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ART EDUCATION

APPLIED TO INDUSTRY

BY

GEORGE WARD NICHOLS

AUTHOR OF "THE STORY OF THE GREAT MARCH"

WITH ILLUSTRATIONS

NEW YORK

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TO MY FRIEND,

PARKE GODWIN,

IN ADMIRATION OF HIS EMINENT SERVICES IN BEHALF OF ART AND LITERATURE,

This Book is Medicated.

INTRODUCTION.

THE object of this book is to show the present need of art education in the United States; to relate something of its history in Europe; to explain what is meant by its application to industry; and to propose a method of instruction best adapted to our people and institutions.

The broad meaning of the term "art education" has not always been understood. It is most often used in its relation to the fine arts of painting, sculpture, and architecture, as if these higher arts and the industries were not mutually dependent, or as if the boundary which is supposed to separate them were not, in all three of the arts, constantly invaded, so that often the product of the industry may be called a work of art.

In fresco-painting, monumental ornamentation, decoration of pottery, in the manufacture of bronzes, and in many other ways, the work of the mechanic becomes a work of art.

But the term "art education" is used here in the largest sense. It means artistic and scientific instruction applied to common trades and occupations, as well as to the fine arts. It means that the educated sense of the beautiful is not the especial property of one class, but that it may be possessed and enjoyed by all.

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ART EDUCATION APPLIED TO INDUSTRY.

CHAPTER I.

THE UNITY OF ART.

The Unity of Art.—Drawing the First Step in Art Education.—Color.—Knowledge and Taste for Art in the United States.—No Systematic Effort toward Art Education.—Drawing in the Public Schools.

THE most important principle to be presented in this discussion is, that all art education should proceed upon the theory of the Unity of Art. It is an opinion too often accepted that there is a decided and wide separation between the applied and the fine arts; and a line has sometimes been drawn which has excluded from recognition as a work of art any object whose construction is based upon the useful. Neither in the ancient days of Greece and Rome, nor during the Renaissance, was such a separation known. It was not until the reign of Louis XIV., of France, in the eighteenth century, that the distinction between the fine arts and applied arts was made, and then it was devised as a protection of the artist against the rapacity of the wealthy corporations. In later days the arts again became united; and at the present time the industries employ the highest order of artistic genius and skill.

In the past, artistic culture was the privilege of the few; now it is the opportunity of the many. In Europe, art instruction is freely to be obtained, and is sometimes obligatory. In the United States, it is a work just begun, and nowhere certainly recognized or established.

DRAWING.

Drawing is the first step in art instruction, for it is by means of the sense of sight that the best faculties of men are cultivated. The knowledge of drawing enables its possessor to see objects truthfully; and while it is an accomplishment which occupies spare time and gives pleasure, it is also one of the necessities of the working-man's education. It is as useful

to the mason, carpenter, goldsmith, potter, engraver, and other artisans, as are the respective tools of their trades. To the artist, drawing is the alphabet and grammar of his language; it presents the life and understanding of his thought: without it he could not express an idea. Drawing is the language of the engineer as well as of other men of science. Indeed it would be difficult to name any department of art, science, or industry where it is not called into requisition, for by its means, facts and ideas are expressed which could not otherwise be understood.

Drawing, then, is the beginning of any system of instruction which has for its aim general art education.

COLOR.

In this book reference is often made to what is assumed to be good taste in color; such as the rugs, shawls, and manuscripts of Persia and India, the mural decoration of the Moors, the cloisonné work and decoration of pottery of the Chinese and Japanese, and in other examples. These are thought by persons who observe and study, to be especially pleasing to the eye. Undoubtedly we admire certain combinations of form and color, and dislike others, without knowing why; and although these conclusions are innate, or in some measure the results of education, yet the final development of form and color is obtained in obedience to scientific laws.

In the art industries, color occupies a place next to form. In painting, it is necessary to know what are the effects of combination, juxtaposition, and contrasts of color upon objects of different texture, such as paper, cotton, silk, wool, or other substances. This knowledge comes only with long experience, or by the study of the science of color. Within a few years this science has made important progress, especially in its physical and physiological features, which have been developed by the experiments of Helmholtz, Maxwell, and others. The new theories have been admirably set forth by Wilhelm Von Bezold, in a work which has been translated and recently published in this country.

The *Theory of Color*, in its relation to art industries, is a subject which requires far more serious attention than has been given by any of the systems of art education now in operation in this country or in Europe. In many of the schools and academies, an attempt to teach the use of color is based upon false and injurious principles.

It is one of the remarkable incidents in scientific discovery that Young's theory, developed in 1802, that "the three primal colors depend only upon the eye," was set aside or forgotten for more than fifty years. During this interval, Sir David Brewster and others advanced the

opposite proposition that "the three primal colors were in light itself." Young's theory did not re-appear until 1853, when Helmholtz, in his masterly investigations, demonstrated its truth.

The artist and the artisan are continually misled by various theories and "schemes," such as color-charts with false combinations of colors, but especially by their failure to appreciate the differences between the mixture of *colors* and of *pigments*. It is well, therefore, to recognize the fact that we can not attain the best success, either in our arts or industries, except by the careful study of, and adherence to, sound principles.

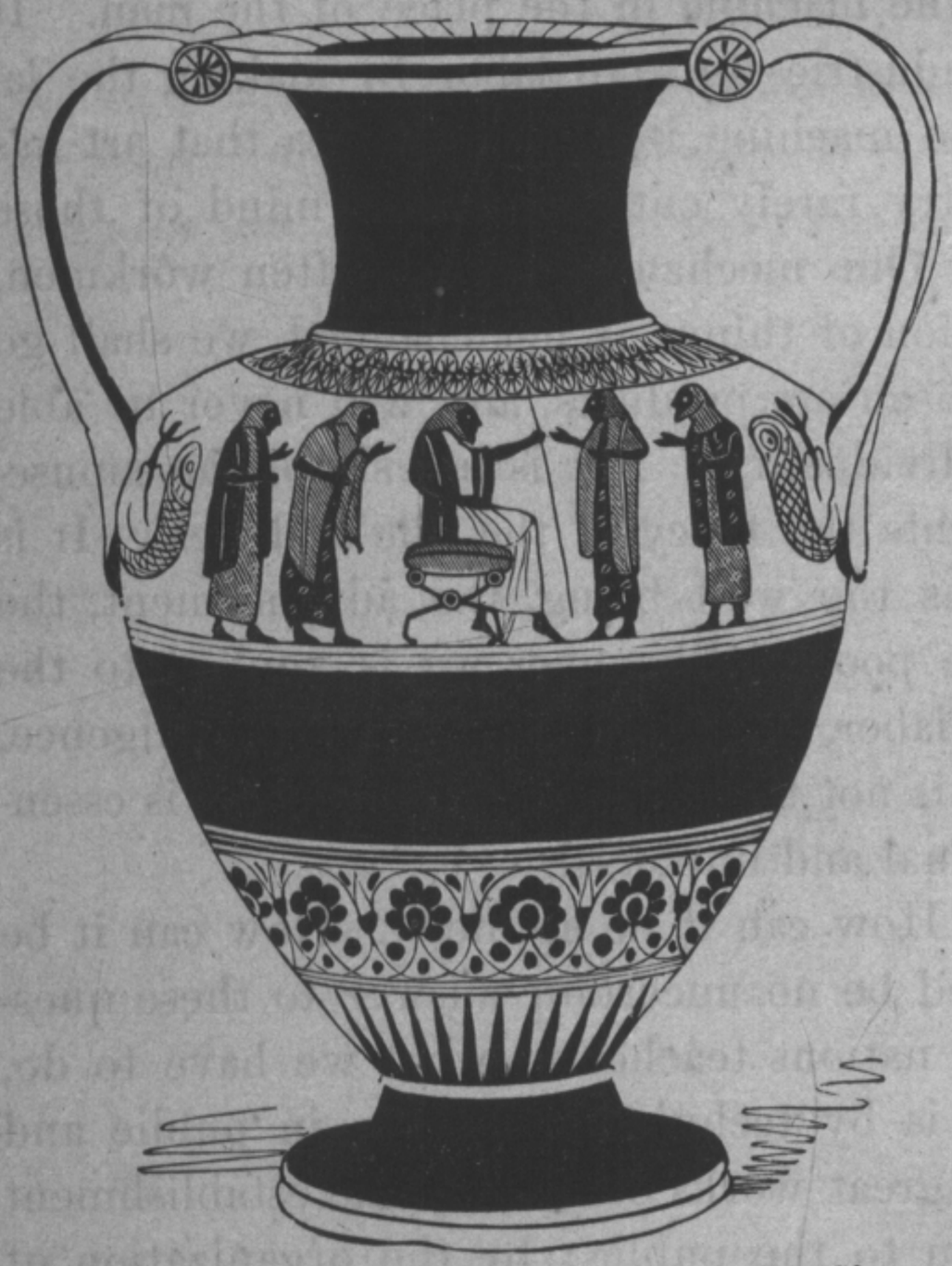
ART EDUCATION.

In this country the conditions of art knowledge are exceptional. It would not be strictly true to say that there is but little art taste here, when our citizens go into the ateliers of the most famous artists, and into the



Roman Plate discovered at Hildesheim.

auction-room, and contest possession of costly works with the richest connoisseurs of Europe. In Europe as well as in the United States, people sometimes buy pictures upon the strength of the author's name, and without caring for their artistic merit. Among us, as among older nations, there is genuine taste for pictures, music, fine architecture, house decoration, dress, ornamentation, landscape-gardening, rare books, and all objects which art has touched and beautified. This art culture is, however, individual rather than general. It is possessed by a considerable number of persons; but these rarely come together, and they exert little or no perceptible influence upon society. Occasionally gentlemen of generous public spirit, as was recently the case in the city of New York, gather rare works of art from private collections, and make of them a public exhibition for the benefit of art or charity; but these are rare exceptions to the general practice.



Amphora. Campagna Collection, Musée Napoléon.

The National Academy of Design in New York has been a powerful means of education; yet, like the Royal Academy in London, its influence is crippled, because, with excellent intentions, it is conducted by professional artists in the interests of themselves rather than in furtherance of the general interests of art. It is a praiseworthy institution, and fills an important office, so far as its influence extends. The Metropolitan Museum in the same city has the better organization; it is broad and receptive. There are also the Boston Athenæum, the Pennsylvania Museum at Philadelphia, and the Corcoran Gallery at Washington. These and similar efforts are doing good, to a limited extent. They exercise an influence for culture and refinement; but it is general, and not direct. In order to reach the people at large, it is necessary to organize a plan which shall begin with primary instruction in drawing in the public schools. We require a system of education which shall be comprehensive in its conception, universal in its application, and practical in its results. Such organized means of

art education has existed among us only in a restricted way. There are a few schools of design in different parts of the country; but until very recently there has been no effort toward the art education of the masses of the people, and especially of those industrial classes whose occupations require a knowledge of Design.

The American mechanic has heretofore been more ingenious than artistic. His inventive faculty exceeds that of any other people, but he has not had the advantages of artistic training. He has filled the world with useful labor-saving machines, without adding much to the sum of grace and beauty.

We have attempted to put the machine in the place of the man. It has been the tendency of our industries to save labor by making the laborer almost as automatic as the machine itself.. The idea that art has any necessary relation to industry rarely enters into the mind of those most interested in the matter. Our mechanics are too often workmen, and not artisans. If this condition of things is not changed, we shall go on in our subserviency to European art products, and will never be able to gain any independence or individuality. Art is not simply an amusement, an indulgence which delights the fancy of the idle and rich. It is decidedly practical, and concerns the well-being, the advancement, the pleasure, of the laborer and the poor. Whenever art is applied to the simplest, commonest product of labor, there will come order, intelligence, grace, and increased value. Art is not the privilege of a class; it is essentially human, and is both individual and universal.

How can it be developed? How can it be applied? How can it be put to the best use? There need be no uncertain answer to these questions. The experience of other nations teaches us what we have to do, and how it is to be done. It is by technical education in public and special schools; by the study of great works of art; by the establishment of museums which shall be open to the public; by the organization of societies in the interest of special industries; by expositions of pictures, statuary, objects of ancient art, and of all products into whose composition art may enter.



CHAPTER II.

THE CLASSES WHO SHOULD BE INSTRUCTED.

The Four Classes who should be interested in Art Education.—First Class, Children.—Second Class, Workmen.—List of some of the Trades wherein Art Instruction is needed.—Fourth Class, Capitalists.—Patrons of Art.—The Metropolitan Museum.—Boston Fine Art Museum.

THE most serious difficulty encountered in the beginning of this discussion is in ascertaining how to approach and influence the persons who most need art instruction.

If this want were confined alone to children, the matter could be easily arranged. It would be simply to ascertain the best method of teaching in schools, special and public, and then go about it vigorously. But other classes need instruction; and the trouble in America is, that many of the master-workmen, the manufacturers, and the capitalists are as uninformed and indifferent as the men they employ. There has been so little of technical education, so little of instruction showing how art may be applied to the common uses of life, that the persons most requiring knowledge are surprisingly ignorant.

Under the employer, there is another class for whose special education there is no provision in this country. This class consists of the master-workmen, who organize and elaborate those more difficult works which require scientific culture.

The master-workman is the superintendent. All over Europe, such men are instructed in special schools which provide for all important branches of trade.

In America, with the exception of a few schools of mines and technology, there is no attempt to build up this class. The master-workman, in some way or other, principally because he is more energetic and intelligent than his fellows, reaches the superintendent's place; but of that wide range of scientific knowledge which he ought to possess, he has nothing, and stumbles on by such light only as experience has given him. Every

taught. Meanwhile our children in the public schools are burdened with studies they never will be able to utilize. In all of our public education, from the primary school to the college, we need more that is practical. The Royal Superior Industrial School, the Architectural School, and the Work-masters' School at Chemnitz; the trade schools all over Germany; the Écoles Industrielles in Belgium; the Central School of Arts and Trades of France, are a few of the many institutions in Europe devoted to that instruction which enables its pupils to fill any position in the important industries.

MEANS OF INSTRUCTION FOR THE FOUR CLASSES NAMED ABOVE.

FIRST CLASS.

As soon as children are old enough to go to school, they should be taught the elements of design as based upon the study of descriptive geometry. In the primary classes they might first be taught geometrical terms, so that the ear shall be familiar with their sounds and meaning. At the same time the slate and pencil should be placed in the hands of the pupil, so that he may learn to draw simple geometrical forms. From these simpler lessons he should be advanced to higher grades. It is not proposed, at this time, to define what should be the methods of study; but the proposition can not be too clearly established that there can be no general art education, except by the teaching of drawing in the public schools. This is not the hasty conclusion of a few persons; it is the matured judgment of the educational authorities of the great European nations.

The governments of France, England, Belgium, and Germany have appointed commissioners, who have thoroughly examined this question, and in each instance it has been the deliberate conclusion that the interests of society and commerce require that drawing should be one of the studies in common-school education. Besides the advantage of higher culture, it is asserted with great force that, in order to establish and maintain those industries into which taste and beauty enter, the children in all schools should be taught to draw. The wisdom of this system has been proved by the results of its practice.

The case of England is specially significant. Through the adoption of a plan of general education, by which, in the year 1874, some three hundred thousand children were taught the art of design, she has gained pre-eminence in the commerce of many important industries. France and Belgium have not been idle. Through every effort of public instruction, they are striving to regain their former control in the manufacture and sale of those articles which are the offspring of taste and knowledge. In the city of Paris all the school-children are taught to draw; and the min-

ister of public instruction asks that the study of drawing shall be introduced into the fifty thousand public schools of the republic. In Belgium, a royal decree has placed art education upon a new and broad basis of instruction for the whole people.

In the United States, in the midst of our inaction, we have, at least, the great advantage of having no false steps to retrace. In an attempt to lay the foundation of a great system, we have the opportunity of beginning in the right way. The other nations named above are teaching us what not to do, as well as what to do; and while the difference between their political institutions and methods of public instruction and ours will require us to modify and change the details of art education, the general principles of a proper method will remain the same in the United States as in Europe.



Persian Jar.

This chapter is devoted more especially to the best method of instructing the poor classes in the community. If the first class (children) are properly instructed, in the course of several generations the second class (workmen) will naturally become very much smaller. But it can not be expected, for a long time to come, that drawing in the public schools will be adopted so generally that there will not always be large numbers of adult mechanics who have never had any art education.

THE SECOND CLASS.

The second class, who are working-men, are not so easily reached. They can be taught drawing and other special studies, fitted for their particular occupation, in night-schools.

The impediment in the accomplishment of this work, however, will be to get at this class, and persuade them that they need such instruction. Schools could be provided for them either by the State, or by the benefactions of wealthy persons; but the greatest and best influence toward their instruction would be by co-operation — not the co-operation of "trades-unions" and "strikes," whose purpose it is to get higher rates of wages for less work, but that co-operation which helps them to become better

workmen, more skilled in the use of their tools and material. If a hundredth part of the money which has been deceitfully and fruitlessly obtained from the working-man upon pretense of the rights of labor had been used co-operatively in establishing industrial schools, the interests of the mechanic and workman would have been far in advance of their present position. Let us see, for example, what trades would be benefited by instruction, and what kind would be best.

We will here enumerate a few trades, with the particular kinds of instruction proper to each:

Fresco-painters.—Drawing; knowledge of composition; color; and chemistry.

Silver and Gold Smiths.—Drawing; modeling; color; chemistry.

Engravers and Lithographers.—Drawing; composition; color; chemistry.

Photographers.—Drawing; color; chemistry; composition.

Farmers.—Drawing; chemistry.

Boot and Shoe Makers and Tailors.—Drawing; color; design; knowledge of good material.

Button-makers.—Drawing; color; chemistry.

Manufacturers of Silk, Cotton, Linen, and Woolen Cloths.—Drawing; chemistry; color.

Machinists.—Drawing; mechanics.

Printers.—Drawing; color.

Molders.—Drawing and modeling.

Mechanical Engineers.—Drawing; and perhaps a few hints as to alloyage, and the working of iron ore; mathematics enough for the purposes of construction.

Masons and Carpenters.—Drawing; perhaps, also, some knowledge of the materials used in building, and the modes of preparing them; the elements of geometry.

Weavers.—Drawing of patterns; directions as to gluing the warp; perhaps, also, an account of the preparation of the raw material until fit for weaving, and of the qualities of yarns.

Cabinet-makers and Turners.—Modeling; color; drawing.

Potters.—Drawing; modeling, and knowledge of various kinds of glazing; color.

Comb-makers.—Drawing.

Millers.—Drawing of the various details of the mill; mathematics; methods of grinding; mill arrangements.

Dyers.—Notices of the character of the different dye-stuffs, and their action on the different materials to be dyed; color.

Basket-makers.—Drawing.

Glaziers.—Drawing; modes of testing the qualities of glass.

Stucco-plasterers.—Drawing; modeling.

House-painters.—Drawing; a knowledge of colors, and how to unite them.

Gardeners.—Drawing.

Cotton-printers.—Drawing; and some notions of chemistry.

Tinmen.—Drawing.

Tile-layers.—Drawing; mathematics.

Wagon-builders.—Drawing; mathematics.

Coppersmiths.—Drawing; modeling; mathematics.

Iron and Brass Founders.—Drawing; modeling; alloyage.

THE THIRD CLASS.

Master-workmen must receive the education necessary for the important functions they may be called upon to fill, in special schools. These men, who are the practical directors in the various establishments and the manufactories, must have the opportunity of receiving the benefit of the highest technical and scientific instruction.

THE FOURTH CLASS.

This limited class occupies a position of highest importance in the successful solution of this educational problem. It consists of the capitalists, the employers. They are most immediately concerned in the success of a scheme of progress by which our products shall find sale in the markets of the world.

It would be better, of course, could they have all the practical knowledge which is required of every one whom they employ, from the highest to the lowest; yet that is scarcely possible. A certain amount of technical information they must have, in their particular business. The influence of this fourth class is found in their power of co-operation, by which art education may be advanced in all directions. They can establish museums, expositions, art schools, and other effective agencies of education. Under the title of "Co-operation among Manufacturers and the Mercantile Class," in another part of this book, these means of powerful influence are set forth more at length, and a detailed history and description of the society, the "Union Centrale," is given as an example of what such associations may accomplish.

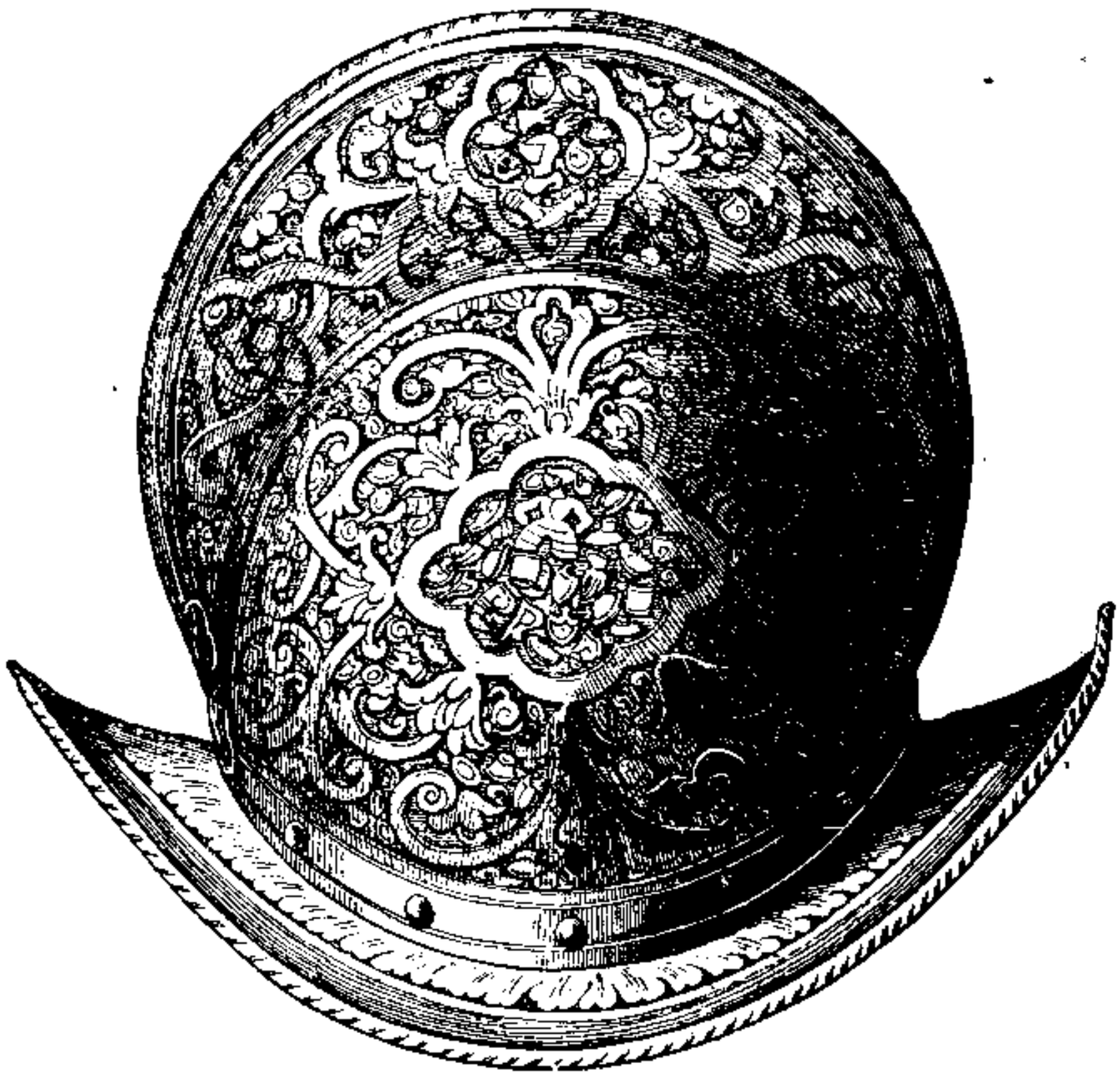
The means of improving, in a large and effective way, our various in-

dividual and associated exertions should come public exhibitions which will elevate and create a standard of taste. In technical education the capitalist can not expect the public schools to do more for these commercial interests than furnish a broad, general education in drawing or mechanics, such as may be applied to any of the mechanic arts. Special technical education should be under the patronage of each industry, which knows best what it needs.

The special schools at Vienna and in other parts of the Old World are conducted in this way, and will serve as models for similar institutions in the United States.

ART BENEFACTORS.

After all, from the merchant and manufacturer, those who control the capital by which the machinery is put in motion, must come successful art progress. These are the men who can set to work the fertile imaginations and skilled fingers of those who have had technical instruction.



Helmet of the Sixteenth Century.

The list of those who have shown practical interest in art education is small, in contrast to the thousands of merchants and manufacturers who appear not to know or care about the matter. Mr. Peter Cooper has founded a school of design which is attached to the Cooper Institute. It

has already accomplished excellent results. Col. R. M. Hoe, of New York, the celebrated inventor of improved printing-presses, has established a school for technical education, for the benefit of his employés. The results have been highly encouraging. The Philadelphia Academy of Fine Arts owes its existence to the enlightened exertions of Mr. James L. Claghorn, who, with some twenty-three other gentlemen of Philadelphia, contributed two hundred and forty thousand dollars for the erection of a very handsome building, and the establishment of a school of art. Mr. Joseph Longworth, of Cincinnati, has given one hundred thousand dollars for the support of the School of Design connected with the University of Cincinnati. Mr. Lick, of San Francisco, has also bequeathed a large amount of money for the endowment of an art school.

Besides these few private benefactions, for the express purpose of art instruction, there are several institutions, organized by wise and generous men and women, which have direct and beneficial relations to this subject of art education. Prominent among these, as has already been stated, is the Metropolitan Museum of New York. In the study of its admirable collection of paintings, the young artist finds invaluable examples of drawing, color, and texture. In the varied display of porcelain and pottery, the student of design discovers inexhaustible material for his occupation. In all its rich display of engravings, statuary, antique vessels of use and ornament, there is material for the inspiration of the artist and mechanic. The managers of the Metropolitan Museum seem to understand their opportunities of usefulness. Besides the few days in every week, when all may enjoy without cost the privileges of the Museum, they give to the art students of the Cooper Institute, the National Academy of Design, and similar institutions, the benefit of free entrance at all times. The uses for art instruction of the Metropolitan Museum in New York, the art gallery at Yale College, the proposed museum connected with the School of Technology at Boston, are of high value; but they are an assistance mainly to the advanced student who is learning the technical methods of applying art knowledge to painting and sculpture.

The generous patrons of the Metropolitan Museum are providing a splendid means of instruction. Let these, with others of equal generosity, provide for the primary steps in the knowledge of design, by which such museums can be made yet more useful. Let them co-operate in every way for this great benefaction of art education.

A Museum of Fine Arts has recently been organized in Boston upon a broad and generous plan. It promises great usefulness in artistic and industrial education.

CHAPTER III.

APPLICATION OF ART TO INDUSTRY.

Application of Art to Industry.—What is meant by the Terms Art and Industry.—How Art may be applied to Industry.—Architecture and Architects.—Steamboat Architecture.—Building Architecture.—Household and Other Furniture.—Architecture of Musical Instruments.—Pottery.—Household Decoration.—The Laws of Mohammed.

At one of the important expositions of art and industry not long ago, a gentleman of character and intelligence was standing in the picture-gallery which formed a valuable part of the exposition.

"I can understand," he said, pointing to Müller's "Roll-call of the Last Victims of the Reign of Terror in the French Revolution of '93," "that it requires a great deal of skill, dramatic power of expression, and all of that, to paint that picture. I comprehend what is meant by art when looking at it, and works of Breton, Decamps, Meissonier, Knaus, and the rest; but it is not clear to me what is meant by the 'application of art to industry,' which you talk about, and which I read about now and then. What does it mean? How are you going to apply this sort of thing" (the speaker included the whole collection of good and indifferent pictures in the sweep of his arm) "to the corn-shellers, bedsteads, pianos, steam-engines, china ware, and so on, over in the other buildings?" Such questions are often asked, and seldom answered.

What is art? What is industry? What is meant by the "application of art to industry?"

The terms art and industry, in their relation to each other, are now in frequent use all over the civilized world, and among most of the leading nations there is at the present time, more than ever before, an effort to unite art and industry. In a general way, the public know that the result of this is to make the common utensils of life beautiful, instead of ugly; but just what art and industry are by themselves, and the process by which they become associated, is not so well understood.

In the beginning of a work which aims to show something of the history of art education throughout the world, and why and how it should be undertaken in the United States, it may be well to attempt a definition

of art and industry, and to explain how the one may be applied to the other.

Industry is work. It is the action of the muscular and moral forces of man applied to production. Art is also a production, but within certain conditions and with a certain definite object in view, which we call grace, beauty, and such other terms as express something attractive. It is the province of art to invest production with an ideal of perfection. While industry sometimes seeks this assistance from art, it must be remembered that art, even in its highest expression, demands the aid of industry, but only within arbitrary and restricted limits. An object constructed for its beauty and as a decoration consults only the law of beauty. But in the application of art to industry, the *uses* of the object must never be forgotten. The products of industry in the United States into which art enters are few, as may be seen in the table of exports and imports in the Appendix. Architecture and the furniture of dwelling-houses, offices, etc., are industries which employ more labor than most others. What has been the influence of art upon these?

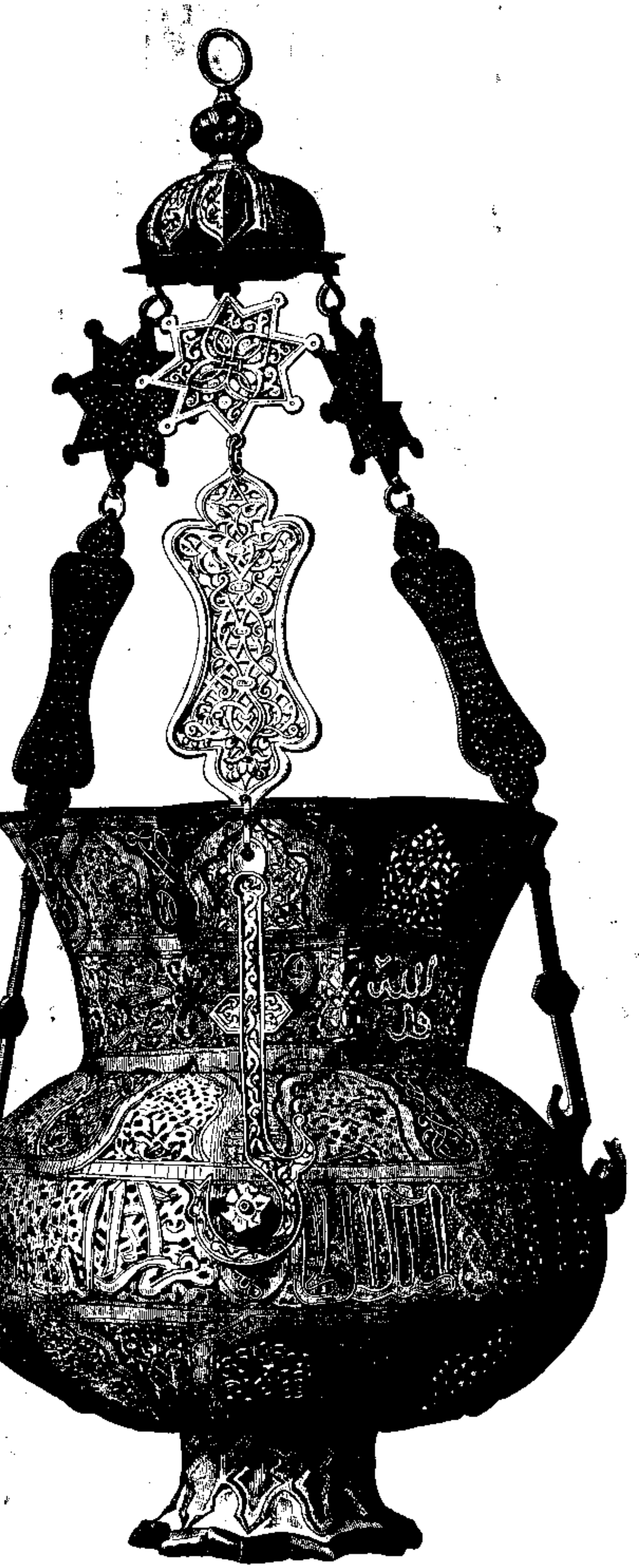
ARCHITECTURE.

Climatic changes influence, if they do not dictate, the principal forms of architecture. In a country like the United States, whose territory touches upon arctic cold and tropic heat, whose limits embrace every condition of atmosphere, it would be too much to expect a distinctive style of architecture.

In Florida and Louisiana, the long summer seasons, the hot sun, with its glaring light, call for wide porticoes, broad piazzas, open passage-ways, so as to moderate the heat and let in the air. In Maine and Minnesota, the brief stay of the sun, the short summer, the fierce blasts of winter, the heavy fall of snow, demand dwellings compactly built, with steep and peaked roofs, which retain heat, keep out the winds, and shed the snow. While we may not, therefore, look for an American style of architecture, we must strive to secure obedience to the laws of substantial construction, harmony, and grace. It is only recently that any opportunity has been offered in this country for education in the art and science of architecture, and even now, at its best, the means of instruction are in many ways incomplete.

It is a great misfortune that concert-halls, churches, and theatres should so often be built by those who know nothing of the laws of ventilation, sound, light, and heat. It is wrong that these edifices, with warehouses, hotels, and dwellings, should be carried high up into the air, regardless of the conditions which govern the solidity of bodies, and the effect of the

IMPERIAL
LIBRARY



Copper Lamp.—From a Mosque.

mechanical powers in the combinations of wood, stone, and metallic substances. Society has the right to insist upon the requirements of the science of architecture, by which use and security shall be obtained. It would be of general benefit, could we have men like those of the architectural school of Chemnitz, in Prussia, who are graduated when they can pass a rigid examination in drawing, ornamentation, arithmetic, geometry, physics, perspective, languages, and mechanics.

The art of architecture is a rare accomplishment, and is only attainable by exercise of the faculties of judgment and taste, and by study of the splendid examples of classic art.

The criticism has been made of buildings in the United States, that they are oftentimes constructed by architects who are not builders, or by builders who are not architects. If this remark in some measure be true, there are noble exceptions in all parts of the land, where the union of science and art has presented some of the most beautiful buildings known in modern architecture. The architect ought to be the master of many sciences. He should not only know things by their outward appearance —he should know their physical properties as well. We have two classes of architects among us. The first are men who have more or less knowledge of the science and art of architecture; the second are men who have been carpenters or masons, and have risen in their trade, but know little or nothing of either the art or science of architecture.

Artists and workmen like Phidias and his associates, Ictinus and Callicrates, who built the Parthenon, are not numerous in our days; nor has modern civilization produced master-masons and builders like Sens and his namesake William, who built the cathedral of Canterbury; neither do we erect Parthenons, nor such cathedrals as that of Canterbury, in this age.

STEAMBOAT ARCHITECTURE.

In this country, the architecture which has had a distinctive character and originality is that of the steamboat, and especially that of the steamboat on our Western rivers. Those large passenger and freight boats, which carry a great many passengers, with thousands of tons of freight, thousands of miles, are among the wonderful creations of modern times. Very stately, graceful, and picturesque are they, as they move rapidly along over the turbid waters of the beautiful Ohio and broad Mississippi rivers. Very often they possess real beauty of form, as one story or deck surmounts the other, rising from the water's edge in harmonious proportions. First, there is the lower deck, with its huge wheel-house and its broad open space forward; then there is the second story, with its long ranges of cabins; above these the "hurricane," with the officers' cabins

and the airy and picturesque pilot-house looking over many miles of water, forest, and meadow-land.

Most impressive of all are the tall black stacks and pipes, whence rush masses of brown and black smoke and white steam, which mingle in upper air in exquisite tints and strange forms. In architectural details these boats might be yet finer. In color they could be improved; but the dangers of night service have compelled the use of white: yet here and there good taste often adds touches of red, gold, or green which relieve the general effect.

Take it all in all, the Western steamboat is a superb spectacle. It is a result of the necessities of commerce, guided by natural good taste.

HOUSEHOLD AND OTHER FURNITURE.

The abundance, cheapness, and beauty of our native woods have given rise to the extensive manufacture of furniture.

In the West especially, where these woods are procurable at small cost, the commonest furniture is made solid of such woods as walnut, beech, and maple. Very often, while the forms are ungraceful, the object itself is inconvenient, and badly put together. It is shipped to the extreme South or the Western border, or to foreign countries less civilized than our own. Cincinnati is a city where a great deal of cheap furniture is manufactured and sold, and here has arisen a school of wood-carving whose work compares with the best results of the Renaissance.

Even to-day this school of wood-carving has few superiors in Europe. Henry Fry, and his son, William Fry, introduced the art into Cincinnati. Henry Fry is an Englishman by birth, and served his apprenticeship under Paxton. His later years have been devoted to architectural construction, to designs for armoires, sideboards, book-cases, and similar articles, which have been carved chiefly by his son.

William Fry was born in the West. From boyhood he hungered for adventures and the sea. This desire he gratified to the most hazardous and romantic extent. For many years he was a sailor before the mast, and visited all the countries and all the great sea-ports of the world. Several times shipwrecked, he saved his life by pluck, and by the exercise of rare physical power. Perhaps this is not exactly the experience out of which to make an artist. The artistic faculty may have been fostered by the romance of adventure; but whether it was or not, it is certain that William Fry is a man of a fine order of genius. His artistic power exhibits itself not so much in the drawing of the human figure as in the adaptation of natural forms to ornamentation. And here the skilled fin-

fertile mind. With marvelous rapidity, from under the touch of his chisel grow drooping ferns, pendent wreaths of leaves and flowers, full-plumaged birds, climbing vines of jessamine and ivy, feathery grasses, graceful and elaborate arabesques. His representations of natural objects are not the language of mere imitation, but charming translations. They are not seen with a cold, unsympathizing eye, but rather with that of love and sentiment. His sculptures from the tough and twisted grain of oak, ebony, walnut, and cherry are full of motion. The caress of his hand brings forth the tenderness of bud, the softness of leaf, the perfume of flower, and an ever-present suggestion of that sense of beauty whose expression is the best attribute of genius.

Robert Rogers is another artisan of Cincinnati who shows excellent faculty. Mr. Rogers is a cabinet-maker, rather than wood-carver. A few years ago he was a house-carpenter and joiner. The School of Design gave him the opportunity of acquiring a knowledge of drawing and the art of design, which has developed artistic faculty. This has shown itself in composition, as well as in carving. The book-cases, escritoires, hanging-cabinets, and sideboards produced by Mr. Rogers are worthy of record in the history of industrial art in this country. These examples (and others could be mentioned) in Cincinnati are given to show how admirable and effective are any means of education in art. The School of Design in that city is exercising a genuine influence in all directions of art culture. In many of the Eastern cities, tasteful, well-constructed furniture is produced; and within a year or two past, the influence of Eastlake's book on Household Architecture has been manifested by the rapid sale of articles of household use which are models of simplicity and grace. At the great industrial centres also, where articles of decoration are made, it is beginning to be understood that sale depends upon a knowledge of applying the rules of art to physical labor.



Surahe. Persian Faience.

sent itself of acquiring some knowledge of drawing, modeling, perspective, composition, and color, in order to gain reputation and success in their calling.

ARCHITECTURE OF MUSICAL INSTRUMENTS.

It might have been presumed that music, that purest and most divine of arts, would have lent a graceful hand in fashioning its instruments of expression. And, indeed, where the instrument has distinct individuality, like the violin, horn, lute, flageolet, viola di gamba, clarionet, and harp, its shape is graceful, and expresses the idea of its sound. The larger instruments which attempt to combine many others have lost this harmony of form and expression.

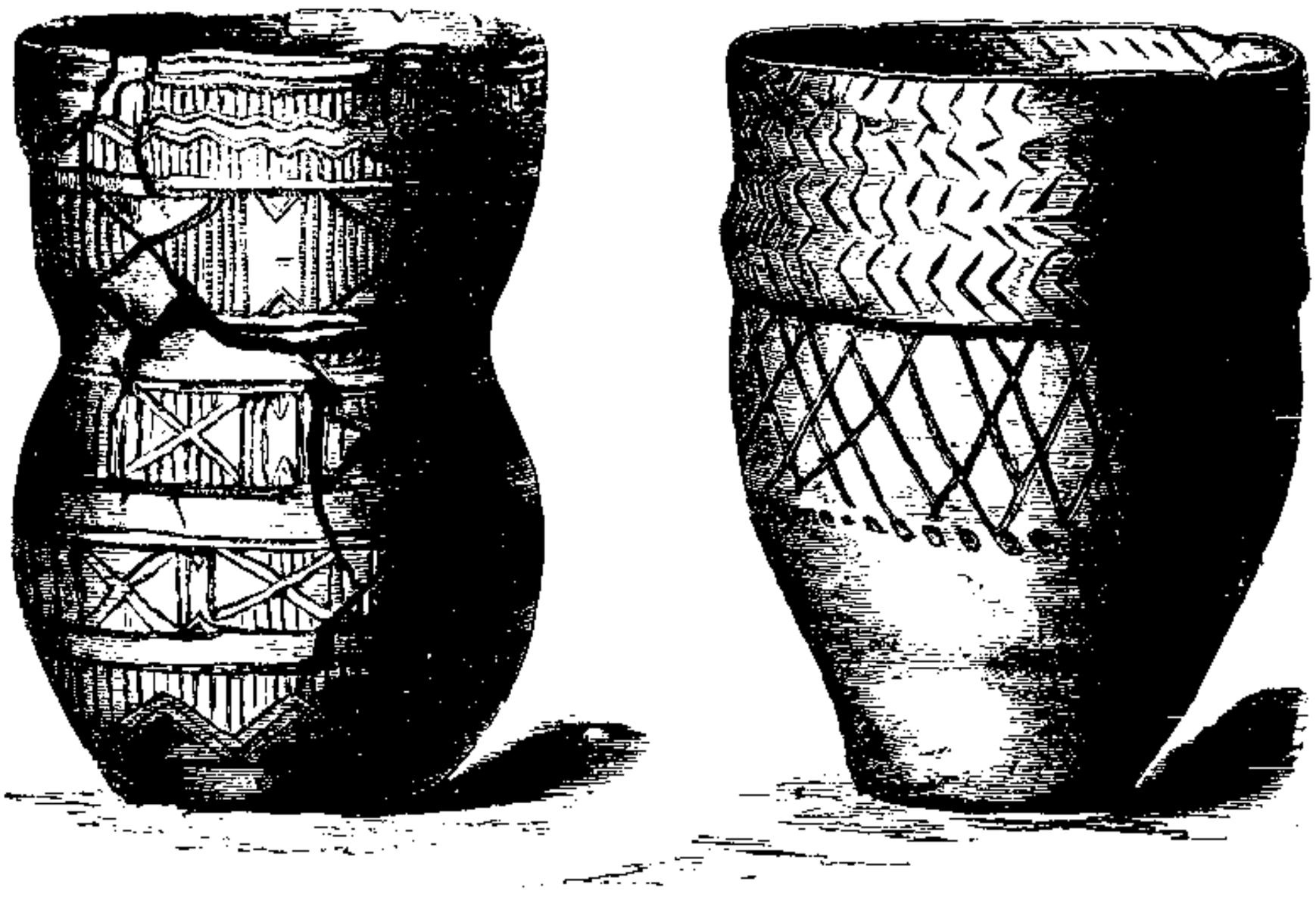
The shape which is required by the mechanism of a piano, especially the "grand," is in some respects graceful; but in other points the ingenuity of man is exercised to make it the opposite. What can be more unpleasant than the piano-case, with its large expanse of polished varnish, reflecting all surrounding objects? Varnished woods in the adornment of the interior of houses are always objectionable. The oiled woods show more clearly their grain and color, and the tone improves with time. The polished piano in the drawing-room is worse, if possible, than a glass mirror. Another offense is the leg of the modern piano. Formerly the large, heavy body of the instrument rested upon straight, strong supports, of not ungraceful form. Now, however, one must pay more for a piano-leg, which makes a curve nearly equal in extent to its height, expressing weakness and ugliness rather than strength and comeliness.

While decided changes in the outer finish of pianos may be sought, there is a yet greater opportunity for architectural and ornamental design in the screen of the church-organ, which is the only part of that noble instrument in view. The old-fashioned screen of golden pipes was pleasing to the eye. It was not incongruous with any style of architecture, while it had the distinguishing merit of indicating the office of the instrument. Of late years, however, the organ-builders fashion screens meant to be architectural, but which only illustrate bad taste. The large organ-builders sometimes have fixed patterns for each instrument of a certain size and price; and the order of architecture, if the design has the dignity of approaching an order, may or may not bear relation to that of the hall or church in which it is placed. The organ being the most prominent object in the interior of a church, the architecture of its screen should as surely be placed in the hands of the architect of the building as its façade or pulpit. If not in the hands of the architect, it should be placed in those of an artist. Yet how often is the eye offended by an organ-screen

and beautiful might it be made—not only graceful in its harmonious relation to the architecture of the building in which it is placed, but in its relation to music and the arts of painting and sculpture! An illustration of how art may thus be allied with a product of industry may be seen in the screen of the organ in the Music-hall in Boston.

POTTERY.

No industry is more charmingly allied to art than that of pottery. Either in articles of beauty or of use, it benefits all classes of society. In its uses, pottery is the necessity of the poorest laboring-man, while the plastic substance of which it is composed yields to the hand of genius the

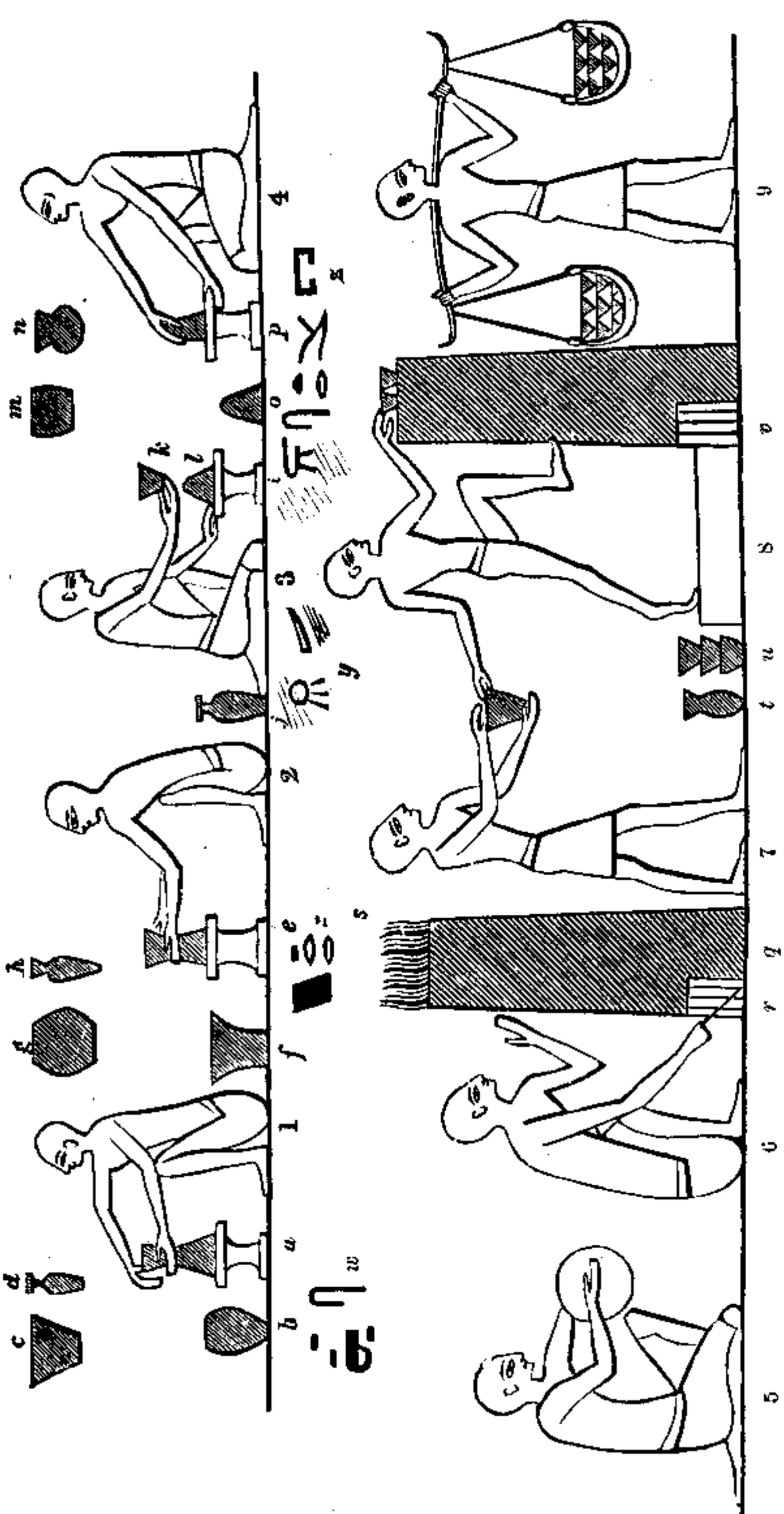


Celtic Pottery.—Found in Staffordshire.

finest and highest artistic possibilities. During the history of mankind, many of the industries have had periods of rise and fall, and for a time the most important of these have disappeared; but pottery has, in one or another condition, been continuously produced.

Some of the most interesting passages in the history of the human race have been written in vessels of clay and porcelain. What material is there more fragile than the potter's clay? Yet to-day the finger-marks of the kings of Babylon, whose names even we do not know, remain on the clay tablets where they impressed their seals. From the tombs of the Theban hills, where the mummies of Egyptian priests and conquerors have fallen to dust, come forth vessels of sacred and common use, as perfect in form as when borne in the hands of their first owners three thousand

years ago; while Pompeii, buried in volcanic ashes, presents thousands of pitchers, vases, and other objects for the pleasure and inspiration of subsequent centuries. These objects, which seem so fragile, are less perishable



An Egyptian Pottery, from a Tomb.—*a*, *e*, *i*, *p*, the wheels on which the clay was put. Fig. 1 forms the inside and lip of the cup as it turns on the wheel, *a*. *b*, *c*, *d* are cups already made. Fig. 2 forms the outside of the cup, indenting it with the hand at the base, preparatory to its being taken off. Fig. 3 has just taken off the cup from the clay, *l*. Fig. 4 puts on a fresh piece of clay. Fig. 5 forms a round slab of clay with his two hands. Fig. 6 stirs and prepares the oven, *q*. At *s* is the fire, which rises through the long narrow tube or chimney of the oven, upon the top of which the cups are placed to bake, as in *q*. Fig. 7 hands the cup to the baker, 8. Fig. 9 carries away the baked cups from the oven.

than temples, and statuary, and the more ambitious works of man. They not seldom outlive the fame of warriors and statesmen. Upon that mas-

collection of the Musée Napoléon, there is the proud inscription: "*Ergotinus made me, Clitias painted me.*" In the same collection is the vase by Timogras, which finely declares: "*Audocide appears beautiful to Timogras.*"

Certainly no modern production of ceramic art can be compared with these wonderful vases. Yet at the present period, Europe, and more especially Asia, has revealed new and beautiful resources in pottery.



Greek Vase, by Timogras. Campagna Collection, Musée Napoléon.

These more recent works are infinite in variety, and have enlisted the genius of the architect, sculptor, and painter. Of all the industries, none, perhaps, offer a larger field for the art of design than that of pottery. It is not surprising, when we see the United States so far behind all other countries, even in the mechanical devices of this industry, to find that she does not exhibit the slightest evidence of a knowledge of its exquisite art.

The manufacture of pottery in the United States is as yet in its infancy. In that extensive commerce, which in England, France, Germany, and Italy employs so much artistic labor, we have but little part. Our

rated stone and earthen ware. But it is hard for the potter's wheel to turn out ungraceful shapes. Even in this country, the commonest pottery, where it is not white, has pleasing tints of yellow and gray. Tiles, jugs, jars, pitchers, and various dishes, even if the material be coarse and unadorned, are fashioned in shapes of comeliness and sometimes of grace.

THE PRINCIPLES WHICH CONTROL THE ART OF DESIGN.

In the art of decoration and design there are certain rules which govern and define what is best and most appropriate. It is seldom that the human figure can be used in decoration. Even the servile imitation of any natural object is injurious to the best design. Among the highest examples of rich and beautiful design are Japanese decoration; the arabesques and decorations of Moorish architecture; and especially Persian, Indian, and Turkey carpets, shawls, and vases, where there is a hint of some natural object, animal or vegetable, but not often an imitation of them. It is said that the followers of Mohammed never imitated the human figure or that of animals. Although many of the Mohammedans have consulted their own pleasures and tastes in construing the laws of the Prophet, in the main they have obeyed them.

"O Believers," says the Koran, "wine, games of chance, and statues are an abomination invented by Satan. Abstain from these, and you will be happy." Again the Prophet proclaims to his disciples: "Woe to him who has painted a living thing. At the last judgment-day the persons who have been represented will come out from their pictures and demand from him a soul." At another time Mohammed said: "God has sent me against three classes of men, to annihilate and confound them: these are the proud, the polytheists, and the painters. Beware, then, of representing God or man, and paint only trees, flowers, and inanimate objects."

As a rule, the Mussulmans have obeyed the stern commands of Mohammed; and the arbitrary creed of a religious sect has brought into existence the most perfect and beautiful forms of art.

