

BULLETIN NO. 1 FOR SCULPTORS

May, 1960

MONTGOMERY STUDIO, R. D. 4, West Chester, Pa. or Northbrook, Pa.

Suggestions about products, answers to typical questions, and discoveries by students, supplementing directions provided in package.

MORE ABOUT MODOCLAY

Modoclay is a basically mineral composition which seems to hold its form permanently when properly treated with a water-resistant finish. Life size heads and figures have stood up for more than six years with no noticeable change except slight darkening which enhances the appearance.

Wet Modoclay keeps indefinitely in a tightly closed bag, but even a small hole will result in drying out of the contents. Such holes or rips in the plastic bag are easily repaired with Scotch tape. We have opened boxes after two years and found the contents in good shape.

Although it resembles regular clay, Modoclay handles differently. Beginners find it most satisfactory and are spared the special problems that come with ceramic clay. However, experienced people who expect Modoclay to be the same often express frustration at first until they accept the fact that it has unique ways of its own. Then they too become "satisfied customers".

One of the advantages of Modoclay over clay is that it does not dry so rapidly and you can keep some out, without covering it, while you are working. Although it takes days (or even weeks for a large piece) to dry, you can speed up the process without danger of serious cracking, even with an armature inside--i.e. it can be placed on a radiator, in front of an infra-red lamp, in an oven or in the sun. One of the greatest advantages is that wet Modoclay can be added to dry Modoclay. It is at this stage that you can work for detail and finish. And as a result, it is easy to repair minor damage or breaks in finished work. It is a good idea to glue separate pieces together first with Modo-gloss or Dupont Cement and then fill in around the crack with Modoclay.

Modoclay does shrink but probably not as much as fired clay. You can allow for this by working large, or you can adjust the proportions after the piece has dried. Sometimes there are tiny cracks but these are easily repaired. However, if you work in low relief and press the clay tightly on your working surface it will not shrink at all. It seems to stretch as it dries.

3 STAGES OF WORKING WITH MODOCLAY

1. Block in your figure with wet Modoclay. It is supplied in plastic condition, holds together easily and you can build it up rapidly. Cover it with a plastic bag between sessions.
2. Let the piece dry slightly for a few days so that it "sets" and provides a firm base as you work in more details. During this stage leave the cover partly open until it has the consistency you desire and then close the bag right when you put it away after working.
3. Let the model dry gradually by leaving the bag open more and more until you remove it entirely. Then you are ready for the finishing touches. The surface can be cut with a knife or saw, and rubbed down with a bit of folded aluminum mosquito netting or sandpaper. Wet Modoclay should be added in small bits which are carefully worked on to the surface. If the difference in color between the dry and wet surface is disturbing dampen the whole piece before working on it. Sometimes the added Modoclay dries a different color from the rest and this can be controlled by putting the cover back on, but leaving it partly open until dry. At the very end, when there is no more work to do, wet the whole surface with your hand or a paint brush. This pulls it together, hardens it and binds any dust left over from cutting and sanding.

BUILDING AN ARMATURE

After such experimentation we have found that the most satisfactory materials for armatures for Modoclay are wooden dowel sticks, aluminum armature wire provided by Art Stores, aluminum clothes line or copper wire. The advantage of dowels is that they tighten when wet, but screws and nails work loose. It is important to use rust-free materials, (as with plaster-of-Paris) because rust works through and spoils the surface. Another excellent material is styrofoam which can be bought at any florists. It is firm, light and can be trimmed with a knife.

For a life size head, use a 3/4" or 1" dowel fitted into a hole of the same size in a wooden base, and a block of styrofoam which can be forced down on the dowel by tapping it with a hammer. Leave an inch of styrofoam at the top for future adjustments. Cut it with a knife to make a proper size core. Rough the surface by jabbing it with a knife or the finger nails and press small bits of Modoclay on firmly to make a covering about a quarter of an inch thick. This binds to the styrofoam and large pieces of Modoclay will adhere to it easily.

For a figure armature, one or two feet high, use the 1" dowel and nail a lath to the top extending out like an arm. Bore holes in the end of the lath and the base to hold the ends of the wire armature firmly. Styrofoam can be used for the head and body with the wire running through it. Wrap string or wind wire around the armature to keep the Modoclay from slipping.

