CLAY MODELING. AN APPRECIATION OF ITS VALUE. BY C. VALENTINE KIRBY

"OH, yes, making mud pies," and the visitor's face beams as he enters a modeling room, for although clay properly handled is not mud in any sense, there is something so delightful about it, that visitors almost invariably recall their mud pie days. Clay, however, becomes mud only in the hands of the most inexperienced persons. In its proper condition it is the cleanest plastic medium known, and the most valuable in all the world as a means to develop skill in craftsmanship.

Out of clay our remotest ancestors fashioned their rugged vessel forms and scratched crude designs upon them, or created the grotesque semblance of a god. The discoveries of clay works among the remains of the earliest savage tribes, in all parts of the world, would indicate that clay was not only universally used, but that its use antedated drawing and painting.

In our plan of art-education to-day, drawing has a firm place and rightly so, but clay modeling as a factor of true culture has not yet come to its own. And yet, drawing might better be omitted than clay modeling; for while drawing is the representative of form, modeling is the actual construction of form and means personal contact with reality. We often wonder at the feebleness of many of our modern artists and artisans, as we are amazed at the consummate skill of a Ghiberti, a Donatello, a Cellini, or a Michelangelo. We aspire to reach the heights attained by them, but we are not willing to follow the trail which they blazed. They were craftsmen and not ashamed of it, and they put art into the humblest utensils, considering them worthy of their skill. Donatello was equally skilled in the art of working in clay, marble-cutting, wood-carving, and the chasing of precious metals.

Ghiberti and Cellini sketched in clay and wax the thoughts which found permanence in gold, silver, or bronze. And there are still in existence little clay studies of human anatomy which Michelangelo executed, in preparation for the marble statue. In building up the form in clay, he built up a

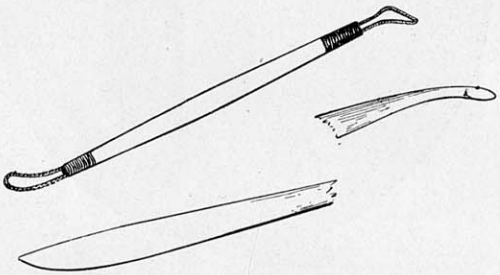

Figure I. Modeling tools

counterpart in his own mind, and in the block of marble which might have had no meaning or value to others, Michelangelo saw a slave struggling for freedom and released him.

The best art schools in this country and Europe require clay modeling, and it is to be observed that those who model, render form on a flat surface better than those who give their attention to drawing alone. A draughtsman may soon forget the model who posed for him, but the modeler is able to draw from memory in many positions the model he has made perhaps years before. Drawing means the interpretation of a single view; while clay-modeling requires the actual construction of many views, and de-

velops the muscular sense and man's master sense of touch. For the hand with countless nerve fibers in each finger tip, is man's only direct means of contact with his environment. With it he becomes cognizant of hard and soft, rough and smooth, hot and cold, heavy and light. It is the hand which models our statues, paints our pictures, fashions our dwelling and constructs our machines, and yet, even in these days of manual training, there are countless schools all over the country which are training this marvelous member to write and figure only. Clay modeling offers the best general training in accurate vision and skilful handling, preparatory to a hundred crafts, and it is so inexpensive that the poorest rural school can offer it: an advantage which is in keeping with these days of craft revival. Surely, people would not willingly withhold such a valuable medium of expression, if they appreciated its value and understood its uses.

It is the purpose of this article to show how clay can be used with very little trouble in the school room, work-shop or home. They who are training our children, as a rule, have no liking for clay, because they are ignorant of its proper care and treatment.

Clay is found everywhere, but in its natural state it is rarely available, until it is freed from gritty impurities. A pottery of some kind is generally at hand, at which clay can be purchased ready for immediate use, at one, or one and a half cents the pound. The quality of the clay depends, of course, upon the quality of the potter's product. If he manufactures coarse jars, his clay necessarily will not be so fine as that of the maker of high class wares. In the latter case, the clay is not only filtered thoroughly, but it is afterward forced through the fine fibers of many heavy canvas strainers.