Nothing can be more curious or attractive than the examination and study of the forms in many of the shawls, carpets, rugs, vases, shields, and cups of the East. Their general appearance presents a mass of wonderfully rich and harmonious colors, a depth and brilliancy of tone which is produced by a multitude of pure tints placed in harmonious juxtaposition. At first sight there does not appear to be any symmetrical arrangement of forms, but a closer examination reveals a regular design which governs the entire work. The objects in this design are frequently repeated in a

slight diversity which is so charming in hand-made work, and which is never attained in the imitations attempted in Western Europe by machinery. In the various objects represented, there are the most perfect examples of natural objects conventionalized. The artists have just indicated, while they do not imitate, the individual characteristics of a thousand things of animal and vegetable life, such as butterflies, birds, trees, fruits, and flowers.



Corean Jar of Persian Decoration.

In modern decoration the human figure is often pressed into service in a manner which is degrading. Its frequent use would divert sculpture and painting from their true mission, which is to educate us to a high conception of the beautiful by separating beauty of form and idea, as embodied in the human figure, from vulgar and material uses. We daily see the human figure, in one or another costume, supporting lamp-shades

or carrying candlesticks; it serves as handles to water-pitchers, arms to chairs, and many other purposes foreign to its proper dignity.

Diderot very happily criticised this tendency in his time, when gazing upon the celebrated historical clock made by Falconnet. It represented the Three Graces supporting a globe, which was also the clock-dial. "These figures," said he, "show every thing except the hour."

Those principles which recognize the importance of geometrical and arbitrary forms in design have become established. In all the important schools of industrial design in England, France and Belgium, the student from the beginning is taught geometrical forms. It is in the practice of these well-considered methods of instruction in the United States that we are to get the best results of the application of art to industry. This subject has been most admirably stated by the distinguished author Daviond. He says: "The union of art and industry is an object of industry, which is transfigured and elevated into the beautiful, by its taste and delicacy of adjustment. The limit which separates industry from art is the obligation of industry to respect organic nature, and principally man, whose spiritualistic beauty and character can not accommodate themselves to the common objects of life except in a restrained measure, and always in obedience to the principles whose employment is permitted by architecture."



CHAPTER IV.

INFLUENCE OF INDUSTRY UPON ART.

The Principles which control the Art of Design.

A WORK of art is a law to itself. The sculptor makes use of clay and marble, the painter of pigments and canvas, as the means to express his idea of beauty.

The purely artistic idea may be removed from the thought of use, yet the influence of industry upon art is varied and essential. Of the arts of sculpture, painting, and architecture, those of sculpture and painting are not seriously modified or changed, either in principles or practice, by the intervention of industry. The same simple tools and the same material have been in use since the birth of these arts. A mass of clay, stone, marble, or wood, with a handful of tools, are the essentials of one; a piece of canvas, or panel, or porcelain, with colors, brushes, and pencils, serves for the other. Industry has a greater influence on painting than upon sculpture, for the quality of the pigments, brushes, and canvas has a great deal to do with the expression of the artistic conception.

Architecture, which is the art of construction in accordance with the principles of the beautiful, as has been said in a previous chapter, makes use of human industry in very many ways. So great is the influence of industry upon architecture, that the architect, in making his plan for a building, is obliged to take into consideration many industrial elements.

The association of industry and art is seen in what may be denominated ornamentation of buildings, such as wood-carving, fresco-painting, sculpture which enters into the actual construction, painted or stained glass windows, tiles, as well as bronzes and porcelain-ware, not in household use. These illustrate the fact that mechanical industry enters largely into the production of what belongs peculiarly to the domain of art. But the modern discoveries of science add infinitely to the obligations of art to industry.

By means of printing, industry reproduces in various ways, from steel, copper, and stone, the most beautiful works of art, and by new processes

most curious, ingenious, and effective, like those of the autotype, photograph, heliotype, and photolithograph, presents the thought of the artist and Nature herself in very complete form.

It is frequently remarked that the general reproduction of works of art makes them commonplace, and their influence injurious rather than beneficial. One gets very tired of chromo-lithographs and poorly executed prints of the works of great masters; but it is well to consider if it is not better to try to have these copies made in the best way, rather than reject them altogether. We can not possess the grand statue of the Venus of Milo, but a mechanical reproduction in plaster is a most satisfactory substitute. It certainly is no injury to art, or the masterpieces of Raphael and Rembrandt, if we repeat numberless good engravings and etchings of these. There are certain industrial efforts which seek to imitate the texture and color of works of industry and of art by methods and with materials essentially different from those of the originals. This attempt to deceive, like all shams, is extremely harmful, and can not be too severely reprehended. But repetitions of works of art which are animated by artistic motives, even though they are articles of commerce, can not become too general. They place the most beautiful thoughts of the best men within the reach of a great many people, and help to purify and enlighten the social atmosphere.

The artist, however, in his creations, must take heed that the industrial elements shall occupy a subordinate place; that while he may avail himself of scientific and industrial methods, his conception of the beautiful must preserve all its independence and liberty.



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Damaskeen Casket.

CHAPTER V.

INDUSTRY AND ART IN THE MIDDLE AGES AND RENAISSANCE.

Industry and Art in the Middle Ages.—Sphyrelaton, or Wrought-iron.—Works in Enamel.—Faience.—Objects of the Toilet.—Bronzes.—Cabinet-work.—Wood-carving.—Cabinet carved by the Monks of Clairvaux.—Art of Design in the Middle Ages and the Nineteenth Century.—The Treasures of Hildesheim.

THE art products of the Middle Ages serve as admirable models in art education. It would require a great many volumes to attempt to describe the objects characteristic of the principal industrial arts of that period. Public museums, like those of South Kensington and the Hôtel de Cluny, as well as many private collections in England and on the Continent, are *full* of these exquisite works of art. In variety and style they represent all classes of society and every condition of life. They are very often the products of men who, in their own day, were known as artists of genius and skill. The beautiful carvings, illuminations, coffers, mosaics, and pottery found among these have a definite art value, kindred to that of the paintings and sculpture of the old masters.

It is embarrassing among so many things, curious and beautiful, to select those which best represent any phase of industrial art.

One of the rarest of works in damaskeen has a romantic and somewhat mysterious history. At the close of the last century a merchant of curiosities, who kept a shop on the bridge of the Rialto, possessed a superb steel casket, covered with arabesques of gold and silver of the most exquisite workmanship. The sculptor Canova pronounced it one of the most remarkable of the works in damaskeen in all Italy. It was bought at a high price by the Marquis de Trivulci.

The arabesques, which interlace each other and cover the exterior of the casket, are of gold. In the bottom of the box upon a thin surface of gold, incrusted with steel, is a planisphere in the form of a heart; upon the exterior of the cover there is a chart of Italy, Albania, Dalmatia, and the adjacent islands; upon its interior face is drawn in gold damaskeen a map of France and Spain. From the latter extend names of cities in

threads of gold and silver. Upon the cornice of the box may be read this inscription: "*Pavlvs Ageminivs Faciebat.*"

This marvelous casket, it is generally conceded, belongs to the early part of the sixteenth century. The inscription on the rim has given rise to a great deal of discussion among the *savants* of Italy. It was variously claimed that it signified a name, place of birth, or a profession. Although, in 1832, this casket was known to be in the possession of the Marquis de Trivulci, it has since disappeared, and has eluded the most earnest search.

SPHYRELATON, OR WROUGHT-IRON. REPOUSSÉ.

The ancient art of working in iron and other metals with the hammer had ceased to be exercised until very recently. The facility with which form can be produced by modeling in clay, and subsequent casting, had put aside the ancient and laborious, but yet thoroughly artistic, method of shaping metals with the hammer. Some of the most effective and durable of antique-art work in wrought iron is to be found in coffers, *plaques*, and hinges; in swords, bucklers, and other arms. This is an art which dates from the most classic age. The Phœnicians, Egyptians, Greeks, and Romans used it upon their colossal figures, as well as in smaller works requiring nicer execution. The recent discoveries of Di Cesnola at Cyprus are a striking evidence of the extreme antiquity of this art.

During the Renaissance iron-work reached a high degree of perfection. The Italians, Germans, and French were artistic workmen. Benvenuto Cellini, who had successfully learned the art of casting from plastic models, could only criticise the works wrought in iron during his time with the remark that, although the modeling was excellent, the different parts which made up those objects of art were not compactly nailed and riveted together.

Among the objects which, from the nature of their use, were made of iron, were the bucklers, which from the earliest ages were used as weapons of defense. In the days when war was not conducted at bullet or cannon-shot range, and when men fought foot to foot and hand to hand, the shield or buckler was of vital importance. In the course of time it had different shapes; but in the sixteenth century it became round, with an inclination toward an oval. In the time of Francis I., these pieces of armor were the chosen objects upon which artists exercised their best genius. The most exquisite designs were worked in *repoussé*, raised upon the surface of the buckler, with a delicacy and grace of form which invested it with great value.

Among rare examples of this art is a shield, now in the Hôtel de

Cluny, *repoussé* and chiseled in the Italian style of the sixteenth century. It is decorated with strange and fanciful figures, representing the combats of Centaurs and animals. The centre of this shield is ornamented with figures of children, and it has a sharp projecting pike. This design is full of strength, and each object is drawn with grace and symmetry.



Buckler of the Period of Henri II.

Perhaps the most remarkable and well-known specimens of armor which have come to us from the artists of the sixteenth century are several now in the Cabinet des Antiques de la Bibliothèque Royale, and which are said to have belonged to Francis I. This armor is attributed to Benvenuto Cellini; but it is said that if Cellini had executed so beautiful a work for the great French king, he would have made mention of the fact in his memoirs.

There is not to be found upon these pieces of armor any device or other evidence that they belonged to the King of France, and it is proba-

ble they were trophies of war. The casque is surmounted by a grotesque dragon, the wings outspread, and the beak or mouth open. In the midst of the florid ornamentation appear two crabs, placed, with intention, as emblems, but to which there has been found no interpretation. The same emblem is found on the shield, the central part of which has two, while two others are placed upon the rim. The ornamentation of these two beautiful pieces is in black iron, chiseled and enriched with incrustations of gold upon a ground of gold. It is composed of trophies, satyrs, figures of Cupid, and exquisite arabesques wrought with all the taste and prodigality of the Italians of the sixteenth century.

Another fine example of work in wrought-iron *repoussé* is an oblong *plaque*, which formed a part of the decoration of a piece of furniture. It belongs to the sixteenth century, and represents the death of Cleopatra. This work is a large medallion of oval form, within which is represented the above-named subject. The border contains the following verse:

"Cum subiit mortis Leges Antonius atræ
Serpentis morsu sese Cleopatra necavit."

The outside frame is enriched with arabesques, masks, fruits, flowers, leaves, and garlands. This work is in the wonderful Du Sommerard collection.

A boldly executed piece of armor in gold damaskeen is a helmet now in the Artillery Museum in Paris. The origin of this helmet is perfectly authentic. It came from the armory of Henri II., whose device and arms it bears. The figures and ornaments in *repoussé* upon this helmet are in the finest style of its period.

ENAMEL.

The history of the origin of enameling is full of fascination. It carries us back into the Byzantine period. Philostrate, a writer of the fourth century, quotes the Emperor Constantine Porphyrogenitus as declaring, in his life of his ancestor, Basil the Macedonian, that people of that epoch, in different parts of Byzantium, painted the image of Christ in enamel upon metals. There can be no doubt that this art flourished in great brilliancy in the East in the tenth century, for it is known that in 976, when the Venetian, Osseolo, visited Constantinople, he was filled with delight and astonishment at sight of the grand altar at St. Sophia. This altar was a magnificent example of enameled work; and Osseolo gave an order for a similar one for Venice, where in the same year he founded the Church of St. Mark upon the model of the basilica of Justinian. This work was accomplished with the assistance of Greek artists. Subsequently Osseolo



Enameling.

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went to France, where he lived nineteen years, and, in the opinion of Du Sommerard, brought with him these Greek artists, and introduced at Limoges the art of enameling.

"How, otherwise," writes this distinguished *savant*, "can be explained the frequent commercial relations between Venice and Limoges, and the appearance of enameled work during the ninth century, of which we find no anterior trace either in our chronicles or monuments?"

In this brief sketch it will be necessary to omit any description of this art as it appeared in Spain and Germany. In Italy and France it seems to have found enthusiastic admirers both for church and secular uses; so that for a long while it took the place of bronze and other metals.

THE WORKS OF LIMOGES.

Of all the industrial art works of the Renaissance, those known as the "works of Limoges" are among the most beautiful. The history of this famous city, so rich in architectural remains, is, as we have seen, associated with the earliest attempts in the art of enamel in France; and there is no doubt but that this rare art became established in the workshops of Limoges during the twelfth century.

The Abbé Texier, in his essays on the silversmiths and enamelers of Limoges, says: "The grand abbeys of Limousin were pillaged from top to bottom during the twelfth century by the English, who, according to Geoffroi, took every thing, including the altar-pieces, most of which were enameled. Notable among these were the gigantic altar of Grandmont and the coffer of Bourganeuf with its treasure." Notwithstanding these depredations, which did not cease until the sixteenth century—notwithstanding all this destruction—in 1779 there were in the diocese of Limoges alone more than two thousand five hundred chiseled and enameled reliquaries, not counting the cups, plates, censers, diptychs, chalices, covers of books, crosses, and objects of a similar character.

Until the sixteenth century the manufacture of enamels at Limoges had been nearly destroyed, or, at least, forgotten, in the midst of the wars which took place during the preceding periods. Francis I. re-established these works, and by his patronage of this art brought forward a number of men of rare genius. Among these was Leonard, a painter, to whom was given by his master the surname of "Limousin," in order to distinguish him from Leonardo da Vinci. In describing the relation between Leonard and King Francis, the term "master" is not used in an artistic sense, for the artist received from the king the title of his "painter and valet de chambre."

Among the enamelers of the sixteenth century whose work is most

sought after, because of its rare perfection, is that of Pierre Raymond. The state collections and private cabinets possess a large number of his productions.

Of the painters—enamelers, who were either scholars or rivals of Leonard—J. Courtois was one who gives us the best evidence of the admirable art of the Limoges manufactory, of which he was at one time in charge. Among the most exquisite of the works of enamel in color by this artist are those in the collection of M. Carrand, at Paris. They are a water-pitcher, basin, and vases. The basin is hollow, and longer than it is wide. The subject of the decoration represents the sacrifice of Iphigenia, after the composition of Polidore of Caravaggio. The rim is composed of arabesques, intermingled with fanciful figures of busts of men and women, inclosed by outlines of color. It is an exquisite composition. The pitcher is fully equal to the basin. The subjects are also drawn from the Iphigenia of Caravaggio. The form of the vase is open. The interior is white enamel.



Leonard Limousin.

In the collection of Messrs. Lebarte and Debruge there is a piece of enameling which belongs to the twelfth century. The decoration represents the legend of St. John.

This art of enameling had for one of its discoverers Bernard Palissy, whose life was remarkable for its unselfish devotion. His productions are marvelous as works of art. They are distinguished for close adherence to natural forms; which, however striking in some ways, are not recognized in these days of conventionalized objects and arbitrary forms as characterizing the best art. One of the finest examples of the work of Palissy is in the Du Sommerard collection. It is a large plate executed in enamel. It is covered with fishes, reptiles, crustacea, and mollusks in the midst of

the water, together with herbs and marine plants. This plate is remarkable for the minute execution of its details, and also for the richness of the enamel, which gives life to these studies from nature itself.

FAIENCE.

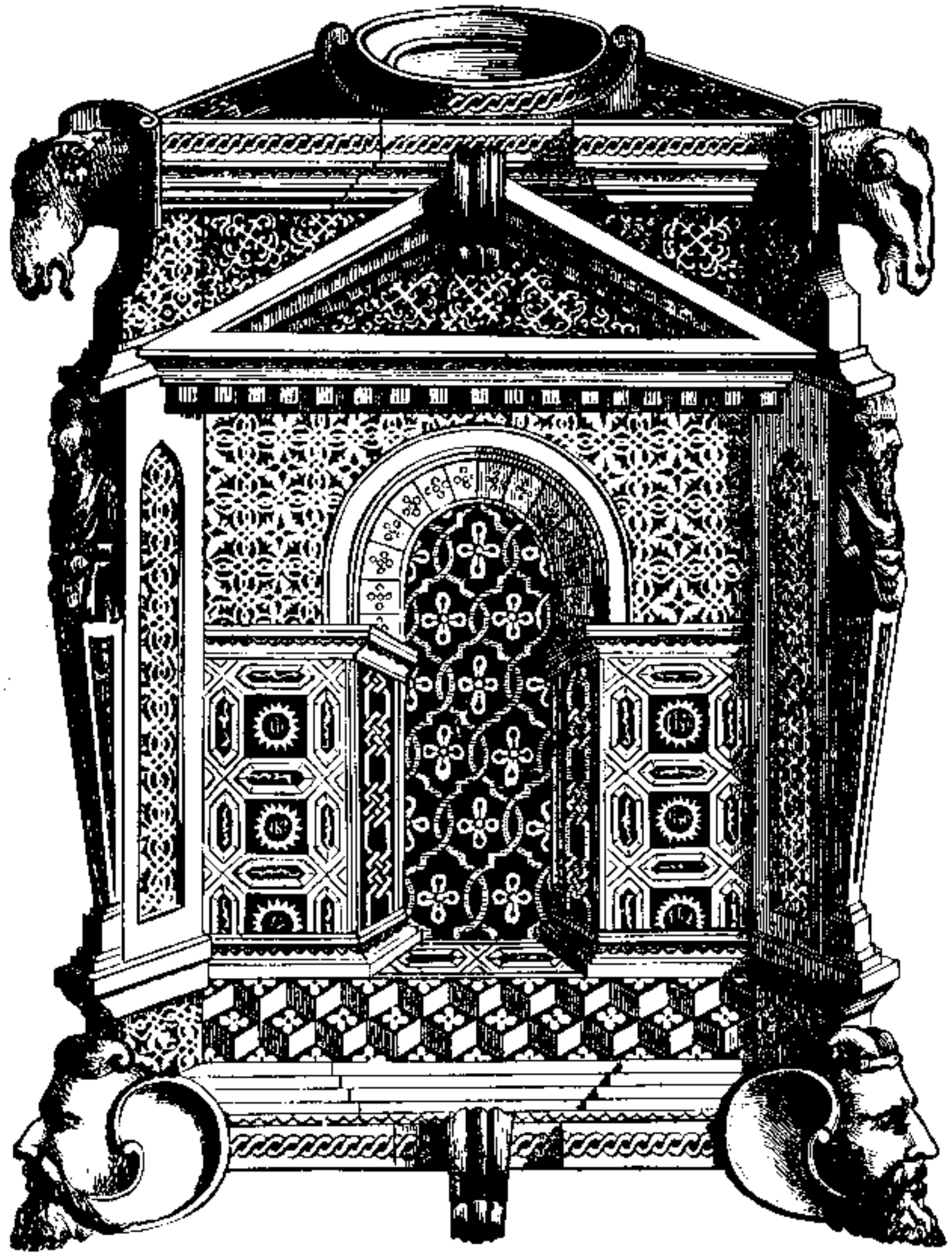
The faience known as that of Henri Deux, or Oiron, is among the most beautiful and symmetrical of ceramic art. The piece so long in the collection of the Count de Portales, sold in 1865 for six thousand dollars, and now in the South Kensington Museum, is the most celebrated. There is also in existence a flagon, or vase, of peculiar form. The handle is placed under the rim, and the mouth projects from the body of the vase. Above this part of the flagon appears an escutcheon of three cross-bars. The designs in arabesque are of various colors upon a white ground. The lower part of this flagon is richly decorated with open-work and a mask which rests beneath the escutcheon.

In the collection of the South Kensington Museum there are two companion pieces to the above. One is a candlestick of monumental form, which has the letter H interlaced. This piece is ornamented with three figures of nude children, who are seated upon the round boss which forms the principal part of the candlestick. Below these figures there are three grotesque masks united by garlands, which hang from one to the other; the garlands are repeated upon the upper part. The whole work is filled in with delicate architectural forms of singular originality and most harmonious and symmetrical designs. This is probably one of the most complete specimens of the ceramic art belonging to the sixteenth century. There are only about seventy specimens of this faience in existence, consisting of salt-cellars, vases, pitchers, and other articles. In his description of these works, Du Sommerard attributes their manufacture to the Italians of that day; and until as late as 1867 the effort to discover the origin of this ware was the despair of collectors. But it is now known that its manufacture was begun in the Château Oiron, by Cherpentier, a ceramist under the patronage of Madame de Hangest, mother of the *grand écuyer*, and former governess of Henri II. The work was continued by the son of this lady. From the name of the château, the ware is now called "Oiron." Its old and familiar title is "Henri Deux" ware.

OBJECTS OF THE TOILET.

Of objects for the toilet, and for ornament, either in secular or religious uses, the Middle Ages furnished countless numbers, in every style of art. They originated in the prolific invention of this most suggestive age, or were copied from the beautiful examples of classic art.

An extremely rich and curious article of toilet is in the cabinet of M. Soulages. It is a metallic mirror, which is inclosed by a broad frame of wood, covered with carved figures, strange and fanciful creations, and other ornamentation. It has the device of the Dukes of Ferrara (a grenade on fire), the legend of which was "*Ardet æternum.*" The subjects of the design on the frame are symbols of good and evil. This mirror is said to have belonged to the notorious Lucretia Borgia, wife of Alphonse d'Este, Duke of Ferrara in 1501.



Salt-cellar. Oiron Faience.

In the collection at the Hôtel de Cluny are to be seen many of these charming objects for the toilet—among others, boxes, chatelains, powder-cases, and hand-mirrors, marvelously beautiful in form and delicate in execution. Although the art of design of the present day has given to articles of similar purpose exceeding tastefulness and ingenious fitness for their uses, yet often the reproduction of one of the antique forms proves, by its great sale, to have pleased the popular taste of the nineteenth century, as it did that of the sixteenth.

BRONZES.

Among the most remarkable works ever executed in bronze are those which come to us from the Renaissance, which also gave birth to such artists as Ghiberti, André de Pisa, Jacopo Sansovino, and Donatello. Although at this period bronze was in general use in the manufacture of smaller articles for the household and purposes of ornament, the finest examples of its application are found in the doors and panels for doors, and monuments belonging to the earliest part of the Middle Ages. We read of the bronze doors of St. Sophia at Constantinople, in the eleventh century, which were executed by Michael Rangabe. Examples of artistic genius and mechanical skill in the use of bronze during the following centuries are to be found in Italy, Germany, France, and Russia. The



Tea-pot. Ellers Ware.



James Wedgwood's First Tea-pot.

Cathedral at Mayence, built about the year 1000, still retains its gates of bronze. In Russia, the basilica of the twelfth century at Novgorod presents choice specimens of work in bronze. In Italy, such works in bronze adorn many of the cathedrals and public buildings. Among those which have been most celebrated are the doors of St. John of Lateran, executed in 1193 by the brothers Uberti. The interior door of Santa Maria de Fiore at Florence is covered with bass-reliefs by Lucca della Robbia, whose pottery has given him such splendid reputation. Loretta and Verona have their *chef-d'œuvres* of this art; and at Pisa remain some of the finest examples of bronze from the hands of John de Douai, better known as John of Bologna.

Among the rare examples of Italian bronzes of the sixteenth century is the door of the sacristy of St. Mark at Venice, which is the work of Sansovino. This door is divided into two parts, which are also separated into other compartments, ornamented with recumbent figures. The decoration on the outside frame is composed of figures of the evangelists in differ-

ent postures, and of children, with portraits of celebrated persons. The pictures in the two large panels represent the Entombment and Resurrection. The whole of this design is executed with artistic skill and taste. In one of the chapels of St. Mark's there are two candelabra, also the work of Sansovino, which are models of monumental grace and symmetry. They are composed of figures of children, men, and women, with garlands and other rich decorations. Other examples from the same period could be given of artistic work in bronze; for the workers of the Middle Ages knew as well as did those of ancient times its durable qualities. The



Norman Ware.



Norman Jar.

modern nations have reserved this metal almost exclusively for artistic purposes. In large sculpture of the human figure which is to be exposed to the open air, it has almost entirely taken the place of marble, stone, or other materials.

CABINET-WORK AND WOOD-CARVING.

In no department of industrial art have the Middle Ages left us so rich a variety as in that of furniture for the house; such as cabinets, armoires, sideboards, chairs, tables, coffers, doors, panels, chimney-pieces, etc. These are of every style, from the ornate, elaborate Florentine mosaic, with its nice architectural lines, to the heavy carved oak, with rough forms, of the North of France. Every material possible for the purpose seems to have been employed for those articles which were of common use in the sleeping-chamber as well as in the grand saloons, including oak, walnut, ebony, and other woods; various mosaics; ivory; iron, bronze, and

other metals, with marbles and various other stones. From the fifteenth to the seventeenth century numberless articles of cabinet-work were produced, which filled the houses of all classes, as well as the convents, churches, and monasteries. This industrial production continued in Western Europe through succeeding centuries down to the present period. During the many wars which from time to time devastated these countries, this combustible material was especially liable to destruction, and a vast amount of the rarest carved work must have furnished fuel for the soldiers' camp-fires. Notwithstanding the loss thus occasioned, a great deal has been preserved to fill the museums of art, and to add to the collections of amateurs. Although it is a well-established fact that there are to-day large manufactories in many of the European cities—and, for that matter, in the United States—which turn out all kinds of genuine antique furniture, yet it is not so difficult to obtain curious and beautiful examples which certainly date from the sixteenth century.

FLORENTINE CABINET.

The most extraordinary example of Florentine work belonging to the seventeenth century is a cabinet which forms a part of the splendid collection of Du Sommerard, and is now in the Hôtel de Cluny. We learn from Du Sommerard that this cabinet was taken to Holland in 1800 by an imperial commissioner, who came from Poland, whither, it is believed, he had followed Maria Louise de Gonzague, wife of the King of Poland. This cabinet is covered with mosaics, in "pietra dura," representing birds and landscapes, with precious stones, pilasters in lapis lazuli, cornelian, feldspar, and labrador; it has also bass-reliefs of ivory, enamel, silver in *repoussé*, gold, marquetry of shells, and paintings. It is divided into three parts with as many subdivisions. The first is formed of shells incrusted with mother-of-pearl, and decorated with marbles and stones of various colors. The second part, which includes nearly all the wealth of decoration of this sumptuous cabinet, is formed of an armoire with two doors. Upon the interior and exterior faces of these two doors, as well as upon the ten drawers which compose the interior, are distributed various precious materials, such as enamels, ivories, stones, and pictures. The upper part of this cabinet, crowning the whole, is garnished with stones and incrustations, upon a surface of shells, as is the rest of the work. It is surmounted by three figures in silver and by two in "rouge antique."

Notwithstanding this celebrated cabinet, which forms a luxury of ornament passing description, underwent restoration during the reign of Louis XV., it remains the most remarkable example of Florentine work of

the seventeenth century. It is an illustration of what may be accomplished by the enthusiasm of the collector. Du Sommerard discovered it in an incomplete state, many of its rarest parts having been scattered apparently beyond reach. With an eagerness, patience, and knowledge unequaled, after six years of labor, he reunited the lost parts, and presented to the world one of the most curious and valuable specimens of this branch of industrial art.

CABINET CARVED BY THE MONKS OF CLAIRVAUX.

One of the most exquisite examples of wood-carving, and of architectural grace as well, is a cabinet carved by the monks of Clairvaux for their abbé, toward the close of the sixteenth century. This fortunately fell into the hands of Du Sommerard. He obtained it from a priest, to whom it was given by the purchasers of the ancient abbey of Clairvaux. The priest, with a holy appreciation of the value of such historical relics, fearing that it might be destroyed if left to his own people, placed it in the safe hands of Du Sommerard. The great collector says of this cabinet that he was assured by the last abbé of Clairvaux, who died not many years ago, that this piece of furniture had always been in the principal abbatical apartment, and that it was the result of the collaboration of a great number of monks.



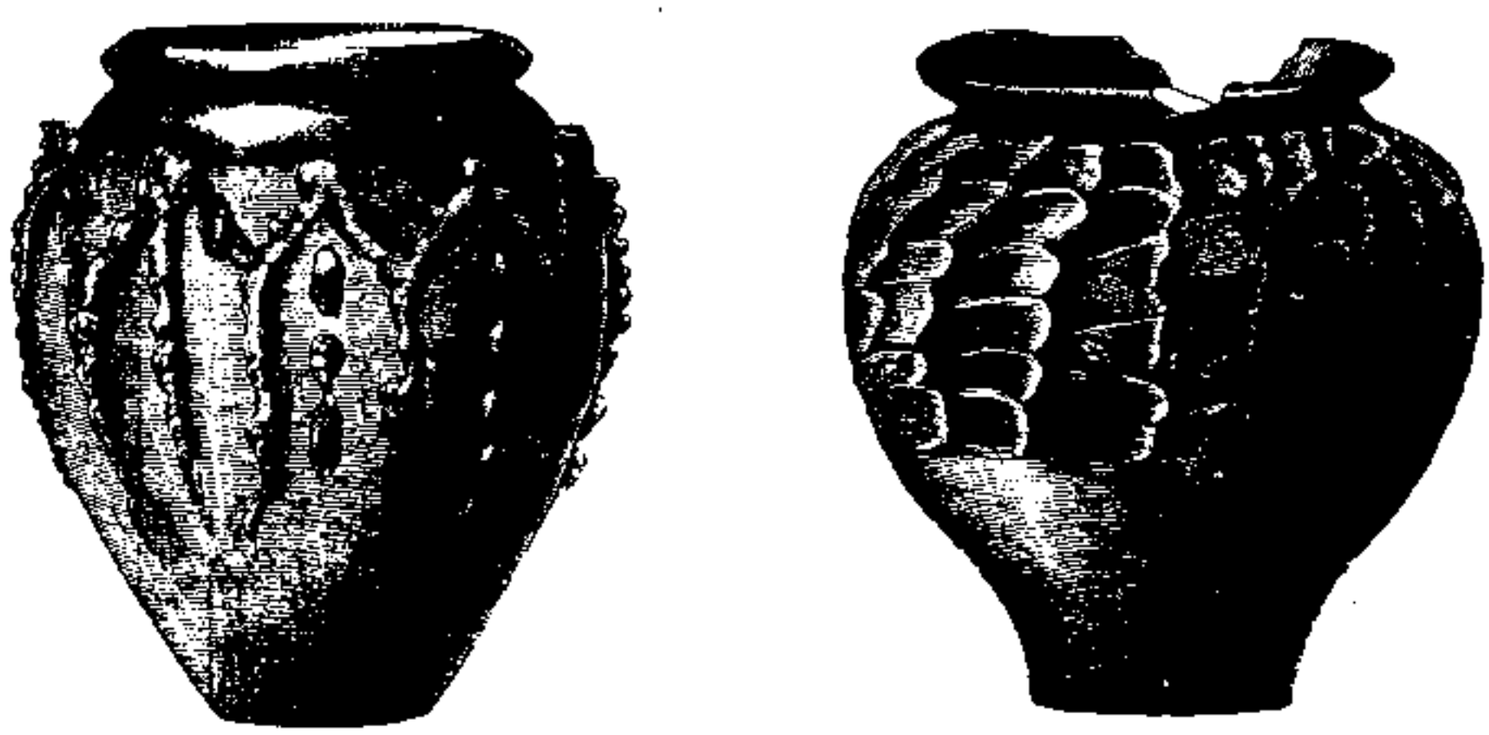
Decorated Valencia Vase.

It will be remembered that Clairvaux was the first establishment founded by the illustrious St. Bernard, who received the aid of Hugues I., Count of Champagne, in this pious work. At first it contained an humble colony of twelve monks, which increased to seven hundred before the death of its founder. Of all the abbeys, that of Clairvaux was most celebrated for the perfection of its illuminated missals. We are told by a Benedictine who visited it in 1708: "In the cloister of the abbey there are twelve or fifteen small cells, all alike, where the monks were accustomed to write, and work upon their books. This is why those places are to-day called 'escritoires.' Above these cells was a library-room, large, vaulted, well lighted, and filled with a great number of manuscripts chained to the wall." While we have this curious passage from

the lives of the monks of Clairvaux, we have only the evidence of this cabinet that they were equally artistic and industrious in the fascinating occupation of wood-carving.

The stalls in the cathedrals on the continent of Europe and in England will be more familiar to the general reader than many of the objects which have been described. The architect and the carver have exhibited in these sacred places the results of training and skill. The stalls of the choir in the Cathedral at Amiens are justly celebrated for their elegance and richness of design and their admirable execution. They are among the best works of the fifteenth and sixteenth centuries. The architecture is of the open character, terminating in pointed columns of elegant workmanship. The author of these stalls was Arnould Boullin.

A quaint piece of sculpture in wood, to be seen at the present time in the Hôtel de Cluny, represents the beheading of John the Baptist. This



Romano-British Ware.

is an example of the German school of the fifteenth century, and is said to be in the style of Albert Dürer. There are four figures in the piece. The knight, in the armor of the period, having taken off the head of St. John, obligingly passes it to an attendant female, who gives it to the queen. The headsman strikes a dramatic attitude, and has a self-satisfied smirk upon his countenance, as if he had done a good thing, while Herodias does not appear to be altogether satisfied with the gory gift. Like many very realistic works of art of a dreadful nature, this is intensely ludicrous. Behind the figures stand the towers of a castle.

The exterior doors of St. Maclou at Rouen, belonging to the fifteenth and sixteenth centuries, have been the admiration of every art-lover who has had the happiness of visiting that city, so rich in architectural glories. These doors are of incomparable beauty, and are attributed to Jean Goujon, that distinguished artist who was at the same time sculptor, architect, wood-engraver, carver, as well as a writer of great erudition.

THE ART OF DESIGN IN THE MIDDLE AGES AND IN THE NINETEENTH CENTURY.

There is a great temptation yet further to describe the arts and industries of the Middle Ages. Most of the objects that have been preserved, and are in the public museums and private collections, possess historical associations of an interesting character. From these, indeed, we oftentimes gain a knowledge of the tastes and dispositions of men, which otherwise might not be accurately obtained. No written history, for example, could so fully have done justice to the culture and enthusiasm for art of Francis I. as do the monuments which mark his reign.

The objects which have been described are characteristic of the industrial arts of the Middle Ages, and clearly show that in some respects the art of design has not since been excelled. But the nineteenth century has progressed in a knowledge of the fitness of things for their uses. As civilization has advanced, a multitude of inventions have made every step of human life more comfortable. Not only have the discoveries of science helped to keep away sickness and pain, and removed them more easily when they came, but the utensils by the aid of which food is prepared for consumption, the furniture of the drawing-room and the sleeping-chamber, the machinery used in manufactures, the tools of commerce, have become more practical and useful. The tasks of life are more safely, easily, and rapidly performed in the nineteenth century than they were four or five hundred years ago; and there can be no doubt but the art of design has at the same time made great advancement.

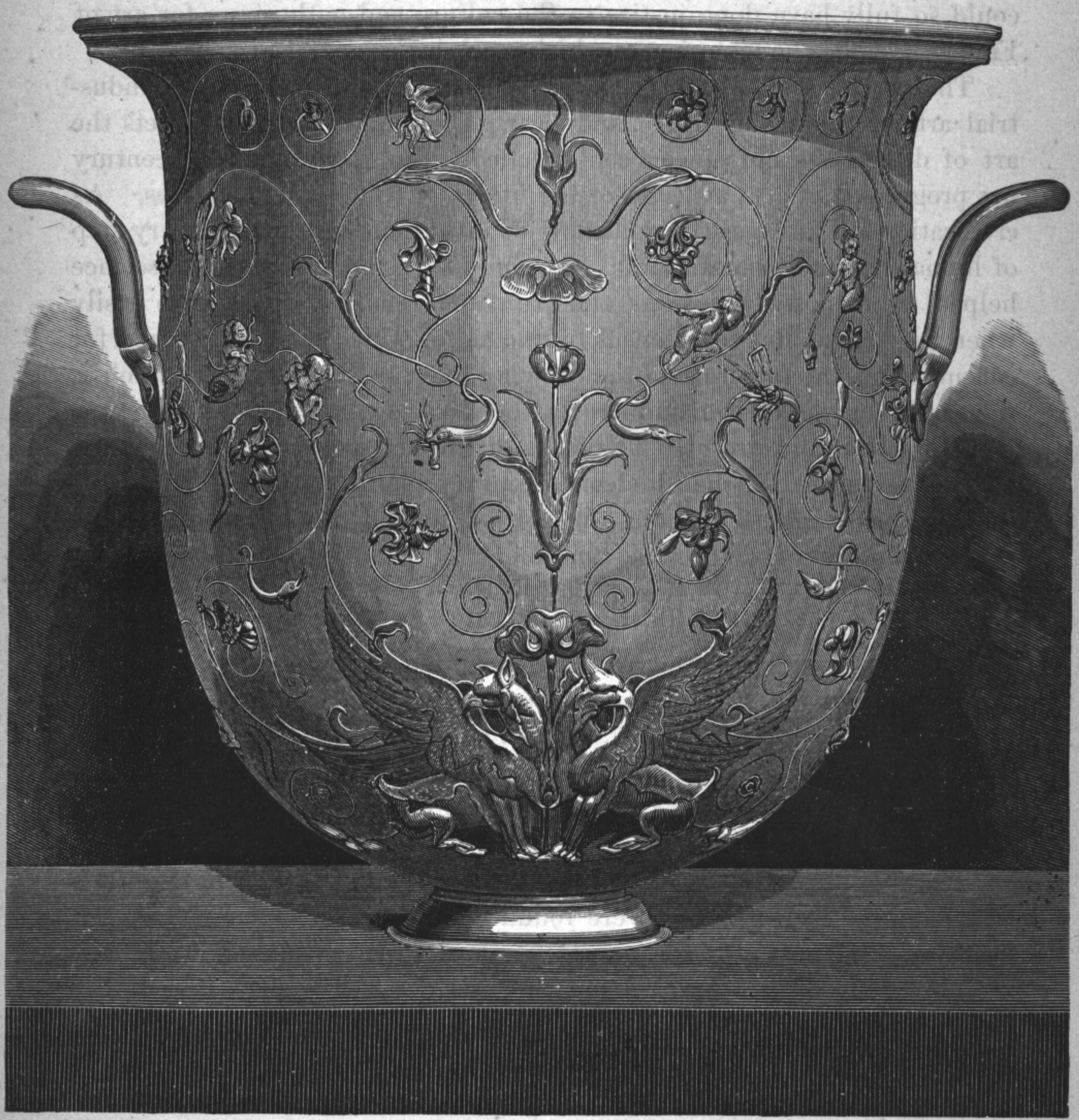
THE TREASURES OF HILDESHEIM.

To attempt to give even a brief description of the characteristic features of the art industries prior to the Middle Ages would be a task far beyond the purpose of this book. A few examples of the art of the period of the Roman Republic are presented by engravings. These objects of art are interesting, both for their intrinsic excellence and because of the circumstance of their discovery.

The treasures of Hildesheim, now in the Museum of Berlin, take their title from the fact that they were found near the gates of the city of Hildesheim, in Hanover, Germany. A party of Prussian soldiers were occupied in laying out the ground for a fortification. The place was full of historical interest. Batteries were planted here when the city was besieged during the Thirty Years' War, and here the city had erected its gibbets of justice. There was an ancient tradition that rare treasures had been buried at the feet of these instruments of death. It was in the year

1868 that the soldiers, while digging, came upon a heap of objects which seemed to have been buried without covering or other protection. There were fifty-two pieces — vases and utensils — all made of silver, most of them of great interest, and several of inestimable value.

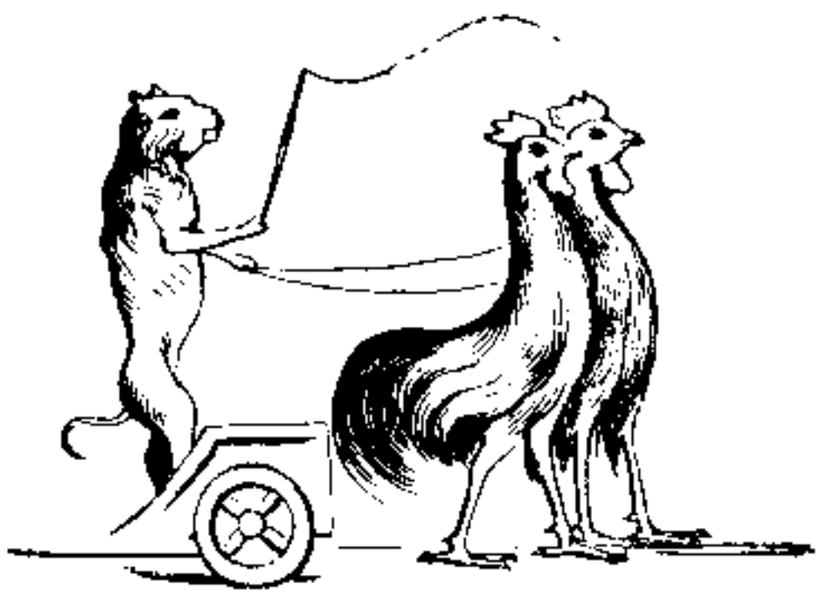
François Lenormant, in the *Gazette des Beaux Arts*, attributes the hiding of these treasures to some of the barbarous chiefs who had pillaged the cities on the borders of the Rhine, or in Northern Gaul; for the Roman occupation had not extended so far into the German country as Hildes-



Roman Drinking-cup.—From Hildesheim.

heim. Besides, these objects are not all of Roman origin, some of them bearing evidence of barbarous construction. The largest of them is known as the "Roman drinking-cup." With its base, it weighed forty-four pounds, as is learned from an inscription engraved upon the interior of the vessel.

The most artistic piece of this collection is an elegant dish, the principal decoration of which is a figure of Minerva, seated upon a rock. The goddess is represented, full of grace and dignity, in a graceful aspect, as the protector of humanity and the useful arts. The ornamentation of the border which surrounds the medallion of Minerva is of palmettos, and has all the fine execution of the best Greek art.



CHAPTER VI.

ART EDUCATION IN GREAT BRITAIN.

English Plan of Art Education.—Committee of the Council for Education seek Information.—Lord Stanley's Letter in 1867, asking Foreign Ministers for Facts with Regard to Technical and Art Education.—The South Kensington Museum.—Its Programme of Instruction.—Table showing Number of Persons receiving Instruction in Drawing in 1873.

Of all the efforts at art education in Europe, that of Great Britain has been most deliberately planned, and most energetically and persistently put in practice in the instruction of a large number of people. In England there is a separate bureau of the Government devoted to Art and Science Education. This bureau has an organization which reaches out in every direction where it is desirable to have art instruction. This thorough organization for art education originated in the desire of the merchants and statesmen of England to advance the commerce of the nation, in the production of objects of art, from its condition of inferiority to that of France and Germany. The English people did not seem to realize the superiority of the nations on the Continent, and especially of France, until the great exposition of 1851. They were quick enough to perceive it then, and profit by the examples of their neighbors. The English-speaking people are often praised for their energy and executive capacity. None of the great achievements of England have been more surprising than the work she has done within twenty years past in the application of art to her industries. As soon as she found out her shortcomings she went to work with great earnestness; Parliament set its powerful machinery in operation; the Committee of Council for Education addressed the Chamber of Commerce of Great Britain the following questions:

What trades are now being injured by the want of technical education?

How, and in what particular, are they injured?

How do other countries, from their greater attention to technical instruction, absorb our trade? Give instances, and, if possible, statistics.

What plan of technical education would remedy the evil?

The replies to these questions may be found in the Parliamentary reports ordered to be printed by the House of Commons, March 25th, 1868. They came from the associations of the Chamber of Commerce for the United Kingdom, which reported the replies from the separate chambers of Nottingham, Kendal, the Staffordshire potteries, and Birmingham. They showed that there was little if any technical education. Of that great industry of the potteries which had been distinguished by the genius of Wedgwood and Flaxman, we read: "It is only necessary to point out the numerous cases in which foreign workmen are employed, and foreign designs copied, in most, if not all, the principal manufactories of the country. * * * In the pottery districts several manufacturers employ foreign workmen as painters and designers, and in one manufactory a sum of ten thousand pounds a year is paid to foreign workmen."



Josiah Wedgwood's Cream Ware, painted with Autumn Leaves.

Such was the character of the evidence which came from the Staffordshire, Sheffield, Macclesfield, and other chambers of commerce; and the associated chambers of commerce for the United Kingdom passed a resolution: "That while the details of a comprehensive plan of technical education must be the subject of minute examination, the Government be urged to direct its attention at once to the systematic training of professors of theoretical and applied science, and to give increased assistance beyond that confirmed by the late minister on science schools (December 21st, 1867), to all serious local efforts to establish and extend the teaching of science and art."

Another step was taken on behalf of technical education, in a circular letter which Lord Stanley, in 1867, addressed to Her Majesty's ministers abroad, requesting answer to certain questions concerning industrial education among other nations. The replies to this circular all went to show that in technical education France, Belgium, Switzerland, Prussia, and Austria were far in advance of Great Britain. It is needless to say that the United States was in no condition to be offered as an example of what had been accomplished by the application of art to the industries of the land. Here and there she was able to compete with Great Britain

and the Continent in certain articles of coarse manufacture, such as spades and shovels, axes, nails, sewing-machines, some fire-arms, and many articles for common use of wood-work and hardware, but never in articles to which taste and beauty give increased value. The United States at that time had not given the subject of technical education the least consideration. In order to gain an advanced position in the commerce of art, powerful associations were formed in Great Britain for the development of the arts. Schools of design, libraries, and museums were multiplied in every direction. The most effective means of instruction, however, were those connected with the Kensington Museum. These were the "National School for the Training of Art Masters and Art Mistresses," and thousands of schools of design which were established throughout the kingdom.



Saxon Jug.



Saxon Jar.

This work of teaching was done with energy and completeness, so that the course of instruction, hereafter briefly described, reached every class in all the important towns of the kingdom.

The machinery by which the English have accomplished such excellent results may be found in the following plan of organization.

In the official directory, which contains the "Regulations for promoting Instruction in Art," four separate schools of instruction are described, and they are recorded as follows:

Aid to elementary day-schools.

Aid to training-colleges for teachers.

Aid to art night-classes.

Aid to schools of art.

The details of the method of proceeding in each of these schools are given at some length in the appendix, where it is seen how liberal is the

the expenses of the schools. The use of the word "aid" has real significance. The Government not only invites the student to come and be educated, but it really pays him for coming. In all the history of persons who have been generous patrons of art, or of beneficent governments providing for the welfare of their people, certainly no system equals this effort of Great Britain to encourage and stimulate art education. The elaborate and thoughtful plan which is detailed in the appendix is the result of the experience of twenty years in endeavoring to find out the best way to advance the industrial interests of that country. The system is a very complete one for Great Britain.

One of its means of efficiency is its centralized power. Yet what is easy and in order for the "Royal Committee of Council on Education" in London is impracticable, well-nigh impossible, and most undesirable, for any commissioner of education at Washington. Nor is the system of money rewards for efficiency possible in this country. The public-school fund is not likely to do more than furnish the teachers, school-room, and material. But while there are features of the English system which are not of the best method, and others not applicable to the United States, the course of actual instruction is nevertheless admirable and efficient.

Let us see what amount of instruction has been given from year to year. At the distribution of prizes at the South Kensington school for work executed during the year 1874, the Lord President of the Council (the Duke of Richmond) gave a statement of the growth of art study in the country since 1871, from which it appears that the schools in which art is taught have increased from 2100 (1871) to 2811 (1874). In the same three years the students of art have increased in number from 203,638 to 281,400; and the works of art produced by the schools have in the same time increased from 102,467 to 157,636.

This statement was probably made up to a later date than that of the annual report for 1873. In order to present the industrial art growth of Great Britain in a yet clearer light, the following table is given on the next page, in which the great progress made in the eighteen years between 1855 and 1873 is seen. What wonder is it that the English have excelled the French in their favorite field of art-industrial development.

These are the statistics of school instruction under the South Kensington scheme; but who shall describe that other powerful influence which proceeds from its magnificent museum and library—the collections of pottery, bronzes, and other objects of art whose variety and costliness have never before been excelled? Not only the art industries, but the social

TABLE SHOWING THE NUMBER OF PERSONS RECEIVING INSTRUCTION IN DRAWING IN 1873 FROM TEACHERS HOLDING DRAWING CERTIFICATES GRANTED BY THE SCIENCE AND ART DEPARTMENT, COMPARED WITH THAT OF PREVIOUS YEARS.

	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.
1. Public and other elementary schools for the poor.....	18,988	22,746	30,802	65,465	67,490	74,267	76,303	71,423	79,845	94,083	86,967	80,084	79,411	93,713	120,928	147,243	166,456	194,549	237,733
2. Provincial schools of art.....	8,274	10,204	10,238	10,784	13,787	11,121	11,569	11,521	12,497	12,733	13,045	15,597	14,639	15,908	17,247	17,541	18,596	20,530	20,653
3. Metropolitan district schools of art (including those in connection with the National Art Training School at South Kensington).....	610	602	778	1,147	1,309	1,530	1,791	2,342	2,522	2,794	2,657	2,542	2,702	2,566	2,617	2,749	2,559	2,324	2,715
4. Students in training for masters and national scholars at South Kensington.	79	106	71	62	64	68	50	59	52	42	39	37	44	53	41	59	62	61	56
5. School-masters and pupil-teachers	1,547	1,425	1,323	2,012	2,322	2,495	2,123	2,044	1,461	1,028	919	1,049	1,051	†	†	†	†	†	†
6. Night classes for instruction in drawing.....	....	....	....	....	....	....	....	....	....	....	....	1,140	2,552	4,571	9,322	12,119	16,140	17,256	20,352
7. Private schools, grammar schools, etc.*.....	....	....	....	....	....	....	....	....	....	....	....	4,219	4,529	4,716	4,951	5,787	6,012	6,309	5,248
8. Diocesan and other training colleges ..	....	....	....	....	....	....	....	....	....	....	....	....	....	2,035‡	2,161	2,418	2,676	3,105	3,419
Totals.....	29,498	35,083	43,212	79,470	84,972	89,481	91,836	87,389	96,377	110,680	103,627	104,668	105,529	123,562	157,207	187,916	212,501	244,134	290,176

* Previous to the year 1866, included under head No. 1.

† School-masters and pupil-teachers are now instructed in schools of art, night classes, and elementary schools, and are included in the numbers given under those heads.

‡ Students in these colleges were examined in previous years, but payments in aid of their instruction were made under the regulations of this department for the first time in 1868.

This table is signed by T. CHESMAN, *Official Examiner.*

CHAPTER VII.

ART EDUCATION IN FRANCE.

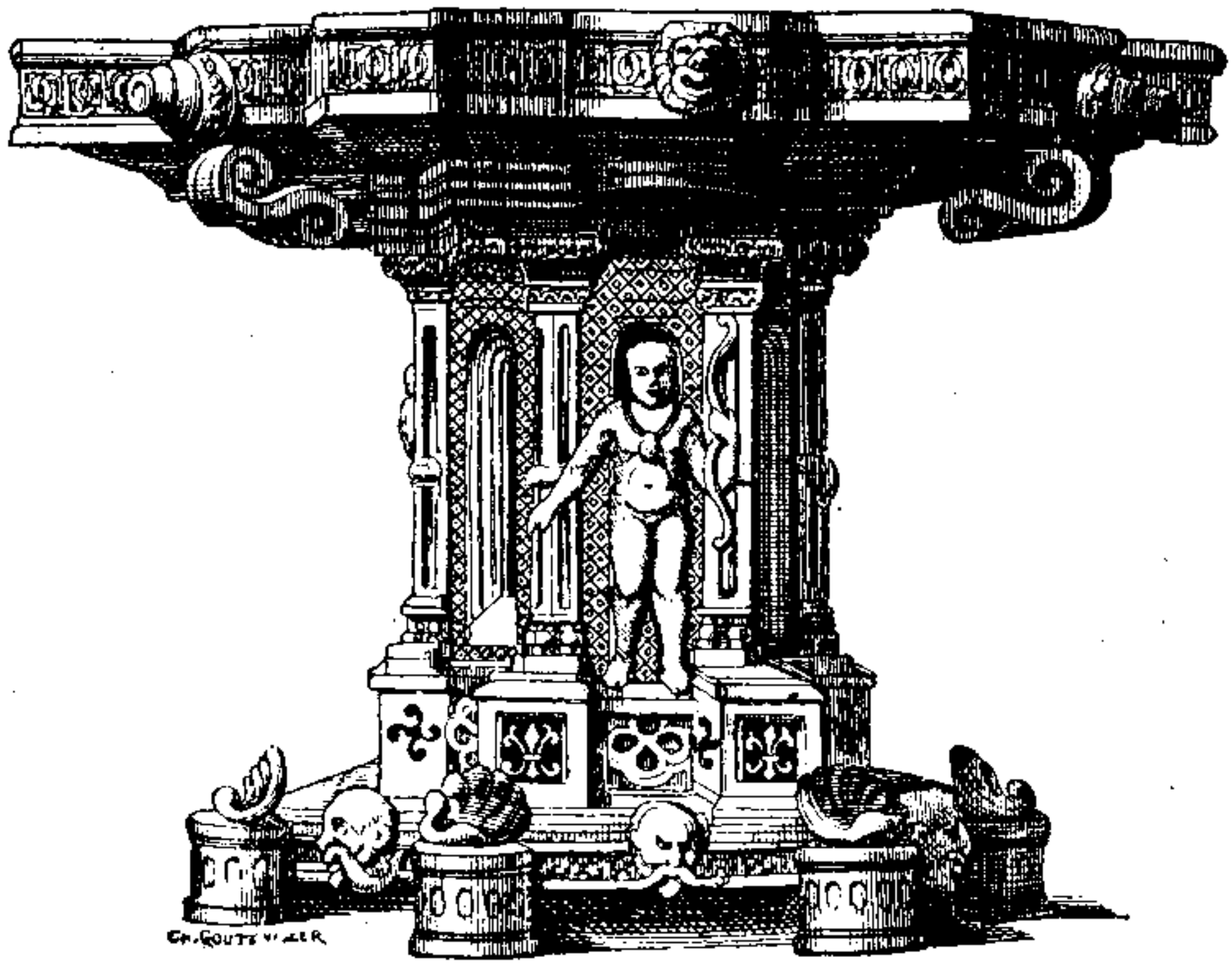
Art Education in France.—Schools of Design in Paris.—No General Programme of Instruction directed by the Government as in Belgium and England.—The École des Beaux Arts.—Statistics showing the Increase of Art Productions in England over those of France from 1847 to 1868.—The Union Centrale of Fine Arts applied to Industry at Paris.—History and Plan of its Organization.—Prosper Mérimée on the Universal Exposition of 1862.—Expositions of the Union Centrale.—Novelty and Beauty of those Expositions.—Expositions of Art and Industry in the United States.—The Sèvres Manufactory.

