, silver, wood, iron, glass, clay or wax; for when a master mind has kindled and brought out his latent artistic talent, the artist can only think and create artistic things.

We may here mention an instance of the effect of some artistic ability applied to book making as shown in the appreciation that has been given to that leader of the salvation army of book men, I mean Elbert Hubbard.¹ By means of his *Philistine*, the General Booth² of the book world, he has created and developed among many well to do people a taste for books which they have frequently gratified and have raised to even a higher plane than that to which he had brought it. By a little artistic taste in the type-setting, in the printing, in the coloring and in the binding of his books, he has made it possible, in such an out of the way place as East Aurora, to produce an industry which has given employment to many, and has done much to foster the love of good books among those who probably never would have heard of them otherwise.

As an illustration of the practical inconvenience which may result from a lack of the proper diffusion of artistic education, we may note the deadlock between the Municipal Art Commission of New York City and the Department of Bridges. The Bridge Department thinks that it can make a design for a bridge which will be serviceable and at the same time possess sufficient beauty for a

¹ Elbert Hubbard, born at Bloomington, Ill., 1850.

² Gen. William Booth, born at Nottingham, 1829.

public purpose; the Municipal Art Commission, on the other hand, maintains that if a bridge is dedicated to the commemoration of the discovery of the Hudson river, and if this bridge is to occupy so important a position as to be the connecting link between Manhattan island and Westchester county, probably to remain for centuries as an object for critical inspection, it must possess artistic lines of beauty as well as strength; therefore, they have declined the designs in several instances and this great work has been kept back for years, because apparently there is no one in the Bridge Department who has combined a study of art with his technical education. The Municipal Art Commission would surely welcome a design of beauty, and we are now promised a design for a reinforced cement structure, giving a possibility for graceful lines much greater than would be afforded by a structural material requiring a geometrical make-up.

A word in regard to pottery and porcelain in the United States. Each succeeding exhibition has shown us that in a new state two or more deposits of clay adapted for pottery purposes have been found. In many instances and in a number of states various amateurs and artists have interested themselves in the working of these clays for artistic purposes, and among these many have produced work of great merit. One of the pioneers in this field is Maria Longworth (Mrs Bellamy Storer), who initiated the manufacture of what is known as Rookwood pottery, the product of which has been of so high a character as to have received grand prizes at great expositions in Paris, Turin and many other places.

The Greuby Pottery of Boston has confined itself to the production of dull grays and greens, and more lately it has become interested in the working of pottery for interior decoration, such as that used in high class bathrooms and stations for the subway.

Kilnfire reds have been produced by Robinson of Boston in vivid colors, often with wonderful metallic reflections. There are dozens of potters, but space will not permit me to more than mention a few of them.

One word in regard to expositions. Shall we have no more of them? Have we had enough of them already? In view of their immense value in disseminating a taste for and a knowledge of purer industrial art, I firmly say *no* in answer to the latter query. Let us have them as often as in the past, and it would be well if we could have those of a certain type even more frequently; I allude to special exhibitions in which only a single industry is repre-

sented, as, for example, the manufacturing of leather into shoes. In such an exhibition illustrations might be given of the animals furnishing the hides as they appear in their natural surroundings and habitat; then the raw hides could be shown as well as examples of the various means of dressing and preparing them used by different peoples; and, finally, there could be a collection of foot wear of all types and styles, from the flat sandal of the Roman to the high-heeled shoe worn by the French and Chinese lady. We should then see the varieties of upper leather from that of the simplest Indian mocassin to the ornately decorated shoe of the Tartar or the elaborately embroidered one favored by the Russian lady. What valuable information could be gathered by a young man engaged in the shoe industry after one hour's study of such an exhibition! How much more he would know in regard to the shape and requirements of the sole of the shoe—an object too often neglected, because it is out of sight—and how much better he would be equipped should he become in later years the foreman or even the manager of a shoe factory. It is quite safe to say that he would know more than 99% of the shoemakers of the United States who have grown gray in the trade. It is true that the shoemaker's trade is not an art, but everything that is worn by man is susceptible to artistic treatment and has its influence on the general effect produced by a costume.

In expositions of the French type, where guilds or a number of men engaged in a profession pass upon the exhibitor, who is only permitted to present what represents true progress, whether artistic or mechanical, no one would be permitted to erect a building 40x60 feet in length, as was witnessed at the Jamestown Exposition, the entire object of the large structure being to house a collection of furniture, cut glass and other material, representing prizes that a large soap company award in return for coupons obtained by purchasing their product. The French make retrospective exhibitions of every object of industry possessing merit, dating from the earliest time to 50 or 100 years preceding the exhibition.

That men with artistic instinct have existed at all times and in all nations is evidenced by some of the wonderful objects made by the aborigines, such as the great paddles from the Harvey islands, gracefully decorated with carving that is never wearisome or monotonous, and these objects are eagerly sought by the collector who appreciates beautiful handiwork.

Who has taken, or who will ever take the place of the ivory carver, Moreau-Vauthier, whose every work was so excellent that they all found a home in the collection of one of our greatest connoisseurs. He bought from the estate all the works that this artist had left and in the whole number there was not one showing poor workmanship.

The membership of the Société des Arts Décoratives of Paris is made up of lovers of industrial art, and the leading artists who devote their time to industrial art, as well as the heads of firms who devote their commercial activities to its production, receive encouragement from this society by the purchase of one or more pieces of the highest artistic value each year. This has been done for some 20 years, and the wonderful collection of art objects which they gathered and displayed in their three rooms at the Paris Exposition of 1900 presented a startling array of meritorious works produced by contemporaneous artists. This exhibition was so much appreciated that the municipality of Paris permitted the society to use part of the magnificent marble palace known as the Musée Galliera to permanently house its collection, and every year, in addition, an exhibition is held of some special class of work, such as jewelry, lace, leather work, wood carving, etc. In this way examples of all the finest known products are brought together for the education of the artist and the artisan as well as for the pleasure of the collector and art amateur.