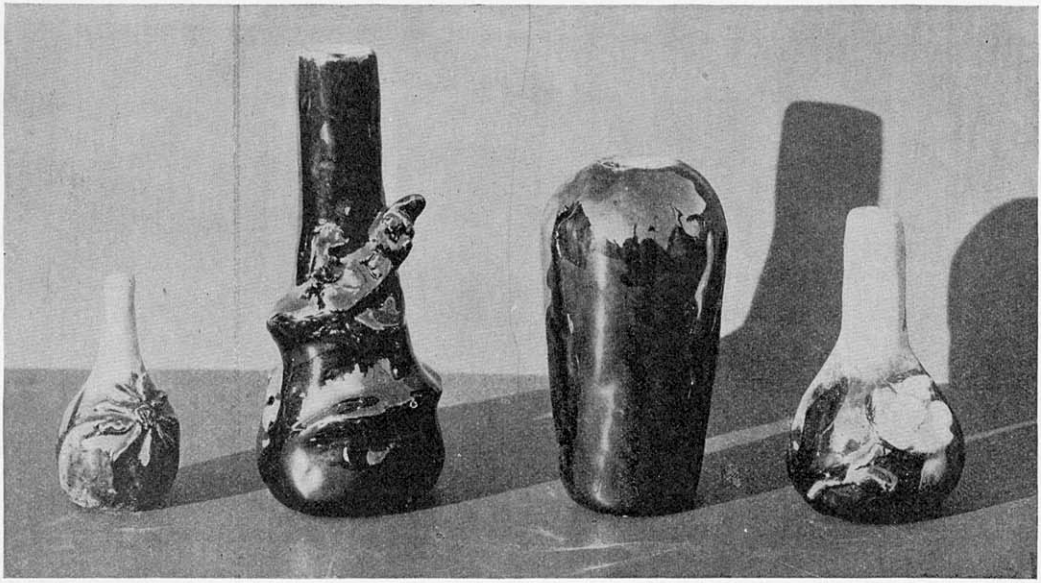

Figure II. Hand modeled vases, designed and executed by children under six years of age

When the clay is received, it should be placed in a wooden receptacle (a common soap box will answer), with damp cloths at the top. Nearly every book on the subject advises the use of earthen jars, but from this use great difficulty is occasioned. The clay on the top is inclined to be too hard for use, while that near the bottom is sticky mud. A wooden case, on the contrary, will absorb the superfluous moisture, and the clay, even at the bottom, will be found pliable and plastic, without sticking to or soiling the fingers in any way. If the moisture extend beyond the box to the floor, a tin or zinc pan may be put on the outside, but never on the inside.

The care of the clay is the most important consideration, for if the substance is too wet, it can not be used, and if it is too hard, the children will rebel. Either the cloth on the top of the clay may be kept moist, or the clay may be sprayed with an atomizer. A garden trowel is an excellent tool for removing the clay from the box. Only the clay for immediate use should be handled, for the heat from the hands dries it and reduces its plastic quality. As fast as crumbs accumulate, they should be picked up by a larger piece to which they will readily adhere. In this way no litter will result, and no evidences of clay will remain.

Ordinarily slates, boards, or strips of oil cloth, should be provided, on which to confine the work. Common roofing slates are excellent, and when it is desired to preserve the study in a moist condition, a damp cloth may be laid on top of the model. A good method is to slide the slates on little cleats into a closet. This is a great economy of space, and many may be moistened at one time with an atomizer.

There are some who object to clay in educational work, because they are afraid that its repeated use might result in the propagation of disease germs. But the Board of Health in one of our largest cities reported that such a result is most improbable and recommended its continued use. If the clay is allowed at intervals to dry thoroughly, it will purify itself in the process. When clay is dry and hard, it should be broken into small pieces and if water be frequently added, through a cloth on top, in a few days, it will be ready again for use. An oil cloth cover placed over any moist model will greatly reduce the evaporation.