For many years past there has been in France no lack of means for art inspiration and art education. In other cities of that country, as well as in Paris, there are magnificent collections of pictures and statuary, and museums filled with rare and beautiful works of art, while in every direction may be found schools of art. Some of these schools are under the direct management of the Government, like those of the École des Beaux Arts, and the School of Design in the Rue l'École de Médecine.

Besides these, there are numerous day and night schools subsidized by the Government, where both sexes are taught the art of design. Notwithstanding this pecuniary assistance given to the last-named schools, the authorities do not attempt to direct the course of study in them, as does the Government of Belgium in the art schools of that country. The reports of Government commissioners and other officials have strongly condemned the use of badly drawn or unartistic models, but there has been no official programme creating uniformity of instruction. At the same time, other influences have been at work which have raised the standards of instruction to the highest point. Notable among these has been the report of the jury of the "Exposition of Schools," held in Paris, which decided that the study of linear drawing, based upon geometry, ought to be the foundation of the programme of all academies and industrial schools.

In 1869 a Congress of Art was held in Paris, which expressed in yet more emphatic terms the same opinion. It insisted upon "suppressing the print, and founding the first studies in drawing upon the elements of

geometry." From 1865 up to the present time this principle has been constantly discussed. It has found among its most earnest advocates the powerful organization known as the Union Centrale. Thus, while the art schools of Paris have no uniform standard of study, they have generally



Oiron Faience.

adopted this method, which is based upon the elements of geometry, and which is sometimes called the "Hendricks system." Within the last few years the Paris schools have become something more than drawing-schools. They are now achieving great results by adding the scientific branch of the art of design to the artistic. One of the prizes offered at the recent exposition of the Union Centrale was for the industrial art school having the best method of instruction. This prize was accorded to the school of M. Levasseur, of Paris, a description of which is kindly furnished by an American gentleman resident in Paris. While it does not give a detailed programme of the course of instruction, it presents a charming, life-like picture, which is more interesting and intelligible:

"I went to see Mr. Levasseur on Friday, by appointment. While I understood all he said, and am sure he has a method, though he declares he has not, it will be difficult, if not impossible, to explain what that method is. It is the *man himself*. Perhaps the best thing I can do is to briefly describe the school. A shabby-looking building on a corner (to get light), fitted up plainly, but with every convenience for work, is crowded day and evening (females in the day-time, males in the evening)

with young people from all the industrial classes. Not a calling, however remotely connected with art, but has its neophyte there. I have no room to enumerate, but from the coiffeur of actual heads up to the painter of ideal ones, there they are—and, directing them, a man who lives, I think, in the building, existing apparently only for his art; and this brings me back to the point I started from—*to the man himself. He* is the text-book and the method. Surrounded by models in plaster, on paper, with living ones at his command (I saw a class of thirty girls, from fourteen years to twenty, drawing from life), and, with assistant teachers, he counts over four hundred pupils; he has more applicants than room. Originally his own, the city subsidized the school, and made it municipal. It is now on the broadest basis. The architect, the engineer, the carpenter, the furniture-maker, the decorator of china, tapestry, fans, what not, the jeweler—all find appropriate models and generous instruction. Mr. Levasseur says it was proposed to establish separate and distinct schools of art in Paris for each and every industry—over thirty different schools would have resulted. But he, with many others, fought the idea, and it was abandoned. He declares that the principles of true art are the same whether applied by this or that workman, and ought to be taught in all their widest scope: special schools would cramp the scholar; the general school expands him. I said that Mr. Levasseur seemed to exist only for his art; besides his personal he has a national pride in his position, and a ribbon, or a medal, or perhaps the cross of the Legion of Honor, is more in his estimation than individual comfort or emolument.

"Mr. Levasseur says that he puts every beginner, who is not pressed for time, to draw the human face; but often his pupils have a business interest in flower-drawing, or ornamental design of some sort which he is obliged to foster. Very young children begin with drawing simple geometrical lines, with which he combines the elements of perspective." * * *

Undoubtedly the secret of the success of M. Levasseur's school is in his devotion and his rare personal capacity as a teacher. A good method of instruction is better than an indifferent or bad one; but the best of programmes is nearly useless unless the teacher is competent and enthusiastic in his work.

In nearly all the public schools of France, especially in the secondary and higher institutions of learning, drawing forms one of the branches of instruction. In the methods prescribed for the special schools there is a full course of drawing for each term; but it is only of late years that it has been thought necessary to teach drawing to children under ten years of age. The action of Belgium and England upon art instruction has aroused the attention of the French. At a recent distribution of prizes

at the National School of Design and Mathematics, the Marquis De Cheunevrieres, who is the present Minister of Fine Arts, declared himself strongly upon this point. He not only urged the introduction of drawing in all the communal schools, but he announced extensive reforms in the higher schools, which are more directly under the authority of the Government. It has been only within a short time that M. Gérard, the director of public schools in Paris, has made the teaching of drawing obligatory in these schools. For the highest branches of art instruction, France possesses one of the most important art schools in Europe.

THE ÉCOLE DES BEAUX ARTS.

This is the well-known "École des Beaux Arts." With few exceptions, for many generations past, the great artists of France have passed



J. F. Millet.

through the extensive course of study prescribed at this school. Names like Ingres, Delaroche, Robert Fleury, Rousseau, Millet, Gleyre, Delacroix, Decamps, Troyon, and others, are associated with its government. Its professors of painting and sculpture are not taken from the ranks of incom-

petent or indifferent artists. Only those who have attained fame by their works are permitted to conduct these important trusts, which at present are in charge of Gérôme, Meissonier, Cabanel, Jules Breton, and Bonnat.

The École des Beaux Arts is divided into three sections. These are: Painting, sculpture, and architecture. To each of these there are special ateliers. Three of painting, three of sculpture, and three of architecture, besides one of engraving on copper, and an additional atelier for engraving of medals and precious stones. The instructors of the school are: A professor of painting, whose duties include the giving-out of programmes



Troyon.

for examination for painting; and professors for sculpture and architecture with similar duties.

The following branches of instruction each have a professor: Ornamental design, anatomy, general history, mathematics, descriptive geometry, stereotomy, physics and chemistry, construction, legislation, history of architecture, decorative art, theory of architecture, history of archæology, history of the art of æsthetics.

There is a system of rewards for excellence of workmanship, consisting

given in several grades, for painting, sculpture, architecture, and engraving. This prize permits the successful competitor to attend the French Academy at Rome, where he follows the study of his profession from one to three years at the expense (a fixed sum of money) of the French Government.

The École des Beaux Arts is a costly institution to the French Government. The subvention for the year 1875 was 450,000 francs. Upon the special authorization of the director, strangers are permitted to enter the school, and are not subject to the conditions with respect to age, applied to native candidates, who are not admitted under fifteen nor over thirty years of age.

Until within a few years, the superiority of France in its art productions was not doubted or contested. With those articles of industry into which art entered, she filled the markets of the world. With a self-confidence peculiar to her people, she became careless, and it was not until half her trade had escaped her that France was conscious of the loss.

Let us see the situation to which this grand nation was brought, through its lack of energy and enterprise. The statistics given below show the relations which France and England have from time to time held in their commerce in the industries of art.

STATISTICS SHOWING THE INCREASE OF ART PRODUCTIONS IN ENGLAND OVER THOSE OF FRANCE, FROM 1847 TO 1868.

France, which had hitherto taken a leading position in artistic industries, began to fall behind, and to see a decrease in the exportation of articles which require art in their manufacture. We find that from 1847 to 1856 French exportations reached the sum of 1 billion 174 million francs. Of this sum 418 million francs were for art industries—about 35 per cent.

On the other hand, from 1856 to 1868, there was an increase of exportations which amounted to 2 billion 70 million francs. Of this sum only 350 millions were for art industries—scarcely 16 per cent. This shows in twelve years a decrease of more than one-half.

Now in England, from 1856 to 1868, with an increase in exportations of 3 billion francs (one billion more than in France), the English products in which art is required occupied more than 855 millions (505 million more than in France), *i. e.*, 28 per cent. (12 per cent. more than in France).

Thus we see that in France, from the first period (1847 to 1856) to the second (1856 to 1868), there was a decrease in the exportation of artistic industrial productions from 35 to 16 per cent., from 418 to 350 million francs, while in England it was always 28 per cent., increasing from 413 to 855 million f

To maintain this proportion, in the presence of the increase of its other exportations, the sum of the products exported which require art in their manufacture must have increased in England 442 million francs, while in France it decreased 68 millions (from 418 to 350 millions).

As has been significantly said of the above facts by an eminent French writer, "These figures have an eloquence which is beyond comment. We leave them to those who consider art as a fantasy without consequence, as a sort of pastime, a recreation of the *bon ton*, which interests only the people of fashion and the amateurs who make collections."

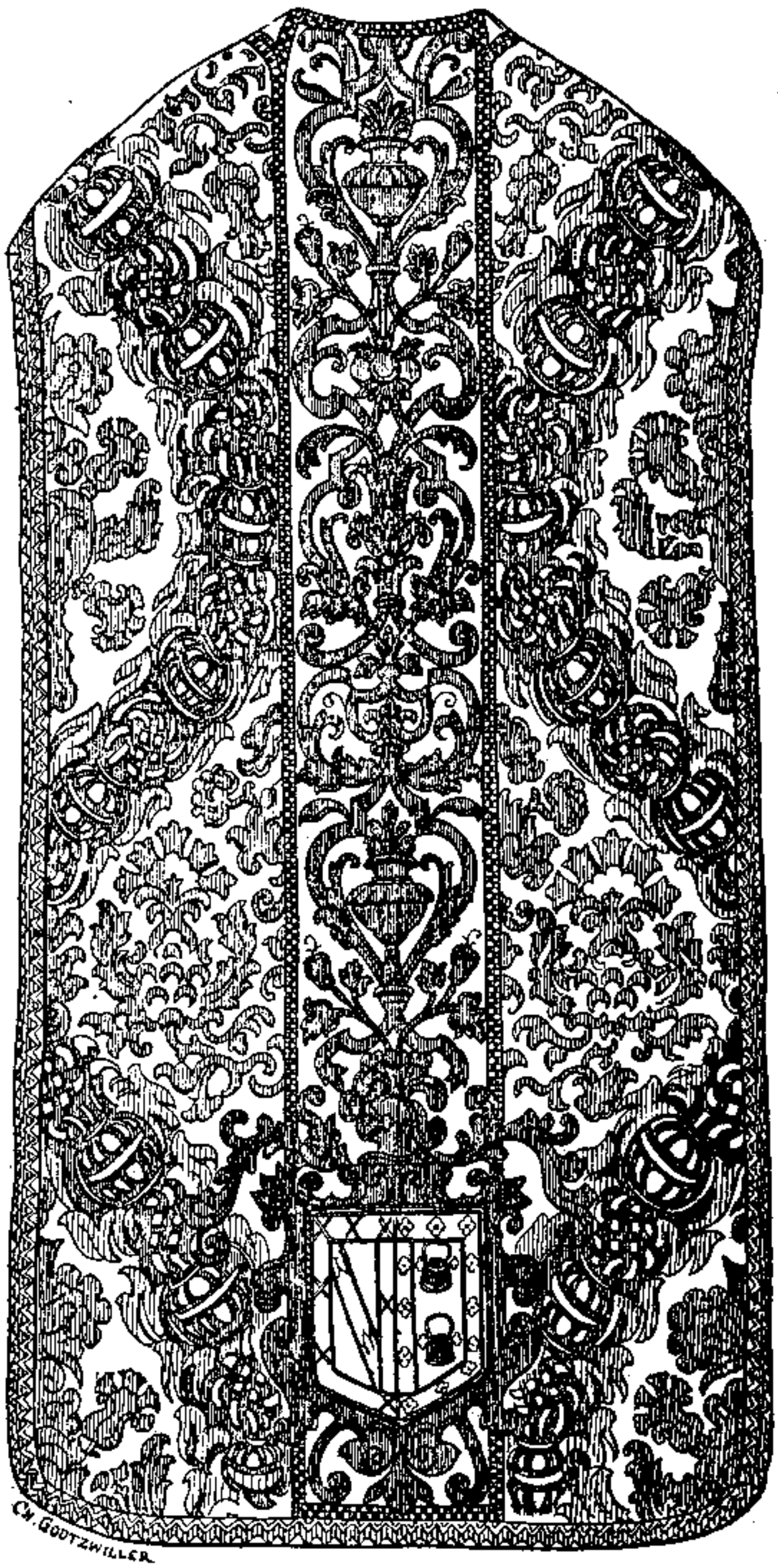
THE UNION CENTRALE AT PARIS.

This is an organization of extended operation and influence, direct and practical in its effort, most discreet in its management, animated by the highest purpose, and already rewarded with the greatest success. The Union Centrale should be the model for similar efforts in the United States. Its early history, its purposes, and a sketch of what it has accomplished, are given in these pages, in the hope and expectation that the establishment of like organizations in this country will exert a dominant influence in technical education, and in the application of art to industry.

This Union Centrale of fine arts applied to the industries, was founded in 1864. It was not the first of its kind in France. As long ago as 1796, Emeric David had the design of founding an industrial museum, which, in the following year, was renewed by Dannon and Mayeure. In 1806, 1814, 1829, and 1834 other efforts were made for its establishment; sometimes at Lyons and sometimes at Paris. In 1845 a society of industrial art was founded. It failed, as did the other attempts; but it was not entirely useless, for it gave to M. Guichard, who had been its secretary, and also to some of his friends, that practical experience which afterward, in a new attempt, enabled them to succeed. They understood that it was necessary first to prepare the minds of the public, and then wait for favorable circumstances.

The proper occasion was furnished by the movement which produced the grand expositions of 1851, 1855, and 1862. In truth, the rapid strides of the English in art production had made such action a necessity, and the society, in 1864, was completely organized. For twenty years France had tranquilly rested in the conceit of its artistic superiority over other nations, having the conviction, as comfortable as it was dangerous, that no power existed able to wrest it from her. French self-confidence went so far as to advance the assuring theory that taste for art was a gift of nature, a matter of climate or territory, and therefore France had noth-

ing bètter to do than to remain quiet. That there were clear-sighted men in France as early as 1862, may be seen by the report of M. Prosper Mérimée on the Universal Exposition of that year. He said: "Since the Universal Expositions of 1851 and 1855, immense progress has been manifested throughout Europe, and while we do not remain stationary, we can not dissimulate that the advance we had made is diminished, and that it may be effaced. In the midst of the successes obtained by our manufacturers, it is a duty which we owe to ourselves to notify them that defeat is possible, and that it may be foreseen in a not far-distant future, if they do not at once make every effort to retain a superiority which can be preserved only upon condition of perfecting themselves unceasingly. The English industry in particular, much behind from the art point of view at the time of the exhibition of 1851, has in ten years made prodigious progress; and if it continues to march at the same step, we shall very soon be left in the rear."



Chasuble, Sixteenth Century.

After a while the merchants and manufacturers of France became aware of the English superiority, and, thoroughly alarmed at the possible loss of their business, they joined together in self-defense.

Two fundamental principles composed the programme of the Union Centrale: a principle of doctrine, the unity of art; a principle of action, an appeal to private enterprise; the end, to labor for the development of

art in all its applications to industry. The Union Centrale held successful expositions in 1861 and 1863.

THE DIFFERENCE BETWEEN THE EXPOSITION OF THE UNION CENTRALE AND THE USUAL INDUSTRIAL EXPOSITIONS.

The Exposition of 1863 gave to M. Guichard, its president, the opportunity to explain more clearly the character and purpose of this enterprise, which was the work of himself and friends: "The Exposition of Fine Arts applied to Industry ought not to be confounded with other industrial expositions. What is the office of the juries of these other grand undertakings? They are obliged to consider a multitude of things equally serious, but far removed from the point of art. They would fail in their first duties if they did not inquire into the importance of the manufacture, the number of workmen employed, the amount of business done, the prizes previously gained, the age of the firm, and so on; and it is upon the results of all these facts that judgment is based.

"With us nothing, absolutely nothing, is the same. The beauty of form, the happy employment of color, masterly execution—art, in a word, art only. Such is the unique evidence invoked by us, the sole element upon which is founded our verdict. A solitary *chef-d'œuvre*, the work of a new artist, an unknown workman, is of more value to us than the largest and most important of productions, the artistic perfection of which does not equal its commercial value. This is what we wish to have understood by the words 'the fine arts applied to industry.'"

The programme of this Union Centrale, and the words of M. Guichard, admirably express the mission of those who aim to advance the interests of industry in this country. It is a programme that can be closely and safely imitated in the great work yet to be begun in America. Some details of the rules of the society will give a clearer idea of its spirit and intentions. It was organized:

"To encourage in France the culture of the arts which lead to the union of the beautiful and the useful.

"To aid the efforts of professional men who are occupied in the work of national art education.

"To excite emulation among artists whose works, while popularizing the sentiment of the beautiful, and raising the public taste, tend to preserve our art industries, now menaced by other countries.

"The institution comprises: first, a museum, retrospective and contemporary; second, a library of ancient and modern art, where workmen can

most essential to the workman and the artist who wish to unite the beautiful and the useful; fourth, concurrence between the artists and the different schools of design in Paris and the departments; fifth, expositions which shall more particularly present the means of studying the best application of art to industry.

"The committee will continue, periodically, at Paris, under its own



Dalmatica of the Fifteenth Century.

responsibility, general or partial expositions of the fine arts applied to industry.

"Warmly convinced of the advantages of the universal application of art to industry, the committee will put itself in communication with all those who in France sympathize with this movement. It asks upon all occasions the concurrence of such persons, the use of their knowledge and influence. In return, it invites them to make use of all the resources at its command. The committee will sustain, by all the means in its power,

to that of the Union Centrale, and as soon as the condition of the museum and library will permit, it will aid those institutions by the loan of models and objects of art."

Membership in the society is obtained by the annual payment of thirty-six francs, or three francs per month. The product of this income is applied to the augmentation of the museum and library. The head-quarters of the society are fixed at No. 15 Place Vosges. Thanks to donations, the sums received from memberships, and other sources, a large library and museum have been collected at the rooms of the society. The library has been open to workmen, and all such as have had need to use it, since 1864. The president of the society at the present time is M. Edouard André, *ancien député*. Its other officers belong to all the departments of art and manufacture. They are architects, manufacturers of art bronzes, house furniture, house papers, pianos, jewelry, laces, all kinds of textile fabrics, carpets, and similar articles of commerce.

Prizes for competition are offered by the society. This competition is open to all aspirants from any of the schools in France, to females as well as to males. There are two classes of competition for women, and three for men. In each class there are a first and a second prize and four "mentions." The first prize is a medal of "vermeil" and 100 francs in money. The second is a medal in silver and 50 francs in money. The "mentions" receive a bronze medal. Besides these, a grand prize is given, the subject being a composition of art applied to industry, which may be executed as a drawing or modeled in clay. This prize is 800 francs, which is to be expended in traveling. During his journey the successful candidate is to make studies and send them home, with full reports of his observations, to the president of the Union Centrale. The competition referred to above is a part of the plan of operations of the society outside of their occasional expositions. At these expositions the effort to excel is provoked by the offering of prizes in every department of industrial art. This list is of value, as it shows the industries in which the French are most earnestly engaged. The juries which decide upon the relative merit of articles are chosen, one half by the administration, one half by the exhibitors. Among the jurors for the exposition of 1874 may be found the most distinguished men in the arts and commerce in France. The following are the classes for competition:

FIRST SECTION.—*Art applied to the Decoration of Habitations.*

Architecture; decoration of cities, public edifices, and private dwellings; ornamental sculpture in stone or wood; carpenter's art work; marquetry; marble-cutting; painting for fixed places; window-curtains.

SECOND SECTION.—*Art applied to House Tapestry.*

Designs; models; carpets of all kinds; furnishing stuffs in silk, wool, damask, etc.; printed paper; leather; figured cartoons; decorative art of the carpet manufacturers.

THIRD SECTION.—*Art applied to House Furniture.*

Designs; models; furniture finished in various woods, carved, gilt, lacquered, ornamented with bronze; marquetry, faience, or enameled chairs; music-boxes; frames.

FOURTH SECTION.—*Art applied to Common Metals.*

Designs; models; art bronzes; objects for the ornamentation of dwellings, engraved, gilt, enameled, glass, etc.; forged iron, cast-iron, artistic iron-mongery, and copper.

FIFTH SECTION.—*Art applied to Precious Metals.*

Designs; models; work in gold and silver for the table and for religious purposes; jewelry, cameos.

SIXTH SECTION.—*Art applied to Pottery and Glass-ware.*

Designs; models; decoration in terra cotta; art potteries; terra cotta enameled; porcelain enameled; painted porcelain; enamels; glass-ware; crystals; mirrors; stained glass; large windows for churches.

SEVENTH SECTION.—*Art applied to Stuffs for Dresses and Clothing for Domestic Use.*

Designs; models; shawls; cashmeres; trimming; laces; embroideries; woolen and silk stuffs; cloths printed and worked, etc.

EIGHTH SECTION.—*Art applied to Various Articles.*

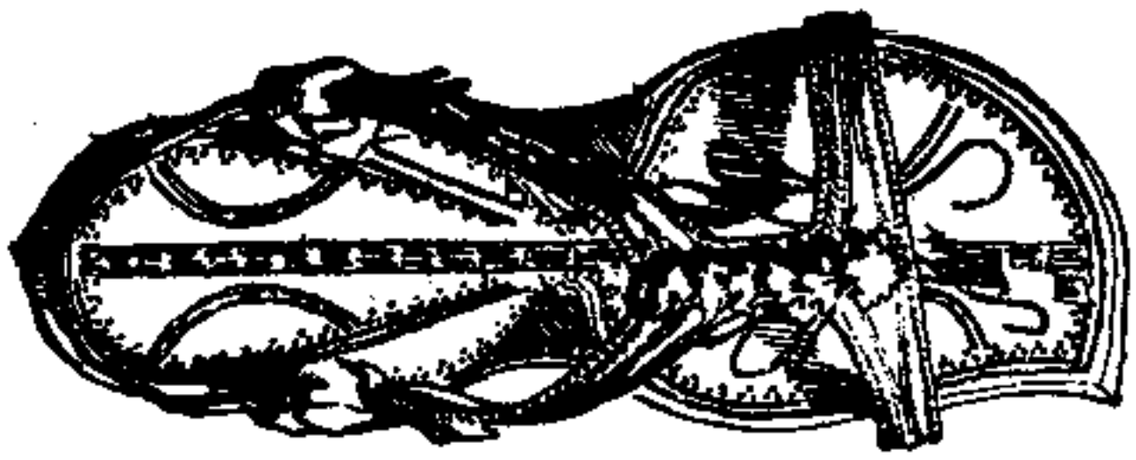
Designs; models; carriages; fire-arms; side-arms; cutlery; table-ware; small furniture; articles de Paris; book-binding; artificial flowers; fans.

NINTH SECTION.—*Art applied to Instruction.*

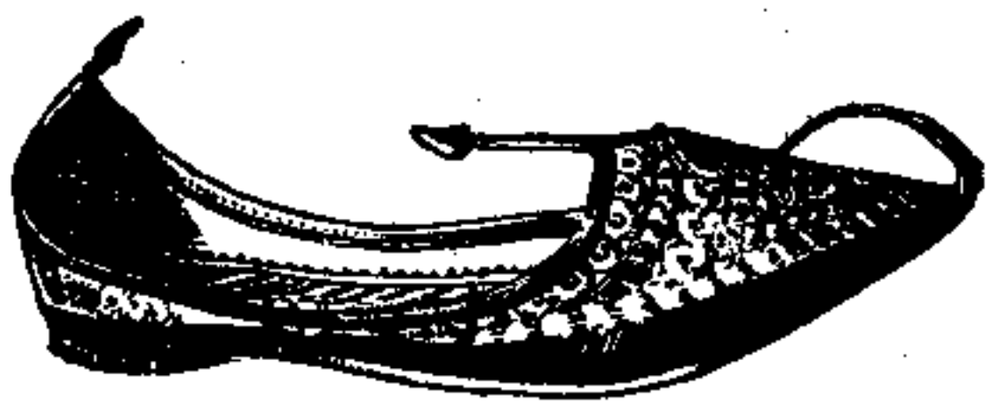
Methods of popularizing art; designs; models; engraving upon metals and wood; lithography; chromo-lithography; autography; heliography; photography; printing; new ways of engraving; books and illustrated publications.

The good results which have developed from the organization of the

Union Centrale are felt all over France. Among the most important has been the formation of a council of manufacturers of art industries, chosen



Indian Leather Shoe.

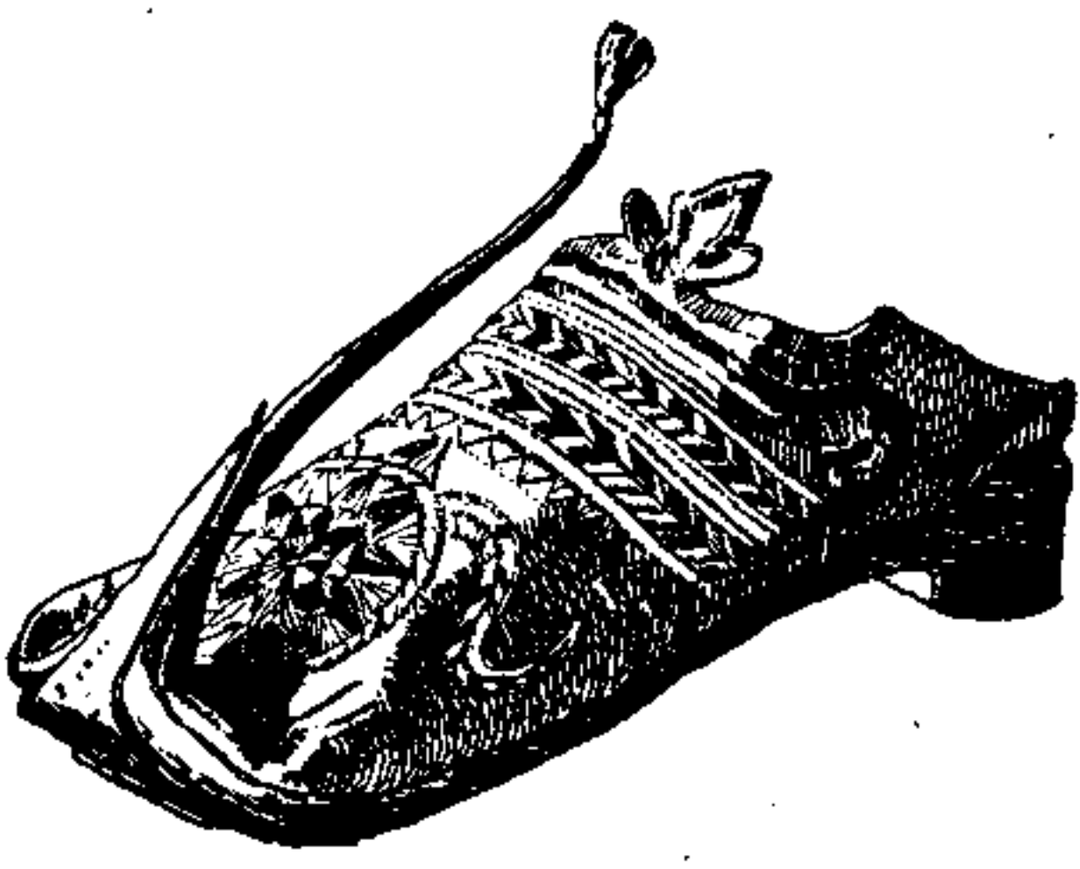


Woman's Shoe, India.

among the presidents and vice-presidents of the syndical chambers of art industries, whose business it is to examine into all questions relative to fabrication.

In the organization of the Union Centrale there were difficulties which do not exist in this country, nor could they well be understood by our self-acting people. In France it has, until recently, been the policy of the Government that superior education, with other great works of a public character, should be under the authority and patronage of the national Government. The Union Centrale renounced the subsidies of the Government, and called upon the public spirit of the people to support its efforts. In 1865 and 1869 successful expositions were held. Soon after came the war with Germany, when the association, in common with other institutions of art was silent. With the close of the war came renewed activity on the part of those who had already done so much for the society. It was reorganized; M. André was made president; and M. Guichard became the organizing director of the Exposition of 1874, which closed after a great success.

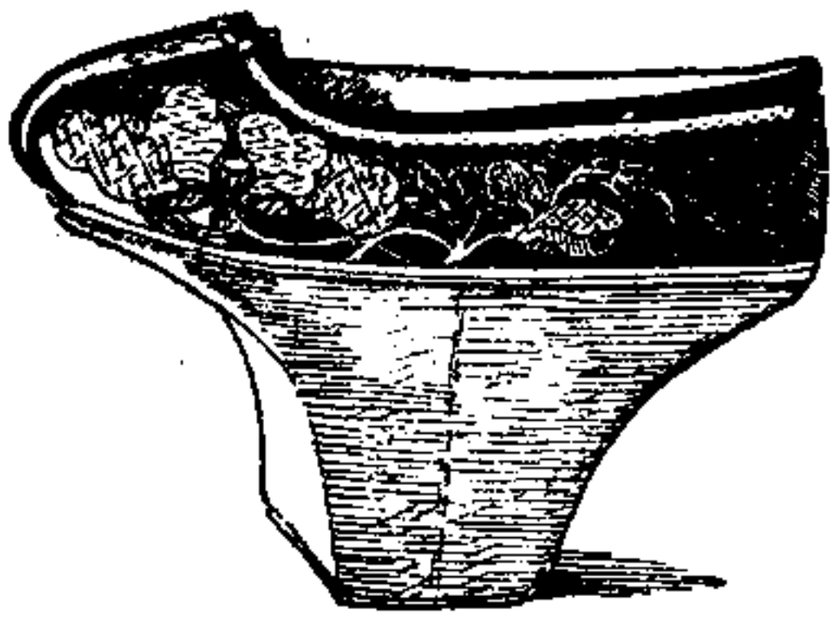
Sandal, India.



Indian Shoe with Pointed Toe.

This brief history of the organization of the Union Centrale would not be complete without mentioning some of the most

this society is conducted under independent direction. It has received important aid, however, from the French Government in its use of the

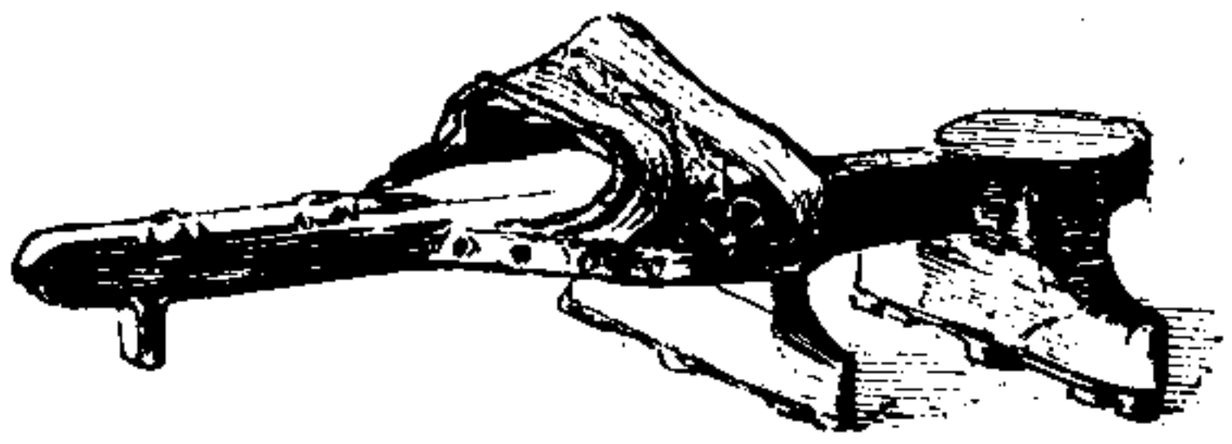


Chinese Shoe for Natural Foot.



Chinese Shoe for Deformed Foot.

superb Palais d'Industrie. In the spacious and commodious halls of this



Patten.

building, devoted to art and industry, the society had ample opportunity to display its collection of wonderful and curious things.

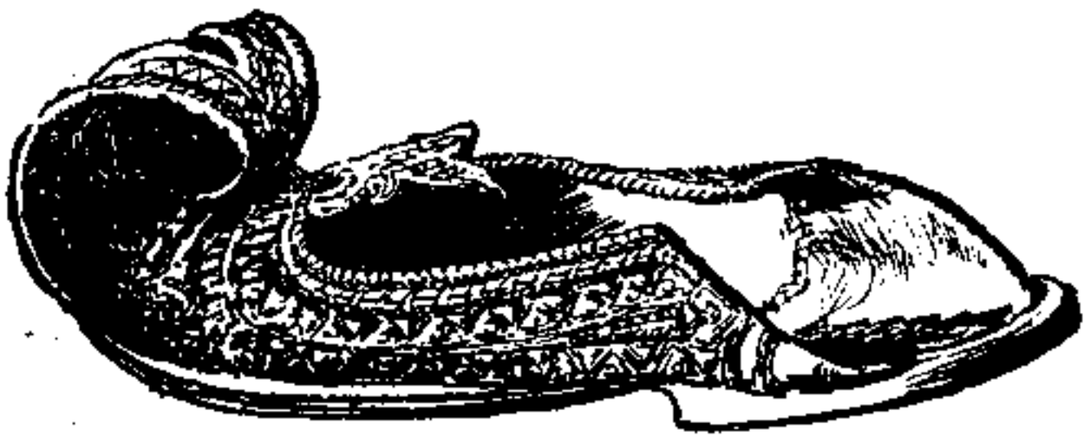


Pointed Shoe of the Fifteenth Century.

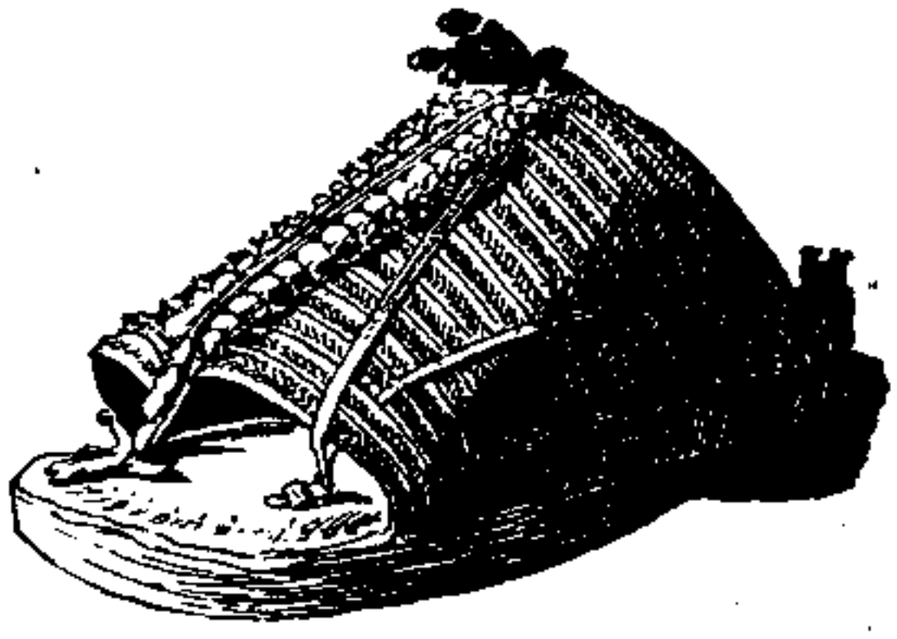


Persian Slipper worked with Seed-pearls.

The artists and manufacturers of objects of art were all represented at

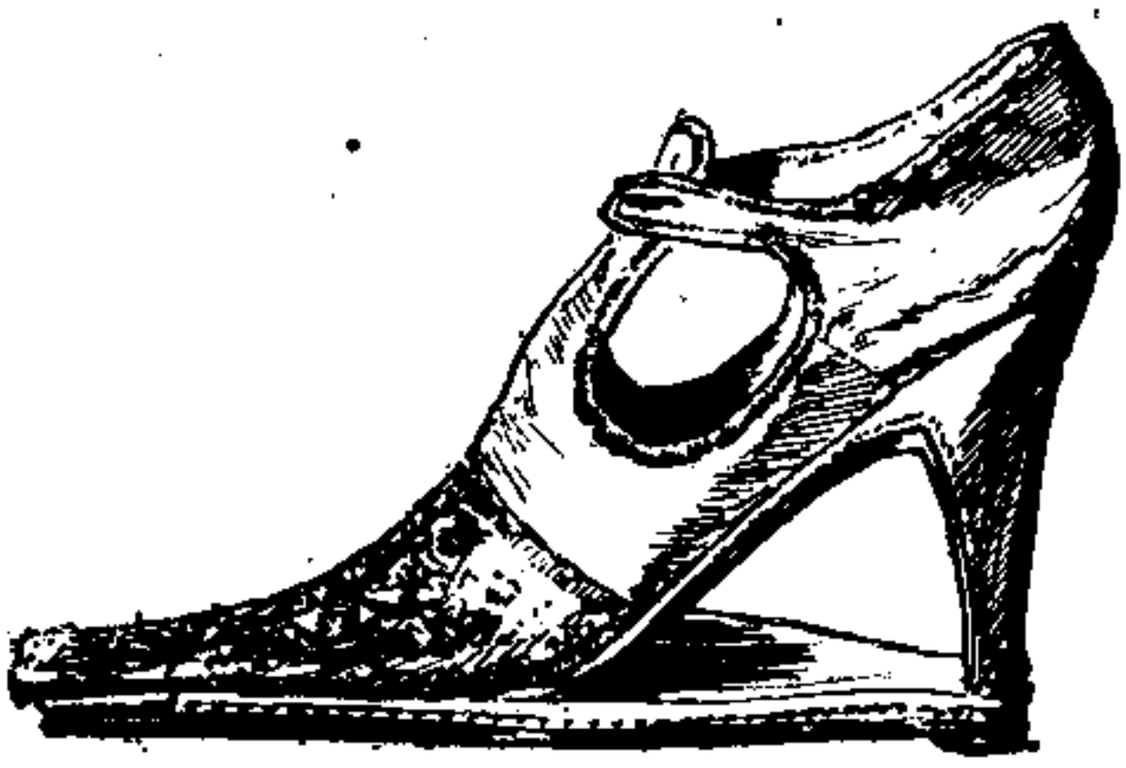


Shoe embroidered with Silver.



Sandal.—From Pondicherry.

this exposition. There was exhibited the most perfect work in bronze, pottery, glass, and jewelry; decoration of walls and ceilings; book-making. There were works in iron and other metals; of engraving and lithography; sculpture and painting; manufactures of shawls, laces, cloths, carpets, linens, silks, and every other fabric; cabinet-work; inlaying; mosaics; photography; clocks and watches; artificial flowers; picture-frames—these and several other objects representing the many subdivisions which go to make up the simplest articles in art manufacture.



Shoe of Catherine de Médicis.

A most valuable and interesting feature of this exposition was the department devoted to competition for prizes for superiority in art instruction. All the principal art and industrial schools of France, including the École des Beaux Arts, exhibited their methods of instruction, with examples of the work of their pupils. M. Levasseur, as has been already noted, drew the first prize in this competition.



Shoe of the Fifteenth Century.

A department of exceeding brilliancy was the Historical Museum of Costumes. Here were gathered some six thousand examples of costumes of all nations and ages. These costumes were classified and divided according to their nationalities and the period in which they were worn. Among these were the Tiraz, made in the eleventh century, in Palermo, by the skilled Arab prisoners of war, for Roger II., the Norman King of Sicily; richly decorated chasubles, worn by high dignitaries of the Church; stuffs of velvet and gold, worn in 1385 by the ladies and gentlemen of the court of Isabel of Bavaria; costly robes which graced the

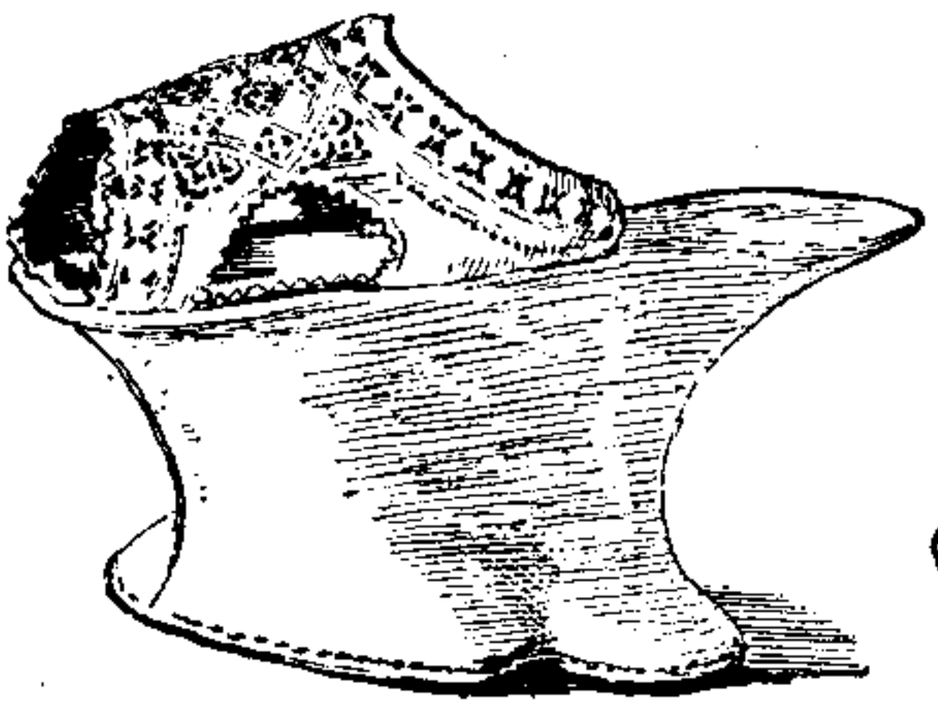


Shoe of De Montmorency.

forms of the men and women of the courts of Francis I., Henry II. of England, and Henri II. of France. Among the costumes of religious orders of special interest were sixteen manikins which represented the "Penitents of Limoges," whose dresses of black, white, blue, and gray; whose chaplets, crosses of prayer, and gonfalon, dated from the fifteenth century.

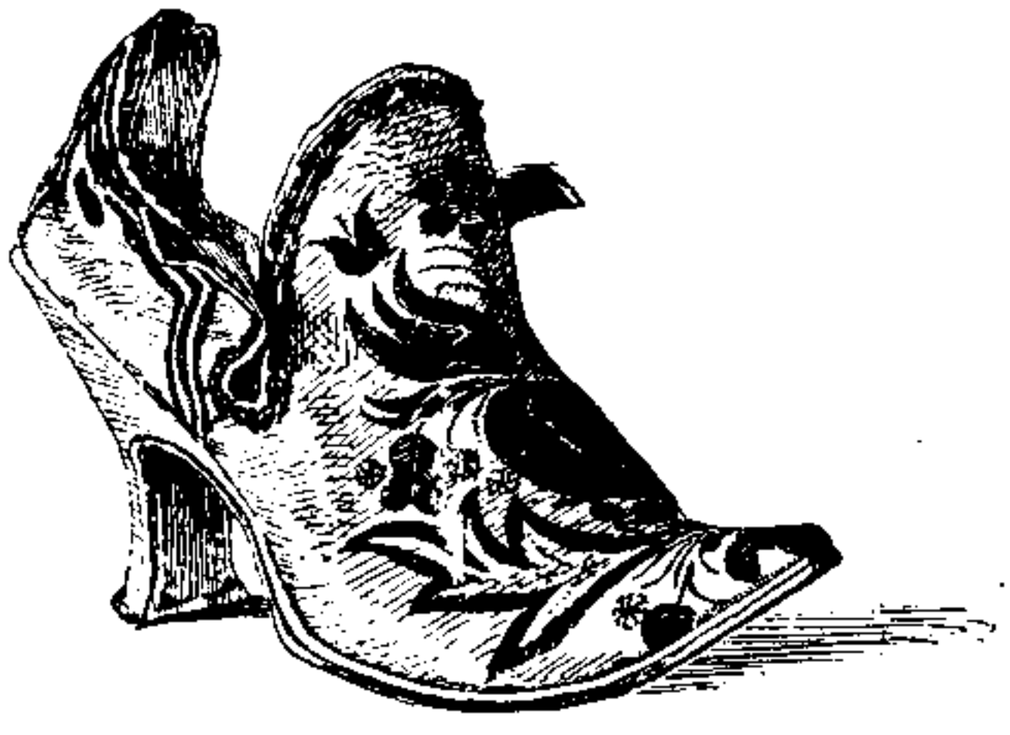


High Venetian Patten.

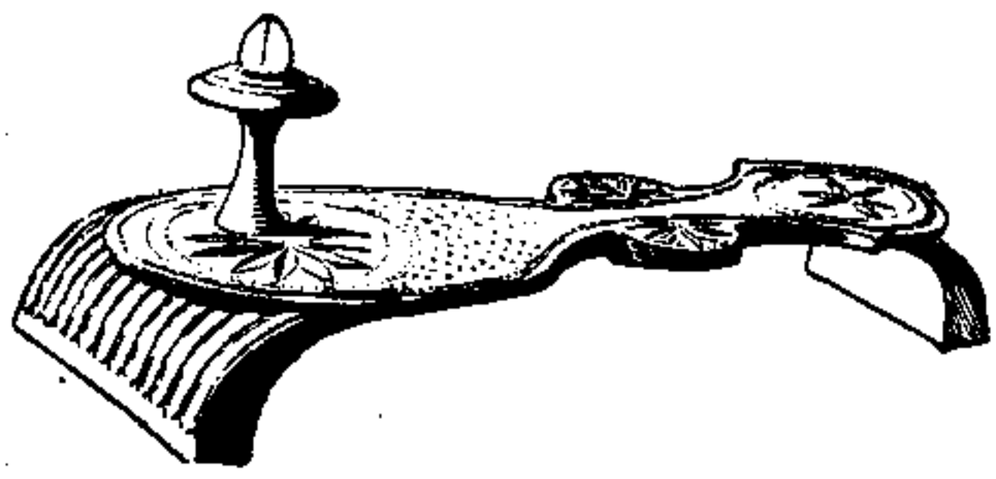


Slashed Venetian Patten.

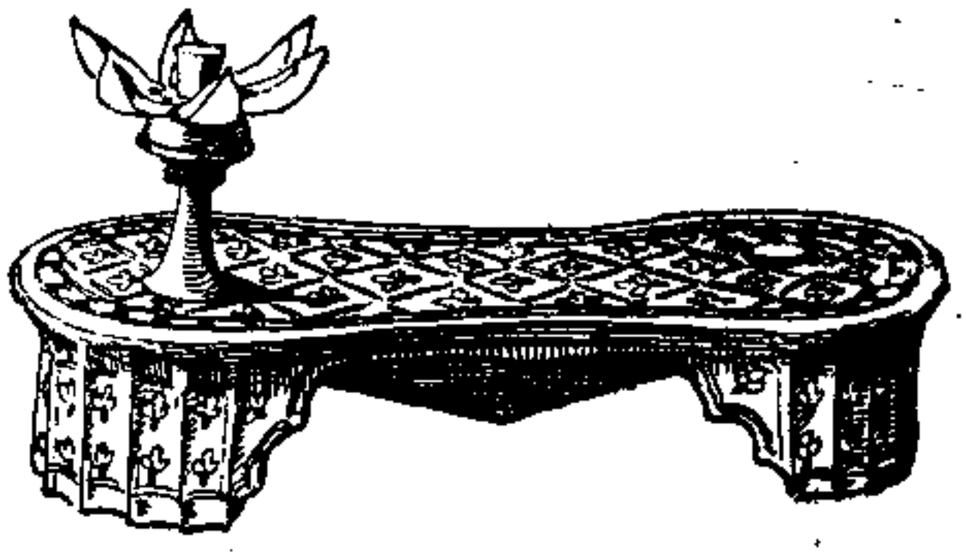
At this exhibition all classes of society seem to have offered their most sacred treasures in behalf of art. The State, the Church, the theatre, and the private citizen exhibited a generosity which it would be hard to find outside of France. Nor were the costumes which have been noted confined to garments alone, for the rare and curious collection of shoes and slippers belonging to M. Jules Jacque-



German Woman's Shoe, Seventeenth Century.

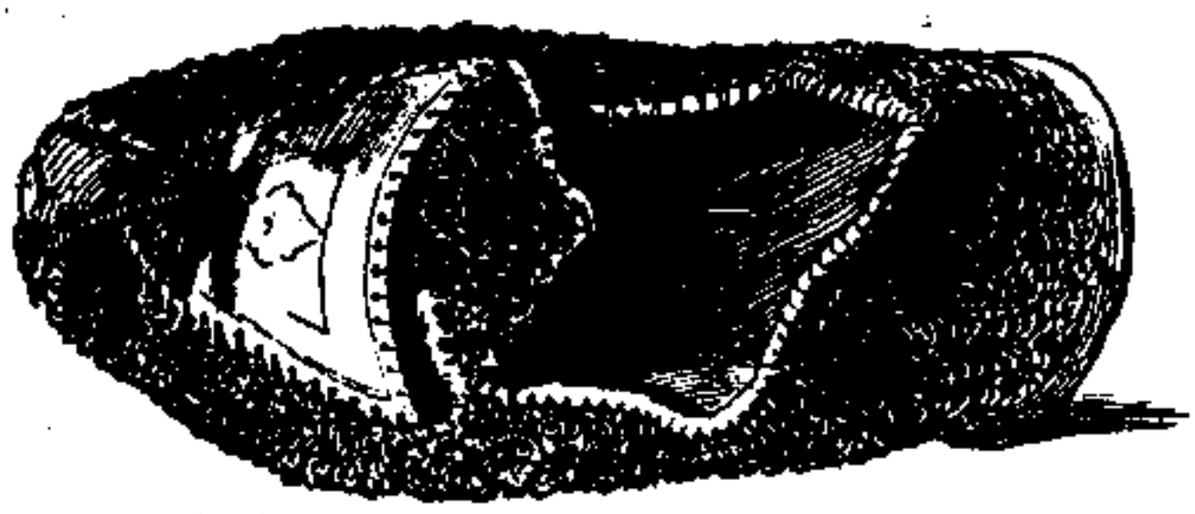


Wooden Sandal with Button, India.

