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IN THE SCULPTOR'S STUDIO.

We know that an artist produces his pictures by means of brushes and colours on canvas and that the architect operates with T squares, compasses and angles, but of the instruments used by the sculptor in the production of his glorious art we are almost, if not quite, ignorant. We stand and admire a beautiful work in marble or in bronze, believing it from beginning to end the work of the sculptor.

This is not at all the true state of the case, for there is many a sculptor nowadays who has never had a chisel in his hand, and certainly would be at a loss if he had to work out in stone that which his imagination had created. The instruments he uses are his fingers.

The chief point or centre of gravity, as it were, of the true artistic creation lies in the sculptor's art, as elsewhere, in giving form and substance to some beautiful thought of his imagination, and this can only be accomplished by successive experiments and alterations, until at length the right expression is found and the artist is satisfied.

The first thing requisite after the imagination has created the picture is to find a material that will readily lend itself to working it out, and which will at the same time permit the author to correct and alter without undue difficulty, and this the sculptor finds in what is called modelling clay. This is a grey-yellowish, or brownish-coloured oily earth, at once pliant, soft and tough, and being kept

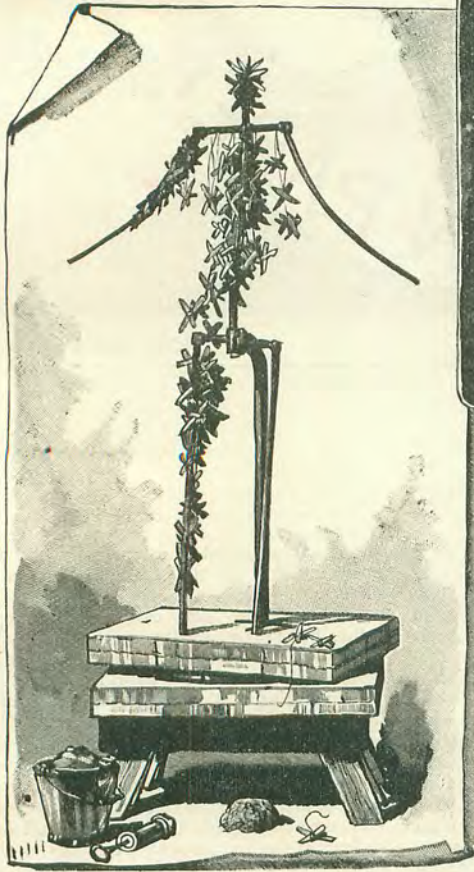
in order by constant moisture gives the artist every facility in the manipulation of his subject.

The sculptor, like every other creative artist, begins by making a rough sketch or model of the creature of his fancy which serves to fix and regulate his conception while working at the real figure, and enables him to alter it at pleasure, which would otherwise be difficult. This model, although on a small scale, must bear a resemblance in position, features, and drapery to his future work of art, and must be so well done that it will serve as a guide throughout. All being so far satisfactory the sculptor begins to think of carrying it out on a large scale, and it is here that his difficulties meet him. We will



THE SCULPTOR AT WORK.

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twenty to thirty hundredweights. From exact and careful calculations of the rough sketch already made, this frame is prepared in such a way that iron rods and, where possible, strong lead pipes, often gas-pipes, whose flexibility facilitates later alterations, give the body as well as the extremities a secure inner support.

To prevent the clay slipping down by its own weight, bundles of wooden crosses are fastened with thread to the frame in all directions and in such a way that the clay is held up by them. The above illustration shows the figure of the Saviour with out-stretched arms, and beside it the corresponding frame with the wooden crosses.

When all parts of the iron frame are covered with varnish to protect it from rust it is placed on a strong plank and stood on a turntable. All being now in readiness the sculptor takes the well-kneaded clay and begins upon the naked figure, for although it is his intention to clothe it with a rich mantle, this will not prevent the necessity of

bestowing the greatest possible care upon the body.

However voluminous the folds on a figure may be, there are always certain places where the body is visible, therefore every limb must be natural and anatomically correct; the less drapery the finer must be the work bestowed on the naked figure, that it may form a harmonious and beautiful whole.

The drapery is first tried on a lay figure, which admits of every possible position, and on this the sculptor spends hour after hour patiently arranging the folds before he can obtain the desired effect. This being arrived at he commences to carry it out in clay, the execution of which often lasts months, and even years if the figure is life-size, and from beginning to end the work consists in constantly altering and adding to the details. We must not think that a work of art springs perfect out of the artist's head exactly as it looks when completed. It is in truth a mute witness to the sculptor's untiring industry and patience. Perfection in the details, which the spectator takes as a matter of course, may have nearly driven the artist mad until he happily solved the riddle.