SURFACE TREATMENT

Each person has his favorite finish for sculpture. Any method used on plaster should work with Modoclay with the advantage that there is less danger of its chipping off.

To get complete coverage it is necessary to be able to reach all parts of the surface with a brush. Even if the surface is rough avoid deep holes.

Modo-Coat is the best product we have been able to find to protect the surface of indoor sculpture and retain the appearance of dry Modoclay. Those who use it find the effect is best if you add more coats where the solution continues to sink in so that you make the surface more uniformly water-resistant.

Modo-Gloss, which can be used over water color or oil paint, may be too shiny for your taste, in which case you can reduce the shine by adding a final coat diluted with an equal quantity of water added to the Modo-gloss. The mixture of Modo-gloss and tempora paint also gives a less shiny effect. One advantage of Modo-gloss is that by mixing it with paint you can have the full range of glazes with one solution instead of buying separate glazes. A good finish is black, which resembles ebony. It can also be combined with bronze powders.

On plaster-of-Paris using the combination of paint and Modo-gloss is more satisfactory than painting it first with water-base paint because this may not stick to the plaster.

A hint to sculptors who like to paint - Modo-gloss is a fine medium to use with water colors for pictures.

Sculp-Metal has held up well on Modoclay or plaster in all weather and all seasons.

SCULPTOR'S WAX

We are fortunate to be able to supply sculptor's wax to our customers as a new service. For interesting information about this, we suggest the book by Frank Eliscu called SCULPTURE TECHNIQUES IN CLAY, WAX, SLATE, published in 1959 by Chilton Company - Book division, Philadelphia 39, Pa. Perhaps you can find it in your local library.

Dorothy Ford Montgomery

AUGUST, 1961

NEW WATER-PROOF MODO-COAT

We finally have a water-proofer that really seems to do the job. It was developed especially for Modoclay by a chemist. A vase held water for weeks with no change. A head treated with it withstood 20' below zero temperature outdoors this past winter. The summer sun does not seem to affect it. If you wish to make a plaster cast it seals the surface of Modoclay effectively. We are putting it out in a thin solution that has very little shine and retains the surface texture. It is important to follow the directions carefully to be sure the surface is completely covered, but it is very easy to apply and one or two coats may do the job. It should be kept away from children. This was tested for 6 months before ordering it, but we have yet to learn all its potentialities.

BRONZE FINISH

Modo-gloss mixed with bronze colors is an excellent and quick finish for sculpture that is to be kept indoors. You can make any color you wish or imitate any patina. The best results come from a mixture of several colors of the bronze powder. This avoids the look of "radiator paint," and gives a vibrating, truly metallic effect. Apply paste wax when finished and touch up the high spots with a little bronze wax allow a few minutes to dry and rub lightly with a soft cloth. You can apply other coats of this combination if you are not satisfied.

Modo-Coat can also be mixed with bronze powder where water-proofing is important, but the finish does not have as much body as the Modo-gloss mixture.

Resin and catalyst mixed with bronze powder provides a tough protective coating where surface detail is not important.

CASTING SCULPTOR'S WAX

If you would like to cast small wax figures or heads, we have worked out a simple procedure, using Modoclay for the mold, melting the wax in your kitchen oven and filling it with dental stone, or regular Plaster of Paris.

1. Soften Modoclay with water and press small bits on the surface of the wax, pushing hard to get a good impression. Add more Modoclay to this so that you have a mold approximately 3/4 in. thick all over. Leave the bottom open. If you have a wire armature remove the base. The wire will help support the plaster cast and the ends can be imbedded in a new base. Flatten the top of the mold so it will stand upside down when you pour the plaster.

2. Place the mold and wax on a wire rack over a shallow pan so that you can see the wax drip from the mold. Put a larger container with water under the pan or place a sheet of foil with the sides turned up to receive the wax and under that place about 1/2 inch of water. This combination is the principal of the smokeless broiler and keeps the wax from over-heating and smoking.

3. Turn on the oven, set at 450' for Montgomery Studio Wax or 325' for one containing natural or bees wax. Check frequently, lower heat if it smokes. When the wax stops dripping into the pan remove the mold with care not to squeeze it.