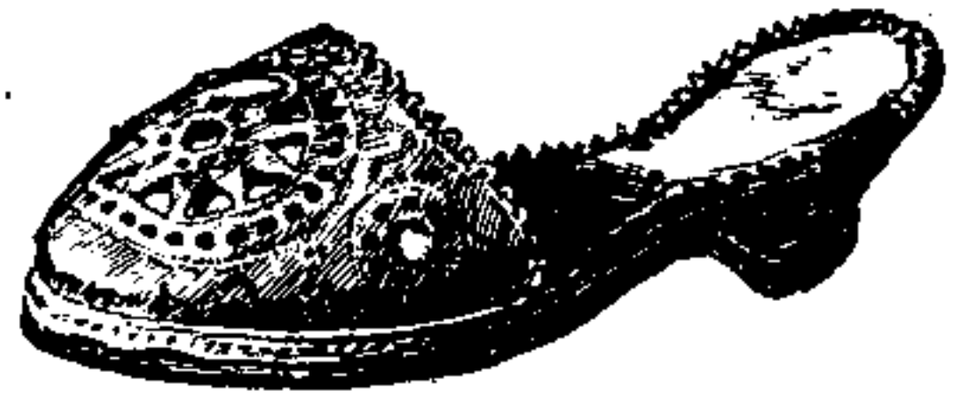


Painted Open Sandal.—From India.

mart came before the eyes of the public. By the side of the high-heeled shoe, richly embroidered with silver, which once contained the haughty foot of Catherine de Médicis, was the black-satin slipper of the Empress

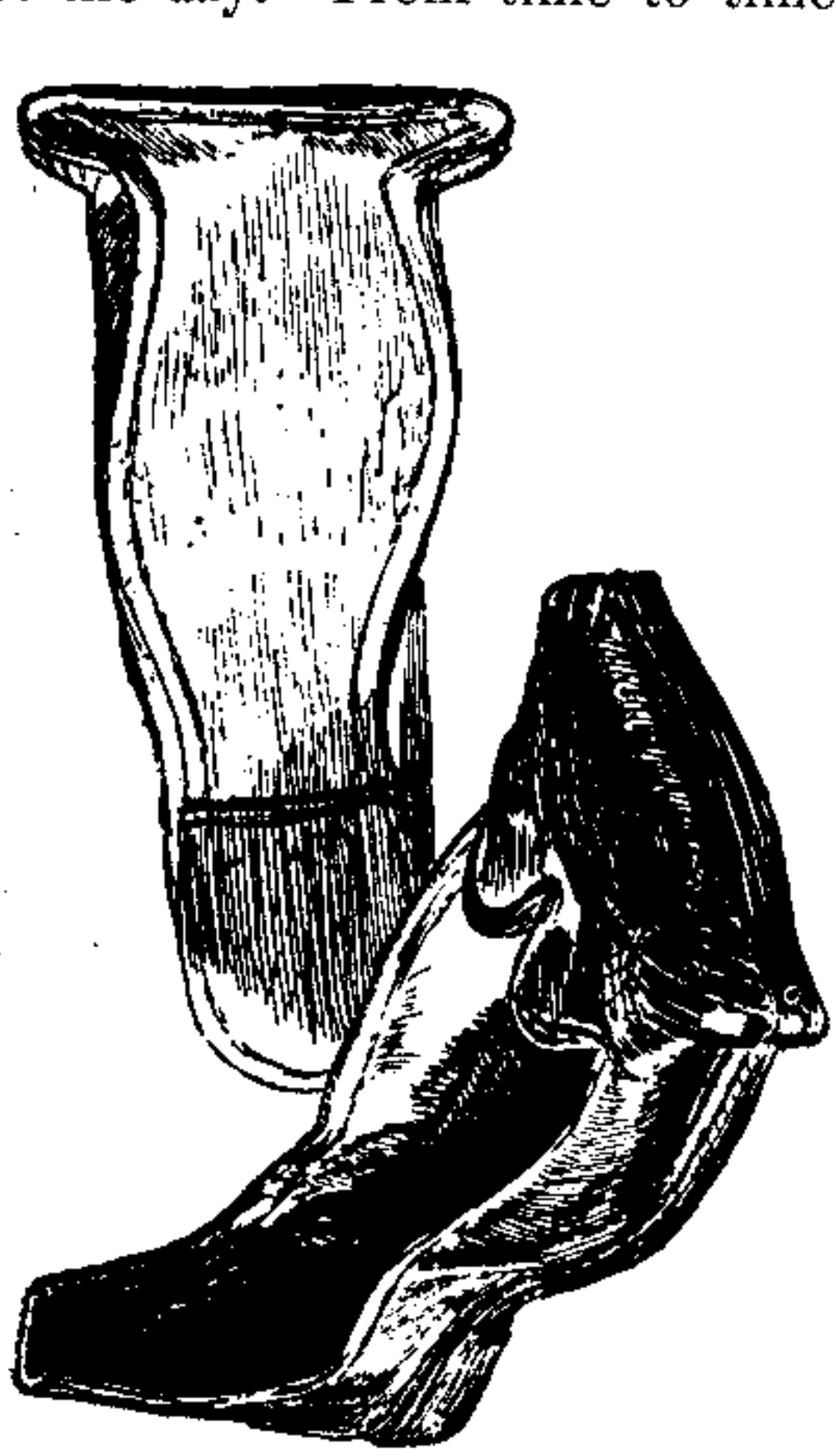


Indian Shoe.



Patten of Corduan, Sixteenth Century.

Josephine. Here were the German shoe "camus" of the sixteenth century, and the shoes of Henri de Montmorency, decapitated in 1632 by order of Richelieu. The pattens of the fifteenth century, with their rough forms, were united with those of Venice in the sixteenth, richly embroidered, and erected upon a pedestal of lofty proportions. The form and color of these last-named pattens are interesting, as marking the manners of the day. From time to time the law-makers of Venice were obliged to define the limit of luxury which might be permitted between ladies of rank and those who made improper use of their charms. The latter could wear only white shoes, while modest women had the monopoly of black. Several sandals and slippers from India bore witness that the laws of caste extended even to the foot-covering of the followers of Buddha. In some instances they appear to have had no other covering or means of fastening than a sort of button, which was passed between the big toe and its next neighbor. A sandal from Pondicherry had antique shape; it was made of damask and leather, covering the upper part of the foot and exposing the toes.



German Shoes, Sixteenth Century.

When we come forward to the time of the Regency in France, the shoes of women were built up at the heel to preposterous heights. Fashion and history repeat themselves, for we find the custom of wearing shoes with high heels placed under the hollow of

the foot is nearly as extravagant in our day as it was even among the idle people of the time of Louis XVIII.

The department of costumes was attractive from its novelty, as well as from the costly nature of the articles exhibited. Almost equally interesting was the historical collection of gloves. The ecclesiastical red glove, with gold-embroidered monogram, worn by a cardinal of the fifteenth century, was placed side by side with the rough gauntlets of some warrior of Flanders; while there were many pairs of delicately made gloves ornamented with lace and gold, all of them representing the history of many nations and centuries.

At the present writing—August, 1876—the fifth exposition of the Union Centrale has been opened at Paris, with imposing ceremonies, by the President of the French Republic. The brilliancy of the display of industrial arts of France is said to surpass any which have preceded it. More than thirty halls and galleries are filled with ornamental sculpture, carpets, pottery, and all those objects of ancient and modern industrial art whose exhibition fulfills the high aims of this organization.

EXPOSITION OF ART AND INDUSTRY IN THE UNITED STATES.

The discussion of the projects and performances of the Union Centrale suggests the desirability of radical changes and improvements in the plans of the expositions so generally held in this country. Our so-called "expositions" are most often the old-time county or State fairs, without their show of horses, oxen, and other cattle. There are exceptions, however, like those which for several years past have been held in Cincinnati and Chicago. Those at Cincinnati are worthy of consideration, because they introduced certain important features; because they have been regularly held, have represented most of the great industries in the East and West; and because the service rendered by their commissioners and officers is gratuitous.

The Cincinnati Exposition has also pre-eminence, because its so-called art department has presented altogether the finest annual collections of paintings and engravings exhibited in the United States. These collections have always been of an international character. The artists of Europe and the United States have appeared upon the walls in harmonious proximity. Although the number of paintings exhibited has never been large—not over four hundred at a time—yet these have been of the highest character. The exhibition of 1872 brought together an extraordinary representation of the works of the German painters, especially those of Lessing, Andreas and Oswald Achenbach, Gude, Knaus, Herzog, Vautier, Zimmermann, Hübner, Heilrath, and others. The exhibition of 1874 was

yet more remarkable. Contributions were made from the celebrated collections of J. Taylor Johnstone, William T. Blodgett, Marshall O. Roberts, Charles O'Hara, J. L. Wolf, Parke Godwin, and others, of New York; from those of J. L. Claghorn, H. E. Gibson, and Fairman Rogers, of Philadelphia; and from those of several gentlemen in Cincinnati and elsewhere. In the exhibition of that year there were scores of pictures, any one of which would have made a sensation at the Paris salon. The collection included the finest examples from the pencils of Müller, Couture, Jules Breton, Meissonier, Villegas, Decamps, Knaus, Brion, Cabanel, Escosura, Carl Hoff, Carl Becker, Lessing, Achenbach, Hugues Merle, Troyon, Vautier, Ziem, August Bonheur, and many others. Besides these paintings, there was a splendid collection of engravings, consisting chiefly of an historical series lent by J. L. Claghorn, of Philadelphia.



Tile.—From Chertsey Abbey.

There is no question of the value, both from a commercial and art point of view, of these expositions. Their influence is distinctly perceptible, and especially is that of the exhibition of pictures; yet none of these expositions are conducted upon the admirable plan of the Union Centrale. We might not be able at the present time to say, with M. Guichard, that "The beauty of form, the happy employment of color, masterly execution; art, in a word, and only art, is the unique evidence to be invoked," etc. Such an exposition, framed upon such a basis, would certainly be attractive, and of the highest educational value. Unfortunately, we have neither the manufactures, nor, excepting in a few large cities, the rare private collections of antique and other historical gems upon which to draw for the desired material; and yet we can borrow wisdom from the example of the Union Centrale. While premiums for merit are lavishly given at our expositions, the true spirit of art is rarely called upon, nor is it understood. The highest expressions of art are on the walls of the

picture-gallery; but they are gathered rather as an attraction to bring money at the entrance gate than as an educational influence. The space between these paintings and the industrial part of the enterprise is vast, and no effort is made to fill it up. In the rewards of merit for superiority in industrial products there is no standard of art. No steps are provided by which the exhibitor or the visitor can ascend to the higher plane of taste and culture. The juries which are selected to decide upon the premiums to be awarded for objects of industry are not, as they should be, required to give reasons for their choice, or to make critical reports upon the objects to which awards are given.*

The programme of the Union Centrale is full of suggestions, the adoption of which would raise the standard of our American expositions, and, at the same time, the higher education it is their province to teach.

THE NATIONAL MANUFACTURE OF SÈVRES.

The Sèvres manufactory has been a decided influence in art education, not only for France, but for other nations. Its exquisite work has been produced at the expense of the Government, not directly with a view to money profit, but rather from the higher stand-point of art. In its productions of beautiful works of the finest artists in ceramic art on the Continent, it proposes to rise above the ordinary commercial enterprises conducted for personal gain. It aspires to be at the head of artistic production, to give tone to public taste, and thus establish French pre-eminence. The French Government has recognized the need of reform, even in the Sèvres manufactory, and a commission has very recently been appointed for the purpose of examination into the general conduct of this public work.

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* Since the above was written the Centennial Exposition has been held, where a plan for recommendation of awards, similar in some respects to this, was adopted. A written opinion was expected from an "individual judge," which was to meet with the approval of a majority of the judges of the group to which he belonged. While it was impossible for these judges to make exhaustive reports, yet in most cases they gave just and valuable criticisms, which met with the approval of their companions. The great error, however, of this plan at the Centennial Exposition was, that it was expected also to apply to works of fine art purely, such as paintings and sculpture. It was found to be impossible for any two persons to agree in their opinion of a work of art, while in the expression of approval they could unite upon a general term like that of "artistic excellence." So the judges to whom were intrusted the classes for painting and sculpture agreed in their recommendation for award to use only the phrase "for artistic excellence." The judges upon paintings made the distinction of classifying the pictures as follows: 1. Historical, Religious, Poetical, and Allegorical; 2. Genre; 3. Landscape; 4. Portrait; 5. Animal and Still-life.

This commission, through one of its members, M. Viollet le Duc, a gentleman highly distinguished in the world of art, has made a report which is an invaluable addition to the literature of ceramic art. This report is



The Raphael and Fornarina Plate.

too long to be reproduced in these pages. It is divided into several chapters, as follows:

I. Report of the examination of the products of the manufactory, with critical remarks.
II. The end proposed by the manufactory.
III. Science and art involved.
IV. Theory of the ceramic art; its form and decoration.
V. Education of artists; instruction in the art of decoration.
VI. Price of Sèvres ware.
VII. Organization of a museum of Sèvres ware.
VIII. Management; general questions.
IX. Conclusion.

Under the second article, which discusses the "end proposed," a list is given of various articles to be manufactured. It discusses the best forms and styles for all of these. After calling attention to the superior style

and colors of Chinese and Japanese decorations, it makes the following résumé:

Suppress the pastes of color, replacing them with colored enamel made transparent by intense heat.

Create for these kinds of transparent colored enamels an order of vases, where beauty of shape, engraving, sculpture, and high-relief shall form all the decoration.

For the decoration of white vases, replace the glazing with tinted enamel, and transform a part of the colors of the paint by substantial enamel, both transparent and opaque, limiting the number of shades of color.

Create a porcelain which can be reglazed with background colors at half heat.

Try to obtain the flaming Chinese red.

Develop, by serious appeals, personal effort.

After discussing some defects in the management of the Sèvres manufacture, M. Viollet le Duc suggests the following reform:

In the first place, it is necessary to systematize the education of the artists. It is necessary to indicate to the artists now employed in the works, and those who desire to be employed, the steps to be taken for that special education which is required of them. It is necessary that these artists shall pursue the general studies of art education, as well as special studies, in order to develop the following qualities:

The purity, beauty, and grace of Greek art.

The security and vigor of Etruscan art.

The brilliancy and originality of Persian art.

The infinite variety, the marvelous coloring of Chinese art.

The striking effects of decoration in Japanese art.

The grace and ingenious combinations of Arabian art.

The abundance and richness of Italian art.

The delicate grace of the arabesques of Rouen, Nevers, and Delft.

The noble elegance and the distinction of the old Sèvres of Louis XVI.

M. Viollet le Duc offers in this report not only the above learned and significant advice, but many other theories and suggestions which are of great value in the production of ceramic art.

CHAPTER VIII.

BELGIUM.

Art Education in Belgium.—The Congress of Art in 1868.—Demand for Improved Methods of Art Education based upon the Principles of Geometry.—Decree of King Leopold appointing a Commission to investigate and report upon the Condition of Schools and Academies in Belgium.—Report of Commissioners.—Programme of Art Education adopted by the Government, and put in Practice in the Schools.—Excellence of this Programme.

It has, until very recently, been supposed that the system of art education in Belgium was more complete than that of any other plan pursued by the European nations. Her academies of fine arts, schools of design, and especially her industrial schools, have been cited as models for imitation, because of their admirable organization and advanced method of instruction. It appears that, excellent as all this was, the Belgians themselves became aware of their deficiencies, and within a few years have taken vigorous and thorough means for a radical reformation in their system of instruction. The agitation of this reform began by the convocation in 1868 of an industrial congress at Brussels, for the discussion of the best methods to be introduced into the schools for instruction in the art of design.

Among the results of the proceedings of this congress was the adoption of a resolution that it was necessary to introduce the study of drawing into the communal schools. In the language of M. de Lajolais, a member of the congress from Paris, "Instruction should be given at first to children, in knowledge of form, then they should be accustomed to the habit of following and understanding the transformation of exact form into ornamentation. The study of drawing, in the first instance, develops the intelligence of the child in teaching him how to see. To see with the eye of a designer is to create the sense of exact observation and of analysis; and these results can be attained by a series of attractive exercises."

Another important conclusion which came from the discussions of this congress was the "necessity for the radical reorganization of the elementary teaching of the fine arts by the substitution, for the routine methods

in use, of a uniform and rational mode, based upon scientific principles, which are the essence of art itself; to suppress the common prints and engravings now used as models; to base the study of drawing upon the elementary principles of geometry."

Following up the work of this congress, in 1869, M. Pirmez, Minister of the Interior, addressed a circular to the governors of the provinces, call-



Mirror-case enameled with Precious Stones. Period of Henri III. Collection of Madame la Baronne Gustave de Rothschild.

ing for reports of the condition of the schools in their districts, with an inventory of the models in use. Very many of the art and industrial schools throughout the kingdom were largely sustained by subventions from the National Government. On July 10th, 1869, a decree was issued by King Leopold which declared, among other articles, that these subventions should hereafter be conditional:

2d. Inspection.

3d. Participation in the general examination and the expositions organized by the Government.

The effect of this decree was—by persuasion more than authority—to place all the schools under a uniform system of instruction, and subjection to the central authority. The Government chose as inspectors two artists, long associated with this branch of instruction, and who had specially signalized themselves in the congress referred to above. These were M. Canneel, Director of the Academy Royal of Fine Arts at Ghent, who was delegated to inspect the academies and schools of design of the two Flanders, and M. Taeye, Director of the Academy of Fine Arts at Louvain, who was delegated to inspect similar establishments in the other parts of the country. These gentlemen were furnished with all authority, and formulas were issued covering all the information desired. These were comprised under several questions referring to the condition of the schools, the form of instruction, and the *personnel* of the teachers. After close and thorough inspection the delegates made exhaustive reports of the condition of the schools. These reports showed the necessity of great reform and changes, both in the methods of and models for instruction. A programme in accordance with the principles suggested by the congress, as above noted, was elaborated by the inspecting delegates. This programme has been adopted by nearly all the schools in the kingdom. It gave, as the foundation of instruction in the fine arts, the study of linear drawing, based upon geometry, substituting the model in relief, for the print.

In 1871, M. Kervyn de Lettenhove, Minister of the Interior, addressed a circular letter to the provincial inspectors of primary instruction, in which he called attention to the fact that the Government of Great Britain and the city of Paris had introduced the study of drawing in the public schools. The minister advanced cogent arguments for the adoption of a similar course in Belgium. He says: "Instruction in drawing ought then to be given in all the normal schools by professors capable of teaching. In order to attain this result, the Government will not hesitate to make remunerations larger than those now accorded."

After asking for replies to several questions with regard to the "capabilities of teachers," the "methods in use," and the "material on hand," etc., he declares: "The Government, in the task it has undertaken, counts upon the concurrence and support of the communes and provinces. It is a question of national interest, since its principal object is the progress of industry and the development of the artistic sentiment of the

In the attempt to carry out the objects of this circular, the delegates, Messrs. Canneel and Taeye, were instructed to visit and inspect these normal schools. The result of this inspection was a report which urged the adoption, in the primary schools, of a system of education similar to that already recommended for the academies of art. Numerous other suggestions were also made looking to the more complete organization of these schools. The reports of Messrs. Canneel and Taeye are among the most valuable contributions yet made to the literature of art instruction. These gentlemen possessed rare qualifications for the duty imposed upon them, and their opportunities for observation and comparison embraced a large number of superior schools. The conclusions to which they arrived are undoubtedly important and correct, and ought to be carefully considered by those who are organizing art schools in the United States.

The following is the programme adopted by Messrs. Canneel and Taeye:

PROGRAMME OF COURSE OF INSTRUCTION FOR AN ACADEMY OR SCHOOL OF DESIGN.

Elementary Instruction.

First Degree.

Geometrical drawing, drawing at sight and by aid of instruments; principles of projection and perspective.

Second Division.

Artistic Instruction.

1. Linear drawing, one and two hours each day, of plain geometrical figures and some of their combinations.
2. Combination of polygons.
3. Application of geometrical figures to ornament.
4. Exercises of drawing from memory.
5. Exhibition of the fundamental relations of colors with extremely elemental applications in simple tints.

Scientific Instruction.

Two lessons of one hour each week—arithmetic.

First Division.

Artistic Instruction.

3. Designs after nature, represented by solids.
4. Application of geometrical figures to ornamentation.
5. Exercises in drawing from memory.
6. First ideas of harmony of color, with applications of polychrome in plain tints and by juxtaposition.

Scientific Instruction.

Two hours each week—arithmetic.

Second Degree.

General principles of design from objects in relief; light and shade; drawing from fragments of architecture, from ornamentation and busts.

SECOND DIVISION.

Artistic Instruction.

One and a half to two hours each day.

1. Study of shaded drawing from solids.
2. Progressive studies of shaded drawing from fragments of architecture modeled upon the monuments of antiquity, of the Middle Ages, and the Renaissance.
3. Exercises in drawing from memory.

FIRST DIVISION.

One and a half to two hours each day.

1. Studies of shaded drawing of fragments of ornaments after casts from the sculpture of antiquity, of the Middle Ages, and the Renaissance.
2. Studies of shaded drawing from fragments of heads, casts from the *chef-d'œuvres* of antique sculpture.
3. Studies of shaded drawing of masks after the casts of *chef-d'œuvres* of antique sculpture.
4. Drawing exercises from memory.

Scientific Instruction.

Four lessons of one hour each week.

1. Continuation of the study of projection.
2. Study of linear perspective.
3. Elements of algebra.
4. Elementary geometry.

the second year of studies for the normal schools, and form the programme for instruction in drawing for the intermediate schools.

Third Degree.

Study of different styles of ornament and busts.

Artistic Instruction.

One and a half to two hours each day.

1. Shaded drawing of ornaments of different styles, after casts from the *chef-d'œuvres* of antiquity, of the Middle Ages, and the Renaissance.

2. Studies of drawings of busts after the casts of the *chef-d'œuvres* of antique sculpture.

3. Drawing exercises from memory.

Scientific Instruction.

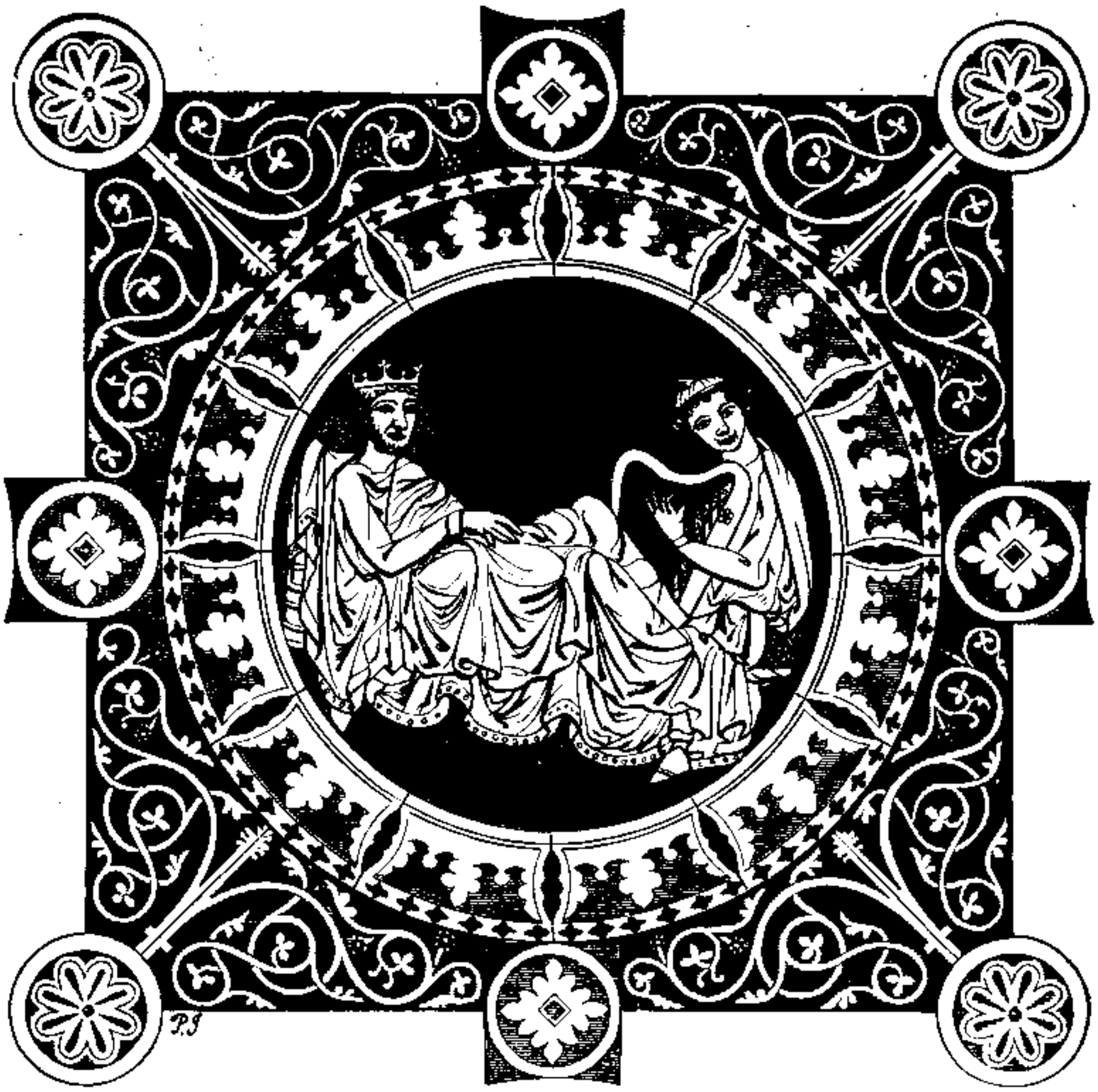
Six lessons of one hour each week.

1. Continuation of the study of projections.
2. Study of perspective; direct outlines and reflected shadows.
3. Architectural nomenclature.
4. Elements of algebra.
5. Geometry.
6. Proportions of the head placed in their relation to the human body; anatomy; osteology and myology of the human head.

At this point the programme of art instruction is enlarged, or rather separates toward those studies which concern the different occupations the pupil may wish to follow. This programme embraces painting, sculpture, and architecture. Now that we have given a brief sketch of the history and programme of art instruction in Belgium, it will be interesting to note some few facts with regard to the number of schools and pupils in this little kingdom.

In 1870 there were 66 academies and schools of design, and 17 industrial schools. The total cost of supporting these schools was about $100,000, which was borne by the State, the provinces, and the communes—much the larger portion by the latter. In 1872 the number of professors was 315, the number of pupils 11,158.

Of the 750,000 children in Belgium of the school age, 17,000 were members of intermediate schools, colleges, and athenæums, of which nearly 590,000 were in the primary schools; only 11,158 were in the academies and schools of design, notwithstanding the fact that most of the children in the primary schools were destined to pursue occupations for



Tile from Chertsey Abbey.

state of affairs in 1872. At the present writing, 1876, the adoption of the programme framed by Messrs. Canneel and Taeye has already brought about a marked change. The entire population of Belgium is gradually acquiring a knowledge of drawing and technology which will result in artistic and intellectual development.

CHAPTER IX.

ART EDUCATION IN PRUSSIA AND BAVARIA.

Art Education in Prussia and Bavaria.—General Survey of Plan of Industrial Schools in Prussia.—Schools of Higher Instruction.—The Trade Schools in Bavaria.—Royal Industrial School in Nuremberg.—Trade Schools in Nuremberg as an Example of Others in Bavaria.

An investigation of the means of education in Prussia and Bavaria reveals a system far-reaching and complete in each of its departments. Not only in the common schools are taught all the studies customary in our own, with the addition of drawing, but technical schools are established which give instruction in the special knowledge required for all the arts and trades respectively. All important trades, like those of the weaver, dyer, mason, carpenter, potter, and so on, have schools which teach the scientific as well as the practical knowledge necessary in such occupations. The institutions for education in the higher branches of the arts and sciences are equally exhaustive in their programmes. In all of these, drawing and design are carefully taught.

An idea of some of the provisions for technical instruction may be obtained from the general survey of the plan of industrial schools in Prussia, given in the table on the next page.

All of these schools embrace art education in one or another form.

In the *Evening*, *Sunday*, and *Perfecting* schools the following are taught: architectural, machine, free-hand, and geometrical drawing (fundamental proportion doctrine); modeling in clay, wax, wood, etc.

In the *Building* schools, architectural and free-hand drawing, and modeling in clay. For the middle grade—*First Course:* Four lessons of about one hour each week are given in—1. Drawing; 2. Architectural drawing; 3. Machine drawing, twelve lessons in all, and one hour to modeling. *Second Course:* Ten lessons to drawing, and two to modeling. The other establishments in the middle grade are similar to the above.

In the higher technical schools, like the Gewerbe Academy at Berlin,

General Survey of Plan of Industrial Schools in Germany.

FIRST GRADE.

Names of Establishments.	Number of Schools in Prussia.	Number of Scholars or Pupils.		Amount of School Money per Half-year.	Number of Teachers employed per Establishment.	Schools for all classes of workmen, artisans, masters, apprentices, and pupils.	Names of Establishments. General.	Special.	Exceptional Schools.	Knowledge Necessary for Admission.
1. Evening, Sunday, and finishing schools....	About 200.	1300 Berlin	About 6000 to 7000.	About 6 thalers (18s.)	4 to 10; Berlin, 20		1. Sunday schools. 2. Evening " 3. Finishing " Admittance and attendance from all classes and corporation of the above grade.	Building-schools for builders, masons, carpenters, roof-makers, etc. Weavers' schools, spinners' schools, dyers' schools, for weavers, spinners, and dyers.	Foreman's schools for millers, brewers, builders of mills, spinners, etc. Commercial course.	Elementary knowledge, reading, writing, arithmetic.
2. Schools connected with building (Baugewerkernschulen).....				About 5 thalers (15s.)	6 to 10					
3. Foreman's schools....	1	69		About 6 thalers (18s.)	7					
4. Weavers' schools.....	3	96		About 20 thalers (£3)	4					
5. Dyers' schools.....	2	45		About 20 thalers (£3)	4					

SECOND GRADE.

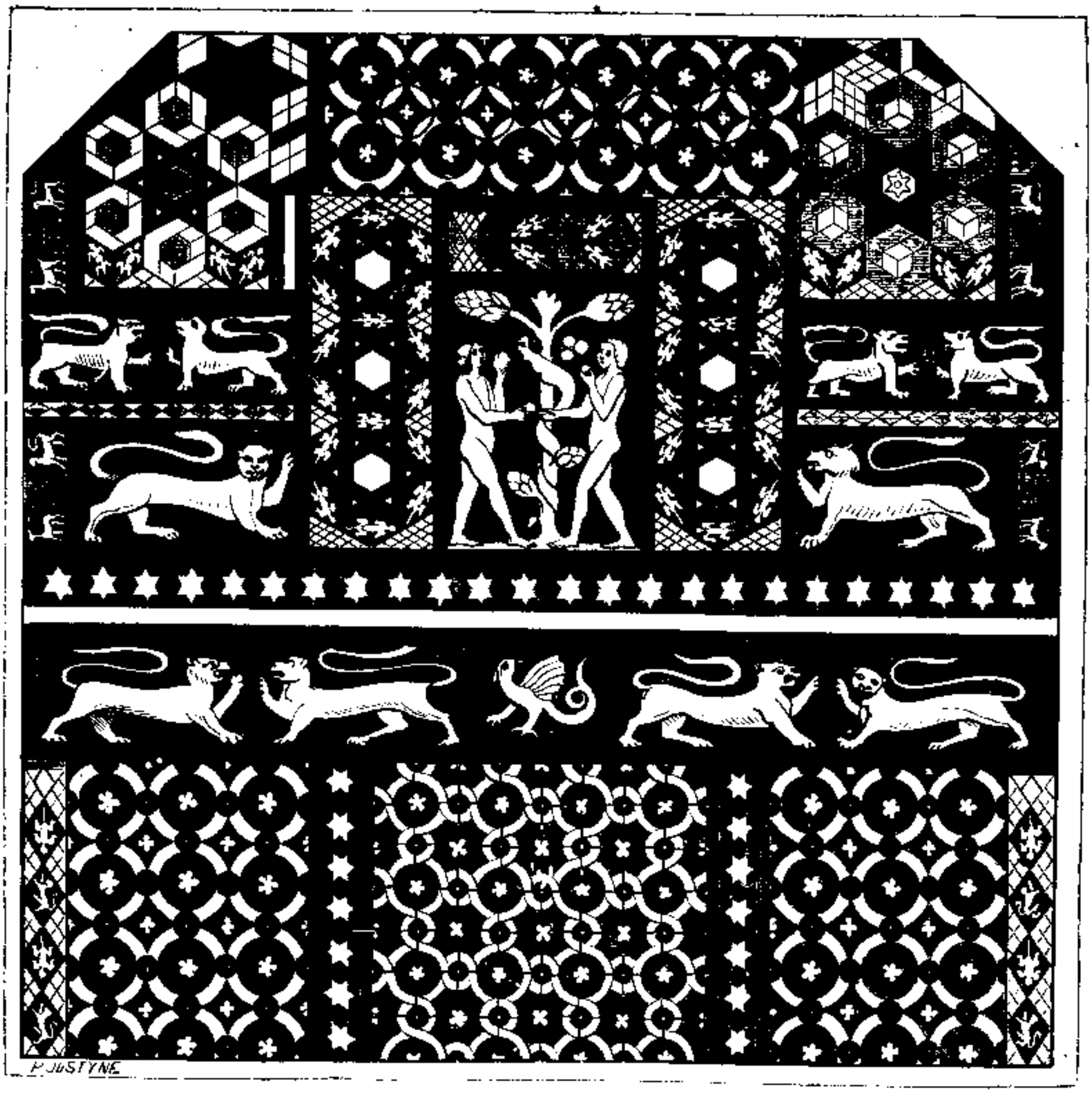
Names of Establishments.	Number of Establishments.	Number of Pupils per Establishment.	Amount of Fees per Half-year.	Number of Teachers employed per Establishment.	Schools for people of middling education, small owners of simple factories, mills, higher artisans' class, and directors of above factories.	Names of Establishments. General.	Special.	Exceptional Schools.	Knowledge Necessary for Admission.
1. Provincial industrial schools. Royal establishments.....	30	About 60 (1800).	About 3 to 25 thalers: see answer to question 6 (9s. to £3 15s.)	3 to 6		1. Provincial Gewerbschulen. 2. Municipal Gewerbschulen. Admittance according to conditions named in last column.	1. Weavers' schools. 2. Dyers' " 3. Commercial " 4. Mining "	Gewerb-Institut for girls for finishing education in commerce and trade.	Certificate of tertia (third) class of a gymnasium Realschule, commercial school. Higher burgher school, a *viva voce* examination.
2. Municipal industrial schools.....	?	700 to 800	About 8 thalers (16s.)	5 to 12					
3. Mining schools.....	....	....	....	....					
4. Industrial schools at Frankfort-on-the-Main.....	1	200	....	9					
5. Weavers' and dyeing schools.....	5	145	20 thalers (£3)	4					

THIRD GRADE.

Names of Establishments.	Number of Establishments.	Number of Students.	Amount of Fees.	Number of Teachers.	Schools for persons of the highest education, directing engineers, civil engineers, owners of large multilateral factories, teachers of technical knowledge, etc.	Names of Establishments. For Machine-building, etc.	For Building.	Mines and Foundries.	Knowledge Necessary for Admission.
1. Gewerb-Akademie (Bau-Akademie)..	Two in course of construction at Aix-la-Chapelle.	About 440	About 50 thalers (£7)	24		1. Gewerb-Akademie. 2. Gewerb-Institut at Aix-la-Chapelle.	1. Building Academy (Bau-Akademie), Berlin.	1. Mining Academy (Berg-Akademie), Berlin.	Having worked at a gymnasium, higher Realschule, provincial Gewerbschule, mining school, or an examination which proves having had this higher education.
2. Building Academy....	....	....	....	....					
3. Mining Academy (Berg-Akademie)...	....	....	....	....					
4. Polytechnic School at Hanover.....	1	About 450	About 40 thalers (£6)	27					
5. Higher Industrial School at Cassel....	1	140	12 to 28 thalers (£1 16s. to £2 4s.)	14					
6. Higher Polytechnic School at Dresden..	1	324	20 to 30 thalers (£3 to £4 10s.)	26					
7. Collegium Carolinum			18 to 28 thalers	About 40					

Schools which unite these three Faculties:

1. Higher Polytechnic School at Hanover.
2. " " " Dresden.
3. " " " Brunswick.



Tile Decoration.—From Cruden's Chapel.

there are lectures upon descriptive geometry, and the application of it to perspective, construction of shadows, drawing, and modeling.

In what is known as the divisional department, there are taught: practice in plans for parts of machines, in plans of power-machinery, in plans of machine and factory grounds, in plans and drawings of such artistic forms as can be used for iron when wrought, drawing of vessels and parts of vessels; art of ship-building.

BAVARIA.

In Bavaria, besides many schools for trade and industry, like those already described in Prussia, there are several schools which have a more direct influence in the effort to unite art with industry. The Royal School of Art at Nuremberg is well known for its special aim in that direction, and its plan of instruction has served as a model for many others. There could not be a better example of the use of art instruction than that offered by this ancient city, which almost has the monopoly of the trade in certain articles of commerce, such as the Nuremberg toys, which

are known the world over. In Nuremberg the influence of the art schools upon the workshop is direct. Artistic grace and curious invention exist in the latter, because of the training and education given in the former. The conditions which have made Nuremberg a prosperous city may exist almost anywhere in the United States, if the attempt be systematically and patiently made. The following is the programme of instruction at the Royal Industrial School in Nuremberg, adopted in November, 1869:

1. Ornamental drawing, preparatory class. (*a*) After ornamental models, twelve hours weekly. (*b*) Exercises in the drawing of surface ornaments, six hours weekly.

2. Drawing from the antique, twenty-four hours weekly.

3. (*a*) Drawing from living models, groups of figures and drapery, twelve hours weekly. (*b*) Drawing of heads, twelve hours weekly. (*c*) Execution of cartoons, paintings on glass, etc.

Technical School.

FIRST COURSE.

First Term (of six months).—Education of the eye and hand by the drawing of lines and geometrical figures; full-size drawing of bodies with plane surfaces; explanation of the faculty of sight, and the first principles of perspective. Linear drawing without instruments is combined with free-hand drawing.

Second Term.—Continuation of free-hand drawing; drawing of simple ornaments, from pictures fastened on the walls, or from slightly relieved or intersected objects; linear drawing with the aid of square, and mathematical instruments; division, measuring, and transfer of right lines, angles, and figures; construction, gradation, and subdivision of scales.

SECOND COURSE.

Drawing of figures in relief; drawing of compound ornaments, from "plastic" (*plastischen*) models; the proportion of the human head and its parts in firm, simple outlines, from pictures fastened on the walls; exercises in the construction of regular curved lines; architectural details; projections of simple surfaces and plane circumscribed contours; relief-drawing, after simple "plastic" objects in different proportions as to size.

THIRD COURSE.

Continuation of the exercises in free-hand drawing, curvilinear objects, drawing of animals and plants—so far as applicable in ornaments—with light shading to mark the form; explanation of the manner of representing *style;* drawing of the human body and its proportions in outlines;

linear drawing; continuation of exercises in the drawing of projected figures, with reference to simple machines and models; the (five) orders of architecture; industrial ornamentations and profiles—if possible, in natural size—after models; sketching from nature; exercises in India ink; designs in intersection; relief-drawing, after pictures of simple forms from the antique.

Agricultural School.

FIRST COURSE.

First Term.—Training of the eye and hand in the drawing of lines, geometrical figures, and simple ornamental forms, from large pictures fastened on the walls; drawing from correspondingly large bodies with plane surfaces; explanation of the act of seeing, and the first elements of perspective.

Second Term.—Linear drawing, with the aid of square and instruments; division into spaces; measuring and transfer of straight lines, plane angles, and figures; construction and division of scales; exercises in the drawing of simple geometrical bodies in outlines, and in various positions; the principles of projection.

SECOND COURSE.

Exercises in drawing of details of architecture, and especially arrangements of agricultural buildings, after models and original designs; drawing of simple agricultural implements; instruction in the designing of maps, and division of land into sections, intended for various agricultural purposes (*Culturplänen*).

THIRD COURSE.

Exercises in the drawing of whole buildings after models on a diminished or enlarged scale; sketches of buildings in elevation and in profile; drawing of agricultural implements and machines, after original designs.

Polytechnic School (Real Gymnasium).

FIRST COURSE.

Free-hand drawing; exercises in the drawing of straight lines, and the formation of geometrical figures out of these lines; drawing of bodies with plane surfaces, accompanied by explanations of the faculty of sight, and the first elements of perspective with reference to single figures and groups of figures; exercises in the drawing of curved lines, and the formation of simple ornaments out of these lines; drawing of symmetrical

ornaments and implements, from pictures fastened on the walls, and from slightly relieved plaster casts of antique forms of art.

SECOND COURSE.

Free-hand drawing; division and relations of different parts of the human body, from pictures on the walls; foreshortening of single parts in different positions; the form of the human body in different movements; richer ornaments, round and plane, in outlines; linear drawing; exercises with rule, square, and compasses, by dottings or figures; explanation of the principles of projection; exercises in the delineation of simple bodies in projection; measuring and reduction of models of bodies, and their projection according to various positions.

THIRD COURSE.

Free-hand drawing; practice in the art of shading in its simplest form —at first from plane-surface ornaments, afterward from round; heads in different positions; hands and feet, after easy models; ornaments of different epochs of art in connection with architectural details; linear drawing; measuring of compound models of bodies with plane surfaces, and their projection, by the application of geometrical rules, on an enlarged or reduced scale, according to position; relief-drawing; projection of ornamental details and of entire ornaments—at first after solid, then after plane models on an enlarged or diminished scale.

FOURTH COURSE.

Free-hand drawing; drawing of animals and plants, with close regard to foreshortening and oblique positions; explanation of style and its mode of presentation; drawing of figures after plane models; ornamentation in conjunction with the human form, and forms of animals; linear drawing; projections of bodies with curvilinear surfaces and their interjections; drawing of the orders of architecture; exercises in linear perspective and shading of outlines; construction of models; execution of forms of crystals and their transitions, in pasteboard, after original designs, in accordance with the rules of descriptive geometry.

In the scheme of instruction of the Nuremberg school there are the combination of free-hand and instrumental drawing, and the application of geometrical forms to ornamentation. But the method at Nuremberg yet retains the practice of copying from the print. This feature has been, as we have seen, positively condemned and abolished in France and Belgium.

The trade-school at Nuremberg may serve as an example of the rest in Bavaria. First, there are here three different trade-schools:

1. The district (*Kreis*) trade-school.
2. The Sunday school for artisans.
3. The elementary drawing-school.

The first has the aim of affording instruction to persons who require for the intelligent pursuit of their several callings a knowledge of mathematics, of natural philosophy, and facility in drawing and modeling, or to such as wish to devote themselves to the technical service of the State. It also serves as preparatory to the polytechnic school. The instruction embraces, in a course of three years, religion, German and French languages, history, geography, elementary mathematics, physics, theoretical and practical chemistry, mechanics, technology, free-hand and linear drawing, modeling in clay and wax. The first instruction is according to Wolff's principles of rational instruction in drawing; the more advanced from large drawings and solid objects. In all the classes there are from seven to eight hours for drawing weekly.



Pitcher decorated by Bernard Palissy.

The Sunday school for artisans gives instruction to apprentices and journeymen in drawing, modeling, engraving, physics, arithmetic, geometry, and chemistry. The instruction in drawing, in three courses, begins with free-hand drawing according to Wolff's system; then follow the drawing of ornaments, vases, etc., in outline, with reference to the trade of the pupil; geometric drawing, and drawing from bass-reliefs; finally, in the last course, special drawing. This is divided into four sections:

(*a*) For builders; (*b*) for joiners; (*c*) for turners; (*d*) for workers at various trades.

The elementary drawing-school is for those boys who are still attending the popular school, and who wish later to engage in a trade, after

which they enter into the trade-school. In two courses, drawing and modeling alone are taught.

It is deserving of mention that the establishments in Nuremberg possess a library, out of which works of general utility and *belles-lettres* are lent to diligent pupils. It thus gives an opportunity of rewarding good behavior, and is also calculated to impart much information which the school does not teach. A bad choice of books is in this way prevented.



CHAPTER X.

AUSTRIA.

Art Education in Austria.—Trade-schools established and conducted by the Provincial Authorities, and not by the Central Government.—The Vienna Exposition of 1873.—Schools of Design and Art applied to Industry in Vienna.—Academy of Plastic Arts.—School of Fine Arts applied to Industry.—School of Design and of Modeling for Art and Industry.—Public School of Design and Industry.—Schools for Builders, Masons and Stone-cutters, Carpenters, and Spinners.

THERE are in Austria trade and industrial schools of a character similar to those described in other parts of Germany. These schools, however, are not established or directed by the Central Government. Their conduct seems to be left to the action of the several provincial authorities, so that careful and complete data about them are not easily to be obtained.

In the city of Vienna are several institutions devoted to instruction in the industrial arts. The magnificent exposition of 1873 grew out of the demand of the Austrian people for knowledge of what other nations were doing in the great industries and the fine arts. This wonderful exhibition has stimulated the productive powers of this people, and Austria bids fair to hold equal ground with her neighbors. In the city of Vienna there are many schools admirably organized and conducted. The especial purpose of these schools, which are described below, is to give instruction in the application of art to industry. Some of these, although of comparatively recent existence, exert great influence for usefulness.

VIENNA.

THE SCHOOLS OF DESIGN AND OF ART APPLIED TO INDUSTRY.

In the capital of Austria, schools in general, and those of design in particular, are numerous. The latter, divided into four principal classes, are:

1. Academy of Plastic Arts.
2. School of Fine Arts applied to Industry.
3. School of Design and of Modeling for Art and Industry.
4. Public School of Design and Industry.

1. *Academy of Plastic Arts.*—This academy was founded, at the commencement of the eighteenth century, by Leopold I. It was reorganized in 1850, and transformed into a school of fine arts. In it they teach painting, sculpture, architecture, engraving, and lithography. They also teach anatomy, general history, the history of art, and all the courses, special and auxiliary, for instruction in architecture.

The sums annually appropriated to the academy amount to 85,000 florins, and are thus divided: 3000 florins for the library; 4000 florins for different models; 1000 florins for the journeys of scholars in the interest of their studies; 3000 florins for four purses of travel, to be used only by those who have drawn prizes; 500 florins for the museum of casts. This gives a total of 11,500 florins. Besides the above, the academy dispenses 18,000 florins, taken from the reserve fund, and it gives 11,000 florins annually in purses and prizes. The admission fees bring 1200 florins.



Vase of the Ferrara Manufactory.

The number of scholars is from one hundred and ninety to two hundred. The excess of sums not used is distributed between the reserve fund, general expenses of administration, entertainment of professors, repairs of buildings, etc.

2. *School of Fine Arts applied to Industry.*—This school, excellently situated (in the buildings of the museum of art and industry), is divided into a school for preparation, and three special schools, for architecture, sculpture, design, and painting.

(a) *Preparatory School.*—This school has for its object to furnish pupils with that knowledge required for each special school, and also to give them a certain familiarity and facility in the art of design. To be admitted to this school it is necessary to have finished a course of study in the preparatory division of a gymnasium. The candidate should be not less than fourteen years old, and possessed of the preliminary knowledge of

school is two years. There is no examination at its expiration. The fees are ten florins annually, besides an admission fee of two florins.

(b) *Special Schools.*—These are distinguished from the schools of fine arts because they have the exclusive object of instruction in the application of art to industry. It is the equivalent of the Special School of Design in the Rue de l'École de Médecine, at Paris.

The course of instruction in these schools comprises architecture and architectural design; design after the models of different epochs; painting and drawing of the head; ornaments and flowers; modeling and wood-carving. They also teach perspective, shaded drawing, anatomy, different styles of architecture, the history of art and industry, the study of color, and its combinations. The fee for these special schools is fixed at eighteen florins. The term of study is two years. Since 1874 they have established a course of study for the male and female teachers. The number of professors and assistants is fixed at twelve; one of the professors being director.

3. *School of Design and Modeling for Art and Industry.*—This school is of recent organization (1865). It comprises several classes. Each day of the week there is a day class, in which the scholars learn to design and model; with a Sunday class, morning and night, for those who, occupied in the workshops, are not able to attend the school during the week-days. Each evening there is a class in industrial design for children, and another for adults. There are also a night class for industrial design with regard to construction, and two classes for decorative painting, one of which is oral; the other at night puts in practice the lesson of the morning.

4. *Public School of Design and Industry.*—In this school, which has both day and night classes, are taught mathematics, free-hand drawing, and design for the construction of machines.

Besides this school, there is in Vienna an industrial school of a higher order, which has for its object the education of master-builders and submasters, in which instruction is comprised in two classes:

1st. A preparatory class. For admission to this class one must be sixteen years old, and possessed of the knowledge which is acquired in an elementary school. Once admitted, the students are taught good penmanship, the German language, construction, architectural design, ornament, and modeling.

2d. In the second course, the German language, arithmetic, algebra, plane and descriptive geometry, architecture, ornamentation, and modeling.

foundly; besides these, natural history and the materials of construction are taught.

In the final classes the pupils are occupied with book-keeping; algebra; terrestrial geometry; analytical geometry; trigonometry; natural history applied to the arts and trades; architecture; the study of plans, estimates, and specifications; and modeling. The term of tuition is fixed for the first two courses at twenty-five florins; for the third, thirty florins; for the fourth, thirty-five florins. In addition, the scholars pay two florins admission fee. Besides this superior school, there are three secondary schools:

The School for Masons and Stone-cutters.—This school came into existence in 1873; it was founded by an association of masons and stone-cutters. Gratuitous instruction is given twice a week, on Sunday morning and night.

The School of Design for Manufacturing and Spinning.—This teaches the art of design for fabrics, and the management of machines and looms for the spinning and weaving of stuffs. The school has about one hundred and twenty-five pupils.

The School of Design for Carpenters has existed since 1854, and is devoted to practical instruction in design and modeling for the work of carpenters. It has three distinct divisions — a day course and a night course which are held during the winter, with a third course on Sunday during summer and winter.

It will be seen by the above list that the schools of design are numerous in Vienna, and that their instruction is peculiarly practical, each school seeking to reach the pupil through that teaching which applies directly to the needs of his trade or occupation. It ought to be added here that special and intelligent care is given in some of these schools to instruction in building, construction, and architecture. The result has been that in a few years Vienna has doubled the number of her beautiful monuments, and that her architecture has made great progress.

Besides the schools noted above, there are in Vienna many societies devoted to similar objects. The splendid museums and fine collection of objects of art are free to the use of industrial artisans.

CHAPTER XI.

SWITZERLAND.

Art Education in Switzerland. — Thorough Result of Compulsory System of Education in Common Schools. — Government does not favor Technical Education in Public or Special Schools.—Private Technical Schools at Lausanne; at St. Imier, for Watch-makers; at Brienz, for Wood-carvers; at Trogen, for Weavers.

THE Swiss people have not given that attention to technical education which has exercised such a powerful influence in other parts of Europe. The system of general education in Switzerland is complete, and is prosecuted with astonishing enthusiasm and earnestness. For many years primary instruction has been compulsory. An idea of the thorough methods of elementary training adopted may be gathered from the fact, that out of 413,209 children composing the legal school population in 1860, no less than 397,538 were in the schools in 1865, and this after subtraction of all the children debarred by mental or physical causes, and those taught in the middle and higher public and private establishments.

It is not the policy of the Swiss Government to establish technical or industrial schools. Mr. Rumbold, an eminent authority of that country, writing upon this subject, says: "Technical instruction, strictly so called, for the working-classes is little known, and still less believed in, in Switzerland.

"What is believed in, and what is most conscientiously carried out in Switzerland, is thorough general education—education for the masses, reaching down to, and purifying, as it were, the lowest depths of society, and not, as in some countries, leaving them to form in their stagnation so unsound and impure a foundation as to cause the whole superstructure to be rotten and insecure. To raise each individual member of the community up to a given standard, and, having thus far developed him, to leave him to work out the rest by his own faculties, and by the help of the natural gifts and aptitudes Providence may have bestowed upon him—such seems to be the simple sum total of the Swiss philosophy of instruction

for the people, and it leaves little room for any special or technical education, properly so called."

There are, nevertheless, schools for technical instruction, several of which are sustained by private means. Among these are:

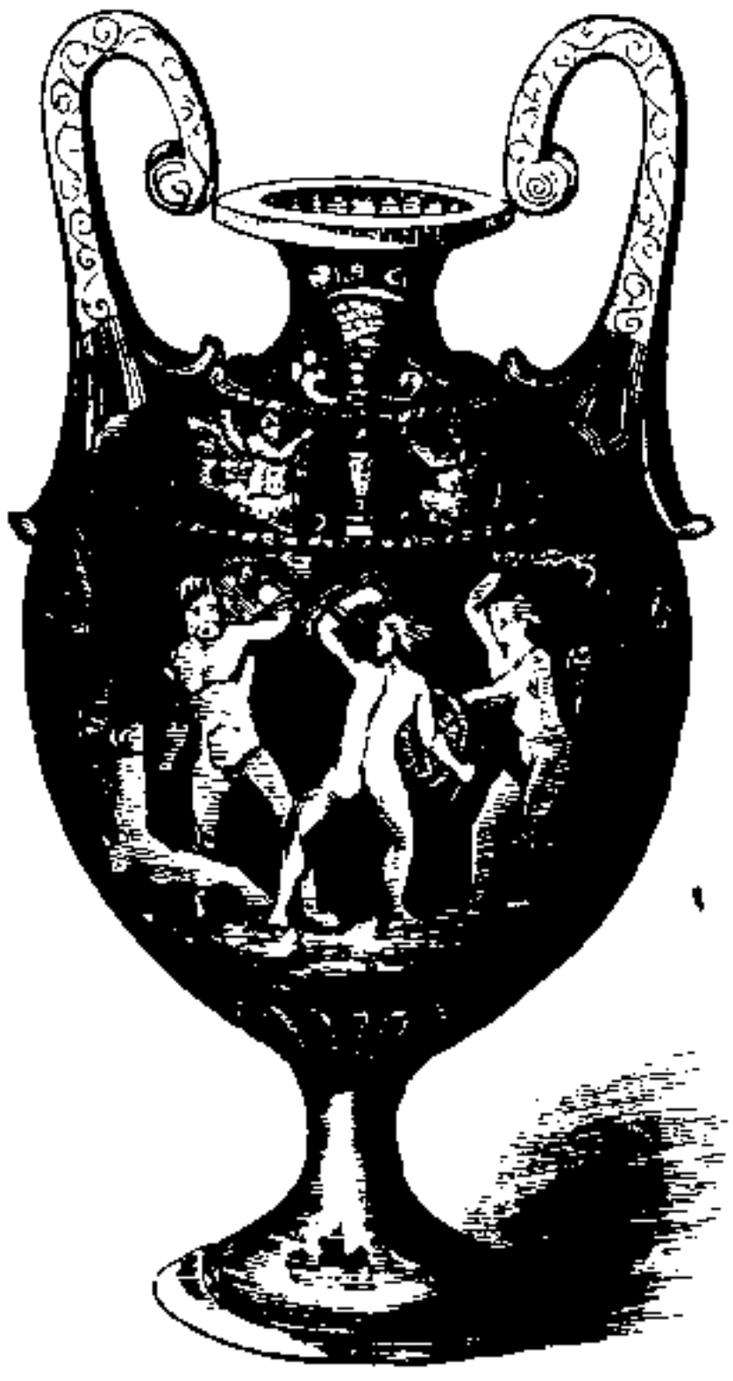
A private school at Lausanne, with the title of "École Spéciale de la Suisse Française pour l'Industrie, les Travaux Publics et les Constructions Civiles," founded in 1853.