In order to improve the figure he often finds himself obliged to remove that which has taken him weeks to accomplish. In short, the impression that a talented artist has simply no trouble in carrying out the bright thought of his imagination is a mistake arising from ignorance. As regards a work of art, the first thing to consider is how it is to look when complete; but the painful labour and artistic work required to bring it to its final stage is a matter only known to the artist.

At length the clay model is complete; the critical eye of the sculptor can find no fault, it seems to him that it only lacks breath to make it live, and he signs his name on it with a sense of relief and satisfaction.

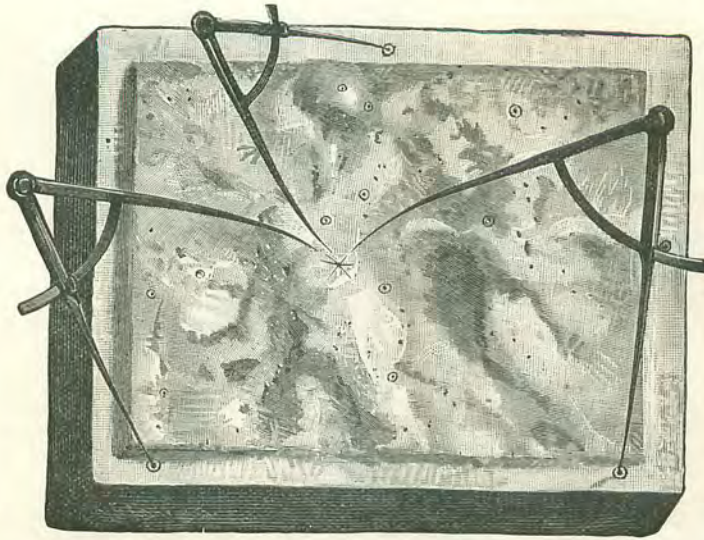
All that follows before the object of art stands before us in bronze or in marble is a matter of trade-work. First the model must be endowed with durability; the clay which up to this has been moistened from day to day has a beautiful life-like appearance, which it loses as soon as it becomes dry, and in this latter condition it becomes less firm and full of cracks, besides changing to a dull grey colour.

It is now that it passes into the hands of the caster, who makes a form or mould of it.

suppose that it is his intention to model a figure with outstretched arms larger than life; he cannot do this merely out of the soft but at the same time heavy clay; he therefore provides himself with an iron frame sufficiently strong to bear a burden of from

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Into this clay, the inner space being cleaned with water, plaster is poured; when this has hardened the mould is carefully broken off in pieces, and what was clay in its early stage stands before us in firm plaster. Although this sounds easy, the performance of it in detail is very complicated, and to explain the process of casting, as it is called, in order to distinguish it from the original form, we will take a simple bust. A band of thin sheet zinc is used to divide the clay bust into two perfect halves, back and front, and as you see by the illustration, the zinc band extends from the foot of the bust over the shoulder to the ear and over the crown of the head, and acts as a wall between the two parts. Clay is now mixed with water, to which is added a little red coloured bole. This is laid over the marked half of the model, which is bounded by the zinc wall, the layer being from four to eight millimetres thick, very smooth, and free of bubbles. In about five or six minutes this will have hardened; then a somewhat thicker layer of white plaster is put over it. A like operation is now repeated on the untouched half, and the bust is cast, surrounded by a shapeless mass of plaster, divided by a band of zinc. To draw this last out with a pair of tongs is not as a rule difficult. Should it prove so, all that is necessary is to drive some wedges into the division, and the soft plaster cast naturally gives way under this treatment, and the cast lies in two halves, the exact negative of the original; bits of plaster sticking to them are removed, the whole washed clean, sparingly oiled and firmly bound together. Now comes the real casting; plaster is again mixed, and is poured through a hole into the mould until the latter is full, and the plaster occupies the place that the clay, worked by the sculptor formerly occupied. When the mass has become firm, the mould is knocked off with hammer and chisel, first the outside white layer and then the inner red one. When the workman gets to this he says, "Look out, we are coming to the model." You see if the form and the cast were of the same colour, the latter might easily be damaged by the chisel. Even as it is great caution must be observed.

With more or less important deviations, this is briefly the process of casting. It is more difficult with large and complicated subjects, because in that case the mould consists of several pieces. It is simpler in a relief, but this of course is clear to any intelligence.

Now we have before us in durable plaster that which issued from the sculptor's hand in soft clay. Here and there is still a little

blemish to be removed, otherwise the work is perfect. What is still lacking, however, is a certain charm which fascinates us in a finished marble or bronze figure. Plaster, however excellent for practical purposes, has little or none of it. Its chalky whiteness excites no real pleasure, and even if it were tinted there would still remain a certain dullness.