Although the outside may seem hard after drying in the oven, the inside remains soft which is important when you remove the mold from the cast. If there is still solid wax in the mold, reheat it until completely melted. However, there is always a slight residue of wax on the surface which serves as separation from the plaster and causes little loss of detail. It may take between 30 and 45 minutes for wax to melt or more.

4. Mix the plaster, set the mold upside down and pour within about an hour. If you delay, the outside of the mold soaks up the moisture from the inside and becomes too soft to handle. Provide several small vent holes to release the air when you pour the plaster. These can be sealed with Modoclay when the plaster seeps through. Do not disturb the mold until the plaster sets, and hardens. Then peel off the Modoclay with care. You should have a good reproduction of your original. This would be difficult or expensive for small objects with the conventional methods of making plaster casts.

5. Make any necessary repairs or changes with plaster or Modoclay. For the final finish you can use Modo-gloss mixed with bronze powder or with water-color paint.

PRESSED MOLDS

Modoclay can be pressed into plaster molds with the technique used for pressing ceramic clay. You can get sharp, accurate reproductions of low relief plaques. Use a loop of wire, imbedded in the Modoclay with a bit protruding at the top as a loop for hanging. This also serves to reinforce the Modoclay which should be about 1/2 inch thick, or more for large plaques. A large piece of sculpture has been reproduced by pressing Modoclay on each section of a plaster mold and fitting the pieces together as soon as the Modoclay is hard enough to handle. This made a strong hollow figure. For more information see Bulletin #3 or "Modoclay for Crafts".

The information provided in this bulletin supplements Bulletin #1, of May, 1960 which is available on request. New discoveries are being made constantly by the writer, students and buyers which we endeavor to share with our customers. We welcome suggestions, information and questions that might be used in preparing future bulletins.

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New Information About Modoclay

Modoclay is more moist. This is the result of tests with different mixtures by children and adults. Almost invariably they preferred the samples which were more moist because they stuck together better, made coils more easily and seemed to have a smoother finish. Also it worked up more quickly. So now we add a bit more water. If too moist for your taste, simply leave the bag partially open for a day or so. On the other hand if your Modoclay seems too stiff, add water and seal the bag tight.

Let Modoclay dry. If you are working on a piece of sculpture over a long time, we suggest that you block in the rough shape and let it dry thoroughly between sessions. Then you can carve it with woodworking tools and chisels, or rasp the surface. Of course you can add wet Modoclay to the dry. If the difference in color bothers you, spray it with water. For final finishing, smooth the surface with a fold of aluminum screen wire, or sandpaper, and finally dampen it with water and handrub it lightly.

An ordinary egg carton can be securely attached to a wooden dowel or wire armature when making the inside core for a head or figure. Modoclay holds well on it and it does not seem to be affected by moisture. Wrap armature with twine rather than fine wire to hold the wet Modoclay more securely.

Modoclay has been used as a grog when making tile mosaics. Apply Modo-coat to waterproof the joints when dry.

MORE ABOUT MODO-COAT AND MODO-GLOSS

Modo-coat with Oil Paint. Do not apply Modo-coat as a varnish over oil paint because it will dissolve the paint. However, you can mix Modo-coat with artist's oil pigments and apply it to your dry model. It dries like a dull or mat pottery glaze. Over this you can brush a mixture of Modo-coat with bronze powder, touching the high spots, letting the color underneath show through, and you will have a realistic bronze patina. You can now order a set of bronze colors and select modo-coat or modo-gloss to use with it.

Modo-gloss has proved more and more useful in schools as a glaze and as a glue for stones, seeds and other collage materials, on wood or stiff cardboard. It is now supplied in sets of 12-2 oz. jars for classroom convenience. One advantage is its lack of a strong objectional odor. And of course the fact that it is water-soluble when wet. But if brushes dry hard by waiting too long they can be cleaned in laquer thinner.

Permanent color may be important in work that is designed for strong light, outdoors or when it is created for permanence. In this case it is important to secure colors guaranteed non-fading by your art supplier.

FREE BULLETINS

Bulletin #1 - May, 1960 provides detailed instructions about working with Modoclay for sculpture, building an armature and surface treatment.