A school for watch-makers at St. Imier, in the canton of Bern, founded in 1865.

A school of design for the promotion of carving in wood, founded by private individuals at Brienz.

A private school for weavers ("École de Tissage," or "Webschule") at Trogen, in the canton of Appenzell Ausser-Rhoden.

The statement of Mr. Rumbold, which is quoted above, has force, from the fact that Switzerland exports every year an amount of products sufficient to pay for all her importations. It proves, at any rate, the value of popular education in making the people industrious and useful. How much more this sturdy Republic might accomplish, if her people had instruction in the art of design, is a question of great interest.



CHAPTER XII.

ITALY.

Art Education in Italy.—Not the Public Policy to give Art Education in the Public Schools.—No General System of Art Education.—It is confined to Particular Industries.—Schools for Wood-carving in Florence.—Schools for Art Manufactures, etc., at Savona.—Schools of Design and of Sculpture applied to Ornamentation at Serravezza.—Schools in Ornamental Design at Bologna, Milan, Bergamo, Modena, Brescia, Como, Naples, Rome, Venice, and many other Cities.

THE industrial arts in Italy follow the great traditions of that country. Italy does not, like England and Belgium, favor general education in art; but she does hope by the establishment of schools of industrial art to renew and enlarge those special industries for which she has been celebrated. The manufacture of glass; the rare carvings; the wonderful Florentine and Roman mosaics; the ornamental sculpture in bronze and marble; the work of goldsmiths, jewelers, and cabinet-makers—all of these have distinguished the genius of Italy. To make great sculptors and painters, to educate skilled workmen in these industries, is the pride and effort of Italy at the present time. It is true that by these special efforts certain interests are fostered to a high point of perfection, at the expense of that general art education which would give life to other manufactures, and which is the substantial sustenance of art itself. The greater number of these schools were, according to "L' Italia Economica" of 1873, created under the influence of the considerations which have been described. They are as follows:

Florence.—The school of sculpture in wood was founded by a private society on the 29th of September, 1868. Four professors have charge of this school, which numbered, in 1871–'72, 78 pupils; the expenses amount to 3000 francs. The Ministry of Agriculture, of Commerce, and of Industry, and the Municipal Government, each furnish a subsidy to this school.

Savona.—School of art and manufacture, department of furniture and porcelain, founded the 15th of August, 1871. Seven professors; 69 pupils. Expenses, 15,000 francs, of which one-third is paid by the State.

Serravezza.—School of design and of sculpture applied to ornamentation, 19th of December, 1869. One professor; 36 pupils. Expenses, 2000 francs, paid by the town.

Sesto Florentino.—School of art and manufacture, department for decorative and ceramic art, 9th of March, 1873. Three professors. Expenses, 3000 francs, half furnished by the State.

Venice.—School of arts applied to industry, 1st of February, 1873. Six professors; 103 pupils. Expenses not yet fixed.

It is also stated by the "Annuario della Instruzione Pubblica" that schools of design of more or less importance are established at Bassano, Brescia, Brisinghella, Castanzaro, Codogno, Faenza, Murano, Pavia, and Pietrasanta.



Faenza Fruit-dish, ornamented with Amorini, Trophies, and Arabesques.

This is the condition of art education in Italy; but it is scarcely probable that she will be willing to confine herself to a restricted field. Depending upon France and England for almost all articles of comfort or luxury, she will gradually attempt to produce them herself, and thus bridge over the gulf which has swallowed so much of her wealth. It is

doubtless in view of the necessity for general instruction, that measures of a more liberal character have been taken; in particular, the establishment of classes in ornamental design at the "Instituti Tecnici;" also in the following towns: Ancona, Bergamo, Bologna, Brescia, Cagliari, Catania, Como, Cremona, Cuneo, Forli, Genoa, Girgenti, Jesi, Livorno, Messina, Milan, Naples, Palermo, Pavia, Pesaro, Piacenza, Port Maurice, Reggio d' Emilia, Rome, Sassari, Sondrio, Teramo, Terni, Turin, Udine, Venice, Vicenzo, and Viterbo. The salaries of professors employed in these branches vary from 1200 to 1800 francs. At Pavia and Rome they receive 2200 francs; at Turin, where the course comprises, besides drawing, carving in wood and sculpture, 4000 francs.

With regard to the academies of fine arts, thirteen of them are maintained by the Government, viz.: those of Bologna, Brescia, Carrara, Florence, Lucca, Massa, Milan, Modena, Naples, Parma, Reggio d' Emilia, Rome, Turin, and Venice.

The entire expense of these amounted in the year 1872–'73 to 700,201 francs, of which 362,620 francs were paid to the professors (the highest salaries, 4000 francs, at Milan and Turin).



Roman Bowl of Samian Ware.

The school at Milan has the largest number of pupils, 1160. Its prosperity is due to the instruction given in industrial design. Then come Turin, 394; Naples, 357; Rome, 290; Modena, 289; Bologna, 255; Florence, 205; Massa, 70.

In Florence the number of pupils in the class in ornamentation increased from 7 in 1861 to 45 in 1873.

At the commencement of the academic year 1872–'73, 3705 pupils attended these different institutions. They were divided as follows: class in ornamentation, 1949; drawing the figure, 1015; architecture, 650; perspective, 315; landscape, 216; painting, 136; sculpture, 106.

To complete the list, there are still to mention the academies of Carrara, Bergamo; the Academia Ligustica di Belle Arti at Genoa; the Stabilimento Fadini at Lovera; the College of Fine Arts at Messina, Palermo, and at Perugia; the Stabilimento Gozzola di Belle Arti at Piacenza; the Royal Academy of Fine Arts at Pisa; the Academy of Fine Arts at Ravenna; the Royal Institute at Sienna the Institute of Fine Arts at Urbino; and, finally, the Academy of St. Luke in Rome, which

is now a free institution. If there are included the schools which, without being especially devoted to art, still give instruction in branches relating to it—such as the Academy of Letters, Science, and Art, of Arezzo, the Athenæum of Science, Letters, and Arts, at Bassano, etc.—it will be necessary to admit that, for what is attempted, in no country is there found such numerous means of instruction as in Italy. In order, however, to obtain all the good possible from these institutions, it would be necessary to remodel the course of instruction, modernize and enlarge the programme, and, in short, infuse new life into these old foundations.

To educate the masses by letting them see the best works of art is the next step for Italy. Following the example of kindred nations, she has undertaken to establish collections of industrial art—such as those of London, Berlin, Vienna, and Moscow. The movement, however, is, for the most part, confined to a few localities.

Besides the Museo Nazionale of Florence, which, in spite of the works of art that it contains, is more especially an historical museum, and the Museo Industriale Italiano of Turin, in which art takes a smaller place than science or industry, we find scarcely any thing but the foundations established by the perseverance of some determined town, or, at most, by the exertions of the inhabitants of a province.

In Rome, the municipal commission have recently established a Museo d' Arte applicata all' Industria. Their intentions were good, and the plan well conceived, but, unfortunately, the result has not yet equaled public expectation. The want of success is due partly to the insufficient room, consisting only of four or five small apartments, and also to the lack of interest on the part of the Roman aristocracy, whose palaces still conceal so many wonders. There, where there should have been a brilliant beginning, they have only succeeded in founding a good and useful work, condemned to languish unless some sudden or unlooked-for aid should come.

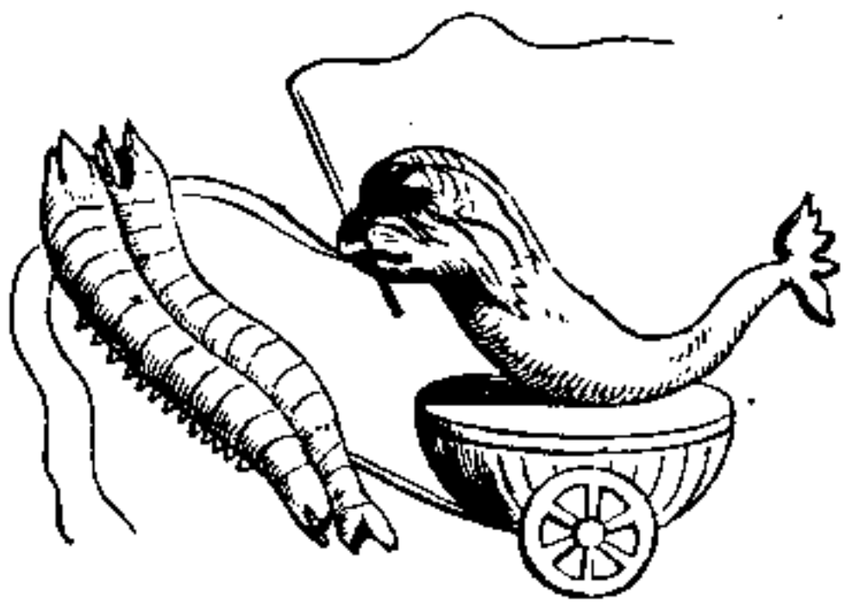
A much more important undertaking has been begun in Milan. The Associazione Industriale Italiana has attempted the creation of a museum of art applied to industry, destined, "with the help of other institutions, to form the taste of artisans, in offering them good models and a well-directed course of artistic instruction." An exhibition recently opened serves as a sort of prelude. With the reproduction of the works which are to be seen there, they hope to sow the seed of a larger growth, which will develop from year to year. The exhibition of July, 1874, is without doubt the most important enterprise of the kind that Italy has seen since

CHAPTER XIII.

ART INSTRUCTION AND TECHNICAL EDUCATION IN NORTHERN EUROPE AND SPAIN.

Art Education in the Northern Countries of Europe.—Trade, Sunday, and Night Schools.—In these Countries no extended Effort in the Way of Art Education.—Art Education in Spain.—The Societies "Amigos del Pais," Academies, and other Institutions of Arts and Industries.

ART instruction is pursued in a limited way in several countries of Northern Europe, but none of them have instituted schools of instruction different from those described in other places. Of these countries Sweden is altogether in the advance in her numerous Sunday and night schools established for the benefit of workmen and workwomen of all ages.



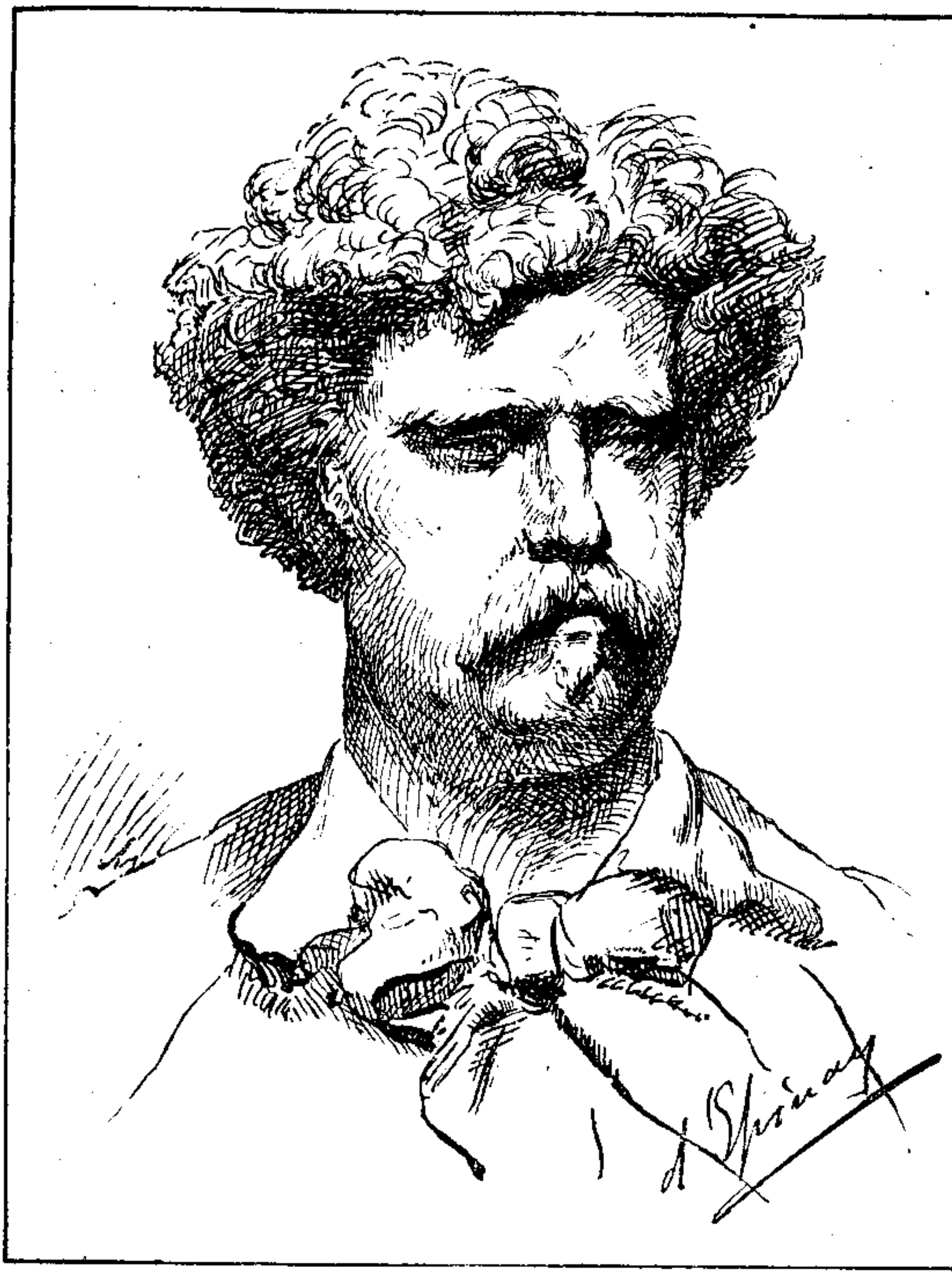
Antique Ornament.

The subjects of instruction are principally arithmetic and geometry, linear and free drawing, mechanics, natural philosophy, and chemistry (with special reference to the particular branches of industry carried on in the locality in which the schools are situated), modeling, bookkeeping, and orthography.

The mode of instruction is partly by lectures, illustrated when necessary by experiments, drawings, and models, or by the exhibition of manufactured articles, raw materials, etc.; partly by questions relating to the various subjects taught; and partly by drawings and other works executed under the guidance of the teachers.

ART EDUCATION IN SPAIN.

There are efficient provisions for art education in Spain, although any thing like detailed statistics with regard to it are not easily obtained. The following information comes from official sources, and was furnished



Fortuny.

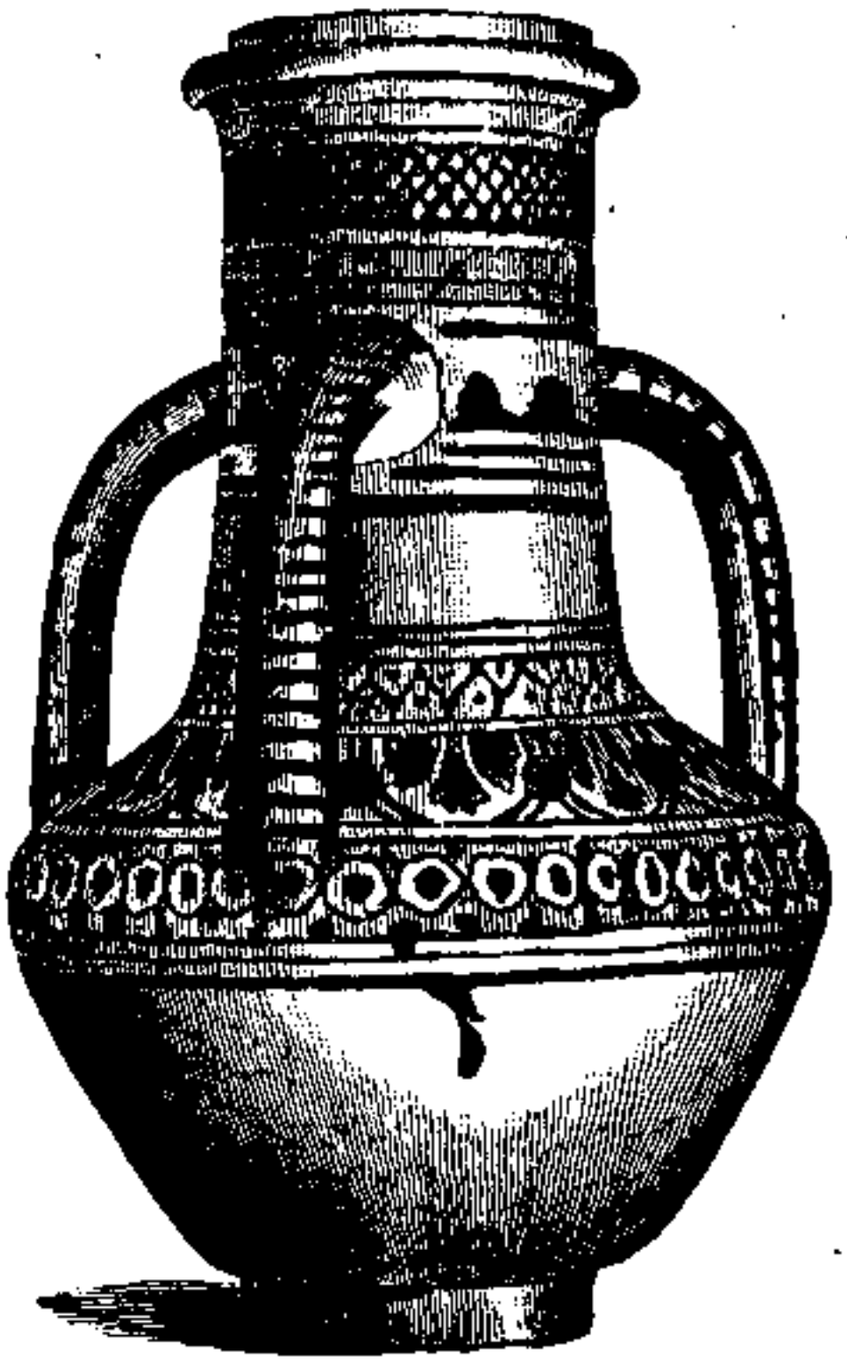
Donadio, one of the commissioners for Spain at the Centennial Exposition.

In Spain there are societies known as *Amigos del Pais.* In 1867, there were 40 of these societies, with 5860 members. The total number of its "sections" or "committees" was: For science, 8; agriculture, 37; industrial arts, 30; commerce, political economy, etc., 15; public instruction, 19; fine arts, 12; different other classes, 10. The total number of

tory, 1; mathematics, 3; physics, 1; drawing, 21; music, 1; hygiene, 2. These societies also have 26 libraries, containing 22,477 volumes, with large collections of manuscripts, prints, engravings, etc.

The athenæums, academies, and scientific societies number some 62, with 18,835 members. There are 34 sections, as follows: Literature, 18; moral and political sciences, 12; legislative administration, 28; history and geography, 4; natural sciences, 15; medical sciences, 43; commerce, 2; agriculture and industrial arts, 25; fine arts, 17; different classes, 25.

These sections have the following schools: Primary instruction, 20; philosophy, 2; literature, 10; history and geography, 12; legislative, 1; agriculture, 2; commerce and industry, 6; natural sciences, 27; medical sciences, 9; languages, 14; fine arts, 21; other different classes, 14. Attached to these institutions are 48 libraries, containing 38,666 books and 1613 manuscripts. These societies are situated in the provinces of the peninsula as follows: Alava, 1; Almeria, 2; Balearic Islands, 4; Barcelona, 22; Burgos, 1; Granada, 1; Hueria, 1; Santander, 1; Seville, 6; Tarragona, 1; Madrid, 9; Malaga, 1; Arrevezza, 1; Toledo, 2; Valencia, 4; Valladolid, 1; Zamora, 1; Saragossa, 2.



Arab Urn.

SOCIETIES OF FINE ARTS.

There are 11 societies especially devoted to the fine arts. They have different names, and are situated in the following cities: Barcelona has 1; Cadiz, 2; Granada, 1; Lerida, 2; Malaga, 1; Arrivisa, 1; Salamanca, 1; Valencia, 1; Saragossa, 1.

The schools of these societies are as follows: Mathematics, 6; drawing, 25; painting, 9; sculpture, 6; music, 19; industrial arts, 8. There is a school for industrial engineers, conducted by the National Government at Barcelona; also one for drawing—for the use of artisans—at Madrid. At Madrid there is, besides, a "Conservatory for Arts and Métiers." This is an institution for instruction in the industrial arts. It has a number of schools devoted to different branches of industry. There are other highly important schools under the immediate patronage and supervision of the

graving, and school of architecture, besides other academies devoted to other branches of the arts and to literature.

From the above list, it will be seen that Spain is exercising a wide and generous influence in the promotion of the instruction which sustains her exquisite arts and industries.



CHAPTER XIV.

GENERAL EDUCATION IN THE UNITED STATES.

Education in the United States.—The Common School and its Programme of Instruction.—Too many Studies and too much Study.—Cramming.—Education made Practical.—Higher Institutions of Education.—Colleges, Academies, Universities.—Instruction in these should be more Practical.—University of Cincinnati.

COMMON-SCHOOL education exists in pretty much the same form in nearly all the States of the Union. In several of the States education is compulsory: in all of them the children of every citizen may attend the public school; but whether or not they make use of their opportunity, all the people are taxed to help pay for its support. In many of these schools the course of instruction includes the elementary studies of reading, writing, arithmetic, and geography. The course of instruction in the schools of the city of Cincinnati will serve as an example, with the exception of the study of drawing, which is not generally taught in public schools.

COURSE OF INSTRUCTION IN THE SCHOOLS OF CINCINNATI.

District Schools.—Grade II, elements of reading, writing, arithmetic, singing, grammar, object lessons, drawing, and German, when desired by parents. These are extended through other grades, introducing, in addition, spelling, composition, music, punctuation, penmanship, and other studies. In the intermediate schools these are continued in the higher grades, with the addition of physics and history. In the high schools the instruction embraces yet larger subdivisions, with those of Latin, Greek, and French, algebra, anatomy, geometry, natural philosophy, botany, elocution, chemistry, astronomy, book-keeping, geology, and other studies.

It is generally conceded that this long and exhaustive course of instruction has failed to accomplish the end for which it was established. The majority of children are able to comprehend intelligently a certain

ply a matter of memorization for the moment. Under constant use, the mind becomes sensitive to recollection, and one lesson is learned after another, and almost as quickly passes out of the mind. This process of what is called "cramming" is a severe strain upon bodily health, and is an injury to the intellectual faculties.

The best thinkers, the most experienced teachers, have long ago acknowledged and deeply deplored this system of education; but no community has yet had the courage to reduce the burden of these studies, which go far beyond the line of obligation which it is supposed the State is under to the citizen. The manifest mistake in this system is the attempt to fit every student for a collegiate education, and, ultimately, for a profession. The aim of common-school instruction should be to give each pupil an education which would make the choice of a profession possible, and to place an industrial occupation within certain reach.

The entire population can not gain a livelihood as lawyers, physicians, or clergymen; but any man may earn an honest living in the thousand and one occupations which require technical knowledge. The foundation of technical knowledge is drawing. Every one can be taught the simple elements of drawing, and these may easily form a part of the system of common-school education.

It is not proposed in this book to do more than give an outline of the best way of teaching drawing in the public schools. It is important to urge upon those who direct the systems of instruction in the common schools the wisdom of a change which shall permit the introduction of drawing as one of the regular studies. This change can be effected in several ways; either by substitution in place of those which are more ornamental than useful, or by abridging the extent of these studies.



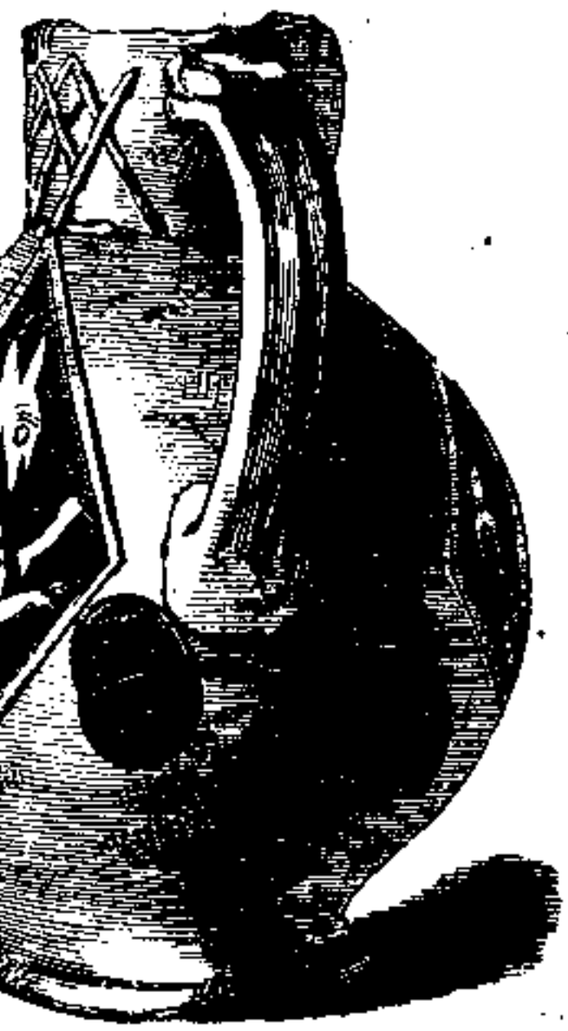
Roman Bowl of Samian Ware.

Mathematics may be abridged to the science of numbers. Geography, as taught, covers a large field of knowledge, which is far beyond the possible needs of most pupils. History embraces a vast range of events: to repeat these from memory is a tax upon the intellect, and they fly beyond recall as other facts are crammed into the bewildered mind of the child. In the studies of composition and the languages there is much which might be abridged. In the high schools all of these accumulate to an absurd degree, if it is the intention of the pupil to follow a mechanical occu-

pation. Latin, Greek, French, German, anatomy, natural philosophy, botany, elocution, astronomy, and chemistry have their practical uses; but of the boys and girls who go to the public schools, nine in ten receive no benefit from them. As men and women they will be glad to be able to earn two, three, or four dollars a day at manual labor. These facts must be recognized and accepted by every intelligent observer. The time, therefore, which is sacrificed to these higher studies ought to be given to those which are more useful. There can be no doubt but what drawing is practical and useful. Its importance is not a new or doubtful question. It has been settled by the action of all the European governments, which now give to drawing a fixed place in their school education. Its value to the laborer and the artisan may be gathered from the list of occupations in which drawing is of use, already noted in these pages.

One of the reasons why drawing has not heretofore formed a part of common-school instruction in the United States may be found in the fact that most of the schools have been organized where the population was limited, where there were few manufactures, and the demand for manufactured articles was confined to the necessities of life. These conditions are changing every day. The population of the United States is increasing enormously through emigration and by natural growth. All over the country, minerals, coals, and clays, to a boundless extent, are dug out of the earth, and appropriated to human uses; and so, with large demand and exhaustless means of supply, manufactures and trades have rapidly increased. With these vast and varied interests comes the necessity for other and more practical means of education. The common school must accommodate its programme of instruction so as to provide for drawing. This is most emphatically the need of the people. At the basis of technical knowledge stands drawing. The children of the *workers*, who are to be workers themselves, must be taught to draw.

In the discussion of the subject of education in the United States, the higher institutions of learning should be included. The plan of some of these proposes to continue the education already obtained in public and private schools. Others take the pupil at the beginning, and dismiss him fitted for the practice of a profession. The following list of such institutions is chiefly obtained from the admirable reports of the



Roman British Pitcher, Thirteenth Century.

Commissioner for Education for the United States, and is arranged so as to show the class to which they belong:

Colleges and universities	324
Schools of theology	118
Schools of medicine, pharmacy, etc	94
Schools of law	43
Normal schools	120
Schools of design	10
Schools of mining, engineering, agriculture, etc., endowed with the national land grant	44
Schools of mining, engineering, agiculture, etc., not endowed with the national land grant	29
Total	782
Museums of art and archæology	13

Of the above list, several of the schools of law and theology are a part of the colleges and universities already named; of the normal schools, several are devoted to technical education. Of the schools of mining endowed by the national land grant but little that is encouraging can be said. The lands granted under the ordinance of 1787—1,119,440 acres—have very nearly been squandered, and only in three or four of the States is there any thing left to show for this generous gift. Under the ordinance of 1862, some $7,000,000 were donated with better results. In twenty-four institutions, in 1873, it was said there were 2604 students, with 321 professors and assistants. Although these schools are professedly devoted to technical education, it is doubtful if it has been practically or systematically applied; at least, there has been no evidence of such application.

The schools of mining and the others which are not endowed by the National Government are better known for their useful work. It may be that several of them are older, but it is fair to presume that any educational institution established because of the necessities of the community, with its aid and under its management, is more likely to thrive than those which grow out of the favor of the National Government with no special need and under no direct control. In one case the responsibility is constant and near; in the other it is uncertain and far removed.

Of the 680 educational institutions above named, less than a score are especially devoted to art training. Harvard, Cornell, Yale, Vassar, the College of Notre Dame, and the universities of Michigan, Cincinnati, and Rochester, either have a special department in art education, or give some attention to art in the way of lectures or in gathering collections, but

nearly all the remainder of these universities and schools are devoted to other instruction.

Of technical education which would enable him to earn his daily bread, develop the natural resources of the land, and benefit society, the graduate from these institutions obtains but little. Our cities and towns are full of young men who have had this kind of academic education, who have abundant capacity, but who do not know how to make profitable use of it. There should be a decided change in the course of instruction in the larger number of colleges referred to above, in favor of a more practical education. The agricultural, mineral, and manufacturing interests of the United States literally have no limit for the employment of those who are educated to know how to develop them. The higher collegiate institutions, like Harvard, Yale, Columbia, and Cornell, fulfill the important and necessary requirements of classical and æsthetical instruction; and even they are doing more than any others in the cause of technical education.

At the city of Cincinnati there is the University of Cincinnati, which has an income of about $40,000. This sum will be increased if the original intention of its organization be carried out. What an admirable opportunity is there here to organize an institution for technical instruction! There is every reason to believe a result so useful might be accomplished at Cincinnati. She is a city fourth in importance in the United States as a manufacturing centre. All around and near her are infinite supplies of coal, iron, and other metals. For hundreds of miles, in every direction, she drains the richest agricultural regions of the West. The Ohio River and many railroads bring to the doors of her workshops the walnut, hickory, oak, beech, maple, poplar, and pine of the dense forests of Ohio, Indiana, and Kentucky. She owes her importance as a manufacturing centre to the fortunate fact that the principal materials, the most bulky and costly which she uses, are within easy reach. Cincinnati is, therefore, one of the most fitting places in the United States for the establishment of a school for mining, engineering, technical and art instruction.



CHAPTER XV.

ART EDUCATION IN THE UNITED STATES.

Art Education in the United States.—The Need of Art Education.—Difficulty of the Adoption of any of the European Plans.—The State of Massachusetts.—Professor Smith's Plan of Education.—Results of the Experiment.—Drawing taught in the Schools of Cincinnati and New York.—Special Schools of Art Instruction.—Cooper Institute.—School of Design for Women at Philadelphia.—School of Design of the University of Cincinnati.—National Academy of Design, New York.—Schools in Lowell and Worcester, Massachusetts.

The best method of art education for the United States is a question which requires thoughtful consideration. It is a subject new to the people of this country, and it may be difficult to persuade them that the art of drawing and design is of such general use and importance as to justify its introduction as one of the elementary studies in the public schools. It is possible that the recognition of this necessity will be of slow growth, but it is very certain that one of the most efficacious means of raising the people to this standard will be to teach them drawing in their early years; and here the public school offers instruction within the reach of both sexes and all classes. Art instruction may be more easily introduced in large cities and in manufacturing neighborhoods than in isolated country districts. The latter need it, however, fully as much as the former; for the life of the farmer and laborer in the sparsely settled districts of the South and West is one of drudgery and monotony, and, besides its actual benefits in his daily work, drawing would become a means of distraction and pleasure.

In European countries the larger part of the population is gathered in cities and within narrow bounds of territory. Within daily reach and use of these people are ample resources in the way of material by which art education is attained. The tools, paper, and instruments can be had at small cost; the ateliers are admirably arranged for purposes of study; the galleries are full of the finest statuary, drawings, and paintings of the masters; there are museums filled with magnificent collections of natural history and objects of art; there are libraries where every possible want can be answered.

In the Old World all is favorable for the study of art. In the United States the opportunities are poor. Our museums, collections of statuary, and models for drawing are limited in number and meagre. There are but few established picture-galleries. Of persons properly educated as teachers of drawing, or in the application of art knowledge to practical industries, there are scarcely any. The cost of materials is much greater here than in Europe. It is one of the discouraging features of our tariff upon imported articles that it taxes heavily every thing that relates to education in art. We are ignorant of what we need, and at once proceed to put hinderances in the road for obtaining knowledge. Besides these wants and obstructions, there are differences between our civilization and that of Europe which prevent the general adoption of any specific plan of art instruction like those which have been described. A plan like that of England or France, for example, is not feasible in the United States, unless we change the theory and practice of our institutions, and permit the National Government to interfere with the State and local governments in their systems of education. A change so sweeping and radical as this is not likely to occur. The people of the towns and cities of the United States would not allow the General Government to regulate the course of studies in their schools, any more than they would allow it to appoint their selectmen or frame laws for their municipal government.



Roman British Pitcher, Thirteenth Century.

If there be any community in the United States to which this experiment of public art instruction can be applied, it is the State of Massachusetts. The brief duration of the summer season, and the hard, unproductive soil, have, in great measure, deprived her of the fruits of agriculture. By thrift and sagacity her people have accumulated capital, which has been invested in trade and manufactures. The ingenuity and industry of the citizens of this commonwealth have placed her manufacturing interests largely in advance of those of her sister States, and the movement for industrial art education has been begun there under the greatest advantages and fairest auspices. The law which established this branch of education in the public schools of Massachusetts went into effect in May, 1870. It is absolute, and applies to all cities with a population of ten thousand and over that number.

Under this law Professor Walter Smith was appointed State director of art education. This gentleman, who had been an "art master" in England, and was thoroughly learned in the course of instruction practiced in that country, has suggested and put in operation in Massachusetts a system similar to that of the South Kensington School. At the outset, Professor Smith met with the difficulty which is encountered in all attempts at general art education. There were no teachers properly qualified; so he and the school authorities at once established a normal school. This school has been in existence several years, and is supplying teachers for the public day and night schools.

Although all the towns which come under the provisions of the State law have not accepted the privileges of art education, yet in Boston, Lawrence, Worcester, and other places where it has been in practice, the results have been more than satisfactory. The drawings exhibited each year represent the work of the day and night schools, and they show a substantial and genuine progress. The scholars are taught the art of design, and in the right way. The study of descriptive geometry enters largely into the plan, and the certain results follow of good drawing and distinct, original ideas. The system of Professor Smith has the distinctive merit that it is the first attempt, in a correct and thorough way, of teaching the art of design in the United States.

Very recently (during the month of February, 1877) reports were circulated through the newspapers that the method of drawing in use in the public schools of Boston had failed, and that the school authorities had abridged the studies in drawing. It is a great pleasure to the writer of this work, just before it goes to press, to be able, not only to give personal assurances from Professor Smith of the untruth of this story, but also extracts from the report of the school committee for 1876, just published, which affirm the complete success of this system of drawing. This committee reports: "So much has been already written and spoken about drawing in the public schools, that the pros and cons are generally known to all who take an interest in the matter, and need not therefore be repeated here. Bearing the latter in mind, it is a satisfaction to those who believe in the important influence of this study upon the industrial future of the State, to see that time has only strengthened the general feeling as to the force of the arguments used in its favor, and made the weakness of those employed against it more and more evident. * * * Before entering into details concerning the study of drawing as at present conducted, it may be well to correct unfounded reports that the time devoted to drawing in the schools has been cut down, and the course of study considerably circumscribed." The report goes on to show that the

studies have not been abridged. It also gives extracts from letters by the superintendents of public schools in Boston, St. Louis, and Milwaukee, showing that drawing is now heartily accepted as a necessary and most useful branch of study in those cities.

This branch of study has also been introduced into the public-schools of States and cities in other parts of the country, and especially in the State of New York, where it is established by recently enacted laws.

In the city of Cincinnati, drawing has been for several years one of the studies in all the grades of the public schools, with the following limit of time:

District Schools.—Grades II and G, three lessons of thirty minutes each per week; Grades F, E, and D, one lesson of sixty minutes and one of thirty minutes per week.

Intermediate Schools.—Grades C, B, and A, two lessons of forty minutes each per week.

High Schools.—One lesson of forty-five minutes per week in all the grades.

Normal School.—Two lessons of one hour's duration per week.



Etruscan Vase.

The advantages of the instruction of drawing in the schools of Cincinnati are not as perceptible as they might be. The system has many admirable points, but it is also somewhat defective. Besides faults in the programme, it commits the error of diminishing the time given to drawing as the student ascends to the higher grades. In addition to these general efforts, there is in the United States a limited number of institutions specially devoted to art education.

The Woman's Art School at the Cooper Institute, in New York, is one of the oldest that have had the special object of art training; but it is narrow in its scope, confining its efforts to instruction in drawing, drawing upon wood, wood-engraving, and painting. This school does not undertake a system of general art education.

The Philadelphia School of Design for Women has a much wider range, undertaking a more complete course. This school also applies its teaching to the industrial arts of engraving, lithography, and practical design.

The Philadelphia Academy of Fine Arts has excellent means of instruction for fine-art purposes. It has a large and commodious building, collections of casts and paintings, and other material for study, besides a

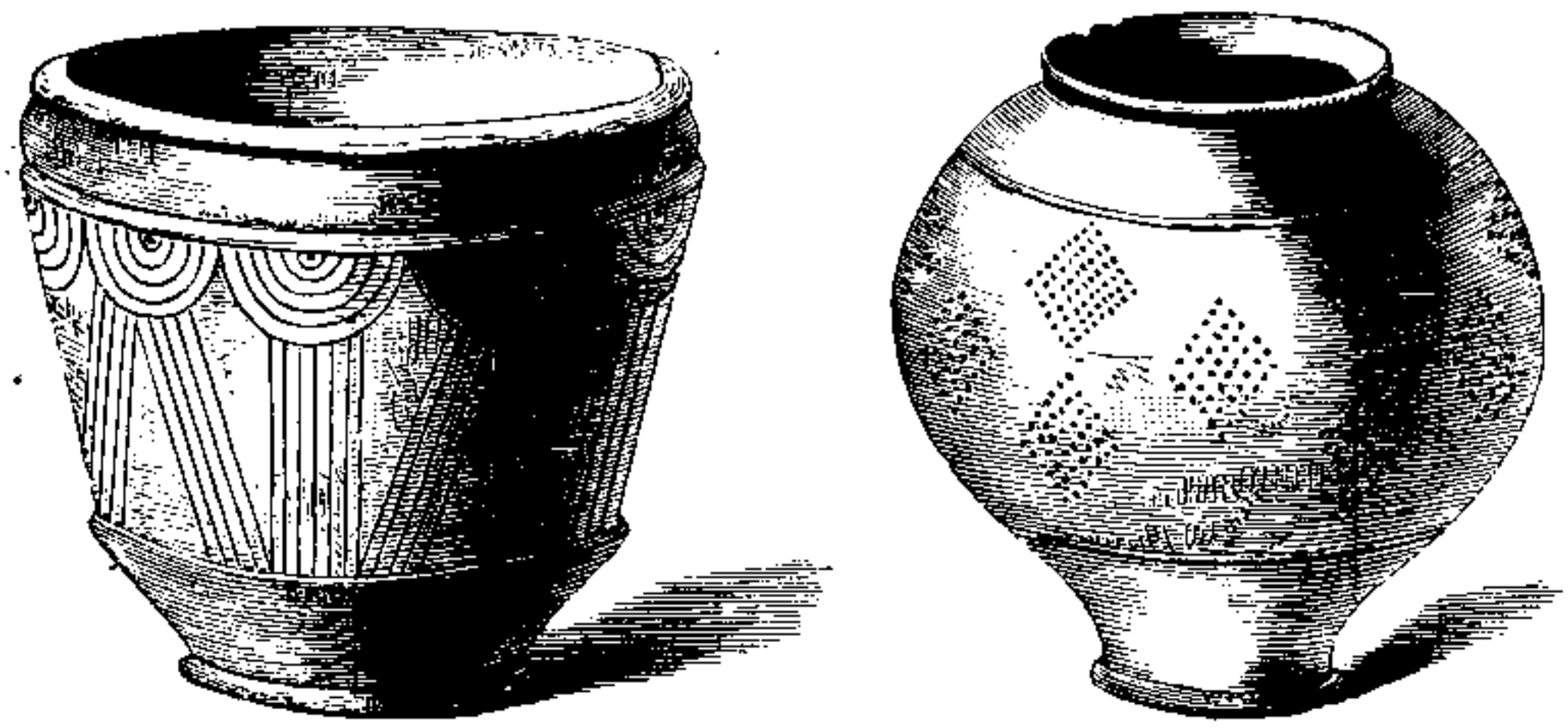
The National Academy of Design, in New York, has a school for drawing, painting, and modeling, with the view of perfecting advanced students in the arts of painting and sculpture. Its choice collection of antique statuary gives to this school excellent opportunities of art study; but no student is fit to avail himself of these models unless he has previously pursued an elementary course of instruction similar to that which will hereafter be suggested in this book.

The Lowell Free School of Industrial Design, connected with the Massachusetts Institute of Technology, offers an admirable course of art instruction, which is directed chiefly toward the arts of design as applied to the manufacture of textile fabrics in the cities of Lowell and Lawrence.

Connected with the Cooper Institute, in New York, there is a Free Night-school of Science and Art, which proposes to instruct in general art education.

The Worcester County Free Institute, in Massachusetts, also has a course of instruction in "theoretical and practical training in those branches of knowledge which underlie the industrial arts."

The school of design which forms a part of the University of Cincinnati has the great advantage of an annual fund of ten thousand dollars, which is devoted to the one purpose of art education. There are three departments in the school. These are the drawing, modeling, and carving classes. The drawing deparment, which is the school of design proper, has three classes, with separate divisions for night and day sessions, each of which has a term of one year. The day classes are filled chiefly with young women, the night classes with workmen. Besides the above, there are in the drawing school a "life" class, for drawing and painting, and a class which is devoted especially to the study of design.



Romano-British Upchurch Ware.

The course of instruction in this school covers a large field of art study. Instruction in drawing is based upon descriptive geometry, and

the print is but little used. Since the recent adoption of the study of descriptive geometry, the progress of the school has been decidedly in advance of its previous experience. The school has been in existence since 1870, and has annually sent forth a corps of teachers admirably instructed in drawing, perspective, composition, painting, and the art of design. It will probably become the normal school for instruction in the industrial and fine arts when these shall be introduced as a part of the school system of the State of Ohio.

A school of architecture and design has also recently been established at the University of Michigan.



CHAPTER XVI.

THE BEST METHOD OF ART INSTRUCTION FOR THE UNITED STATES.

The best Method of Art Education for the United States.—Differences between the European Programmes of Education.—The Methods of Instruction most practiced in this Country. Injurious rather than Beneficial.—General Plan of a Proper System of Instruction.—Adaptation of the Scheme to the Common Schools in the United States.—Merits of the System of Drawing from Solids in Relief.—How this Plan is Useful to all Classes.—Time occupied in these Studies.—Superior Instruction.—Course of Superior Instruction: Painting, Sculpture, Architecture.—The Teacher.—Normal Schools.—Plan of Instruction may be varied in the Interest of Localities.—Practical Application of the Arts of Painting, Sculpture, and Architecture to Various Industries.

We have given a brief sketch of the condition of art education in all the principal countries of Europe and in the United States. There are numerous details connected with the process of instruction, a description of which does not come within the limits of this book. The machinery for teaching differs in one way or another in almost every school. Under the regulations of the Kensington Art School, for example, the harder, sharper point of the crayon is used in drawing. In France, Belgium, and Germany, the "stump" is used quite as much as the crayon point. And so of tables, drawing-boards, paper, tools of all kinds, the arrangements of rooms, studios, light, and models in use—these differ in details, but they accomplish approximate results. In the programmes of art instruction, as has been shown, there are material variations. Until within a few years the systems of England and Germany resembled each other, and were distinguished from those of other parts of Europe by the introduction of scientific studies. But of late Belgium has adopted a more strictly scientific basis of education than either of the other two, and France has also put aside a great deal which was called "artistic," but which was altogether unartistic, and adopted a programme based upon the elements of geometry.

In order to show important differences in the methods of instruction among these nations, let us look at the programmes in use by the English and Belgian governments respectively. These two may best be offered

for comparison, because each has adopted a distinct course of instruction, which is used by all the schools in those kingdoms. There are two points of variance between Great Britain and Belgium which will at once strike the observer. In the scheme of instruction of Belgium, the pupil is first taught the fundamental principles of design, such as linear drawing, arithmetic, the elements of algebra, geometry, projection, linear perspective, shadows, anatomy of the human body, and ornamental design. At a certain point he has all the fundamental knowledge necessary for his career as an artist or mechanic; and here he can stop if he chooses, or he can follow one or all of the three subsequent divisions of painting, sculpture, and architecture.



Staffordshire Tig, or Drinking-cup, Seventeenth Century.

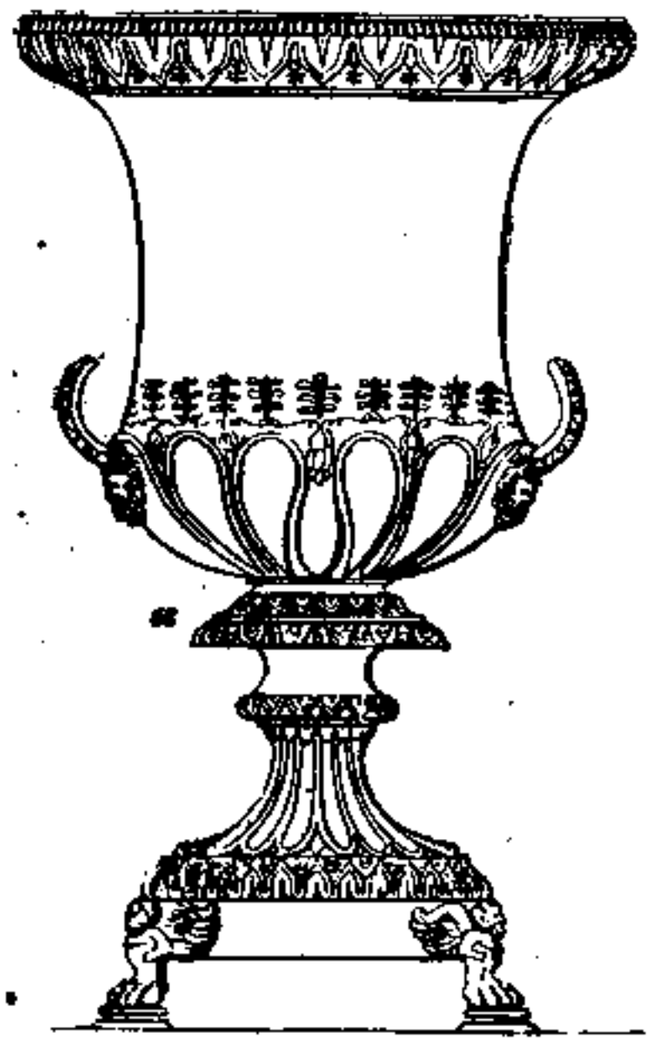
The English method is not so well classified. It brings all these studies together; it contains much that is excessive and cumbersome; and the student is obliged to study branches of the arts and sciences for which he may not have subsequent use. The second point of difference is yet more marked. Belgium entirely suppresses the *estampe*, or print, and condemns its use in strong terms. England retains it with many of its marked defects. A third point of difference is, England gives money rewards to pupils, while Belgium does not. The history and experience of all these efforts to establish art education are of great value to us in the United States; and while we can not adopt or set in operation the same administrative organization because of our form of government, we can make use of what is best in their methods of instruction.

THE BASIS OF INSTRUCTION SHOULD BE UPON GEOMETRICAL PRINCIPLES, THE STUDY OF NATURE, AND SUPPRESSION OF PRINT-COPYING.

Although we have but few schools of design, and the teaching of drawing in the public schools is limited, yet it forms one of the branches of instruction in most of the private schools and academies for boys and girls. In hardly any of these schools is there an intelligent system of instruction. Drawing is placed in the curriculum because it is supposed to be an "accomplishment." The assumption that drawing is properly taught at these places in most cases would be a fraud, were it not for the

fact that the principals and teachers honestly believe that they really are teaching drawing. Who has not seen the singular examples which come from these schools, in crayon, pencil, and monochrome; bad copies from shockingly drawn prints of Alpine views, portraits of Turks, sultanas, saints, and Madonnas, poodle-dogs, cats, lions, tigers, and other tame and wild animals? In the effort to make one of these copies, the student struggles through a great deal of work, and at the end of it all has actually learned nothing—not one fixed principle, not a rule of art, not the least conception of the laws of perspective and correct drawing, not the faintest shadow of a notion of the art of design.

It is not so much the object of this discussion to point out the defects of existing plans of instruction as it is to suggest what is believed to be the best. At the same time, this purpose can not be explained so completely as it ought to be, except by more or less of comparison. Careful investigation of this subject will show that most of the published art studies, drawing-books, text-books, and so on, are defective in their plan of instruction, or, rather, they have no systematic plan. One of the serious errors to be noticed among these is the introduction of objects, at several stages of instruction, involving the necessity for a knowledge of the rules of perspective, without any attempt to teach perspective. Furthermore, these books are filled with all sorts of "directions," which are of little use, and confuse the pupil. Instead of these crude schemes, an evenly graduated system, based upon the principles of geometry, is the true method. This is a plan, simple and rational, which teaches the pupil rapidly and easily to draw objects in relief; not only inanimate objects, but nature, with all the glory of earth and sky; its loveliness of light, shadow, and color; and, happiest accomplishment of all, to depict human nature.



Bronze Vase decorated with Silver.—Found at Pompeii.

The art of drawing and the art of design can be attained by a correct method of instruction, and by no other. These elementary principles are very simple. They are the alphabet and grammar of design. The study and practice of these principles are as necessary for the artist as the mechanic, and are the same for one as the other. In the statement of the order of these studies, the programme adopted in Belgium—with modifications and additions—will be followed, because of its simplicity and directness. The report upon this subject made by M. Taeye has also been freely used in this discussion.

GENERAL PLAN OF A PROPER SCHEME OF INSTRUCTION.

At first the student is given a mathematical and exact idea of different lines and plane surfaces. Then he is exercised simultaneously in the drawing of geometrical forms, in the use of instruments, in drawing at sight, with free-hand, upon the blackboard and upon paper.

In drawing these plane figures, the student acquires the habit of drawing with exactitude, taste, and precision. He teaches himself the meaning of regular figures, as being a part of the expressions used in the language of the arts, and especially of the exact sciences. At this stage of instruction the student may begin to model in clay simple forms from plaster models and from nature. Later the principles of projection and the elements of perspective teach the student to see bodies in space, and the way to express, by outline alone, the forms of solids, which is the essence of drawing itself.

Then follows the application of geometrical figures and natural objects, such as leaves and flowers, to ornamentation; and attention will be given to the interlacing of forms and lines, that productive source of all flat ornamentation, which completes this branch of instruction. The useful side of these exercises may be seen in the fact that they possess the mind of the student with ideas of regularity, symmetry, and those proportions which are in art the conditions of order and beauty. These first studies, in their combined effect, will be consummated with a general idea of primitive colors, of which the students will make application in polychrome, in flat tints, by juxtaposition, and upon their ordinary drawings. This will constitute a first lesson upon the relative value of the harmony of colors, and, at the same time, upon the application of drawing to industry.