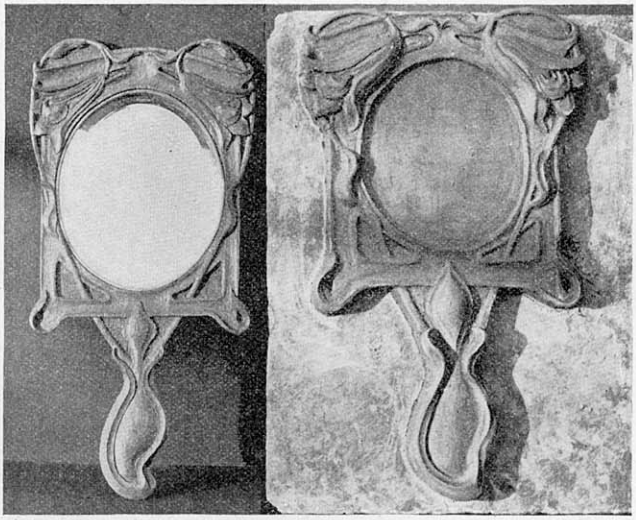

Figure III. Preparatory clay model, with completed hand mirror carved in mahogany

Although modeling tools are a necessity in clay work, it must not be forgotten that

it is the feeling in the fingers which should be cultivated, and that tools are made for the small detail work which the fingers are not able to do. These tools are generally of polished box wood, although some made from wire are useful in many ways. Good tools are made from the closest grained woods only, and must be kept clean; for if any clay be allowed to adhere to them, they will drag the clay and injure the model.

While the professional modeler has many kinds of tools, one or two will answer for the young craftsman. A tool from six to eight inches long with one end shaped like a knife blade and the other spoon shaped, will be sufficient for ordinary work, and ought not to cost more than ten cents. Kindergarten children do not need tools, but can do their work with their hands and some pointed stick, or pencil, for indicating eyes or feathers on a surface.

Small children not only develop great dexterity in clay work, but the attempt really to make a fish, or bird, calls forth such willing attention and awakens such curiosity that parents are delighted to see their children acquiring knowledge first hand, instead of from books. Suppose a boy makes a hen's egg in clay, then places a ball upon the larger end, which he gradually converts into a head, thus evolving from the whole a duck or a chicken. While the object may