Again, it can only be said to be durable in comparison with the original clay. In the open air it would soon become weather-beaten, and fall a victim to every ill with little or no power of resistance.

It is plain, therefore, that a plaster model is a step only towards a representation in some durable and noble material such as bronze, stone, and, for works of highest art, marble.

It must be remembered that these steps from plaster to stone and marble are merely copies or reproductions, demanding great skill and compelling our wonder and admiration, but at the same time must not be classed as artistic productions. The latter is finished with the clay or original model.

The sculptor now gives his work into the hands of the bronze casters, or stone, or marble artisans. It would take too long to enter into

the full details of bronze casting here; but it will be possible to give an idea of the work in marble, which we all regard with special admiration.

By no means to lessen the merits of skilled artisans in marble, but rather to lead public admiration into a right channel, we would say that, notwithstanding the high artistic skill which they exercise in the treatment of the nude, the hair and the drapery, their work is after all nothing but copying with the aid of various mechanical instruments.

We will now give one or two illustrations showing how the worker in marble sets about his task. He determines the principal points for commencing by means of compasses. If the model be a bas-relief, he will enclose it in a frame and have his block of marble of a like size. If you watch the model and the copy, you will see three punctures, one at each corner of the base and one in the centre of the top; a fourth marks the most prominent point. The distance from it to the other points is taken by compasses, one point of each being in its own proper hole, and the other points uniting in a spot as fine as a hair denoting the most prominent point of the model.

In the same manner the other chief altitudes are found covering model and stone with a network of punctures, until finally the distances between each one can be worked freehand. New claims are now made on the artistic skill of the workman, for he has with various kinds of files and chisels to indicate here the fine texture of the skin and there the hair and the dress—in short, to endow the cold stone with the life, softness and tenderness which the artist infused into the pliant clay. In this manner—that is, by puncturing—only reliefs and like subjects can be treated. Great and noble ones require other handling. They are pricked out by means of a cleverly constructed machine and in divers manners—look at the illustration. However the methods may differ, they all agree in this—that they never leave the carrying out of the copy to the sympathetic look or the artistic eye, but to the reliable instrument; there is not a particle of guess-work.

Now that we have followed the work of art up to the time of its representation in marble, it still remains to speak of some kinds of replica, especially those in plaster. This is like the casting we have been explaining. If, for example, a bas-relief, say a medal, is to be duplicated it can be done





in two ways, most frequently by means of a glue or gelatine mould. Over the oiled model a layer of clay is spread as thick as a finger, and this again is covered with a still thicker layer of plaster, this last being called a hood. When this is firm it is taken away, the clay is removed and the plaster again laid on the model. Between the "hood," and the model there is now an empty space which is filled through an opening with melted glue. After three or four hours it has cooled to an elastic mass which naturally has received the impression of the model underneath. This mass needs varnishing and oiling, and it is then ready to form the model for a whole string of casts until indeed the glue dries up by dint of gradual evaporation. One advantage of this

kind of replica is the comparative facility of restoration, beside which the finished casts show no seam or join.

If it be desired to produce a durable work in plaster it cannot be taken from the model, because in the cavities from which the gelatine has still to be taken it would stick fast. This is why a plaster cast has to be in so many pieces to allow of them being removed singly. For this reason they are called piece or wedge-shaped casts. They last with good handling for a long time, but have this disadvantage, that the cast is covered with a great many seams which indicate where the various pieces are joined. More or less carefully worked out all the plaster casts that we see in use were produced in this manner. Some casts, after the oper-

ation is complete, are exposed to a bath of boiling stearin, then they are called "ivory mass." We have still to mention among other means of duplicating figures of burnt clay. They are worked into shape by the fingers in separate pieces, put together and placed in the oven to be burnt. It is necessary for these to be as hollow as possible, as they must naturally be remodelled after the joining together, and this is not always done by an artistic hand, and thus they are robbed of a good deal of value. These must not be confused with original terra-cottas we see in exhibitions. Here we have to do with the personal work of the artist, which after being modelled is dried and burnt, and naturally there is a difference of price in the one and the other:

TEARS.

By M. HEDDERWICK BROWNE.



THE tears of Rage are poisoned drops that burn
And make of life's glad cup a funeral urn.

The tears of Joy are but pure pearls that rise
From the full heart to scatter from the eyes.

The tears of Grief are like soft healing showers
That make the stricken life bring forth fresh flowers.

But tears of Pity, each is such a gem,
God gathers it for His own diadem.