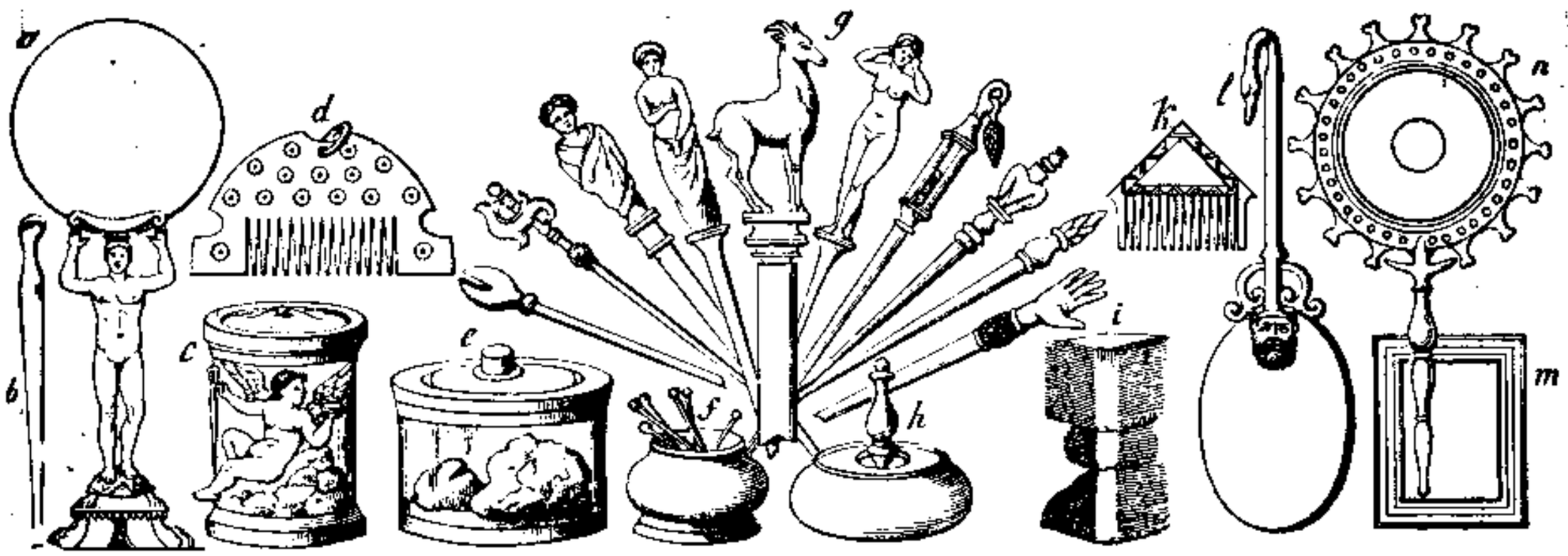
Following all of this, the pupil will enter upon the general principles of relief by the study of the effect of lights and shadows upon solids, which will finally lead to the complete representation of bodies seen in space. Thus possessing all the elements which constitute the true principles of design, he will pass to the study of drawing after casts, of fragments of architecture, and ornaments taken from the most beautiful monuments of antiquity, of the Middle Ages, and the Renaissance; then from fragments of heads, busts, torsos taken from the *chef-d'œuvres* of the antique. Thus, while the student acquires the first ideas of the history of art, he is led to study the principles of the human figure.

In each course of these studies the pupil will repeat from memory the exercises he has already made. The practical usefulness of this is evident. It calls into being the faculties which excite and test his artistic and crea-

tive powers. The studies in modeling will also be continued by copying in clay from plaster models of fruit and animals, and, later, fragments of architecture, the head, torso, and the entire human figure.

ADAPTATION OF THIS SCHEME TO THE COMMON SCHOOLS.

The method of instruction which has been briefly sketched will now be adapted to the primary, intermediate, and high schools of our public-school system, with the exception of the course in modeling, which is not practicable by reason of the material necessary to be used in the process of instruction. The use of clay and the tools in modeling require the



Articles of Toilet in Bronze and Other Metals.—From Pompeii.

convenience of an atelier. There are difficulties also in drawing from natural objects in public schools, but these must be overcome.

The Primary Schools.

1. The course of instruction in the primary schools should be of the simplest character—the pupil to be accustomed to the sound and meaning of geometrical terms.

2. To draw on slates from blackboard illustrations the simple lines, plane surfaces of plane geometrical figures, such as squares, triangles, and some of their combinations. This work should all be free-hand, and done on the blackboard by the teacher, the pupil following, making the same forms upon the slate. These should be taken home, and completed more carefully upon the slate, or on paper, as the teacher may think best.

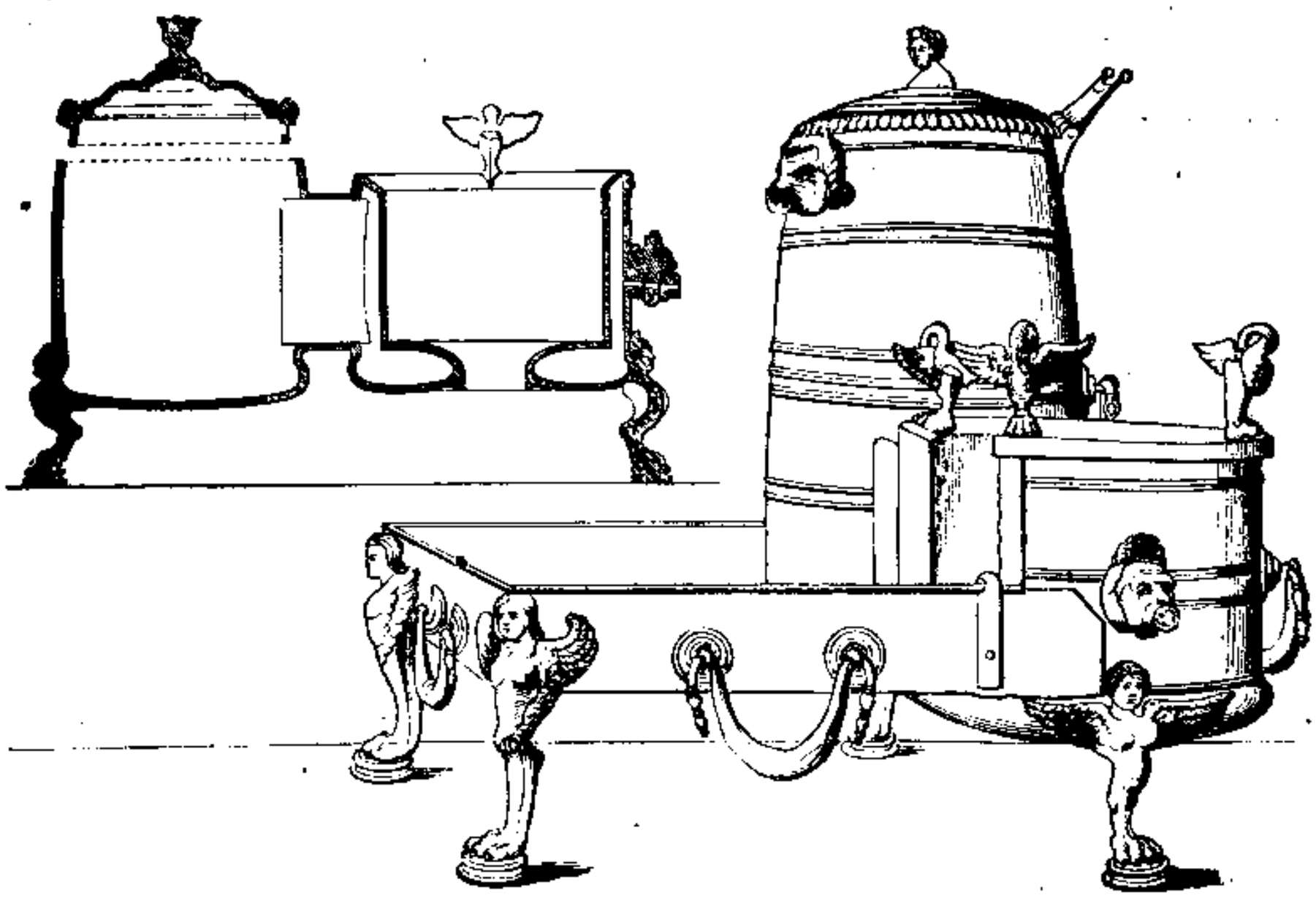
3. Drawing from memory. From time to time the teacher should require each pupil to draw from memory some part of the exercises he has already performed. He should also be encouraged to draw objects of a simple character from nature, and to draw any object he may wish to describe.

ADVANCED GRADES OF THE PRIMARY SCHOOLS.

1. Free-hand drawing of plane geometrical figures, with some of their combinations. The teacher should explain the meaning of simple geometrical terms until they are understood by the pupil, and he can answer questions concerning them. From simpler geometrical surfaces the teacher will proceed to more advanced forms and their combinations.

2. Combination of polygons. These will also be made by the teacher upon the blackboard, the scholar following upon slate or paper with the free-hand; his work to be verified by the aid of rule and compass.

3. Application of ornament to geometrical figures. The ornament will be drawn with free-hand upon a geometrical figure, of straight or curved lines, with their combinations. Sometimes the ornament will be drawn from nature. These should be made upon slates or paper, and elaborated at home.



Miliarium Bronze Brazier.—From Pompeii.

4. Drawing from memory. From time to time the teacher should require of each pupil to reproduce, from memory, a part or the whole of any of the preceding exercises. These studies must at first be made in the class, and more carefully completed upon paper at home.

5. Explanation of the fundamental laws of color, in an elementary way, as seen in plain tints, and illustrated, when possible, by natural objects—such as leaves and flowers. In all instruction upon this question, the teacher is advised to consult Bezold, "Theory of Color."

ADVANCED GRADES OF THE PRIMARY, OR FIRST GRADES OF THE INTERMEDIATE OR GRAMMAR SCHOOLS.

1. Principles of projection. The teacher will make outline drawings of projections upon the blackboard. The pupil will follow this work either upon paper or on slates; in either case to be completed more carefully at home.

2. Elements of perspective. The same method will be pursued as noted in the teaching of projection.

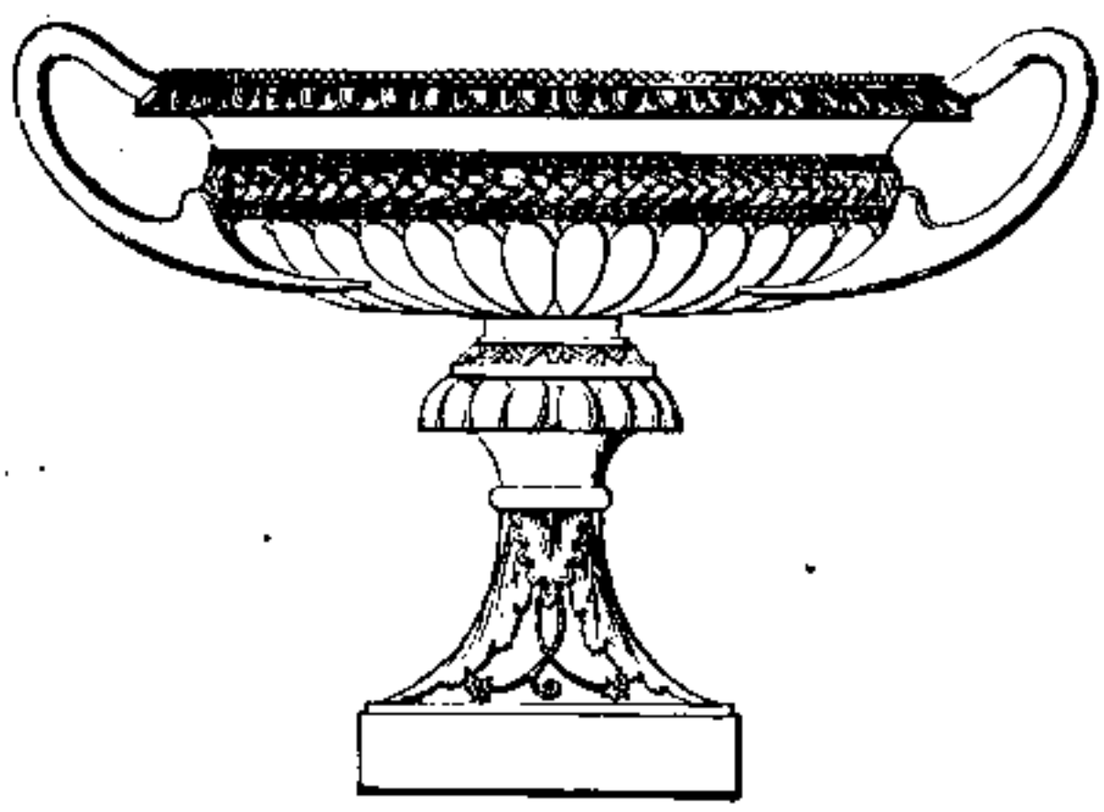
3. Drawing of solids from nature. These may be fruits, flowers, vases, pitchers, or others objects of graceful form, also solids of squares, polygons, etc. These solids and other objects will be placed upon a platform before the blackboard. The pupil will draw from sight, and verify the exactitude of his work by the application of the rules of perspective.

Intermediate or Grammar Schools.

FIRST GRADE.

1. Shaded drawing from solids, such as prisms, at first isolated and then grouped. The same exercises with spherical bodies, and after that the two forms grouped together.

2. Programme studies of shaded drawings of fragments of architecture taken from antique monuments, pottery, furniture, and other familiar forms, which must be graceful and symmetrical. The teacher must give oral expositions of the style and character of the architectural fragments, and the place they occupy in buildings and monuments.



Marble Vase.—From Pompeii.

3. Exercises from memory of the above-named lessons.

4. Application of geometrical figures and natural objects to ornament. The same principles and proceedings will be followed as indicated in the previous degree, except that a more progressive step will be taken in the complication of the arrangement of forms and ornaments.

5. Study from memory. The same manner of proceeding as defined in the preceding degree.

6. The explanation by the teacher of harmony of colors, with illustra-

SECOND GRADE.

1. Studies of shaded drawings from fragments of ornaments from antique sculptures of the Middle Ages and the Renaissance. The teacher will give oral explanations upon ornamentation, its sources and its applications, according to the material employed and the laws of its style.

2. Shaded drawings of fragments of heads after casts from the *chef-d'œuvres* of the antique. The teacher will give oral explanations of the anatomy and muscular construction of the head in general, especially of the fragments used in the studies.

3. Shaded drawings of masks from casts of the *chef-d'œuvres* of the antique.

4. Drawings from memory of the preceding exercises in this degree.

5. Continuation of the study of projection.

6. Continuation of the study of linear perspective.

High Schools.

1. Study of shaded drawings of different styles of ornament, after casts of the *chef-d'œuvres* of antiquity, the Middle Ages, and the Renaissance. These models should be the best that can be found. In this, as in similar cases, they must be selected with knowledge and care. The teacher will make oral explanations of the styles, origin of each object, and its application to the materials employed in its construction, and the place it occupied.

2. Shaded drawings from busts from casts of antique sculpture. The teacher will make oral explanations upon the style, character, and artistic school to which the model belongs.

3. Drawing from memory of exercises already performed in this degree.

4. Continuation of the study of projection, plane sections, intersection of bodies, development of lines, geometrical outlines of shadows.

5. Study of perspective in its more abstruse problems, angular and oblique; of proper shadows, and shadows reflected in water, etc.

6. Architectural nomenclature; oral explanation of the meaning of terms, with sketches; drawings upon the blackboard illustrating the same.

7. Proportions of the human head, in relation to the body; study of the anatomy of the bones and muscles of the head.

RÉSUMÉ OF THIS PROGRAMME.

It is claimed that the above programme has the merit of extreme simplicity. It comprises instruction in the elements of the art of design, and



Romano-British Caster Ware.

the elements of the sciences with studies from nature, constituting the fundamental studies necessary to the artist as well as the workman.

Arrived at this point of instruction, the pupil has had the opportunity to learn linear design, descriptive geometry, projections, linear perspective, and shading. He has been instructed in ornamental design, the forms of foliage, and the most important part of the human figure, the bust. He has a general idea of the proportion and anatomy of the human body, as well as of architectural nomenclature. Thus prepared, and knowing design in its two fundamental expressions, the pupil has the elementary knowledge necessary to undertake the study of different specialties.

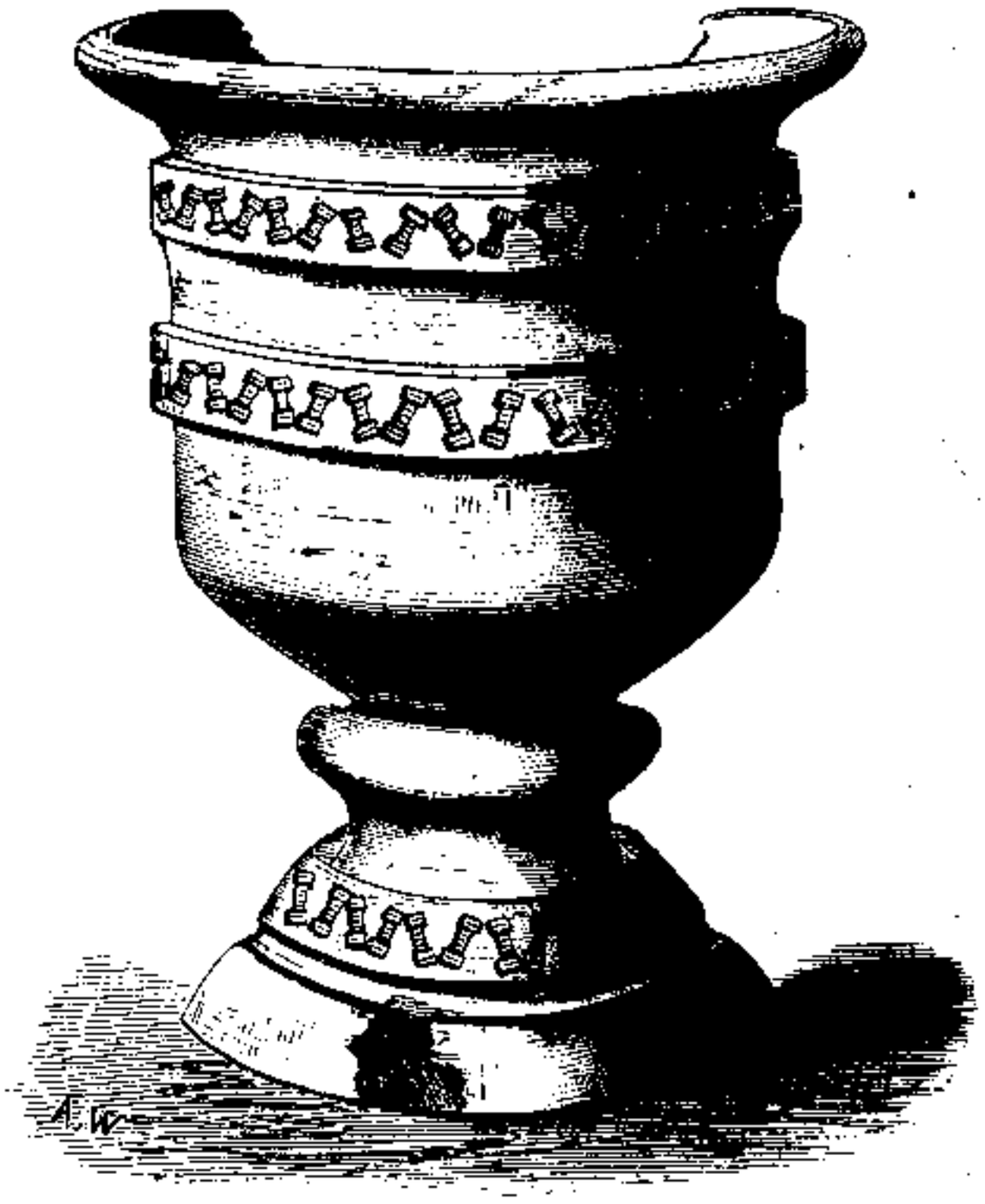
The combination of studies which has been defined constitutes a genuine and complete programme of the elementary teaching of design in its two practical expressions. First, geometrical drawing as far as projection. Second, artistic drawing, or drawing at sight from nature and ornamentation, and of the most important parts of the human figure. In this method of instruction, mechanical copies from flat examples are suppressed. There are carried on at the same time geometrical drawing, artistic drawing, and drawing from memory, all of which are inseparably united in the general idea of design. These are the principles which constitute the method.

DRAWING FROM RELIEF.

This method of elementary instruction, because it teaches the simple fundamental rules which are the base of industrial and high art, is proper for all art instruction. It is the course of study to be pursued alike in

the public schools, in schools of design, and by the individual who may not be able to obtain the advantages of school instruction. To all classes of workers this method is of real value. To the student who desires to become a painter, it teaches the two methods of proceeding most important in the practice of drawing. These constitute the scientific knowledge necessary for rendering forms familiar—projection and perspective.

The student who hopes to become a sculptor gains the exact knowledge of geometrical drawing. The student of architecture finds that knowledge of perspective, projection, and geometrical drawing so essential to his profession. To the workman whose occupation is in any way influenced by art, the study of geometrical drawing, which is the practical base of all mechanical occupations, is of immense value.



Romano-British Urn, made of Red Clay.

The advantage of such elementary instruction will be the same for all those who intend to follow the exact sciences—to the civil and military engineer, the inventor, the surveyor, to all of those who, in their ulterior studies, have need of a thorough knowledge of the science of geometry, and especially descriptive geometry.

THE TIME OCCUPIED IN THESE STUDIES.

The question of the amount of time to be devoted to drawing in the public schools is worthy of serious consideration. At the recent distribution (August 11th, 1875) of prizes to the students of the École des Beaux Arts at Paris, the Marquis De Chennevrieres, Director of Fine Arts for France, urged the value of art education in the public schools, and announced that it had been concluded by the authorities to devote not less than two hours per week to this study in the primary schools, and at least three hours in the higher schools. The Belgian Government, for the same purpose, has taken from two to three hours in its communal schools. In Germany, the time allotted to art studies varies according to the character of the school. In the English elementary schools, this instruction is confined to the two hours set apart for secular education.

Professor Smith, Superintendent of Art Education for the State of Massachusetts, thinks two hours, divided into lessons of thirty minutes each, the least time that should be given for weekly art teaching in the primary schools. In the Cincinnati schools there is a curious inequality in the allowance of time. The earlier grades of the district schools have three lessons of thirty minutes each, and the later ninety minutes, while the high schools have only forty minutes each week.

The practice in most of the schools where art instruction has become established agrees with the opinion of competent judges, who seem to fix upon two hours in the primary schools and three hours in the higher schools each week, as the least time which ought to be given to art teaching. The course of instruction which is here offered for adoption is adapted either to the limited time allowed by the exigencies of public-school education, or to the larger space permitted in schools of design, either for night or day, where the session of several hours is devoted to this special purpose.



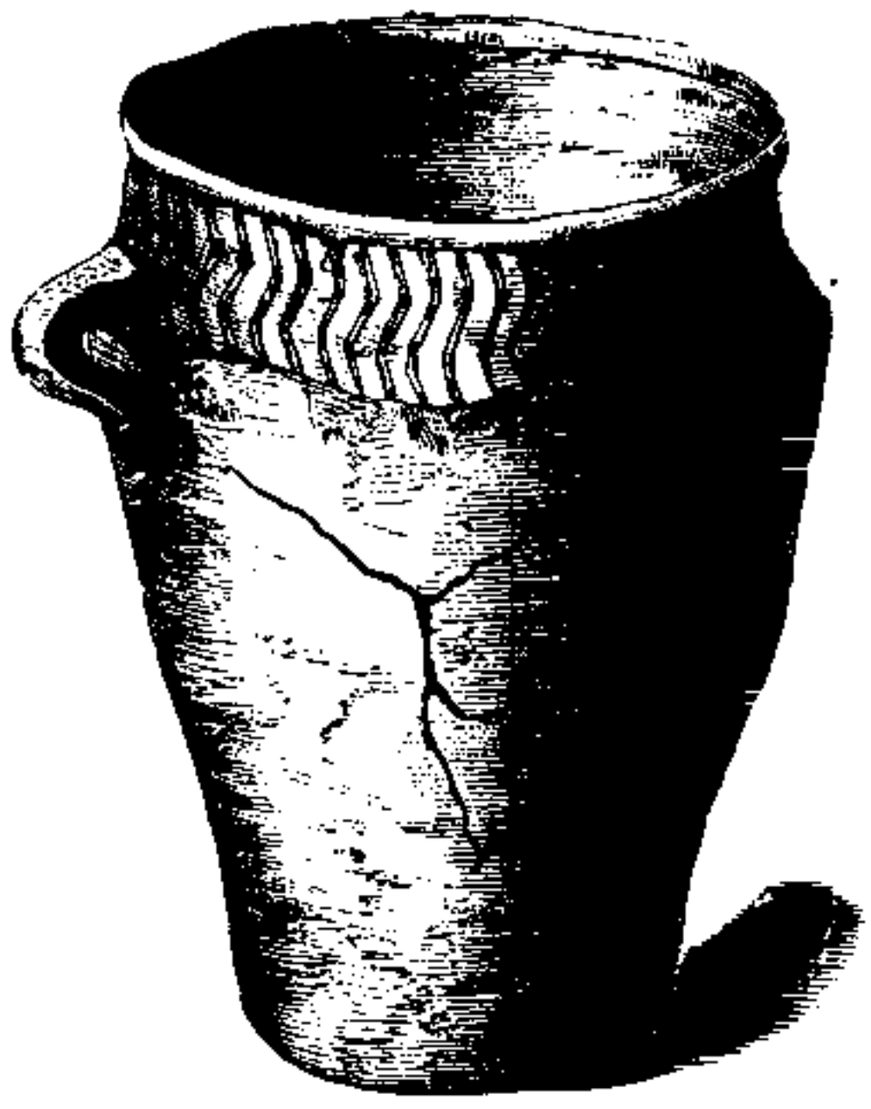
Bronze Water Pitchers.—From Pompeii.

SUPERIOR INSTRUCTION.

In the preceding pages we have given a method of instruction which will carry the student through the course which might form a part of most of the public-school systems in this country. This method would also serve the purpose of elementary education in schools of design. It brings the student up to that point where the arts of design separate into three distinct branches, which unite color with drawing, and modeling with construction. The arts applied to industry, proceeding directly from the arts of design, have the same division; they comprise the occupations which are related to painting, to sculpture, and also to architecture.

This superior instruction, then, should be divided into three distinct branches, each of which has a particular development, forming the base of special instruction in the arts as well as in a thousand and one busi-

ness occupations. At this point a doubtful question arises, whether or not it is the duty of the State to continue the office, which up to this time it has benignly held, of instructor. With almost all of the European nations this superior instruction is in one or another way provided for by the State. But it would appear as if that kind of education which approaches the practical application of the arts to the industries ought to be at the expense of those industries. It is not often that the student can sustain any proportion of such cost. Ought not the merchant and manufacturer, at this stage of education, with the practical means at their disposal to carry forward and make complete the unity of art, do as the Union Centrale of Paris has done?



Celtic Urn.

COURSE FOR SUPERIOR INSTRUCTION.

Painting.

Artistic Instruction.

Course of drawing and painting, and the occupations which depend upon it.

1. Studies of shaded drawings from torsos, and casts of fragments of the *chef-d'œuvres* of antiquity; studies made of landscapes from nature.

2. Studies of shaded drawings from bass-reliefs of casts from the *chef-d'œuvres* of antiquity and the Renaissance.

3. Studies of shaded drawings from casts of antique statues.

4. Painting from plaster casts, and from nature.

Practical Course.—The teacher will make oral explanations of the character, style, and school to which the models belong. Consult the following authorities upon the subject: "History of Art," by Winckelmann; "History of Antique Sculpture," by Emeric David; "Grammar of Painting," by Charles Blanc; "The Principles of Harmony," etc., by Chevreul (Bohn's Library); Bezold's "Theory of Color."

5. Exercise from memory.

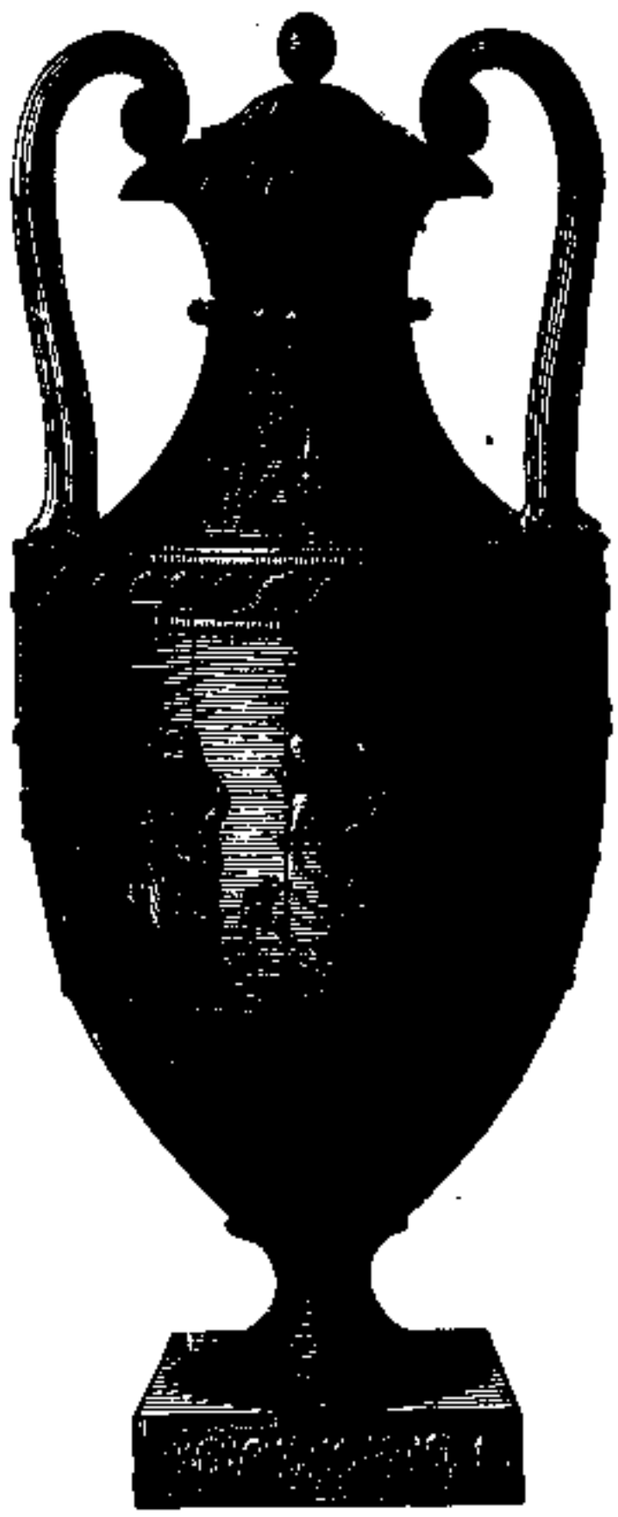
These exercises will be regulated by the professor. The pupil will reproduce from memory the whole or a part of one or more of the studies of this degree.

6. Picturesque anatomy.

7. Perspective, and application of its rules.

FIFTH DEGREE.

Course showing the application of the foregoing studies to the occupations where the art of painting is concerned. One and a half to two hours each day.



Etruscan Vase in Black Basalt.

1. Studies of different styles of ornamentation, with its various relations to painting from ancient down to modern times.

2. Painting from nature. Objects arranged with regard to form and color; plants, flowers, animals, human figures, etc.

3. Composition of objects, painted and drawn; studies of details which shall have relation to the occupations depending upon painting. These studies may be made from photographs, engravings, and casts from nature; works on decorative art and ornamentation, viz., "Specimens of Ornamental Art," by Louis Gruner; "Principles of Decorative Design," by C. Dresser; "Monochromatic Ornament," by M. A. Racinet.

For explanations upon the theory of the art of design, and history of ornament, consult J. E. Maxwell, "Experiments on Color as perceived by the Eye;" "Grammar of Painting," by Charles Blanc; "The Theory of Color," by Bezold, translated by S. R. Koehler; "Encyclopedia of Ornament," by Henry Shaw; "Grammar of Ornament," by Owen Jones.

Sculpture.

Course of modeling; sculpture, and the occupations which are related to sculpture; design.

1. Practice in modeling of busts, torsos, and fragments from plaster casts of the *chef-d'œuvres* of antiquity, and from casts of ornaments of antiquity, the Middle Ages, and the Renaissance, and from natural fruit and foliage.

2. Studies from casts, bass-reliefs from *chef-d'œuvres* from the antique and the Renaissance.

3. Modeling of the complete figure from the antique. The teacher should make oral explanations of the style, character, and schools to which the models belong.

FIFTH DEGREE.

Course of application to the occupations which are related to sculpture.

1. Study of different styles of ornamentation in their various relations to sculpture from ancient up to modern times.

2. Modeling from nature; trophies and their accessories; plants and flowers; animals from still-life, and living objects.

3. Compositions of general effects and studies in detail, for the purpose of use in construction, to be modeled in clay and wax. These studies to be in harmony with the different occupations which relate to sculpture. These studies will be made in accordance with subjects given out by the teacher. The studies given in the last three numbers will be made from photographs, engravings, from nature, and by consulting standard works like the following: "Specimens of Ornamental Art," by Louis Gruner; "Works in Gold, Silver, and Other Metals during the Middle Ages," by H. King; "Forged Iron Work of the Middle Ages and Renaissance," by Hefner Atheneck; treatises upon ceramic art by Brongniart, Jacquemart, Marryat, etc.

4. Lectures upon the theory of the arts of design and ornament. Consult in this relation the following works: "Grammar of the Art of Design," by Charles Blanc; "History of the Industrial Arts, from the Middle Ages to the Epoch of the Renaissance," by Jules Labarte; "Grammar of Ornament," by Owen Jones; "History of Ornament," by Guilmart; "Encyclopedia of Ornament," by Henry Shaw; "Fragments of Architecture," by Chabert; Colling's "Art Foliage," etc.

Architecture.

FOURTH DEGREE.

Course of architectural studies for architects, and for the occupations which relate to architecture and construction.

1. Practice in the use of wash coloring, India ink, sepia, etc.

2. Definitions and outlines of moldings.

3. Drawing, by projection of the orders of architecture, from relief.

4. Assemblage of orders. Drawing these combinations seen in front and obliquely.

5. Continuation of the study of projections; descriptive geometry.

6. Technology and knowledge of materials, and their relation to construction. Consult "Technology of Buildings," by Th. Chatean; "Course of Constructions," by A. Demarest; numerous works upon building construction by Davidson and by Dobson; Gwilt's "Encyclopedia of Architecture," etc.

FIFTH DEGREE.

Course of application of occupations which relate to architecture.

1. Masonry; foundations, walls, and different kinds of vaults and arches.

2. Stone-cutting.

3. Carpentry; employment of iron, stone, terra cotta, etc., in building.

4. Joiner's work; windows, staircases, doors, wainscoting, etc.

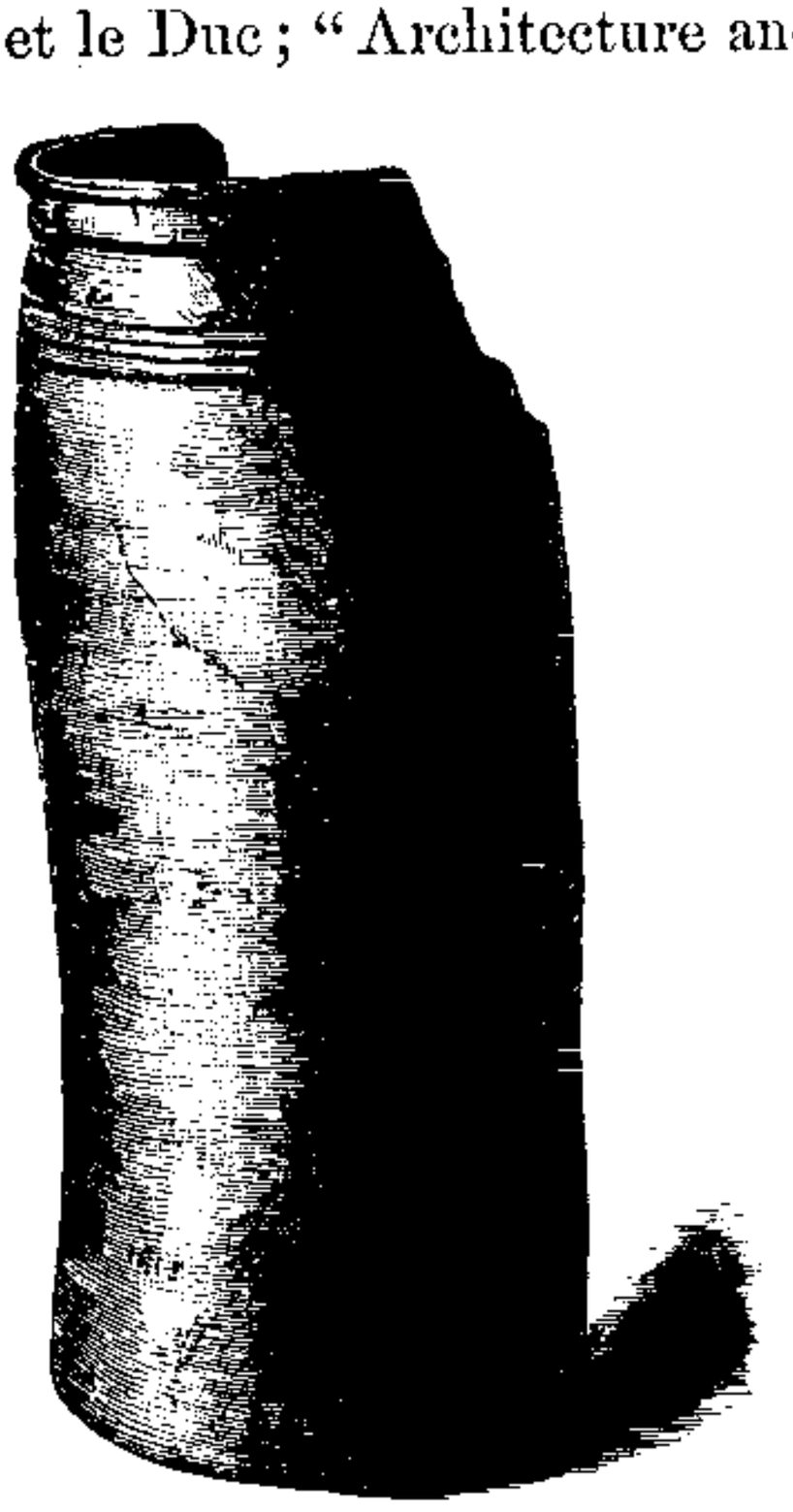
5. Mechanics; elements of machinery, etc.

6. Continuation of the study of projection and descriptive geometry.

In all of the above studies the pupil should be required to execute works and make compositions in those subjects which relate to his special occupation.

Lectures upon the theory of the arts of design and history of ornamentation.

In the study of architecture consult works upon architecture, by Violet le Duc; "Architecture and the Arts which relate to it," by Gilhaband; "Grammar of Design," by Charles Blanc; "History of Ornament," by Guilmart, etc.; "Polychromatic Ornament," by M. A. Racinet.



British Butter-cup—Year 1500.

PROGRAMME OF INSTRUCTION MAY BE VARIED IN THE INTEREST OF SPECIAL LOCALITIES.

The plan of studies, beginning with the elementary course of instruction, and ending with the fine arts, has been given in a condensed form so that it can be applied to public schools, academies of design, or other institutions for artistic education. As it now stands, it is a scheme based upon the principles of the science of geometry, upon nature, and æsthetics. It is a logical and symmetrical construction, within the limits of which each educational institution can work in its own way and according to its peculiar necessities. The art education of a city whose manufactures are silks and other textile fabrics will be diverted into a different channel from that of a city which manufactures wood, pottery, iron and other metals.

painting, sculpture, and architecture, the same method of instruction governs all occupations; yet even here a discreet liberty must be given to the teacher in each locality in the execution of these general rules. The schools of fine arts, the schools of design, and all of those higher institutions of art study will undertake that special instruction comprised in painting, sculpture, and architecture. These schools may teach all of these arts, or devote themselves to any one of them, or to one or more of the occupations which relate to them; but it is very certain that only in such special schools can that most important part of art education, "the application of art to industry," be accomplished.

The Fine Arts.

APPLICATION OF ART TO INDUSTRY.

Now that it has been shown how art education may be acquired, it would be well to define the office of the arts, and in a general way show to what industries they may be applied.

Painting.

Painting as a fine art may be divided into the following classes:

1. Monumental painting.
2. Religious and historical.
3. Genre and portrait.
4. Landscape and animal.
5. Artistic engraving on copper and wood; etching.
6. Artistic lithography.

THE APPLICATION OF PAINTING TO INDUSTRY.

This may be divided into three categories; the first two belong to color and design, the last to design alone. The first may be classified as follows:

1. Decoration; painting in fresco, etc.
2. Polychrome and sculptural decoration.
3. Painting upon glass and porcelain.
4. Use of color upon paper and other materials for pictorial purposes.

In all of these four classes the applied arts are so closely allied to the fine arts that at times it is difficult to separate them. The finest artists have employed their talents in the decoration of walls and ceilings. Painting of glass and porcelain often passes into the field of high art, and sculptural painting often becomes a work of art.

The second category comprises a thousand objects—antique, Byzantine, Arabic, Asiatic, those of the Middle Ages and modern times; all

of which receive their value and beauty by the application of the genius of art. Among these are:

1. Polychrome painting.
2. Mosaics.
3. Painted glass; tiles.
4. Woven fabrics, such as shawls and carpets, cashmeres, embroidered cloths, etc.

The third category employs design almost altogether:

1. Engraving on copper-plate.
2. Engraving upon wood, metals, and glass.
3. Lithography and chromo-lithography.
4. Typographical characters, initials, and letters of fancy.
5. Penmanship, etc.

Sculpture.

The separation of the industrial arts from the fine arts becomes yet more difficult to establish in sculpture than in painting. Statuary and bass-relief, the work of the greatest artists, often form a part of monumental ornamentation which is subordinate to the architectural construction, so as to confuse what is really a work of art with merely decorative sculpture. The same is often true of bronze and other works in metal. The works of sculpture may be divided into five classes. The first is sculpture proper, which is valued for itself as a work of art, as follows:

1. Statuary.
2. Decorative sculpture on stone, wood, etc.
3. Moldings and reductions in plaster, etc.

The second class includes statuary, bronzes, reproductions of statuary, and ornaments in metals, by any of the processes known to art. This class comprises:

1. Statuary and bass-relief.
2. Artistic bronzes.
3. Bronzes gilt and enameled.
4. Iron and other metals worked with the hammer and at the forge.

The third class comprises that special work where iron and the precious metals, gold and silver, are fashioned in *repoussé* into various objects, vases, etc., which has always been a fine art.

1. The work of the chisel and *repoussé* combined.
2. Stamping in metals.

The fifth class includes:

1. The working in cameos, medals, and other sculpture of small dimensions.

2. Engraving in relief; decoration of metals; inlaying, etc.

Architecture.

In another place reference has been made to the art of architecture and its condition in the United States. The industries which relate to architecture are those which are based upon the harmonious proportions of forms purely geometrical. Architecture, when it treats of objects of utility, is an industrial art. Its great works may be separated from those which relate to objects of household use and ornamentation, calling the latter "inferior constructions belonging to architecture." These we can divide into three categories. The first comprises the ceramic art, from the simple cup in constant use to the most precious ornamental vase, or to any article of pottery. These may be subdivided as follows:

1. Pottery of a useful kind.
2. Pottery, vases, cups, etc., for ornamental purposes.
3. Vases, lamps, etc., mounted in metal.

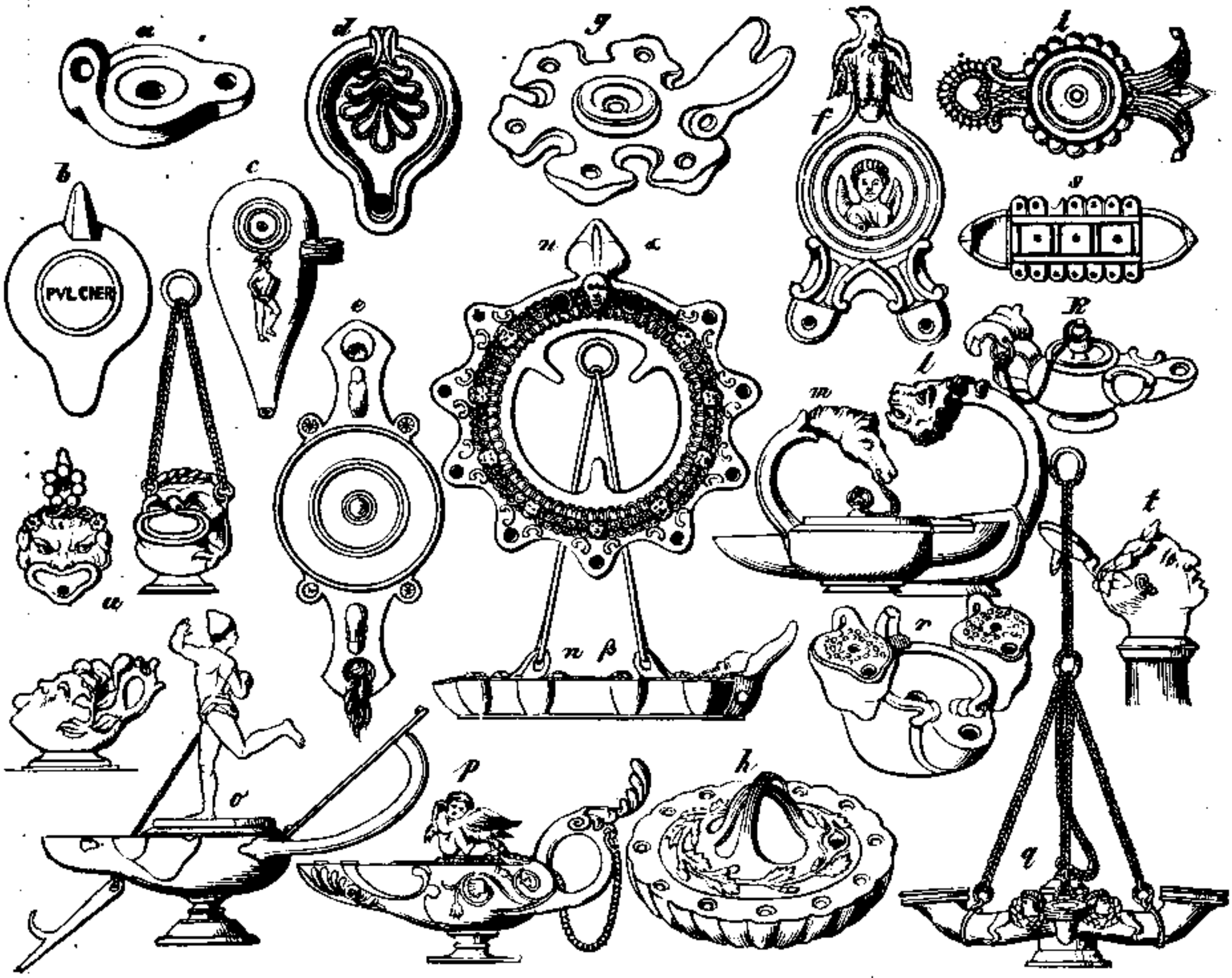
The second class comprises glass-ware, from the simplest drinking-glass to the most costly pieces, mounted in gold or bronze. The following is the subdivision:

1. Glass-ware in all its varieties.
2. Bohemian and Venetian glass.
3. Crystals, white, colored, and painted, etc.
4. Mounted crystals.

The third class comprises all kinds of furniture. Every thing that has to do with the furniture, so called, of buildings, is closely allied to architecture, because furniture has its intimate relation to the form, style, size, etc., of the building and room where it is placed, and because of its own proper form, whose construction requires architectural skill. This class may be divided as follows:

1. Cabinet-work; furniture made by the use of the saw, plane, and lathe.
2. Carved work.
3. Wooden furniture, combined with bronze, porcelain, tiles, etc.
4. Musical instruments, such as organs, pianos, etc.

The general classification which has been given of the occupations which relate to painting, sculpture, and architecture is based upon the æsthetic principles of each branch. There are infinite applications of



Lamps and Ornaments in Bronze and Terra Cotta.—Found at Pompeii.

the practice of these principles which has given to the world Phidias and Raphael, Palissy and Wedgwood, Ghiberti and Benvenuto Cellini, and the brilliant hosts of artists and artisans who have filled the world with objects of beauty and utility.

THE TEACHER.

Under the system of instruction which has been described, it will be perceived that the teacher is required to fulfill a most important part. He must be thoroughly informed of the subjects to be taught, for upon the clearness of his oral explanations and blackboard illustrations must depend largely the progress of the pupil. To a certain extent, text-books are necessary in teaching the art of design; but, especially in elementary instruction, the pupil can best be taught by what he sees upon the blackboard, with its meaning explained by voice and hand. The education of the teacher must be the well-ordered work of the normal school, and this brings us to the necessity for the establishment of special institutions of

The problem which at once presented itself for solution in Belgium, England, and other nations, comes to us in this country with still greater force. In order to have art education in the schools, it is necessary to have teachers. The purpose of a normal school is to educate teachers of both sexes, who should be familiar with the practice of the arts and their scientific principles, and capable of applying them to the daily needs of industrial life. It should furnish teachers for special schools of design as well as for public schools.

Our public schools should have professors whose entire service will be devoted to art instruction. Besides these, however, all the teachers must be capable of giving instruction in the elementary principles of design. The creation of a normal school is one of the fundamental bases of a serious teaching of the art of design. It is not always possible out of the ordinary school of design to form teachers fit for the work of superintendents in public schools, or professors in the higher schools of design. The studies which prepare the person who is to be a teacher have a special artistic and scientific importance, which embrace the whole field of observation. The ordinary school of design is insufficient, for it only provides for the student who desires to fit himself for a certain occupation, and who pursues only a limited range of studies.

The conditions for the establishment of a normal school cover a larger scope of needs than any other. Besides all the working material of an ordinary school of design, it should have a museum of art and of applied arts; a complete library, artistic and scientific; a complete collection of models, and an atelier for the reproduction of models.

Whenever any state or city undertakes art education, it should begin with the normal school. It may be difficult to persuade the school authorities of the necessity of first establishing the normal school. When organized upon the plan briefly sketched above, the question of expense will be urged. To make a collection of models, even not to speak of a library and museum, requires practical knowledge and taste. Excellent examples of what is desirable in the way of plaster casts, large and small, may be found in the Athenæum Gallery, in Boston; in the Academy of Design, in New York; and in the School of Design of the University of Cincinnati. The other parts of a collection of models, such as geometrical solids, casts of natural objects, vegetable and animal, architectural and other fragments, are inexpensive, and can easily be obtained from D. Brucciani, No. 40 Russell Street, Covent Garden, London, or from the Louvre, in Paris.

CHAPTER XVII.

CONCLUSION.

Résumé upon Art Education.—Supplementary Chapter upon the Centennial Exposition.—Art Industries at the Exposition.—Influence of the Art Industries of Foreign Countries upon those of the United States.—Brief Résumé of the Art Industries of All the Nations at the Exposition.

We have briefly outlined a programme of instruction, beginning at the elementary principles of drawing, which, progressing upward in art and science, arrives at the practical application of the arts of painting, sculpture, and architecture to the various industries.

There can be no doubt that the earlier studies should be conducted in the public schools, but when that point is reached where the attempt is to be made to teach the application of art to industry, we find that the restricted limits of the public schools no longer answer the purpose.

It is only in schools of design and industrial schools specially organized with this intention that this completion of the artistic work can be accomplished. In the pursuit of these studies the art influence must dominate. If there is to be formed a genuine taste, if the faculties of composition, invention, and design are to be created, or aroused into action, it will be brought about only through the study of the beautiful in art and nature. It is for this reason that all students, no matter what occupation they are destined to follow, are required to pursue the same programme of studies; it is for this reason that both branches of this programme, art and science instruction, are harmoniously and judiciously combined.



King Charles II. Cup.

By the use of the term "art influence," it must not be understood that it is thought desirable that students should seek to become artists in the technical sense of the word. In the course of instruction of any school of design there will be a tendency on the part of the pupil toward the artistic profession, and especially that of painting.

Very often this choice is made because of an idle disposition, and because the artist life does not require habits of persistent and daily labor. There are persons who are excited to take to the palette and brushes by a laudable ambition and æsthetic tastes, but without any assured evidences of talent or genius. At rare intervals the genuine artist appears, and, first or last, he makes himself known, and receives that full recognition which is the reward, as it is almost the necessity, of his life.

The teacher has an important office to fill in giving direction to the choice of occupation of those who come under his care and influence. He may not always be able to detect the particular bent or faculty of the student. One person may have great powers of comparison, another a talent for correct drawing, another a nice sense of color, another skill in combination of form and color, another the rare creative faculty of design. To direct these into their most fitting channels, to assist the student to do that which he can do best, is of greatest value to him. It is an act of serious responsibility on the part of the teacher, and it will be safe for him, in most instances, to advise those whom he has to instruct to follow the secure and remunerative path of an industrial occupation.

Under any circumstances, there will be a large number of young men and women who will insist upon painting landscapes and figures, and call themselves "artists." They will help to fill our annual exhibitions with feeble, meaningless productions which add nothing to the sum of taste and culture. The student in these art schools can not be too thoroughly impressed with the fact that artistic culture may be exhibited in other ways than in painting pictures and modeling statues, and that he may be more useful to himself and to others by bringing to some industrial occupation the benefits of the art culture he has received in the schools. To become an artisan is one of the most excellent results to be obtained by art education. It helps to make men more useful. For the laboring-man it is in many ways a blessing. He has that pleasure which comes from refinement and culture, and he gets more money for his day's labor. But, perhaps, the most important of all the good work of art education is, that it helps to level the class distinctions between men, and raises them to a higher and happier plane of thought and action. Men are usually selfish because they see so little. Teach them to observe, to compare, and they will discover the good and the beautiful rather than the bad and ugly; for there is nothing evil in itself, but only that which the mind conceives in its ignorance.

It is not claimed that art is necessarily a moral influence, but that those who practice it acquire an exact knowledge which keeps their hands and minds healthfully employed. Whatever may be the moral influences of

art culture to the individual, to society, and to commerce, its benefits are incalculable. When nations are peaceful and most prosperous the arts flourish, and the violence of war even is tempered by their gentle sway.

In his "History of Ancient Art," Winckelmann relates a fact eloquent of the power of art. He says: "During the obstinate war which preceded the Peloponnesian war, which had its beginning in the eighty-seventh Olympiad, even during the fiercest of these internecine conflicts the artists looked forward to the great day when their works should be exhibited before the eyes of every Greek. For all hostilities ceased when, at the expiration of four and three years respectively, the time of the



Masks.