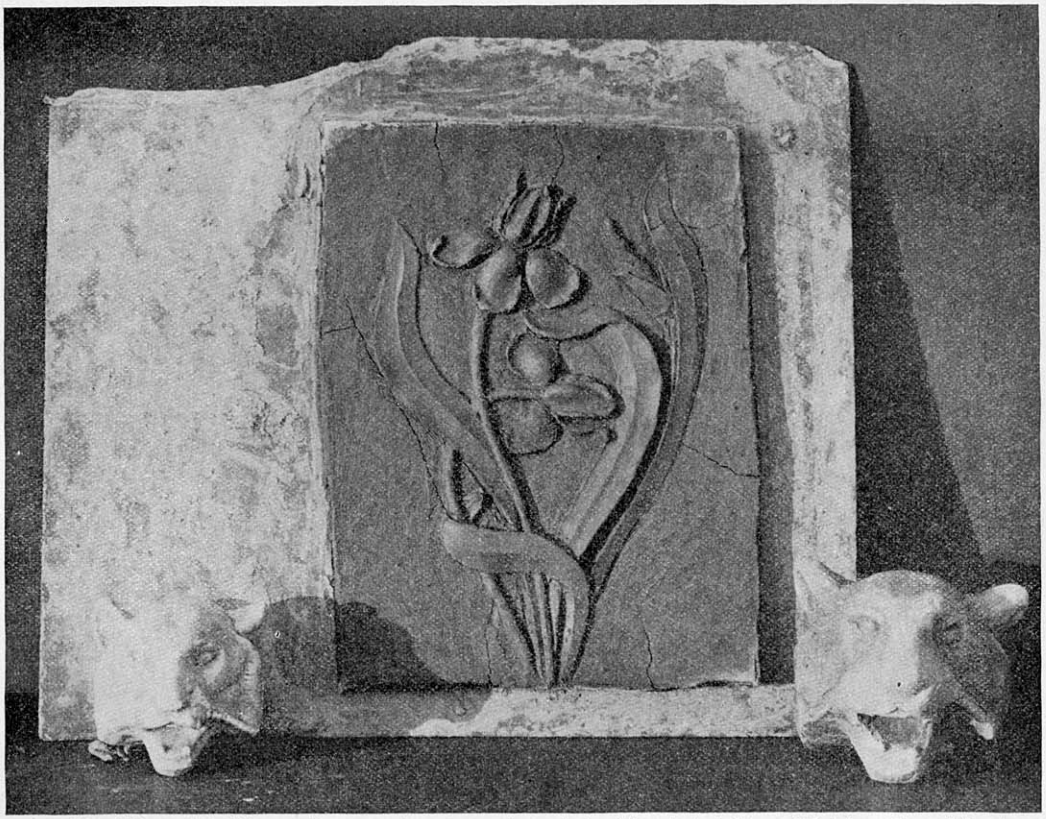

Figure IV. Iris modeled by pupil preparatory to carving. Animal head at right modeled by a boy of fourteen

be grotesque, it will compel the child to note the next time that he sees the bird, the exact number of its toes, or the shape of its bill, or whatever detail that gave him trouble. Fruit and vegetable forms and those of reptiles and birds are a source of profitable pleasure to a child, and not mere busy work. After the clay has dried, additional pleasure may be gained and a feeling of reality created by allowing the children to color their studies with common water colors, a banana yellow, or an apple red. The molding of little cups, saucers and other vessel shapes, is a valuable exercise. The vases in the illustration (No. 2) were made by six-

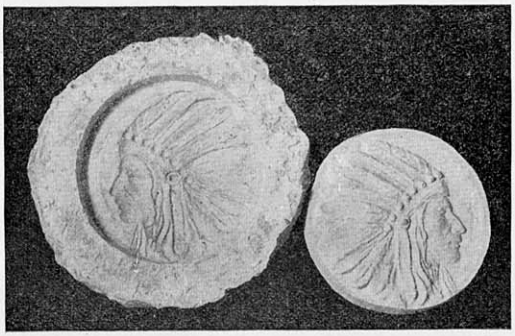

Figure V. Plaster mold and cast from wax model

year-old children. When the shapes were dry, they were taken to a pottery at which for ten cents each they were glazed and fired. They are hollow, hold water, and are the pride of a number of fond parents.

If the model is to be left dry or bake, each piece of clay must be well incorporated with its neighbor, or it will break apart. It must be remembered that clay shrinks in drying, and again in firing, and, therefore, the clay model should be made larger than the size desired. The benefit to be derived from the correlation of modeling with nearly every school study, can not be over-estimated. Many of us have forgotten our geography, because we were expected to assimilate its dry facts, but not so with the child who models the plan of a country, the home and sled of the Esquimaux, or the Pyramids and other characteristic features of ancient Egypt. Thus, our knowledge clings to us as do our experiences.

There is hardly a study from botany to geology that could not be made more valuable and interesting, if correlated with modeling. In one school, children engaged in studying Physical Geography have modeled the different formations of earth, strata of rocks, coastal plains, etc. These were cast in plaster and remain as valuable illustrations.

It is quite common to discover advanced boys and girls who have drawn for years, and yet show that they are not sure which lines they have made to represent a form, and which to afford the background. Many times this feeble understanding of real shape lies undeveloped for years, and pupils go on making drawings which to them are a confused, incomprehensible mass of lines. They may, for instance, draw a cube in perspective many times, but they never know every edge, angle, or surface, as they do when they take a sphere of clay which they feel is round all over, and which they gradually convert by tapping different parallel sides, until the sharp edges of the perfect cube appear. They gain by this means a better understanding of a cubic shape than results from a hundred drawings.

A boy starts to carve a piece of wood: if he has drawn only and never modeled, the block of wood means nothing but the guide lines on its surface, and he often cuts away the very part that should remain. But let him model the form which he is to carve

(illustrations 3 and 4), and, as he fashions it with his fingers, he also fashions the same in his mind. Then the block of wood or any other concrete substance has a new interest. It is no longer a mere block, but it is the abode of beautiful acanthus leaves or of spring flowers.