Bulletin #2 - August, 1961 gives detailed instructions about our own method of casting a wax figure by covering it with Modoclay and melting out the wax in the oven of an electric stove. Then the mold can be filled with plaster of paris. It can also be filled with plastic resin, colored or mixed with bronze powder. (Write us for a formula if you need one for the resin mixture.)

As an after thought, we wish to point out that the principal of casting with modoclay and wax is simple. But each model is a special problem when placing in the oven in such a way that the wax melts freely and you can see it dripping into the underneath pan. But unless you can see this, there is danger of damaging the mold when you remove it to inspect it. Wait until wax stops dripping before moving the mold and then do so with care not to squeeze it. It is wise to experiment with samples so that you learn the process before casting a valuable piece of work. You can use disposable broiler pans for catching the melted wax.

Bulletin #3 has developed into the booklet, Creative Crafts with Modoclay. It is being revised to include more information for adults.

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HISTORY OF MODOCLAY

The following article by Roberta Roesch is presented in full as a brief biographical sketch of the development of Modoclay and the Montgomery Studio business, by courtesy of the King Features Syndicate Inc. A footnote gives an explanation of the difference between pottery clay and Modoclay.

DAILY LOCAL NEWS West Chester, Pa., Mon., Mar. 18, 1963

Artist Created A Clay That Wouldn't Break

ROBERTA FLEMING ROESCH

We love writing stories about our readers!

So today we're reporting the story of Dorothy Ford Montgomery of West Chester, Pennsylvania who recently wrote us about a business at home that she developed because she had both a problem and a unique idea.

"I began worrying in art school about the way art students often had to break up their completed clay figures and throw the clay back into the bin because of difficulty in keeping the figure from breaking," Dorothy wrote.

Common Occurrence

"Unless the students had the money to cast their work in plaster or an available kiln in which to fire their figures this often happened.

"Later, when I taught art in a veterans' hospital, I faced this problem again and worried about it more because the men wanted to keep what they made and couldn't since they had no kiln."

Children Cried

Still later, when Dorothy began teaching at a private school for children, the problem bothered her more and more as she saw how the children cried when their clay models broke.

She decided to try to do some-

thing about it and after several years of experimenting with all kinds of formulas in her home she managed to come up with a promising formula for a self-hardening clay.

Urged To Sell

At first she had no intention of going into business. But teachers kept urging her to put her product on the market.

Finally, because she was aware of the needs of teachers, children, schools and artists through her own work and teaching, she began her present business by sending out 25 descriptive brochures. Later she advertised in selected magazines.

When her first order came in, it was for 25 pounds of clay.

"It took me one weekend to mix it by hand!" she wrote.

Presently Dorothy's orders range from requests for small samples to requests for one hundred 25-pound boxes for a single school system.

By now Dorothy—who has done every part of the process of mixing, packing and running the business herself—has a helper and a part-time secretary. But she constantly checks on the quality control of her clay herself by taking

boxes out of her stock for her own work. She also uses her experience and philosophy as a teacher to write directions and booklets to encourage the most creative use of her product.

Important Extras

"When you want to provide a worthwhile service in your business, all of this is important," she wrote.

"It's also important to get good legal advice when you start a business.

"When you start, you need to feel your way along and go one step at a time with both feet on the ground. You have to track down supplies to their source in order to buy them at the lowest cost. You also need to ask questions.

Try To Help

"Through the years I've found that both big and little companies from whom you make purchases take an interest in your problems and try to help when you ask."

If you'd like to receive information on a book on starting your own business, send me your request and a stamped, self-addressed envelope in care of this newspaper.

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Note: Ordinary pottery clay dries fragile and must be fired in a kiln to harden it. If applied to an armature the natural shrinking of the clay in drying makes it crack and fall off whereas Modoclay stretches as it dries and therefore does not crack to any extent. Modoclay dries as hard as soft rock and is less apt to shatter than fired pottery or plaster if it is dropped. Any surface dents are easily repaired by adding wet Modoclay. If loose joints come apart they can be glued back into place. As a result students can now keep their work as a record of their progress, children make treasures they can take home and professional sculptors have a creative, useful medium to work with.

Dorothy Ford Montgomery