Olympian and Isthmian games drew near, and the Greeks, exasperated against each other, met together to share in the general joy at Elis or Corinth. Even they who were banished from their native land were permitted to appear at these games, and who, gazing upon the flower of the nation, which was seeking to distinguish itself, forgot the past and looked not to the future."

Such was the power of art in ancient Greece, even when its study was confined to the privileged few. What may not be its peaceful offices when it becomes the possession of the multitude? During all those years of

highest culture among the Greeks, the study and practice of art were reserved for a chosen class. Pamphilus, the master of Apelles, Zeuxis, and Nicias, admitted as students to his ateliers only those of noble birth or of distinguished names. In general, the bondmen were not permitted to study drawing.

The Greek civilization carried the plastic arts to the finest perfection of form, expression, and beauty. This grace of form extended to objects of use, but they were few in number. The countless articles of use and ornament, the manufacture of which to-day gives employment to millions of men, and contributes to their comfort and wealth, did not exist in Greece or Rome, or during the Renaissance; and while we go to the art productions of the past for knowledge and inspiration, yet it is the nobler purpose of the present day that we seek this culture in behalf of the wants and tastes of the many as well as the few.

If we do not use art and science for the building of splendid temples, cathedrals, and palaces, as grandly as has been done in the past, they assist to give all classes homes more or less tasteful, filled with arrangements for health, comfort, and convenience such as the classic past, with all its beautiful statues, grand architecture, and luxury of wealth, never knew. And this is one of the good works reserved for the latter part of the nineteenth century — to popularize art, to unite the useful, which is the end of industry, with the beautiful, which is the end of art.

ART INDUSTRIES AT THE CENTENNIAL EXPOSITION.

The Centennial International Exposition at Philadelphia will have incalculable influence for good upon the art education and art industry of the United States. What the Exposition at Paris in 1851, and that at London in 1863, did for England and France, our Philadelphia Exposition will do for the United States. We were already familiar with the paintings and sculpture of Europe. The taste and wealth of collectors had brought together the finest works of celebrated modern artists. These had often been exhibited in public, but the best products of industrial art had been seen here only to a limited extent. The costly works of the Barbedienne, Elkington, or the Sèvres manufactories, and the riches of Asiatic art were found sometimes in our private collections, but seldom in the shops.

This exposition gathered together, within a comparatively small space, the most wonderful results of the taste and skill of all nations. It sur-

prised even our merchants, who for years had examined the markets of Europe, and supposed that they had seen every thing.

To the capitalist who had just begun to manufacture, and sought for new sources of inspiration, these curious and sometimes beautiful outgrowths of the character and habits of many nations were full of suggestion. The thousands of visitors took ceaseless pleasure and interest in studying these products, which displayed the ingenuity and patient industry of so many human beings. The works of art were not confined to modern days, but there came from foreign governments antique objects of rare historical interest, so that our exposition became also a grand museum, in which one could review the progress or decadence of various arts and industries.

This exposition is of greater advantage to the United States than to any other nation, because it has been held within our borders, and thousands of our people have given to it intelligent study. On the other hand, those who helped us from abroad in this rich display will have some recompense from us. They have seen—many of them for the first time—that the skill and ingenuity of the American mechanic have added to the sum of human knowledge; that he has produced great improvements in machinery; and that he has invented a good many useful things that they need and will purchase. It is proposed in this chapter to review, rapidly, some of the art industries exhibited at this exposition, bearing in mind the influence which they exerted upon the United States and other countries.



Persian Coffee-pot.

It was the good fortune of the writer to be one of the judges selected to make recommendations for awards, and in that office to become associated with a number of highly intelligent gentlemen who were commissioned by foreign countries to fulfill the same duties. It is interesting to know the opinions of those who are competent to criticise; and these experienced judges were of the opinion that this exposition was in many respects the most remarkable ever held. They were eager to express their admiration for the great capacity and boundless energy of the American people and the infinite resources of the land. They admired the ingenuity and excellent workmanship displayed in the construction of machinery, and the instruments used in science and trade. They wondered at the thousands of inventions which



Candelabrum, in the Collection of James Gordon Bennett. Made by Tiffany & Co.

IMPERIAL
LIBRARY

have made the Patent-office a most curious and interesting museum. This recognition of the value of the industries of the United States was constantly and cheerfully accorded.

The exhibition made by the people of the United States offered an excellent opportunity to study the questions of political economy and sociology as they have been developed in this country. We necessarily occupied a large space upon the grounds and in the buildings of the exposition, and all of this display showed that during the brief period of our national existence we have been devoted to the sterner occupations which develop the vigor and strength of a people; we have been gathering the fruits of the earth, establishing manufactures and commerce, and have begun the accumulation of wealth, through which come the opportunities for leisure, culture, and refinement. The exposition showed our physical resources in all their power; but it also exhibited our inferiority in the fine arts and the art industries. Nevertheless, taking into consideration the facts of our history, there was reason for gratification at the representation of the art of painting.

Many of the pictures gave evidence of original power and a national style, while others showed that study in the art schools and in the ateliers of the best masters of Paris and Munich had given direction to the talent or genius of the artists who painted them. Our sculptors, with a few praiseworthy exceptions, did not seem to think it worth while to send any of their works to the exposition. The collection of designs from the Institute of Architects was altogether the best public exhibition we have ever had of the progress of this important branch of art. It was, perhaps, all the more conspicuous from the fact that foreign architects sent comparatively few designs; but our architects might have held their own against even the best representation from abroad, for they seem to make their own adaptations from classic orders and styles rather than to copy from those of modern Europe. The United States suffers most, by comparison with foreign countries, in those industries of which art forms a part. It is said that the production of articles of taste follows the demand; but for many years millions of dollars' worth of art objects have been imported. They might have been made at home, had we encouraged or facilitated the art education of workmen. There were, however, at the exposition many evidences of artistic faculty, and, in some departments, of great excellence in design and workmanship.

Tiffany & Co.'s exhibit of work in gold, silver, bronze, and other metals was especially remarkable. It was a great pleasure to see their tastefully arranged cases containing articles for use or ornament, offering fine contrast and harmony of color, with novelty and charm of design. Among

these articles were drinking-cups, tea-sets, and pitchers, with bold conventional ornamentation, suggested by Japanese designs.

Tiffany & Co.'s *repoussé* work was also well conceived and skillfully executed. The Bryant vase, a gift to the great poet, expressing the respect, admiration, and love of his countrymen, was symmetrical and beautiful in shape. It was covered with suggestive designs, and was graceful and artistic in its execution. Another admirable example of *repoussé* work was a pair of candelabra, which were executed for Mr. James Gordon Bennett, to commemorate the victory of his yacht *Dauntless* over the yacht *Mohawk* in 1875. The name of the latter suggested the composition of the work, which is taken from the life and customs of the North American Indians. In this respect it is original, vigorous, and picturesque, and one wonders that material so abundant, striking, and characteristic had not before been made use of in ornamentation. The buffalo's head, the arms and costumes which decorate the candelabra are accurately studied from nature, while the figures of the Indians are fine examples of the plastic art. In the hands of a genuine artist, the methods of working peculiar to *repoussé* make it possible to obtain the distinctive texture of objects, and in this regard the memorial candelabra are remarkable. The flesh of the Indians, their costumes, the bark of the canoe, are all truthfully rendered. One is also impressed by the classic character of this decoration. Those who have ever seen the North American Indian in his savage state in the Far West will have been startled by the extraordinary resemblance Ristori has to him when she strides upon the stage in the character of Medea; and so this decoration recalls with singular force that of the archaic Greek.

The fine art of *repoussé* is to-day having its "renaissance" from the decadence since the Middle Ages, and in its production it is highly creditable to Tiffany & Co. that they have helped to place the United States on a level with European countries.

The exhibition of the Gorham Company was highly praiseworthy. To be sure, it flashed and glittered with burnished silver until the eye, dazzled and tired, turned away, seeking relief in surfaces which were not polished, or in sober tones of color; yet the productions were meritorious, because the shapes and designs are almost always in good taste. Water-pitchers, jugs, and other articles of use, stand firmly upon substantial bases; the handles are just where they ought to be; the mouths of vessels for liquids are made to pour out, and not spill over; the excellent shapes of these useful articles have met the approval of every good housekeeper. While this company showed much that was practical, their judgment and artistic taste were evident in objects for ornament. Their vases, flower-

stands, and salvers were symmetrical and full of grace, while a piece of *repoussé* work was executed with skill and delicacy.

Of the art of the potter in the United States there is not much to be said. At the present time his work is confined to the making of iron-ware, stone-ware, and tiles. They are excellent of their kind, and have driven from the market foreign wares of a similar character. Concerning the decoration of pottery, which the commonest Chinese or Japanese artisan has at his fingers' ends, our manufacturers at Trenton, Cincinnati, Sciotoville, and elsewhere, know but little. It is to be hoped that the magnificent display of ceramics which came from foreign countries will teach them, and inspire them with emulation.



Romano-British Caster Ware.

The exhibition of furniture was very large. Stacks of it, acres of it, came from all parts of the country where a numerous variety of handsome woods is to be found. To be sure, much of this furniture was unattractive, awkward in shape, and imperfect in workmanship, and there were scores of extraordinary inventions, such as "hygienic chairs," "adjustable tables," and "patent desks." Besides these, however, there was a great deal of excellent wood-work, simple and artistic. This was the outcome of recent discussion about household furniture. The influence of Eastlake could be seen in many directions, and the picturesque ideas in the published designs of Talbert, the English architect, could be traced here and there. The Boston manufacturers and dealers have taken the advance in the encouragement of these simpler shapes, and we are now in the midst of a furniture reform.

Marcotte, of New York, exhibited a superb cabinet, which was artistic in every respect. It was inlaid with different woods, decorated with handsome carvings, and had fine architectural proportions. The Cincinnati School of Design, as well as that of William H. Fry, also of Cincinnati, exhibited a number of excellent examples of wood-carving.

Printing in its different forms—such as book-making, periodicals, display circulars, posters, and the rest—showed some originality, and a fair amount of ingenuity and taste in the way of adaptation.

The industries which have been mentioned, and others of not so much importance, showed evidences of natural taste and some culture; but they served, by contrast with those representing foreign countries, to heighten

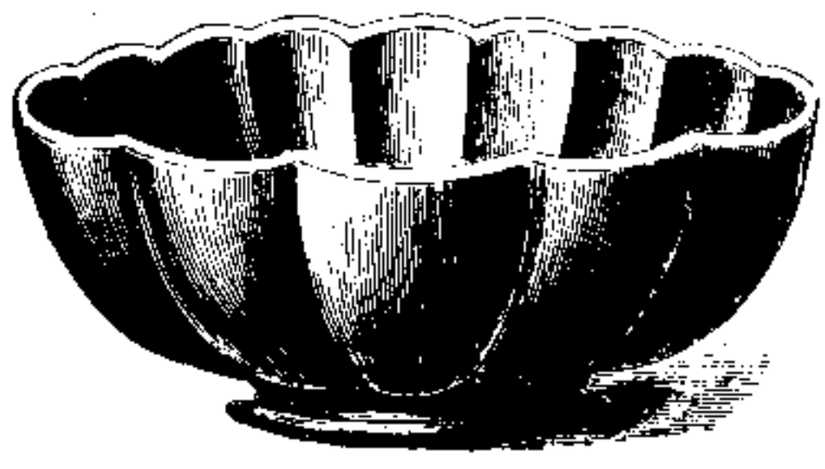
the impression that, as an art, industrial design has been but little cultivated in this country. Except in the drawings of a few schools of design,



Staffordshire Saucer.

and the public schools of several cities, whose admirable exhibitions received little or no official recognition, were hidden from sight, and almost passed unnoticed, there was limited evidence to show that our people possessed a knowledge of the art of design.

The attitude of Great Britain at the exposition can excite only feelings of friendly recognition. The expression "the mother country" has a new and better meaning. We were celebrating the centennial year of our independence from that nation, and yet Her Majesty's Government, art academies, museums, art collectors, manufacturers, and merchants, came to do honor to the occasion. Great Britain stretched forth both hands, and they were full; while her mighty colonies, from every part of the world, joined in the demonstration.



Compotier. Wedgwood Ware.

It has been said by those who know, that upon no occasion had the British nation ever gathered together so large a collection of the works of her painters as was seen in Memorial Hall. The most celebrated of her living artists were there, and the masterpieces of those famous in the past lent historical value, and yet deeper interest, to the

exhibition. The art industries of Great Britain gave signal evidence of unlimited material resources of knowledge and experience.

Elkington & Co., silversmiths and workers in other metals, stand among the first of manufacturers of articles of art, not only in Great Britain, but in other parts of Europe. Some of their superb productions fairly enter the field of fine art. The *repoussé* work which they have made, in exquisite delicacy of execution may be compared with the best efforts of the Italian masters of the sixteenth century. The Milton shield, in silver, and the Helicon vase, in silver and steel, with gold damaskeen, are works of art executed by the celebrated artist Ladeul. The Elkington Company, in the production of these and many rare vases, cups, and *plaques*, which are full of the genius of design, maintain their artistic position. One can not but remember, however, that, with all the beauty and merit of these objects of art, they are made as articles of commerce.

The artists of the fifteenth and sixteenth centuries were often in the service or under the patronage of wealthy nobles. Not seldom they supported an independent existence, and a great deal of the rarest *repoussé* and damaskeen work of mediæval days was the creation of some poor armorer of Florence or Venice unknown to fame. The civilization of the nineteenth century has changed all of that, so far as Europe is concerned. The great capitalist, the large manufacturer, have, in some sense, supplanted king and baron. This is not the place to discuss questions of political economy, such as the advantages of capital in the employment of labor, or the benefits derived from the division of labor. Capital, in our day, employs the artistic faculty, but it does not produce the best art. During the Middle Ages the artist was unrestrained; he worked out, in his own way, his quaint conceits, his poetic fancies. The master of his own time and actions, he gave full play to the bent of his genius, while, under the employer of modern days, he fashions to order, and is more or less harnessed to his labor. These reflections are inspired, not so much from the study of the art work of the Elkingtons—because they seem to give the largest liberty to their artists—but from a general observation of the higher works of industrial art, always excepting that of the Japanese, of our own period compared with the past.



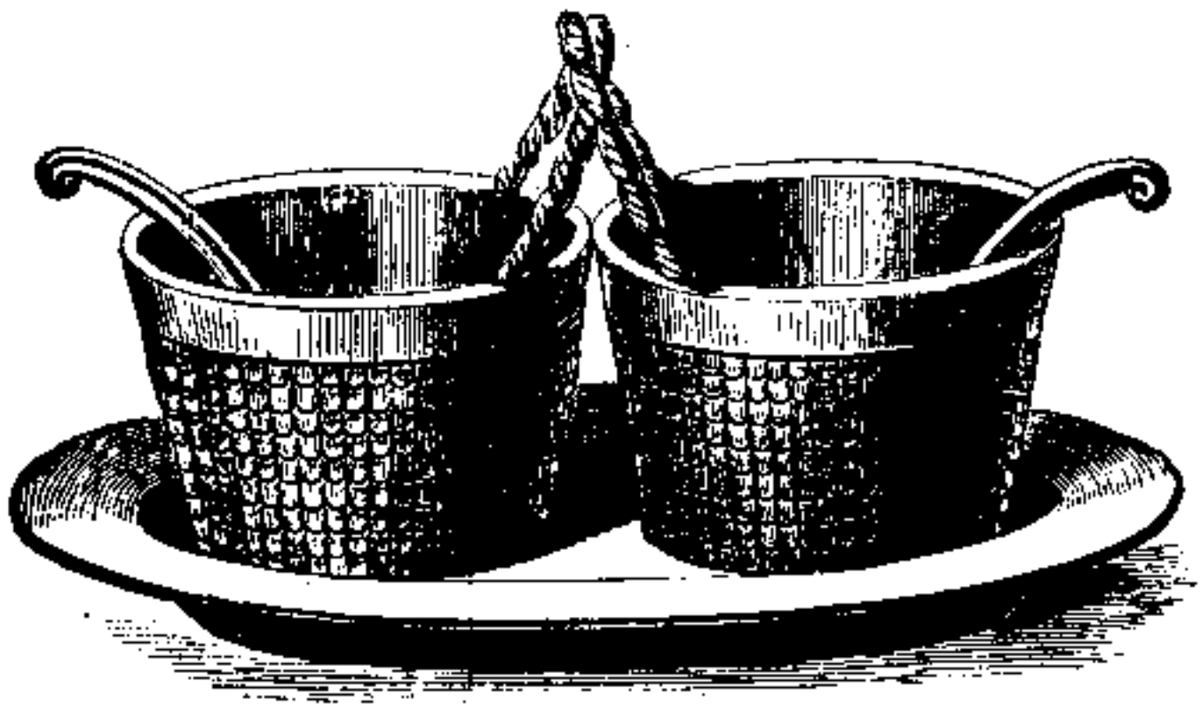
Cameos by Wedgwood—White on Blue and Olive-gray Grounds.

The Milton shield and Helicon vase were not the only examples of *re-*

poussé exhibited by Elkington & Co. There was also a handsome shield of *repoussé* in iron, which was bought by Professor Archer, of the British Commission, for the Glasgow Museum. The centre ornament of this shield was a finely modeled head of Medusa. Surrounding the head was a broad band, artistically decorated with figures of War, Famine, Slaughter, and Fire.

The collection of the Elkingtons was a brilliant display of work in metal, a long and interesting list of which might be enumerated. It gave dignity to the British section, and it can not fail to produce the most marked results for good upon the public taste and the art industries of the United States.

English pottery is decidedly superior to that of other European nations. This excellence is of comparatively recent date. A. R. Daniell & Son, merchants, of London, exhibited choice examples of artistic pottery from the manufactories of Minton, Worcester, and Colebrookdale. Their collection was very complete, embracing a large variety of styles and subjects. There were vases which have the title of *pâte sur pâte*, so called by the French, because of the application of a paste, transparent or opaque, upon the body of the vase after it has had one baking. This decoration of applied paste, in the vases just referred to, was generally that of human figures, well modeled after classic compositions. Chinese and Japanese pottery employ this kind of decoration in the most liberal manner, and with results of startling brilliancy.



Ice Pails. Wedgwood Ware.

The reproductions of Henri Deux or Oiron ware by Minton, Hollins, & Co. are a welcome addition to ceramic art. There are several pieces the originals of which are in the South Kensington Museum. It is one of the wise and generous provisions for art education of the Government of Great Britain that it permits the art treasures in its collections to be reproduced for public sale; and certainly none are more pleasing or more admirably executed than this Oiron ware.

The collectors of artistic pottery who have fancied the Doulton ware had an opportunity of seeing here a complete variety. It had the additional advantage of being displayed upon very pretty hanging shelves and attractive sideboards. One admired the vases and jugs, and were offered a suggestion of the places they were intended to ornament. This kind of

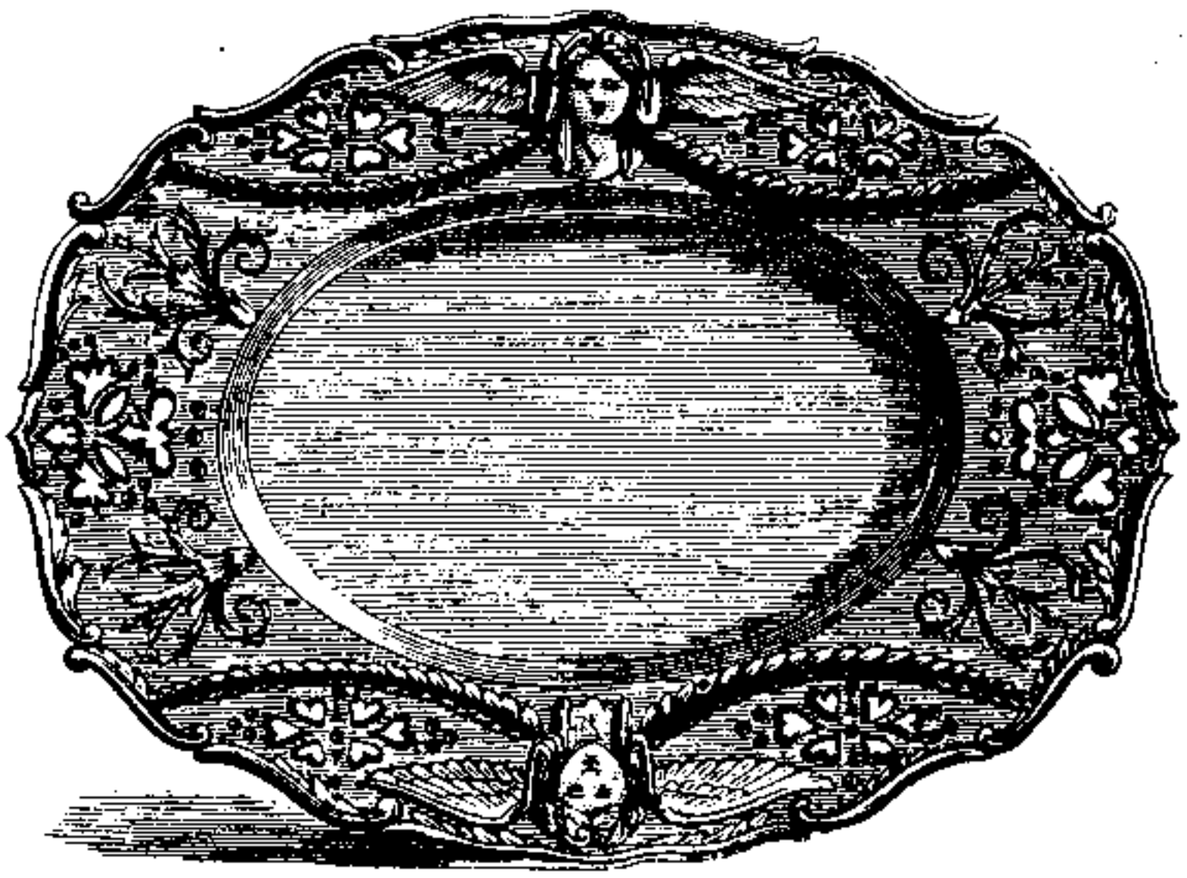
ware, as well as the handsome tiles of Minton, Hollins, & Co., are more likely to be imitated in the United States at the present time than the finer kinds of porcelain, even of that which is printed, and which we do not consider artistic.

The evidences of culture in the art of design were visible in many of the English industries. There was a subdued and harmonious tone in tapestries, wall-paper, carpets, and other articles for house decoration, and their exhibition here can not fail to produce a beneficial influence upon similar industries in this country. The groups of subjects from the South Kensington School were of great value in the illustration of its method of art and science instruction. Among these were reproductions in plaster of works of art, and diagrams prepared for the use of students. The method of the South Kensington School is presented at length in another part of this book. Very recently a discussion has arisen in England with regard to the efficiency of this system, and its success is denied. There are errors in the plan; one of which is the payment of money rewards to pupils. It is possible that this school appears to fail because it has not annually produced a corps of designers of genius. As if any method of instruction could invest its students with genius.



Saxon Pitcher.

But those who compared the art industries of Great Britain with those of other European nations at Paris in 1851, and saw their inferiority, and made the same comparison at Philadelphia in 1876, can not fail to recognize their present great superiority, and admire the system which achieved the result.



White-ware Perforated Dish. Wedgwood.

It has been previously shown in this book that France, Belgium, and other nations admit the superiority of English art industries, which is attributed by them, for the most part, to the right cause, and they are trying to overcome their defects by schemes of education similar to those of South Kensington. Such schools

teach the student how to draw, and the art of design; but they accomplish yet greater results in the influence they exercise upon the community at large. It is through the multiplication of good models, it is by discussion and instruction, and the elevation of a high standard of artistic taste, that the English manufacturers and merchants are taking the lead in the commerce in objects of art.

France seems to have regarded this exposition with an indifference amounting almost to contempt. She was not justly represented either in the fine arts or in her industries, although in both of these her relations with the United States are of great magnitude. But where the French Government was indifferent, what could be expected of the people? Of the vast number of paintings, sculpture, and objects of art which fill the



Ornament.

galleries of the Louvre, Luxembourg, Versailles, the museums, and the churches, nothing was sent but a few Sèvres vases and several pieces of Gobelin tapestry. Of the masterpieces of her most celebrated painters, not one graced the walls of Memorial Hall.

The art industries were made equally conspicuous by their absence. When one thinks of the magnificent display of French manufactures at the expositions of Paris, London, and Vienna, their absence at Philadelphia excites feelings of vexation and regret.

Among all the manufacturers of bronzes in France, Susse frères made the only noteworthy appearance; this collection excited general admiration. The works in gold and silver of the French artisan have their own characteristics. They are noted for their delicate finish and graceful shapes. Froment Meurice in those pretty things did full justice to the national reputation. Deck has identified his name with the ceramic art in France;

and especially by the employment of the most celebrated decorators of porcelain. He stands at the head of his business in France; but he, with others, did not aspire to the honors of the Centennial Exposition. To fill the vacant places of these dealers in pottery, there came the printed ware of Gien, entitled "faience artistique," and manufactures from the ancient city of Limoges (Haviland et C^ie^). It was a bulky display; there was a great deal of table and household ware, and a variety of artistic pottery, such as *plaques*, vases, and pitchers. Some of these objects were made of a strong earthen material, of a rich unctuous texture, and negative in color, with a bold and not ungraceful decoration worked into the body of the vase. This collection was striking in its general appearance; it contained but little, however, to recall memories of Limoges of the fifteenth and sixteenth centuries.

A compartment near that of Limoges was devoted to what was called



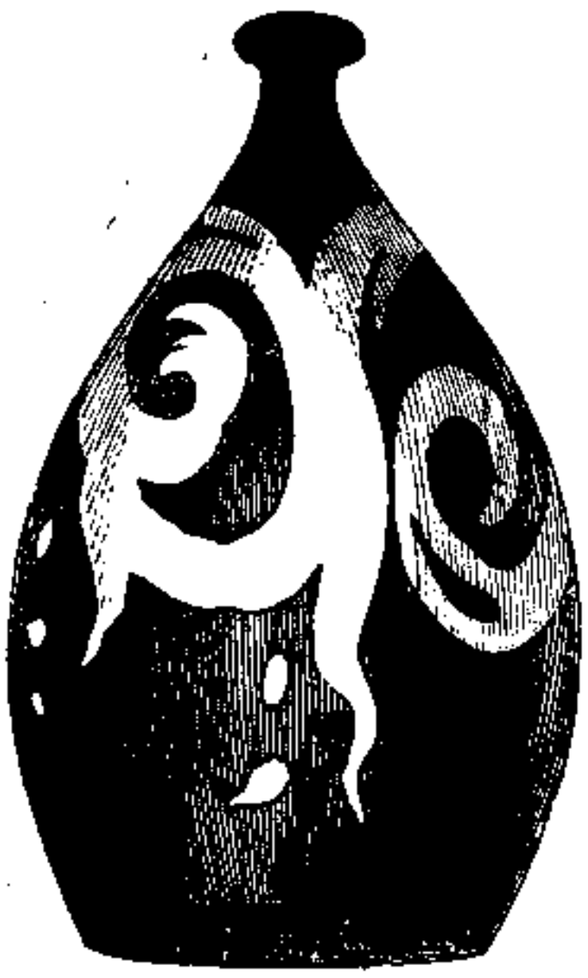
Palissy Dish, of his Earliest Ware.

Palissy ware, manufactured by Barbizet fils. This collection comprised reproductions of the faience made by the celebrated Palissy. Without doubt, Palissy was a man of original genius, and there are works by him of classic grace; but the manufacturers of these reproductions have, for the most part, chosen hideous subjects. There were many objects, such as ewers, urns, basins, dinner-plates, and articles for table-service. These were covered with repulsive toads, lizards, snakes, salamanders, fishes, and foliage; all of it in sharply crude and inharmonious colors. An urn covered with these reptiles might possibly be seen to advantage in a pond of water, or under a cascade; but to place them upon dishes to be used for

food, or upon objects to serve for the ornamentation of the dwelling, is contrary to the rules of art, and altogether offensive.

There is, perhaps, no manufacture of metal work on the Continent worthy to be compared with Elkington & Co. except Barbedienne; but he did not think it worth the labor and expense to come to Philadelphia. Le Cointe, however, proved that France held her place in the art of *repoussé* and metal work. In many other ways this great nation exhibited her skill and artistic feeling; but she was not the France of the exposition at Vienna, nor did she bring to Philadelphia a suggestion even of the exposition of the Union Centrale of 1874. This failure was a loss to us, and will prove an injury to France.

Germany, also, seems to have had her thoughts far removed from the Centennial Exposition. From the poverty of her contributions and her lack of sympathy, one would hardly believe that so many thousands of her children were citizens here. One of the angles formed by the great nave and transept of the main building of the exposition was occupied by Germany with a collection of ceramic art. It contained but little that was attractive, and not a sign that the once famous Dresden ware had made artistic advancement. From Idar and Oberstein there came a superb collection of cameos, and the reproductions of the Bavarian Gewerbe Museum were most admirable. They were subjects chosen from shields and other objects in *repoussé*, and from classic designs, answering well the purposes of artistic education. Similar subjects, exquisitely reproduced by the electro-galvanic process, came from Krupp, known as the manufacturer of cannon, with a numerous variety of objects in metal, not always of a superior or artistic class, yet having the merit of cheapness as to price.



Mediæval Watering-pot.

If Austria did not contribute largely in the way of art industries, she at least sent some of the works of the greatest of her modern painters. Hans Makart revealed a power which had never before been seen in this Western World. In his hands the painter's palette has a scope and capacity never before known in the painter's art.

The industries into which art enters were not largely present in the

Austrian section. The eye of every visitor was attracted with curious interest to the collection of Bohemian glass which shone with reflected brilliancy. The Nuremberg toys were the toys of ever so long ago. They seem never to have changed. They appeal to the child sense, and aim no higher. But it is the German child sense, at least so the toy-makers of to-day in the United States say, and seem to think. The American baby is supposed to have a keener and more active disposition, and requires toys suitable to its more excitable temperament.

A series of models for the study of descriptive geometry was one of the evidences which Belgium gave of the importance attached to that science in her method of art education. These models were solids, represented by their skeletons, which were made of wire. An excellence in these models, especially for the earlier studies, is that not only the *exterior* form of the figure is seen, but the *interior*, with all its auxiliaries. The industries of Belgium displayed uniform good taste. The manufacture of laces is one of the most distinguished, and in the profusion and variety of this graceful and profitable production the eye and the imagination of men and women were bewildered.





Wedgwood Cameos.

One of the most lucrative employments of the artisans of Switzerland has been that of wood-carving, and it is rather surprising that, during all the years devoted to this manufacture, it has not risen above the level of the production of commercial objects. It is singular that the Swiss have failed to produce artistic designs, not to speak of higher efforts in the plastic arts. This is probably due to the absence of good models, and to the fact that there are few, if any, schools of design in Switzerland. The special schools for wood-carving, in Brienz and other districts, do not seem to have fostered invention or developed artistic genius. The same impossible cuckoos wheel out of their little closets, scream a few conventional sounds, and then wheel back again with methodical exactness. We saw the tame and feeble repetitions of bread-plates and paper-cutters; on all sides were imitations of fruit, game, and other still-life; and we lost hope for art progress in that direction. The policy of the educational system of Switzerland is not to intro-

may be attributable to this fact that her art and industrial exhibits showed a lack of grace, symmetry, and invention.

Wood-carving is destined to become an art industry of great importance in the United States, and already an appearance of freshness and spirit indicates that it is not likely to follow Swiss models.

Sweden—that other country of mountains and lakes—at once gave to the visitor an impression that she is distinctly original, if not artistic. Her pottery, glass-ware, furniture, and household objects were always in good taste and well made. Attached to the important manufactories of Sweden are the societies formed by the employers and workmen, by which are sustained schools, libraries, reading-rooms, sick and burial funds; and with such institutions it may be imagined that strikes and trades-unions and starving people are not often seen in Sweden.

One of the many picturesque objects in the beautiful grounds of the exposition, and standing near the very different but equally charming Japanese Bazaar, was the Swedish school-house. Its frame-work was transported from the workshop in Stockholm and erected here. It was as thoroughly constructed as it was pretty.

There was a great deal that was crude, yet vigorous, in the Swedish exhibit, and the fact became the more noticeable by contrast with the elaboration, refinement, and harmony of its next neighbor, Italy. The artistic products of Italy—and every thing she exhibited was artistic—left a pleasing impression. If she has not opened new avenues for the employment of the artisan, she at least preserves the spirit of her past achievements. It is evident that the numerous schools for instruction in special industries which are in operation in all her large cities are conducted upon broad and generous principles. This is forcibly and happily illustrated in wood-carving. The armoires and book-cases were constructed with architectural knowledge; they were symmetrical in their general proportions; the finely cut forms which ornamented a panel or pilaster were held in subordination to the central thought. A good deal of the Venetian carved work of the kind often brought home by collectors is painfully bulbous; but this was left in Italy, as not worthy to be offered for competition. The criticism, however, was sharply made, that in the fine arts of sculpture and painting Italy was in her decadence; that there were left only memories of Raphael; that her sculptors did not possess even strength enough to imitate Michael Angelo; but it must be said in behalf of jus-

tice that the best painters of Italy did not send their works, and that much of the sculpture was of a commercial sort, and was brought by dealers for purposes of sale.

The art instincts and culture of Italy were everywhere evident. The mosaics, faience, bronzes, and ornaments in silver and gold were not servile copies of antique models, but original designs executed in the finest spirit of the classic art of Greece and Rome. From Italy only could have come such a rare and beautiful collection of faience as that of Torquato Castellani—a collection which has excited the desire for possession among the museums of Europe. Its presence in Philadelphia taught us, for the first time by actual sight, the splendor of the ceramic art in Italy from 1460 to the sixteenth century. Very many of the pieces we have heretofore seen, said to be "Maiolica," "Gobbio," and "Della Robbia," were interesting because of their historical value, for they were not always handsome; but the splendid Castellani collection told a new story. With this pottery there were quaint bits of cloth and carpets, curious objects of art, and fragments of antique statues. This collection should be placed permanently in the Metropolitan Museum. Italy was not content to appeal to the artistic sense through the eye alone. From Venice there came a bell made by the brothers Poli. It was of exquisite shape, curving to its base with the grace of a lily. Its sides were artistically ornamented with graceful forms, delicately carved in relief. But the most attractive part of this bell was its tone. Many times the writer visited it, and to his passing salute it never failed to give response, deep, sweet, and clear. Of all the crowded memories of our great exposition, that of the bell is one of the most dearly cherished.



Saxon Pitcher.

The best inspirations of Murillo and Velasquez have descended to some of the modern Spanish painters. The men who are giving new glory and a more hopeful future to the art of painting are: Mercade, author of the "Translation of St. Francis;" Valles, who painted "The Insanity of Donna Juana of Castile;" Guisbert, who painted "The Landing of the Pil-

grims;" Vera, author of "The Burial of St. Lawrence." These masterly works are full of learning, dignity, and dramatic power.

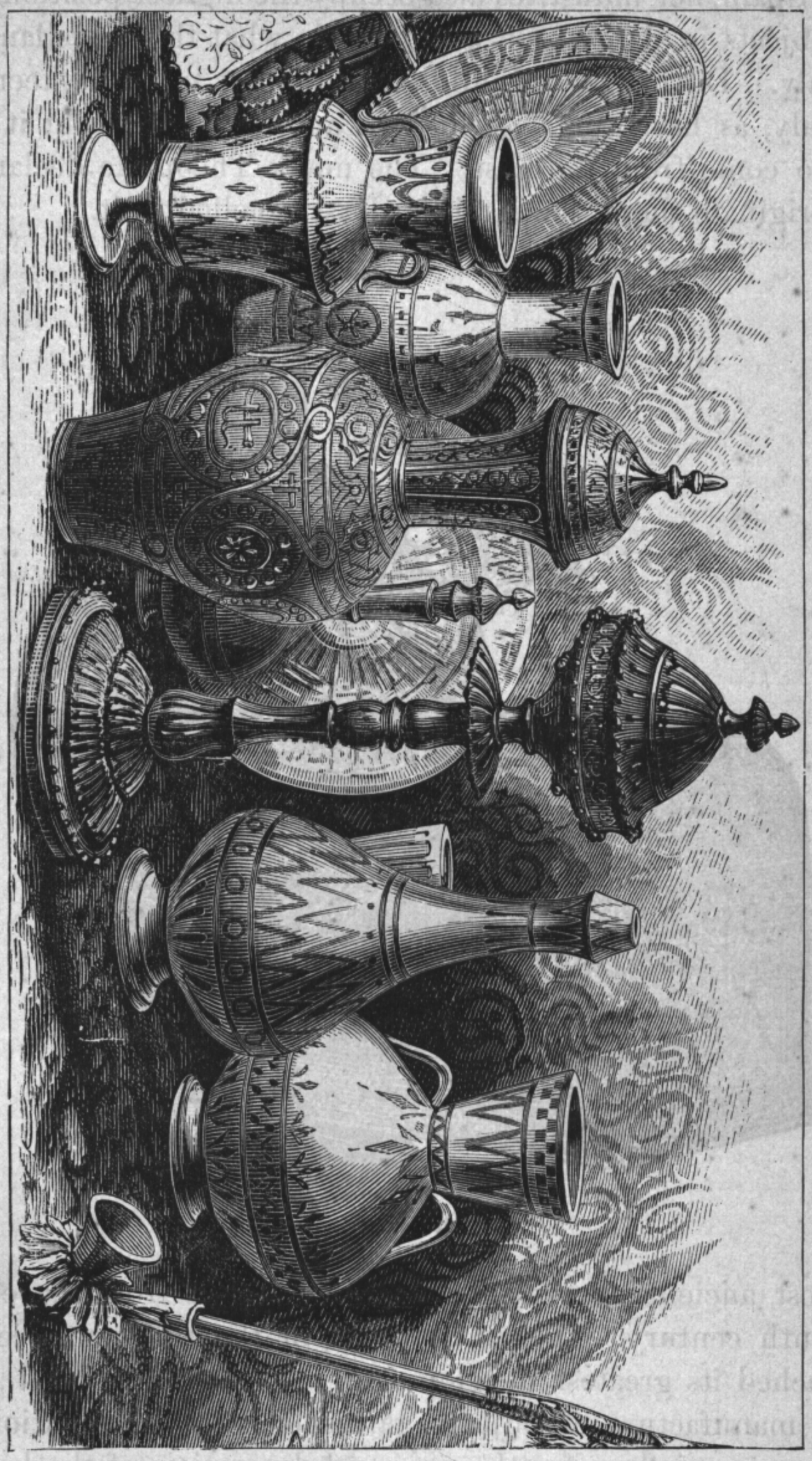
While the highest commendations should be given to the fine art of painting in Spain, her industries also occupy the highest position. The collection of objects in damaskeen was to Spain what the Castellani ceramics were to Italy. During the Middle Ages the art of damaskeening flourished in Italy, as has been described in another place; but it is said at first to have come from the East. The monk Théophile declared that if it did not originate there, the Arabs at least excelled in it.



Spanish Damaskeen.

The most ancient of works in damaskeen date from the eleventh to the thirteenth century. It was, however, in the thirteenth century that the art reached its greatest development. At Damascus and Aleppo, in Egypt, the manufacture of objects garnished with incrustations of gold and silver was carried on for the uses and decoration of the houses of caliphs, sultans, and emirs. At that period were made the cups, lanterns, vases, and boxes so rarely seen at the present day, and upon which, by the side of the titles of honor which glorified the owners, were engraved

the names of the artists. The art had its schools and masters, whose peculiar styles can be traced seven hundred years after their authors have ceased to exist. The work of the earlier centuries is indescribably rich



Egyptian Pottery and Metal Work.

in ornamentation. It is finely engraved and loaded with incrustations, which are interlaced with the most capricious designs. Nowhere is the divine art of geometry more wonderfully displayed than in damaskeening.

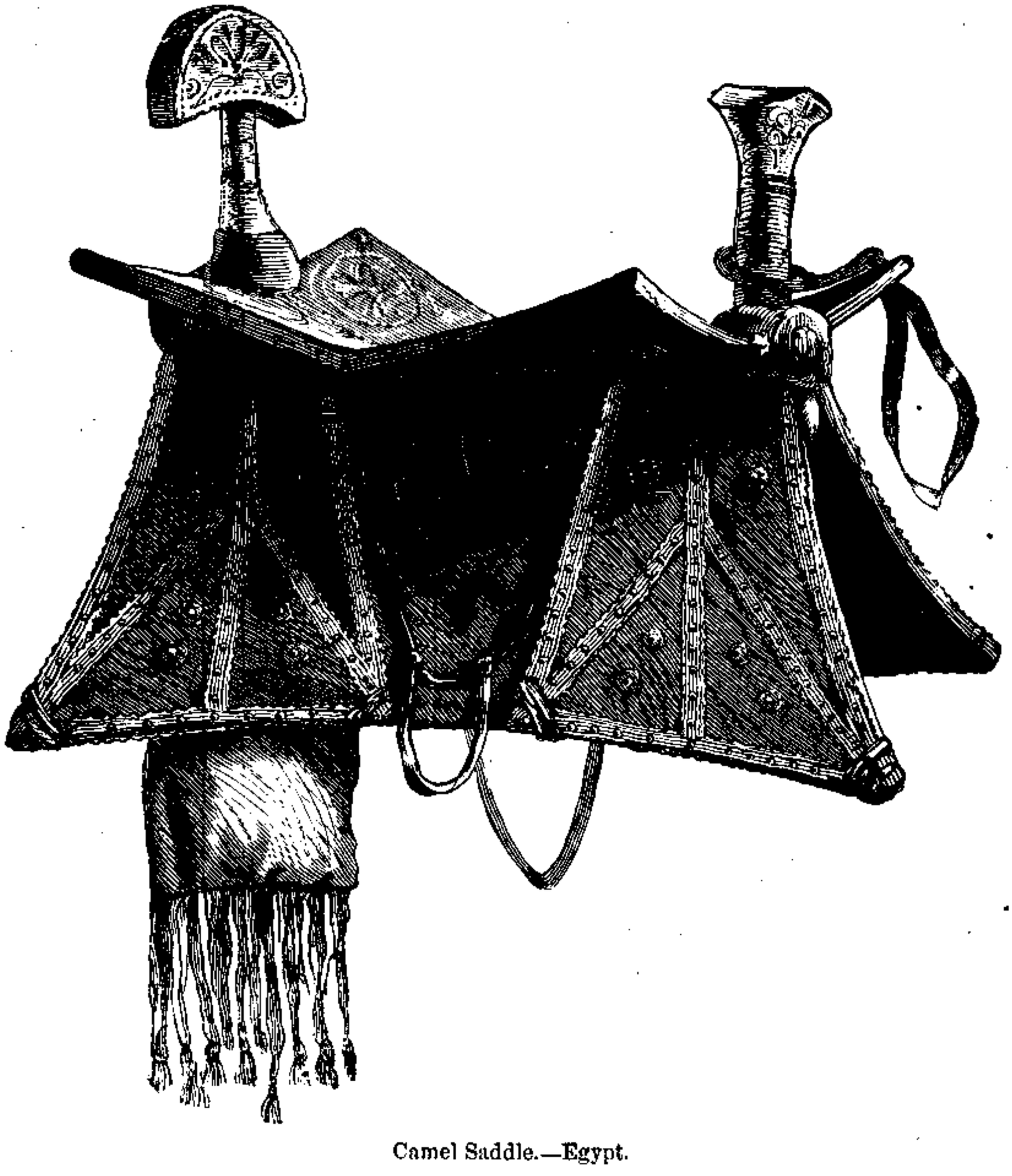
This art is attempted by some of the modern nations with unimportant results; so it appeared, at least, in the presence of the splendid Spanish collection. Spain has not lost the rich inheritance left her by the Moors. The cups, vases, boxes, and amulets, which were seen side by side with the rarest work of antiquity, showed that they did not have that feeble execution which comes with mere imitation, but new and graceful designs, and the highest kind of workmanship. The material was costly, the designs elaborate, the execution perfect. Spain has preserved others of the ancient arts. A piece of *repoussé* work was complete in its execution, while the composition was symmetrical. There were objects in metal, such as Hispano-Moresque vases in bronze, and handsome armor mounted in silver and gold, and loaded with ornamentation. There were silk and woolen cloths of sober colors, and rich in design. The pottery was of a most primitive kind; jugs and water-coolers, such as the women bear to and from the fountains.

From the other countries bordering upon the Mediterranean there came no evidence of revival from their long decadence. Turkey, Egypt, Morocco, and Tunis presented pretty much the same aspect. They each exhibited, with differences, the same character of objects. There were rugs, carpets, cloths, curtains, shawls, and embroideries worked in gold and silver threads and many-colored braids. There were weapons of war and armor richly inlaid, and embossed plates of brass covered with intricate geometrical figures.

There was pottery of a primitive kind, made of yellow-gray clay, and slightly decorated; and there were cone-shaped coffee-cups with an odd-looking coffee-pot and platter, all made of brass. From the Upper Nile came cups, spoons, pipes, candlesticks, and trinkets, worked and carved from a black and red stone, and a great many other quaint and interesting things. Each one of the exhibits of these countries had the delightful appearance of a *bric-à-brac* shop. Almost every article had historic or picturesque value, and would have been an addition to a museum. Indeed, these collections contained enough of the former greatness of the Orient to show how often the younger nations of the West have gone to that prolific source of color and design for suggestion and inspiration.

The Arab and the Cossack were in close proximity at the exposition, and the passage from one to the other was of extreme interest. The gossamer airy cloths of the one, and the thick woolens and heavy furs of the other, told the stories of Southern heat and Northern cold. The Russians have

evidently gone to the Orient, however, for their decoration, and have not comprehended how to use what they borrow, for card-cases, snuff-boxes, and toilet articles of all kinds were richly enameled in arabesque; but they fail, where imitation might expect to fail, in preserving harmony of color and delicacy of adjustment in design. And then they attempt that which the laws of art forbid. Upon some prettily decorated salver lay the sem-



Camel Saddle.—Egypt.

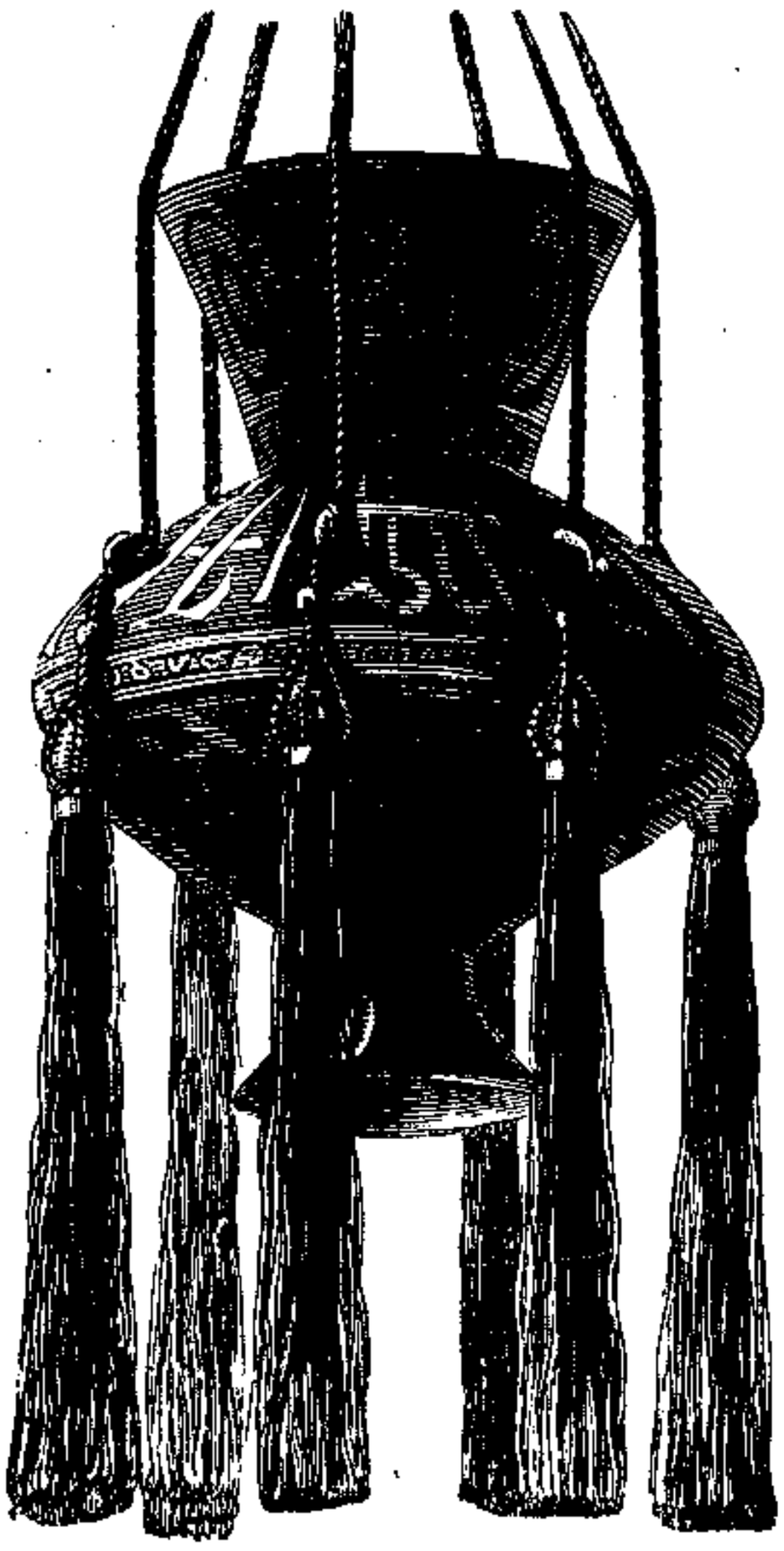
blance of a white napkin, or upon some perfume-box a lady's lace handkerchief. For an instant the eye is deceived, and then turns away, vexed that so much of labor and good material should be wasted in the mere imitation of an object which suggests no thought of beauty. A large piece of work in *repoussé*, by the artist Sassikoff, contained excellent modeling and good workmanship. The composition of this piece, which was in alto-rilievo, was somewhat crowded. Several figures and groups of figures

in bronze were exhibited as "commercial" bronzes. They were spirited in conception and handling, and all the more attractive because the subjects were novel. Some of them were out-of-door scenes, descriptive of the life of the hunter in his picturesque costume.

The people of the North of Europe do not seem to display originality or invention in the potter's art. A very neat and successful imitation, or adaptation it might be called, came from Denmark, in the shape of vases, jars, pitchers, and bass-reliefs, made of red clay, and ornamented with classical figures and groups in black, after the manner of the Etruscans. They were reproductions, so far as it is possible to imitate what is inimitable.

A consideration of the magnificent exhibition made by China and Japan, for good reasons, has been reserved until the last.

It is the first time, at least in the case of Japan, that the Celestials have appeared at an international exhibition represented by a large body of distinguished officials. It is the only instance where the Imperial Government of Japan has used its power and patronage to insure a complete representation of the arts and industries of all the people of that country.



Glass Lamp.—From Mosque in Cairo.

A description of the artistic objects displayed by China and Japan has been reserved for the close of this chapter because they were more artistic, beautiful, and attractive than those of any other nation; because the novelty, freshness, and infinite grace of the decoration of these ceramics, bronzes, screens, fans, and lacquer work will exert a wide and positive influence upon American art industries, an influence more immediate and enduring in its action than that of any one country, or perhaps of all the countries combined, which exhibited at the Centennial Exposition. From this declaration of belief, it is not to be supposed that the Chicopee works are likely at once to turn out numbers of symmetrical bronzes, inlaid with threads of silver and gold, or that the

potteries at Trenton and Cincinnati will at short notice rival the marvels of decorated pottery of Satsuma and Hizen. It may be believed, however, that the astonishing brilliancy of the decoration of Chinese porce-



Powtai, the God of Contentment.

lain, and the originality and poetic feeling which give to Japanese art its distinctive character, will strongly impress themselves upon our young and sensitive civilization.

China has, for a long while, been familiar to the Western World. We

have known its philosophy, its religion, and the manners and customs of its people; but the period when the products of its arts and industries were first introduced into Europe is not precisely known.

The narrative of the voyages of Marco Polo, the Venetian, which was printed in France in 1307, excited the liveliest interest by its description of what he had seen, and especially of porcelain, during his long residence in China. It is said that porcelain was first introduced into Europe by the Portuguese. With what wonder and curiosity must the amateurs



Imperial Robe. Chinese.

and collectors of that day have gazed upon this strange substance from an unknown and far-distant country! It was so hard as to resist a fire which melted metals; the sharpest instrument could not scratch its surface; it had grace of form and harmonious tone in the midst of startling brilliancy of colors, in all of which it far outrivaled the finest work of Palissy, Della Robbia, or the manufacturers of Limoges.

More than two hundred years have elapsed since the period of the introduction of Chinese porcelain into Europe. At this international exposition, Europe and Asia came together, in the way of comparison of their

products, as they never had before; and the impartial spectator passed from one to the other to find that, so far as the ceramic art is concerned, with all the experience and skill of two centuries, Europe has not advanced to the high standard of the Celestials.

They have copied from the Chinese and Japanese, but are yet ignorant of that hard, transparent glaze of true porcelain, which, fusing with the body of the object, is able to resist the greatest heat, and which also admits of any amount of decoration. Neither have they learned the many secrets of the application of colors in the decoration of pottery.