In industrial and manual training institutions, when boys and girls meet concrete form for the first time, clay modeling constitutes the basis for the knowledge of reality that must later be used in shaping woods and metals.

Modeling is the direct opposite of marble-cutting, wood carving or metal work, in that the latter processes always require cutting away in order to release form, while modeling, except in accenting details, is always a process of building up from a smaller to a larger form.

For relief work we generally make a tile first upon the slate or board, and, following out Michelangelo's injunction to "carry our instruments of precision in the eye instead of the hand," we should endeavor to make this tile and draw the ornament upon it, as far as possible without artificial aids. A straight edge may be drawn over the surface to smooth it for the design, which should be drawn boldly, without fear or hesitation; since, in this case, there is no danger of spoiling the material. (When we see so frequently this hesitation and fear on the part of the children who draw, we regret it most heartily, for spontaneity is the basis upon which all forms of expression should be founded. In drawing, however, some teachers are so afraid that the child will spoil the paper, that they spoil the child instead).

After the drawing on the tile has beeen corrected, the form can be built up between the proper lines. If the object be a head or a flower, the planes of the relief will be made relative to the plane on the solid object, and the accented portions will be treated in proportion to the height of the relief.

If the form to be built up is a decorative arrangement, the tools will be found necessary to give the large, graceful movement of line, and for modeling the shadow edge of each part. In this work, the hand should move in direct and unrestricted sweeps.

In modeling a form in the round, there are three ways of securing results. The usual way is to work by lines. The model is frequently turned, and the clay work to correspond, so that the lines of each may be compared and made alike. In large life modeling classes, the model is turned every fifteen minutes, and the students are required to keep their work in line with the model at each turn.

One may also model by light and shade. The light falling on both model and clay work from one side, should give like shadow shapes on both. If they are not alike, the worker must build here, or cut down there, until they coincide. The third method is to trust almost entirely to our sense of touch, which will be eyes to us, as to the blind, if we will cultivate its delicate power of perception.

For ordinary work the embryo craftsman does not require a frame work on which to build his clay, providing it be wedged well into shape, but in figure work a skeleton, or armature, is required.

Modeling wax or composition clay is best adapted to small detail work. It requires no moistening, and, after the cast has been made, the wax may be used again. The

composition is purchased under the name of plastina or plastiline, at about thirty cents the pound. As the model is often a thing of beauty in the pliable condition, it may be made a joy forever, and every finger mark preserved by firing or casting.

Some knowledge of Plaster of Paris casting should be possessed by every one. While it is a mechanical process, at the same time, one must experience both failures and successes, before he can be certain of the result desired.

The illustration represents one of the simplest methods of casting. First, there is constructed a wall of clay, about an inch high and the same distance from the model. The finest plaster obtainable is then mixed, dental plaster being most desirable. The plaster should be sprinkled into the water, not the water poured upon the plaster. When the water seems no longer to absorb the plaster, the mixture should be stirred, under the surface, as much as possible, to keep the air out, until the plaster has the consistency of thick milk or cream; then, some of the plaster should be poured upon the clay or wax, and blown well over the surface, so that all air bubbles may be removed, and the smallest recess covered. Now the entire model should be well covered. Coarser plaster will do for the outside of the mold.