A retrospect of art, both of fine and of industrial art, reveals the many landmarks where some individual of original power of thought and ability has founded a school or industry, making his place of birth, or his later home, famous for the products of his genius. These men have belonged to no special time, place, class or religion; but their inspiration has made their own work great; they have inspired others who have carried out and developed their art; and in some cases the pupil has been greater than his master.

Such periods of artistic achievement were always either the outcome or the forerunner of commercial greatness. Their areas have varied in extent; but generally they have included less than one half of the European continent. The means of travel were slow in those times; but at present the farthest point of the world is scarcely more than a month's journey away. If, therefore, great artisans the world over were brought, a few at a time, to a great central institution of art, there to create their masterpieces with the leisure requisite for perfect ideals, as the great masters came to the kings

and nobles of old, we should have as a result the finest art products of the age. And still more—with such instructors the picked students would be inspired, and like the students of the olden time would carry out the tradition of their masters, and perhaps become even greater than they. Their works would command the attention of the entire world; and a class of men would be developed in the special fields that sorely need them, creating productive works and preventing the outpour of millions of dollars yearly to foreign shores. There never has been a country more affluent than is our own today, or a people more anxious than ours to obtain, and more intelligent to appreciate, the finest handiwork of man, or the richest products of nature transformed by his handiwork. Nothing is too expensive for such patrons of art, providing it has true merit. The fact that European art collectors are alarmed at the absorption of old art treasures abroad testifies to this, and many a modern European artist has received his first substantial encouragement from an American or from a dealer who was representing one. No less an artist than Barye¹ was discovered and encouraged by the late W. T. Walters.²

It would take more time than is at my disposal to go fully into all the details of such an industrial art institution. But among a few of the principal things—essential and beneficial requirements—this institution should have a shop for casting large or small bronze, copper, iron, tin or other metals; a smithy where iron or other metals could be forged, either massively or like the most delicate petal; a filing room, to produce anything from a gigantic gate to a small key, and in steel, iron, brass or other required material; kilns to fire the finest porcelain vase or the rudest bit of faience, and the means to decorate these with any known or new glaze; a verrerie, where every known form of glass could be worked, whether blown, molded, engraved or etched; a wood-working shop for the carving of choice objects, great or small; a press to strike medals and allied material; a printing room for the creation of special types and illustrations, and presses of various kinds to teach printing as a fine art in every branch; and a bindery perfect in every detail, to bind the simplest or the finest book. Special artists should be secured as teachers, to remain only for definite periods of time; and students who possessed true talent,

¹ Antoine Louis Barye, born in Paris, 1795; died 1875.

² William Thompson Walters, born on the Juniata river, Pa., May 23, 1820; died Nov. 22, 1894.

though only partly developed, should be placed under their care. Correct instruction in drawing and modeling would mean much for such an institution.

There should be the means of keeping living objects of various kinds on hand, in order to supply the artisan with true models from nature. Material of little value would thus, by skilled handiwork, be changed into work of priceless value. It is knowledge and skill like this that adds so much to the wealth of France and Austria.

This ideal school of industrial art should be under the direction of a man well acquainted with what is best and greatest in the various lines just indicated. He should have some familiarity both with the teachers and the students, and a full knowledge of the possible demand for their work. Rightly administered, such an institution should, within five years, make itself known and felt in all parts of the civilized world.

The title N.A. is the ideal of every American artist just as the English artist aspires to that of R.A. At present, to what can an industrial artist aspire? Why should not an annual exhibition of industrial art be held in the City of New York, and why should not I.A.A. (Industrial Art Academy) or I.A.I. (Industrial Art Institute) have an equal value with the other titles?

Criticisms have been frequently made that Americans are not art lovers, and a number of foreigners assert that Americans are buying fraudulent antiquities and that they are responsible for the thefts that have occurred and for the breaking up of many collections. The fact that these collections are absorbed by the United States is only an evidence of the desire on the part of the American people to obtain the best material, of ancient as well as of modern art, and no laws that may be enacted by any foreign government, and no barrier or dam that they may erect, will prevent art objects from gravitating to the place where the collector or museum is ready to pay the greatest sum of money.

It is the abuse of the customs laws, frequently due to representations made by unscrupulous dealers, that has had much to do with the placing of all art objects or pretended art objects on the same level. Unfortunately, the duty is not imposed on a price that represents the actual cost of the article when made, but on that at which the article is invoiced, so that on a scarabaeus costing \$10 to make, and which commands \$200 on account of its antiquity, the duty is not levied on the \$10, but on the \$200. It is the same with the painting for which the artist may have received \$1000; because

the collector has paid \$20,000, \$50,000, or \$100,000 for it, the duty is placed not on the cost of production alone, but also on the value of the object as an antique. There is no doubt but that this is a great injustice and it is certain that, if some arrangement could be made by which a given duty would be placed on all art objects, whether bronzes, statues, or paintings, this duty being imposed on the cost of production and not on the acquired value, many treasures of art would come to this country. We know of a single collection, representing some millions of dollars, that the owner has finally decided he will never bring to this country on account of the existing custom laws. There is no doubt that this is a great injustice to art lovers and art students, as well as to the generous collector who would be willing to buy objects of art. The placing of such a duty on art objects as is here proposed would prevent the bringing of the poorer works of art to this country, as in that case, no matter what the quality of an art object might be, there would be a fixed sum of duty upon it.

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