A Chinese authority says that the making of pottery began during the reign of Hoang-Ti, from 2698 to 2599 B.C. The fruits of these thousands of years of labor were seen at the Centennial Exposition. Tables, shelves, and cabinets were filled and crowded with every style and variety of porcelain. Heretofore the hungry collector had been able now and then to find a cup or vase; upon this occasion he was surprised at the large variety of jars, vases, urns, cups, and plates, many of which he had never before heard of, and all of them attractive. There were superb silks, richly decorated robes, grotesquely carved bedsteads, and cabinets, and curious bronzes, more ancient than those of Egypt; also bells, braziers, and other strange and interesting articles made in metal. There were flower-stands and seats made of teak-wood, of symmetrical shape, with graceful carving in low-relief.

In the discussion of the art industries of the Asiatics, as compared with those of Europe, China and Japan have been classed together. These two nations have also been associated in the influence it is supposed they will exert upon American taste; yet to the Japanese should be assigned much the larger share; and while this opinion is firmly held, it is not from any failure to recognize the importance of the artistic and commercial relations between China and the United States. For many years past our ships have dropped anchor in her harbors, her teas have refreshed us, her silks have graced the forms of our women, her porcelain has been ornamental and useful in our houses, and in those arts in which she excels we have lost nothing of our admiration. The art of China has its distinctive excellence, yet in many of the industries where she comes into competition with Japan she is inferior. It is necessary to admit that her intercourse with Europe has been the means of introducing into her workshops bad styles. Especially is this true of the decoration of pottery. Within the past decade she has copied meretricious European models, and vainly attempted to imitate those of her successful rival, Japan.

While for eighteen hundred years there has been more or less of communication between these two great nations of the East, yet to Western

Europe, for more than two hundred years, Japan has been closed from view. It has only been within the last twenty years that her exquisite products have found their way into the art commerce of Europe and the United States, and already they have gained the enthusiastic admiration of the connoisseurs of Paris and London. But Europe had never witnessed a spectacle so varied, rich, and brilliant as the Centennial Exposition. At the Vienna Exposition, in 1873, Japan was only partially



Japanese Military Costume.

represented. Her commissioners were not appointed until 1872. They had no time for preparation in a work to which they were all unaccustomed; at the same time, the timid manufacturers and merchants were suspicious of the outside world, and were unwilling to trust their goods to the risks of such an undertaking. The case of the Philadelphia Exposition was very different. The Imperial Government began operations in 1874. A commission was appointed of more than forty persons, who were either officers of distinction, or influential representatives of the industry

and commerce of the country. The provincial authorities were instructed to assist the people with money and advice to take part in the exposition. The value of the articles sent to Philadelphia was two hundred thousand dollars. The Government spent thirty thousand dollars in making a collection of its own. It advanced seventy thousand dollars to assist manufacturers in the production of works which would be an honor to national art and industry. Three hundred thousand dollars were also appropriated for general expenses, including the cost of transport of goods to and from Philadelphia, and the expenses of such merchants as chose to accompany their wares. It may be said, however, at this point, that only a limited number of these beautiful objects have been taken back to Japan; for long before the close of the exposition they had been purchased by eager connoisseurs and the great museums of this country and Europe.

There were more than two hundred and fifty Japanese exhibitors; fifty-two of these were manufacturers of pottery, twenty-four of lacquer-ware. The metal-workers numbered thirty-three. These figures are given to show the proportion in numbers of one industry to another, and that the display was not made by a few merchants, but by a large number of persons from different parts of the empire. The Centennial Exposition saw the full flower and glory of Japanese art. A great empire, which for two centuries had established non-intercourse with foreigners, and whose products had at no time, to any extent, reached European markets, chose this exposition as the field wherein to reveal the wealth of its resources.



Chinese Ornament.

It would be difficult to say whether the Japanese excel most in the manufacture of bronzes or pottery. Jacquemart, in his "History of Porcelain," gives the following picturesque account of the origin of the manufacture of pottery in Japan: "In the spring-time of the year 27 B.C., a small vessel departed from Sin-Ra, in China, and landed in the province of Halima. The chief of the expedition, a pretended son of the King of Sin-Ra, established himself in the village of Fasa-ma, in the province of Omi, where his followers set up a manufactory of porcelain."

Griffis, in his work "The Mikado's Empire," says that Japanese art had its birth in mercy. It was an ancient custom, when one of the noble classes died, for the wife and one or more of his retainers to commit suicide and be buried with their master. In other instances these slaves of the deceased lord were buried alive, with their heads only above ground, and then stoned to death. Just after the commencement of the Christian era, one Nomi no Tsukuné began to make porcelain vases and clay figures of men. These figures were afterward substituted for the human beings who were devoted to the horrible custom of following their masters in death. Both Jacquemart and Griffis tell this story, but with unimportant differences. There are other Japanese legends which attribute the invention of pottery to yet earlier dates. After the sixth century its history is given in detail, and no doubt with accuracy. It shows that at a comparatively recent date Japan received from China the secrets of this exquisite industry. But the Japanese, so imaginative, gifted, and skillful, have passed from imitation, and become creators. For many hundred years they have excelled their masters.

There was a strange and delightful fascination within the area which inclosed the Japanese display at the Centennial Exposition. It was not alone that one stood in the presence of a nation whose blood had run unmixed with that of other races far back beyond the days of Greece and Rome, or that their history was filled with romance of surpassing interest, but that these products of their hands were more beautiful than any thing ever seen before.

How grandiose were these Arita vases, tall and graceful, resplendent with rich and harmonious flora! How superbly decorative were the wide-spreading bowls from Hizen; one with its fishes in strong relief, with its deep translucent blue, a tone of color never beheld before, except in the deep-blue sea; and others gorgeous in red, green, and gold! Upon these was painted the mythical zoölogy of this artistic people. Here were strange dragons, part bird and part crocodile, with examples of many other creatures. When they breathe, the breath turns to pure gold. Here were amphibious monsters, *jishin uwo* (earthquake fish), plunging in a sea

of infinite iridescent tints of violet, pink, and green. Storks in vast flocks rode upon golden clouds; turtles, said to have lived ten thousand years, with fringing tails, crept across the plain; while interspersed with all these in charming confusion were flowers of every hue, such as could only be found in the mythical world of this imaginative people. But the fantastic and grotesque form only a small part of Japanese decoration. The writer has in view a flower-vase from the village of Ota, which is masterly and beautiful. It is some thirty inches in height, its shape is exceedingly graceful, and it has two light handles growing out from the neck near its upper rim. The body is of a warm gray tone, and is encircled by irregular white lines or bands. Upon this body, raised in applied paste, and accurately modeled, are a flock of wild geese, which are screaming, flying, darting, and plunging into a cool bed of reeds and long grasses which rise from the curving base of the vase. On its neck are several dainty fans in red, green, and gold, and the same harmonious colors, in tasteful patterns, decorate the upper and lower borders, their positive tones giving emphasis to the prevailing tint of gray.



Japanese Monster.

This is one of many beautiful vases of different shape, color, and decoration, and each a work of art. In all this charming array of cups, plaques, vases, and other works in pottery, there was the greatest variety, and repetition was rare. The designs were original, the tones fresh and pure, the workmanship skillful. In every respect, except that of architectural construction, they were superior to the pottery of other nations, while they had characteristics all their own. In their ceramics the Japanese never attempt a servile imitation of any object. In all of their decoration they work directly from nature; but if they draw from a tree, flower, bird, or landscape, it is to suggest an impression which strikes the beholder when first seeing it, rather than to present that close

The Satsuma and Kioto ware are now widely known and warmly admired for their singular originality and fresh and happy suggestions. The designs of flowers, grasses, and birds are full of wayward grace, while their delicate tints of color, by intelligent juxtaposition, are most exquisitely harmonized. Many of the provinces, cities, and villages of Japan were represented by works in pottery. Among these were the cities of Kagoshima, in the province of Satsuma, and Igano-Musa, in the province of Owari; while both faience and porcelain came from several places in the provinces of Ise, Mino, Kaga, Owari, and Kioto; from Ota, near Yokohama; the village of Arita, in the province of Hizen; and the great cities of Tokio and Yokohama.

The potter's art has risen to a state of great perfection in Japan, because nature has there brought together all the minerals and earths needed for the purpose of manufacture. The small town of Arita, in the province of Hizen, is one of the great centres of the manufacture of pottery in Japan. Within the limited space of half a mile in diameter, imbedded in the rock, are found all the minerals and clays needed to make the splendid bowls and vases known as "Hizen" ware. Here are the silex, kaolin, feldspar; and here are other subtle substances, unknown to us, whose use in the cunning fingers of the Japanese artist display effects which excite our wonder and delight. The poorest peasant of Arita finds the materials for labor at his door. Happily the tools of the potter are not costly, and all that is needed besides are industry, skill, and the artistic sense; these are natural characteristics with the Japanese. There are other interesting circumstances attending the manufacture of pottery in Japan. Each shop has a kiln in the open yard, where the pottery is slightly baked while yet under the modeler's hands. The finishing kilns usually belong to the community. Those at Arita are more than two hundred in number, and are situated here and there on the boundaries of the village. They are rented to the manufacturers, and any man may bring his pottery to be baked in the common kilns.



Japanese Dragon.

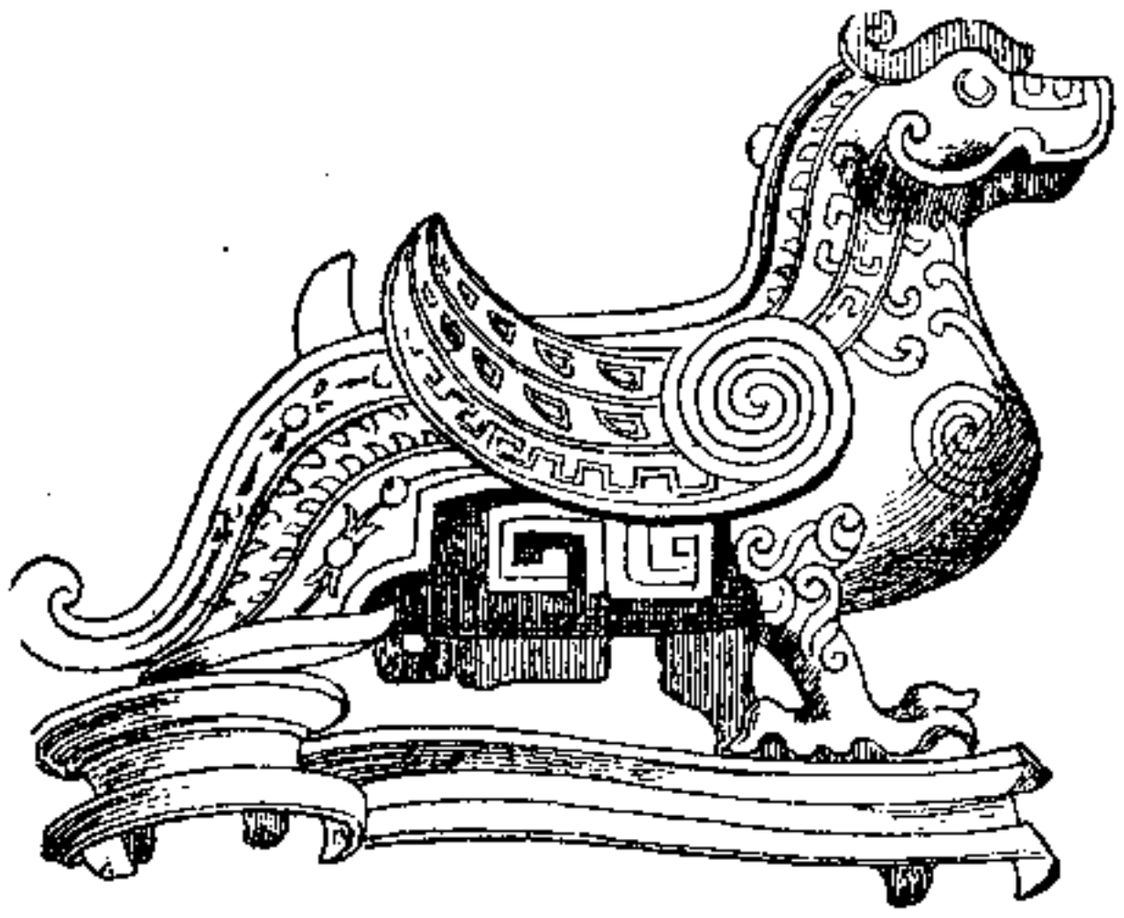
One could not pass from the study of this brilliant display of porcelain and faience, so refined, chaste, and forcible, to that of Western Europe, and not notice the painful contrast of feeble imitation and helpless expedients. A European dealer one day expressed his surprise at the enthusiasm excited by the art of the Chinese and Japanese. He wondered how any one could compare it with the faience of Minton, or the cloisonné of Elkington or Barbedienne. It was not possible to explain to this gentleman why these mythical creatures, these suggestions of a multifarious flora, were better decorations for pottery than *genre* pictures of well-dressed little boys and girls; and when the discussion came to cloisonné ware, the difficulty increased; for while Barbedienne and Elkington have done their best to copy Japanese cloisonné, there is just that difference between the one and the other which separates the artistic from the mechanical.

It is the difference between the most skillful workmanship with delicate juxtapositions of color, in sober but decided tones, worked into the most marvelously intricate and minute designs, on the one hand, and inexperienced workmanship with coarse designs and crude color on the other. Japanese cloisonné, and, indeed, their other manufactures of modern days, are not equal to those made when Japan was not subject to demoralizing foreign influence. A new art is the application of cloisonné to porcelain instead of metal. The cup or vase used for this purpose has the glaze ground off, and presents a rough instead of smooth surface, wherever the vitrifiable substance is to be applied. The metallic wire which marks the outline of the figures is fixed on the porcelain, not by soldering, as in the other case, but by the application of a fusible glass. Afterward these lines become more firmly attached by contact with the fused enamels. This novel and charming application of cloisonné is made upon porcelain of turquois-blue, with figures of butterflies, flowers, and leaves, which are made in red, green, and gold. These cups, vases, and plates are very pretty, and are not always high-priced.

The display of Japanese bronzes fairly divided one's enthusiastic admiration with that of pottery. They were equally original and artistic with the faience and porcelain. Novice and expert have alike examined these wonderful bronzes, amazed at the skill and patience which have produced such singular objects, with their elaborate inlays of filigree, rivaling the damaskeen of the thirteenth century. But from observation alone, none could explain the mystery of this steel-blue surface which was veined with microscopic threads of gray, red, and gold. In the native tongue it is called "moku-me," which may be translated to mean "veins of wood," although wood does not enter into its composition. From offi-

cial sources we gather an explanation of this charming art. "Moku-me" is composed of several metals, chiefly of white silver, red copper, and a dark-blue alloy. These are overlaid and soldered together by hammering and kneading. Any inequalities in the homogeneous plates are filled up by new metal of one or another kind, such as the artist with the hammer may think best for the purpose. These operations are many times repeated. Finally, the pliable mass of metal is beaten out into thin sheets, presenting a beautiful surface of infinitely small veins of red, blue, and white. Thus fashioned, it passes into the hands of other artists, to be made into objects of use and beauty. This material formed the body of many of the more costly vases, which were otherwise superbly decorated with incrustations and inlayings of silver and other metals.

The larger number of bronzes, however, were of less costly manufacture. They were vases, flower-stands, incense-boxes, all charmingly decorated, including imitations of every object in nature which could have come within the ken of the artist, from a crab to a bull, and of an indefinite number of other creations, humorous and grotesque, but seldom repulsive, which exist in the lively imagination of a Japanese.



Japanese Ornament.

The lacquer-work of these people has these many years graced the tables of every well-ordered household; but never before had it been seen in such perfection of delicate workmanship of design, richness, and variety of color. Almost every object brought to us by the Japanese exhibited the highest sense of grace and poetry in decoration. There were silk screens, painted with designs of infinite beauty and fine poetic feeling; carved wood and ivory; picturesque arms and armor; and gorgeous stuffs of silk and wool.

The visitor to all these lovely things, who returned again and again, who exhausted time and purse, might well ask himself: What is this enchantment which has taken possession of me? What is it in these creations which, more than any thing beside in this great exposition, attracts and pleases me? Their novelty might in some degree explain the attraction; but as novelty alone soon wears off, the cause will be found in other directions. In the discussion in another part of this book of the *repoussé* work of modern days, as compared with that of the Middle Ages, the superiority of the latter was attributed to the fact that the artists worked

out their own fancies, and were not subject to the orders of a master-workman or employer.

What was true, even to a limited degree, of the European artist of the Middle Ages, is the practice everywhere in Japan. The manufacture of its pottery, bronzes, lacquer-work, fans, painting on silk, and the rest, is carried on by the enterprise and genius of individual, and not by associated, labor.

Griffis, in his entertaining book on "The Mikado's Empire," says that the principles of centralized capital, large manufactures, and division of labor are as yet scarcely known in Japan. An official report declares that the artist in bronzes, who makes the model, generally does the casting himself, and in most cases the workshop consists only of the master's family and two or three assistants. After the casting, the artisan goes over the work with his chisel, while the bouquet of flowers, the bunch of leaves or grasses, or whatever be the object he wishes to depict, is placed before him, and thus the engraving is sketched directly from nature. And this is also the way the potter works. In this independent atelier, in this constant study of nature, and of the little things and nearest, we have the cause of that endless variety of subject, simplicity of treatment, freshness, originality, grace, and poetry which are the glory of Japanese art.

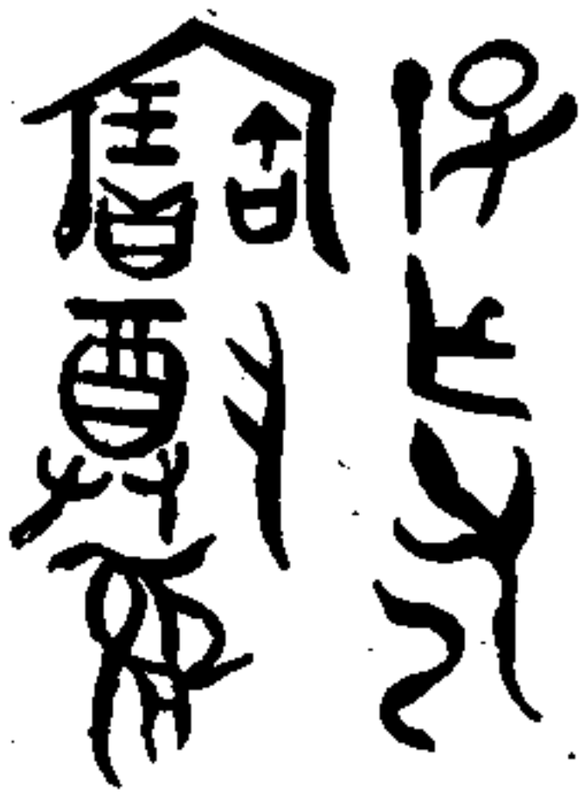


Chasing Floral Designs on Copper.

This, then, is the fascination which holds us; and here, also, in the Far East are found the true conditions of successful art industry. The head of the family is the artisan, his children are students, his cabin an atelier; while nature, with prodigal hand, furnishes the material. The subjects for illustration are on every side. Vines clamber about his porch, flowers of every hue are in his garden, while to him, devout follower of Buddha, the beasts of the field and fowls of the air have spiritual significance which finds pictorial expression in his decorations.

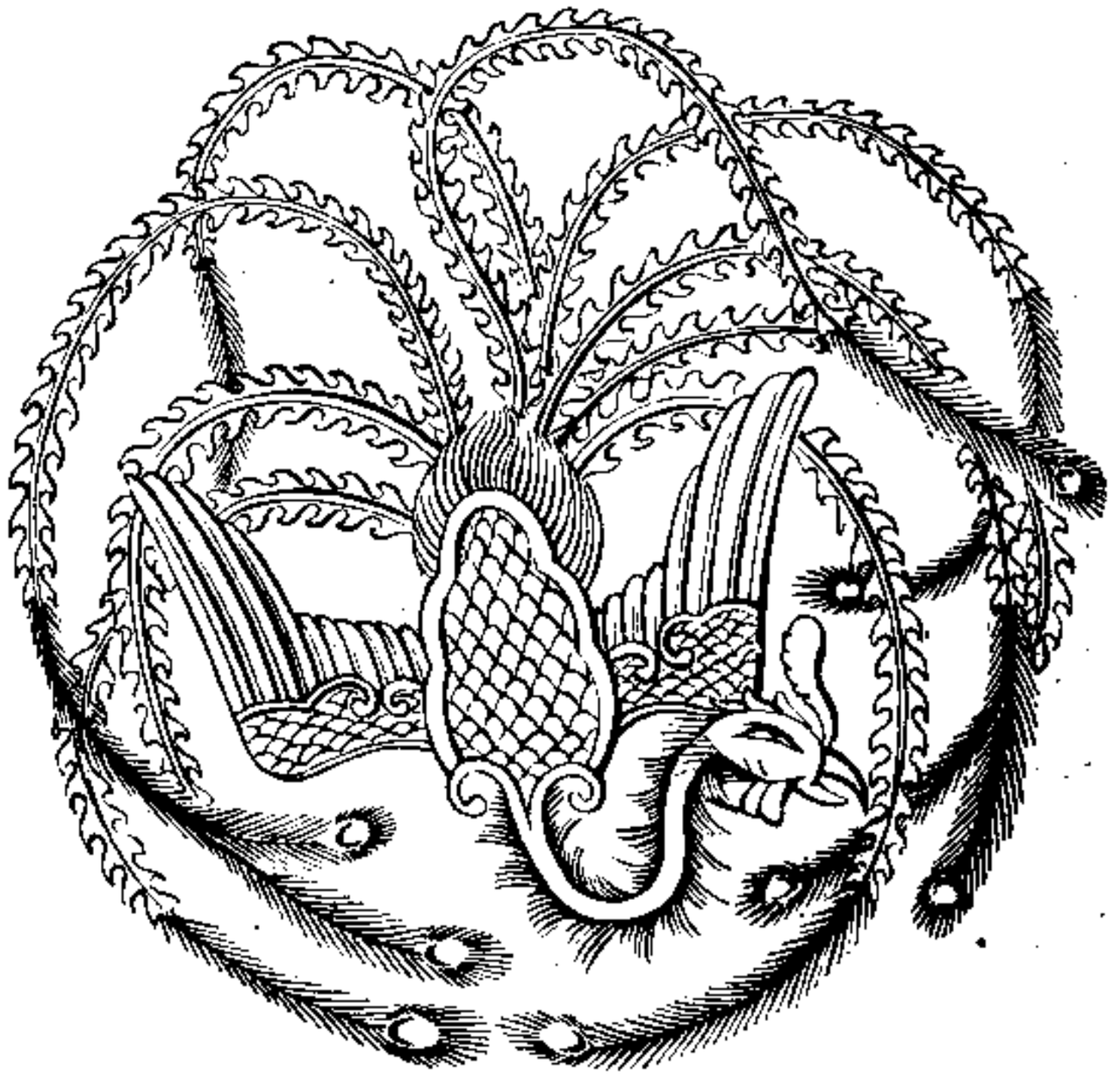
While so much of unqualified admiration has been herein expressed

for Chinese and Japanese decoration, it is necessary to say that these nations seriously need instruction in the science of design. The most exquisite decoration will often be found upon vases which are unsymmetrical in shape. With no people would the study of the science of design accomplish finer results than with the Japanese. They appreciate the advantages of a knowledge of exact forms, and are introducing the study into their schools; and yet one can not contemplate the introduction in Japan of European methods of instruction in the art of design without some fear. Any plan of instruction which includes copying from prints, such as "flower-pieces" and "Julian's lithographs," would be demoralizing, and destructive to the freshness, originality, and beauty of Japanese art. What would lend grace and symmetry to their productions is a knowledge of arbitrary and geometrical forms, and those laws which belong to architectural construction.



Chinese Inscription.

Good results in many channels are flowing from the Centennial Exposition; but in no direction have there been better opportunities for information than in the art of design. The exhibition of the arts and industries of all the nations has taught us that, in order to achieve the best results in the application of art to industry, we must have a complete system of instruction, in public and special schools, in the science of design. The principles thus established are, that the method of instruction in these schools shall include the constant study of natural objects; that the artisan must always go to nature for his models; and that independent rather than associated labor is the most fruitful source of freshness and originality of design.



Japanese Phœnix.

APPENDIX.

ART EDUCATION IN GREAT BRITAIN.

THE scheme for art education in Great Britain is thus set forth in the Official Catalogue:

A sum of money is voted annually by Parliament for the purposes of science and art.

This sum is administered by the Science and Art Department, hereinafter called the Department.

The head of the Education Department, of which the Science and Art Department is a branch, is the lord president of the council, assisted by a member of the privy council, who is called the vice-president of the Committee of Council on Education, and who acts under the direction of the lord president, and for him in his absence.

A portion of the sum voted is set apart for the promotion of instruction in art in the United Kingdom.

The object of this grant is to promote instruction in drawing, painting, and modeling, and designing for architecture, manufactures, and decoration, especially among the industrial classes.

To effect this object, the Department will give aid toward the teaching of elementary drawing in elementary day schools; toward the teaching of drawing in night classes for artisans; toward instruction in art in schools of art; and toward the training of art teachers. The Art Library and collections of decorative art at South Kensington are also made available for the purposes of instruction in schools of art.

AID TO ELEMENTARY DAY SCHOOLS.

An elementary school is a school, or department of a school, at which elementary education is the principal part of the education there given, and does not include any school, or department of a school, at which the ordinary payments, in respect of the instruction, from each scholar exceed ninepence a week.

The Department will encourage the teaching of drawing in elementary day schools at which the children are instructed in drawing by teachers holding art certificates of the second or third grade.

The aid given by the Department consists of *payments* made to the managers of the school toward the cost of the maintenance and instruction of the drawing classes in the school; of *prizes* awarded to the children, pupil-teachers, or paid monitors only of the school, whose exercises reach the standard of excellence; and of *grants* toward the purchase of suitable examples.

The Department will determine the number of payments to be made, and of prizes to be given, annually, by means of an examination of a very elementary character, called *of the first grade*, in free-hand drawing from copies, free-hand drawing from models, and in practical geometry; and by a more advanced examination, called *of the second grade*, in free-hand, geometric, perspective, and model drawing.

AID TO TRAINING COLLEGES FOR TEACHERS.

Annual examinations in drawing of the second grade are held in November at each of the training colleges under inspection, in any or all of the following exercises, for success in which the candidate may not have been registered by the Department since the 24th of February, 1857: Free-hand drawing from flat examples; practical geometry; linear perspective; model drawing; delineation of large letters, numbers, diagrams, and other objects on the blackboard.

The marks given for these exercises are carried to each candidate's total for the certificate granted by the Education Department, Whitehall.

Candidates who pass in all the five exercises named above obtain the certificate ("D") for drawing, which qualifies them to earn the payments conditionally made to the managers of elementary day schools on account of the teaching of elementary drawing concurrently with reading and writing.

A payment of two pounds is made to the authorities of training colleges on account of every resident student who obtains the certificate of the second grade, subject to a deduction of ten shillings on account of each of the required subjects in which the student may have passed previous to admission to the college.

AID TO ART NIGHT CLASSES.

An art night class is a class for instruction in elementary drawing held after 6 P.M., to which the public is admitted on payment of fees within the reach of persons who support themselves by manual labor.

The Department will give aid to such classes* when conducted under the direction of a local committee of not less than five well-known responsible persons, and meeting at least once a week under instructions by a teacher, or teachers, holding the second-grade certificate of the Department for Elementary Drawing, or an art-master's certificate of the third grade.

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* This aid will be extended, on the merits of each case being considered, to classes for artisans or teachers meeting after noon on Saturdays; to classes for female artisans or female teachers meeting in the day-time; and to science classes on account of students who are not scholars in an elementary day school.

Art night classes may be held in mechanics' or literary institutions, elementary schools, or in other educational institutions.*

The Department will pay annually to the local committee of an art night class the under-mentioned sums on account of the instruction, *in the night class*, of students of the industrial classes,† from ten to fifteen shillings, according to their advancement.

Prizes, consisting of one sum of twenty pounds, ten sums of ten pounds, forty sums of five pounds, will be awarded to the head masters of art night classes in which the results, as tested by the examinations of the Department, and considered with reference to the number of students under instruction, shall be most satisfactory.

Teachers in charge of art night classes who hold a certificate for second-grade drawing only will be allowed a payment of ten pounds on taking the first certificate of the third grade.

Prizes of the second grade will be given to all students who excel in the examinations; and of the second or third grade to students who execute highly meritorious works of the classes named in clause 2 of † note.

AID TO SCHOOLS OF ART.

A school of art is a room or rooms devoted wholly to instruction in art, where examples of art are always open for study and inspection, and where instruction is given by a teacher holding an art teacher's certificate or certificates of the third grade.

The Department will aid the instruction given in schools of art, when under the direction of a local committee of not less than five well-known responsible persons, and instructed by teachers holding one or more art certificates of the third grade, provided that day classes be held, and that artisan night classes meet under the instruction of the master, in rooms approved by the Department, at least three times in each week for two hours.

Payments are made to the local committee on account of persons of the industrial classes, teachers, or children above twelve years of age, who pay fees for being taught, from ten shillings to three pounds, according to meritorious work.

The rewards are not given to pupils alone, but every inducement is held out to

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* Drawing can not be taught during the one hour and a half required, under Article 23 of the Education Code, for general instruction in the night classes of public elementary schools.

† Under "students of the industrial classes" are included only:

1. Artisans or operatives in the receipt of weekly wages.

2. Coast-guards, policemen, and others who, though in receipt of weekly wages, do not support themselves by manual labor.

3. Teachers and pupil-teachers of elementary schools in connection with the Education Department, Whitehall, or the National Board of Education, Ireland, and students in training-schools.

4. Persons in the receipt of salaries of less than two hundred pounds per annum.

5. Small shop-keepers, tradesmen, and others whose net incomes do not exceed two hundred pounds per annum.

teachers to advance art education. Fifteen pounds are paid to an art teacher in schools in which twenty students of the industrial classes are satisfactorily taught, and thirty pounds for two art teachers in schools in which fifty or more such students are so taught.

Prizes consisting of one sum of fifty pounds, three sums of forty pounds, six sums of thirty pounds, twenty sums of twenty pounds, thirty sums of ten pounds, will be awarded to the head-masters of schools of art in which the results of instruction, considered with reference to the number of students, as tested by the examinations of the Department, shall be most satisfactory.

Prizes are offered to teachers who qualify themselves for higher teaching. Grants are made to pay the expenses of teachers who come to London to study from the works sent for competition.

The best works sent up for examination will be selected to enter into a national competition between the works of all the schools of art in the kingdom, and medals and prizes will be awarded to those students who execute the most meritorious of the competing works.

The prize list will include ten gold medals, distributed as follows:

One gold medal for the best study from the antique in chalk or monochrome. This study must be from a single figure in the round, and must be executed within the dimensions of an imperial sheet.

One gold medal for the best study of the figure modeled from the antique. This study must be from a single figure, and not more than thirty inches in height.

One gold medal for the best example of painting a group of still-life from nature, as a composition of color, in oil. The dimensions of this work should be imperial size, *i. e.*, twenty-one and a half by twenty-nine and a half inches.

One gold medal for the best example of painting a group of still-life from nature, as a composition of color, in water-color. The dimensions of this work must be twenty by sixteen inches, or, if of other proportions, of equal or nearly equal surface.

Six medals for the best designs in the three classes—architectural design, surface design, plastic design. A statement of the purpose or material for which it is prepared should be given on every competing design.

Twenty-five silver medals, of which part will be given to the second-best works in the various subjects to which gold medals are assigned, and the rest to meritorious works in the same, or the best works in other, subjects of study.

Sixty bronze medals to meritorious works in any of the various subjects of study.

Any of these medals may be withheld if, in the opinion of the examiners, the works in any subject are not of sufficient merit to deserve them.

Additional prizes of works of art, books, etc., will also be awarded.

The works entering into the national competition will be exhibited in London, and in some one of the more important towns of the kingdom where suitable space can be provided.

Grants of money are made to assist in the building of art schools and furnishing them.

These schools may also borrow works of art and books from the Kensington Museum.

Students who may compete, because of previous advancement for admission to the National Art Training-school, are allowed a maintenance of fifteen or twenty shillings a week.

There are national scholarships of the value of one pound per week. The Princess of Wales has given two scholarships of the value of twenty-five pounds and eleven pounds to the two female students who gain the highest prizes in the yearly national competition.

THE NATIONAL ART TRAINING-SCHOOL.

The National Art Training-school at South Kensington is established for the purpose of training art masters and mistresses for the United Kingdom, and for the instruction of students in drawing, designing, and modeling, to be applied to the requirements of trade and manufactures.

The course of instruction is as follows (it should be understood that it is not progressive in the order in which the stages are named):

Stage 1.—Linear drawing by aid of instruments: Linear geometry; mechanical and machine drawing; linear perspective; details of architecture from copies.

Stage 2.—Free-hand outline drawing of rigid forms from examples or copies: Objects; ornament.

Stage 3.—Free-hand outline drawing from the "round:" Models and objects; ornament.

Stage 4.—Shading from flat examples or copies: Models and objects; ornament.

Stage 5.—Shading from the "round" or solid forms: Models and objects; ornament; time-sketching, and sketching from memory.

Stage 6.—Drawing the human figure and animal forms from copies: In outline; shaded.

Stage 7.—Drawing flowers, foliage, and objects of natural history, from flat examples or copies: In outline; shaded.

Stage 8.—Drawing the human figure, or animal forms, from the "round" or nature: In outline from casts; shaded (details); shaded (whole figures); studies of the human figure from nude model; studies of the human figure draped; time-sketching, and sketching from memory.

Stage 9.—Anatomical studies: Of the human figure; of animal forms; of either, modeled.

Stage 10.—Drawing flowers, foliage, landscape details, and objects of natural history, from nature: In outline; shaded.

Stage 11.—Painting ornament from flat examples: In monochrome, in colors, either in water-color, tempera, or oil.

Stage 12.—Painting ornament from the cast, etc.: In monochrome, either in water-color, oil, or tempera.

Stage 13.—Painting (general) from flat examples or copies, flowers, still-life, etc.: Flowers or natural objects, in water-color, in oil, or in tempera; landscapes or views of buildings.

Stage 14.—Painting (general) direct from nature: Flowers, or still-life, in water-color, oil, or tempera without backgrounds; landscapes, or views of buildings.

Stage 15.—Painting from nature groups of still-life, flowers, etc., as compositions of color: In oil-color; in water-color or tempera.

Stage 16.—Painting the human figure or animals in monochrome from casts: In oil, water-color, or tempera.

Stage 17.—Painting the human figure or animals in color: From the flat or copies; from nature, nude or draped; time-sketches and compositions.

Stage 18.—Modeling ornament: Elementary, from casts; advanced, from casts; from drawings; time-sketches from examples and from memory.

Stage 19.—Modeling the human figure or animals: Elementary, from casts of hands, feet, masks, etc.; advanced, from casts or solid examples; from drawings; from nature, nude or draped.

Stage 20.—Modeling fruits, flowers, foliage, and objects of natural history, from nature.

Stage 21.—Time-sketches in clay of the human figure, or animals, from nature.

Stage 22.—Elementary design: Studies treating natural objects ornamentally; ornamental arrangements to fill given spaces in monochrome; ornamental arrangements to fill given spaces in color; studies of historic styles of ornament drawn or modeled.

Stage 23.—Applied designs, technical or miscellaneous studies: Machine and mechanical drawing, plan drawing, mapping, and surveys done from measurement of actual machines, buildings, etc.; architectural design; surface design; plastic design.

The twenty-three stages of instruction are divided into six groups. Certificates of competency to teach the subjects included in each group are given to candidates who pass the necessary examinations, and are called certificates of the third grade.

The following are the groups which form the subjects of certificates:

Group 1.—Elementary drawing and coloring: Stages 1, 2, 3, 4, 5, 6, 7, 10, and 13.

Group 2.—Painting, with examination in styles of art, and in the elementary principles of ornament: Stages 11, 12, 14, 15, and 22.

Group 3.—The figure drawn and painted, with examination in the historic

Group 4.—Modeling ornament, with examination in styles of art, and in the elementary principles of ornament: Stages 18, 20, 22.

Group 5.—Modeling the figure, with examination in the historic styles of ornament: Stages 8, 9, 19, 21.

Group 6.—Technical instruction.

FIRST GROUP.

Candidates for certificates for the First Group who have attended the National Art Training-school must obtain a recommendation from the head-master for admission to the examination. Candidates from provincial or other schools must send the requisite drawings to the secretary of the Department on the first Saturday in February. They will receive notice to come up for examination if their works be approved.

All candidates will be required to execute an extra work in the presence of the examiners.

Candidates must be prepared to instruct a class in the presence of the examiners in free-hand drawing, geometrical drawing, perspective, and model drawing.

They must be able to sketch, in a given time, a group of models, placed by the examiners for that purpose. And to solve, in writing, questions in geometry, perspective,* and elementary architecture.†

For the First Group, the following works, nine in number, are required to be sent up:

Stage 1*a*. A sheet of geometrical problems. There may be six or eight problems selected to show the power of working neatly and exactly with instruments.

Stage 1*c*. A sheet of perspective diagrams. This should contain one or two problems neatly worked, showing the extent of knowledge possessed by the candidate.

Stage 1*d*. A sheet of architectural details. These should consist of classic capitals and moldings, and Gothic openings for doors or tracery for windows.

Stage 3*b*. An outline of ornament in low-relief from the cast. This may be from the lower portion, or any one of the scrolls, of the Madeleine pilaster, or from one of the pilasters of the tomb of Louis XII., and must be executed with correctness and delicacy.

Stage 5*a*. A sheet of drawings from models, shaded in chalk or pencil.

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* In the perspective paper credit will be given for a knowledge of the projection of shadows. The exercise in elementary architecture will require a knowledge of the five orders of classic architecture with their moldings, and a general knowledge of the principles of construction applied to ancient architecture, and also of the larger distinctive characteristics of Gothic architecture in England from the time of Edward the Confessor to that of Henry VII.

† Female candidates are not examined in architectural drawing. Candidates who have passed in the advanced stage of Science Subject III. (building construction) are also exempt from the examination in architecture.

These should be carefully drawn without backgrounds, and shaded simply to explain the separate forms.

Stage 5*b*.—A sheet of ornament shaded from the cast, in chalk. The egg-plant portion of the Ghiberti frieze or other piece of ornament in high-relief.

Stage 6*a*.—An outline of the figure from the flat. Any complete figure from Morghen's outlines, or from any of the selected examples in the Department's list.

Stage 10.—A sheet of foliage drawn from nature. This should be drawn with delicacy on an imperial sheet from a freely growing plant.

Stage 13.—A sheet of flowers painted from the flat. From a good example of oil or water-color painting, or from nature.

SECOND GROUP.

Candidates for the certificate of the Second Group must already have obtained a certificate of the First Group.

Candidates will be required to sketch, in color, in a given time, a group placed by the examiners for that purpose—using any medium or vehicle which the examiners may propose.

To answer in writing a paper of questions on the elementary principles of ornament, and on the history and peculiarities of the ornamentation of the class chosen for illustration in the drawings sent up in Stage 22*d*.

To answer in writing a paper of technical questions on art, and on the general principles and execution of the several historic schools; and a paper of questions on the nomenclature of structural botany, and its application to ornament.

For the Second Group, the following works, seven in number, are required to be sent up:

Stage 13 or 14.—A landscape in oil from nature, or from some approved example. Should be of half-imperial size or thereabouts.

Stage 12.—A painting of ornament in monochrome from the cast, in oil or tempera. Should be of imperial size or thereabouts, and should be painted in a manner suitable for decorative purposes.

Stage 14.—A study of flowers painted from nature in water-color.

Stage 15.—A study of a group as a composition of color, in oil.

Stage 22*c*.—A sheet of at least two studies of ornamental arrangements in color.

Stage 22*a*.—A sheet of studies of some plant or plants botanically analyzed with a view to ornamental details.

Stage 22*d*.—A set of studies executed during the period of training, from some one class of objects in the South Kensington Museum, sufficiently extensive to represent the history of the class selected.*

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* It is intended by these studies to test the knowledge of ornament possessed by the candidate. He should therefore send a sheet or sheets of the most characteristic details of the best periods of the various styles, and should state the source from which the examples are derived.

THIRD GROUP.

Candidates for the certificate of the Third Group must already have obtained certificates of the First and Second groups.

Candidates will be required to answer, in writing, a paper of questions on the anatomy of the human figure.

To answer, in writing, a paper on the history of ornament of the various periods and styles, and a paper of questions on the elementary principles of ornament, and on the history and peculiarities of the ornamentation of the class chosen for illustration in the drawings sent up in Stage 22*d*.

To draw in a given time the bones or muscles, within the outline of an antique figure, from memory.

And to make a time-study from the living model.

[From candidates who are, or have been, students of the Royal Academy, and have been there admitted to study from the living model, this last exercise will not be required.]

For the Third Group, the following works, seven in number, are required to be sent up:

Stage 8*b*.—An antique figure shaded from the cast, in chalk.

Stage 8*c*.—A study in chalk from the living model.

Stage 9.—The bones and muscles placed within outlines of an antique figure.

Stage 16.—A painting of the human figure from a picture in oil.

Stage 17*a*.—A painting of the nude or draped figure from the life, in oil.

Stage 22*d*.—Varied studies of historic styles of ornament, sufficiently extensive to represent the history of the classes selected, sketched from works in the museum, the authority in each case being appended. If they are from colored ornament, the sketches are to be colored also.

FOURTH GROUP.

Candidates for the certificate of the Fourth Group must already have obtained a certificate of the First Group.

They will be required to answer, in writing, a paper of questions on the elementary principles of ornament, and on the history and peculiarities of the ornamentation of the class chosen for illustration in the drawings sent up in stage 22*d*.

To answer a paper of technical questions on the application of ornament to, and its modes of production in, various plastic materials.

To sketch from memory elementary details of ornament, and in a given time to model a piece of ornament, in low-relief, from a print or drawing.

For the Fourth Group, the following works, six in number, are required to be sent up:

Stage 18*a*.—A modeled study of ornament from the cast.

Stage 18*b*.—A modeled study of ornament from a drawing.

Stage 20.—A modeled study of flowers or foliage from nature.

Stage 22.—A modeled study of any one of the sections of this stage.

Stage 22*a*.—A sheet of studies of some plant or plants, botanically analyzed with a view to display their ornamental details, drawn or modeled.

Stage 22*d*.—A set of studies executed during the period of training from some one class of objects in the South Kensington Museum, sufficiently extensive to represent the history of the class selected.

FIFTH GROUP.

Candidates for the certificate of the Fifth Group must already have obtained a certificate of the First Group.

Candidates will be required to answer, in writing, a paper of questions on the anatomy of the human frame.

To answer, in writing, a paper on the history of ornament of the various periods and styles.

To make in a given time a sketch, in low-relief, from a print or drawing of an antique figure; and to give the anatomical details from memory.

To make a time-study from the living model.

[From candidates who are, or have been, students of the Royal Academy, and there admitted to study from the living model, this last exercise will not be required.]

For the Fifth Group, the following works, six in number, are required to be sent up:

Stage 8.—An antique figure shaded from the cast.

Stage 9.—An anatomical rendering of an antique figure, modeled.

Stage 9*a*.—A drawing of the skeleton placed within the outline of an antique figure.

Stage 19.—A model of an antique figure in the "round," rendered in relief.

Stage 20.—A model of the human figure from nature, nude or draped.

Stage 22*d*.—Varied studies of the relief ornament of historic styles sketched from the casts, carvings, metal-work, etc., in the museum of the Department, with written authorities for each, and sufficiently extensive to represent the history of the various classes selected.

SIXTH GROUP.

Certificates of the Sixth Group are granted on proof of competency to teach, first, domestic architectural drawing; and, second, the special application of ornament to plastic and surface decoration for various fabrics, manufactures, and architectural purposes.

Candidates for a certificate for architectural drawing must have already passed in the First Group. They must send in, together with their application for permission to compete, a tinted drawing, from measurement, of some architectural subject, and a design with plans and sections. If these works are approved, they will be required to answer a paper on the details of architectural construction, and on the

characteristics of the architectural ornament of various historic styles and periods; and to make a design from specifications of some architectural subject in the presence of the examiner.

Candidates for a special certificate on ornament who have been educated in the training-school must have previously taken certificates for the First, Second, and Third, or the First, Fourth, and Fifth groups. They will be required to send in, for permission to compete, two original works, painted or modeled, in order to show their technical skill as well as their power of designing; also a monograph, drawn up by themselves, of at least two historic styles, illustrated by sketches from works or drawings in the museum. They will be examined by papers on the elements, history, and application of ornament, and will be required to design some work in the presence of the examiners.

An open competition for admission to the National Training-school for teachers in schools of art is offered to candidates of all classes under the age of seventeen years.

Every candidate must produce—1. A certificate that he has satisfied the examiners of the Oxford or Cambridge Local Examinations, the Society of Arts Examinations, or he must hold the diploma or first-class certificate of the College of Preceptors in the following subjects: English grammar; English history; arithmetic; writing; Latin, or a modern foreign language. 2. The certificate of the Science and Art Department of the Second-grade Art in free-hand and model drawing.

Candidates must submit works in drawing, painting, or designing, to show the nature and extent of their qualifications. Those whose works are of sufficient merit will be admitted to undergo a competitive examination in the following subjects: 1. Drawing, from the cast, of ornament or of the figure; 2. Painting in color from still-life, or from the life (a head); 3. Drawing from memory, or designing; 4. Modeling of ornament or the figure (this may be alternative with subject 1).

Allowances for maintenance will be made to successful candidates at the rate of thirty, fifty-two, sixty-five, and seventy-eight pounds a year, according to qualification.

PROSPECTUS OF THE NATIONAL ART TRAINING-SCHOOL, SOUTH KENSINGTON, FOR 1874.

The following are the titles of the officers of the school: Inspector-general for Art, Head-master, Deputy Head-master.

There are teachers for mechanical and architectural drawing; geometry and perspective; painting; free-hand; drawing of ornament, etc.; the figure and anatomy; ornamental design; and modeling.

The female classes have a lady superintendent.

1. The courses of instruction pursued in the school have for their object the systematic training of teachers, male and female, in the practice of art, and in the knowledge of its scientific principles, with the view of qualifying them to impart to others a careful art education, and to develop its application to the common uses of life, and its relation to the requirements of trade and manufactures. Special courses

are arranged in order to qualify school-masters of parochial and other schools to teach elementary drawing as a part of general education concurrently with writing.

2. The instruction comprehends the following subjects: free-hand, architectural, and mechanical drawing; practical geometry and perspective; painting in oil, tempera, and water-colors; modeling, molding, and casting. The classes for drawing, painting, and modeling include architectural and other ornaments, flowers, objects of still-life, etc., the figure from the antique and the life, and the study of anatomy as applicable to art.

3. The annual sessions, each lasting five months, commence on the 1st of March and the 1st of October, and end on the last day of July and the last day of February, respectively. Students can join the school at any time, the tickets running from date to date. The months of August and September, one week at Christmas, and one week at Easter or Whitsuntide, are vacations. The classes meet every day, *except Saturday*. Hours of study—day, 10 to 3; evening, 7 to 9.

4. In connection with the training-school, and open to the public, separate classes are established for male and female students; the studies comprising drawing, painting, and modeling, as applied to ornament, the figure, landscape, and still-life. Fees for classes studying for five whole days, including evenings, five pounds for five months; for three whole days, including evenings, four pounds for five months; for the half day, morning, 10 to 1, or afternoon, 1 to 3, four pounds for five months. To all these classes there is an entrance fee of ten shillings. Evening classes: male school, two pounds per session; artisan class, ten shillings per session, three shillings per month; female school, one pound per session, three evenings a week.

5. No students can be admitted to these classes until they have passed an examination in free-hand drawing of the Second Grade. Examinations of candidates will be held weekly at the commencement of each session, and at frequent intervals throughout the year. Students can not join the school for a shorter term than five months, but those students who have already paid fees for five months may remain until the end of the scholastic year on payment of a proportional fee for each month unexpired up to the 31st of July in each year.

6. Classes for school-masters, school-mistresses, and pupil-teachers of elementary schools meet on two evenings in each week: fee, five shillings for the session. Teachers in private schools or families may attend the day classes on payment of a fee of one pound per month.

7. The morning classes for practical geometry and perspective are open to all students, but they may be attended independently of the general course, on payment of a fee of two pounds per session for those classes.

8. Students properly qualified have full access to the collections of the museum and library, either for consultation or copying, as well as to all the school lectures of the Department. The public also are admitted to the same privileges on payment of small admission fees; for which see the prospectuses of the museum and library.

9. A register of the students' attendance is kept, and may be consulted by parents and guardians.

STATEMENT OF EXPORTS FROM, AND IMPORTS INTO, THE UNITED STATES, WITH THE RELATION OF EACH TO ARTICLES INTO THE MANUFACTURE OF WHICH ART ENTERS.

In view of what has been said in the preceding chapters, it seems appropriate to present statistics of the imports and exports of articles into the manufacture of which art enters. There are persons who may not be able to see the force of reasoning presented from an artistic or æsthetic point of view. There is, however, a penetrating and luminous power in figures which reaches the comprehension of every man. The capitalist and the laborer can alike understand the simple statement. It is much better for both one and the other that, instead of sending to Europe an annual sum of over 131,000,000 of dollars, we should keep the money at home. This economy can be practiced by manufacturing articles for which that amount is paid within our own borders, and the fact can not too often be stated, that in order to be able to manufacture these articles we must have general art education.

The following statistics are taken from the annual report of the chief of the Bureau of Statistics, Commerce, and Navigation of the Treasury Department of the United States for the year 1874. The report includes the fiscal year ending in June, 1874:

Grand total of exports	$704,463,120
Grand total of imports	595,861,248
Excess of exports	$108,601,872

Notwithstanding this very great difference between the total of all the exports and imports, it will be seen by the following tables that in the manufacture of those articles into which art enters our imports were $158,786,319, and our exports $27,505,049; showing an excess of imports of the value of $131,261,270.

This enormous sum of money is paid Europe because, in the main, she has better taste and more skilled mechanics than we. From the point of view of political economy, it may not matter who makes these articles so long as there is a fair exchange of commodities. But every consideration of culture, refinement, and all of that moral power which comes from education, require us to instruct our people so that these things shall be manufactured within the United States.

In the tables of exports and imports it will be observed that the list of exports includes a number of articles representing large amounts of money, which are of a rough, coarse character, and into which the art element is but slightly concerned. These articles are freight-cars, agricultural implements, coarse cotton prints, bulky machinery, sewing-machines, etc. In nearly all the imported articles mentioned in these tables, the advantage of a knowledge of art is directly and pointedly shown. Under the general titles, such as jewelry, fancy goods, china-ware, engravings, silk,

cotton, and linen manufactures, and so on, a large number of articles are included which are not manufactured in the United States.

It is an interesting fact in these tables that, while the products of art industry form 26·7 per cent. of the grand total of imports, they are only 3·91 per cent. of the grand total of exports.

ARTICLES IMPORTED INTO, AND EXPORTED FROM, THE UNITED STATES DURING THE YEAR ENDING JUNE 30TH, 1874.

	Imports.	Exports.
Agricultural implements	.....	$2,089,753
Books	$2,853,285	584,930
Bells and bronze metal	.....	8,433
Brass, and manufactures of	355,062	503,531
Buttons	2,122,037	.....
Billiard-tables and apparatus	.....	48,799
Carriages, carts, and parts of	.....	541,844
Cars, railroad, passenger, and freight	.....	1,151,898
Clocks, and parts of	.....	1,007,507
Combs	.....	7,535
Copper, manufactures of	163,656	233,301
Clothing	3,943,628	.....
Cotton, manufactures of	24,772,898	2,252,533
Earthen, stone, and china ware	4,882,355	59,494
Fancy articles	4,518,987	302,548
Flax manufactures	17,472,755	.....
Gax-fixtures and chandeliers	.....	38,817
Glass, manufactures of	1,710,005	448,760
Hemp, manufactures of	114,184	861,746
Household goods	887,874	.....
Hair, manufactures of	1,229,400	33,257
Hats, caps, and bonnets	.....	200,464
India-rubber, manufactures of	803,830	126,280
Iron and steel, manufactures of	10,222,116	8,753,430
Jewelry	849,130	.....
Lamps	.....	168,231
Lead, manufactures of	36,401	308,044
Leather, manufactures of	4,133,058	613,185
Mathematical, philosophical, and optical instruments	.....	64,433
Musical instruments	870,348	550,327
Paintings, chromo-lithographs, photographs, and statuary	1,169,878	161,503
Paper-hangings, papier-maché, etc	1,230,688	.....
Plated ware	.....	55,127
Printing-presses and type	.....	163,839
Scales	.....	139,607
Sewing-machines	.....	1,594,296
Silk, manufactures of	23,996,782	.....
Tin, manufactures of	71,779	62,973
Trunks	.....	171,383
Umbrellas	.....	503
Watches	2,374,294	9,470
Wood, manufactures of	1,269,857	3,655,177
Wearing apparel	.....	427,992
Wool, manufactures of	46,732,032	124,099
Total imports	$158,786,319	$27,525,049
Total exports	27,525,049	
Excess of imports	$131,261,270	

Percentage of imports into which art enters..... 26·7 per cent.
" exports " " ..... 3·9 "

LIST OF BOOKS AND ESSAYS USED IN THE PREPARATION OF THIS WORK.

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"Art Directory," South Kensington School. London.

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