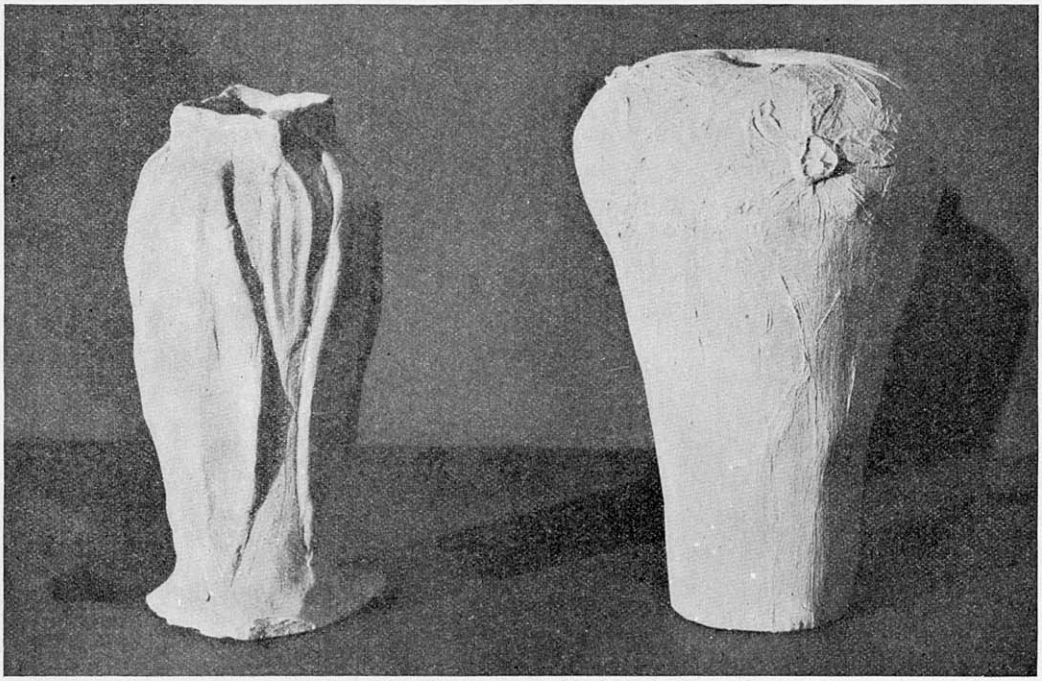

Figure VI. Vases executed entirely by hand

After the plaster has been allowed to "set" for about an hour, the wall may be removed, and the clay, or wax, cleaned from the inside of the mold, which should be thoroughly cleaned and dried (placing near the fire will hasten the drying process).

Vaseline, or some other greasy or soapy substance, should be applied with a small

brush to the inside of the mold, in order to prevent the plaster cast from adhesion. When the mold has been thoroughly washed with soapy water, a solution of soda or lye can be shaken over the inside of the mold and will answer the same purpose as the vaseline. Now more plaster should be mixed and poured into the mold, the plaster should be well blown over the surface, as before, and while the plaster is setting, a loop of copper wire should be inserted at the top for suspending the cast. If there are no undercuts in the model, the cast may be pried out at the end of an hour, and the same mold will answer for duplicate casts. But if there are undercuts in the model, the mold will have to be carefully clipped away from the cast with mallet and chisel.

This is called a waste mold, and when such an one is necessary, it is well to pour a few drops of blueing or other color into the plaster; so that the line of demarcation between the bluish mold and the white cast may be readily determined. In casting a bust or statue, a piece mold is necessary. Thin sheets of copper may be stuck into the clay model in order to separate the pieces of plaster where necessary; or part of the model may be covered at a time, and the edges greased, before the covering is continued. When sufficiently hard, these pieces may be removed with little trouble. Professional workers in plaster generally use gelatine or glue molds, and these are so elastic that the casts are removed from them with less difficulty than from the plaster molds.

The necessity of a knowledge of casting in all kinds of pattern making and many other pursuits, makes the study of modeling important, and the desire to cast the hand of a friend is not uncommon. These directions for casting are only suggestions, but an article on clay modeling would hardly be complete without some reference to plastic casting.

In conclusion, I hope that I have inspired a greater respect for the soil that often annoys us by clinging to our feet; for it is not only a valuable means for developing man's marvelous, God-given instrument, the human hand, but when confided to a true craftsman, it may be made to reproduce the smile of a child or to reveal the soul of a saint.

JAPANESE ART. BY WILLIAM MORRIS

THE Japanese are admirable draughtsmen, deft beyond all others in mere execution of whatever they take in hand; and also great masters of style within certain narrow limitations.

As a non-architectural race they have no general mastery over the arts and seem to play with them rather than to try to put their souls into them. In Europe the existence of the other arts is bound up with that of architecture.

All art must be related to architecture. It can not exist in any place where there is no security.

Earthquakes exercise a most important part in the artistic history of a nation.

Art has to bend before superior sway of physical phenomena.