

## How a Sculptor Works.

BY ALFRED T. STORY.



HERE is, perhaps, no art that is less understood by the general public than that of the sculptor. The prevailing idea is that he takes a piece of stone or marble, and goes to work with hammer and chisel till his bust, statue, group, or whatever it may be, is produced. But although it is said that Michael Angelo could do this, it is open to doubt whether he ever did. Certain it is no modern sculptor would dare to attempt it, and chiefly—and in the first place—because a false stroke once made, it is impossible to rectify it, and the marble is spoiled.

Hence, in all important works, the sculptor's first care is to make a sketch of

out of that. Such, however, is not the case. The clay is taken bit by bit, and placed on the framework, or skeleton, where the anatomy requires it, great care being observed to preserve the relative size of the masses, and the exact angles of all the planes, which should be kept as square as possible. This is continued until something like the figure desired has been shaped. Then the details are worked in, either by the hand or by the proper modelling tools.

The manner in which the figure grows into form and shapeliness will be seen from the accompanying photographs, which have been taken so as to exhibit the work at each stage. To do this two simple forms were deemed best—one that of a horse, the other

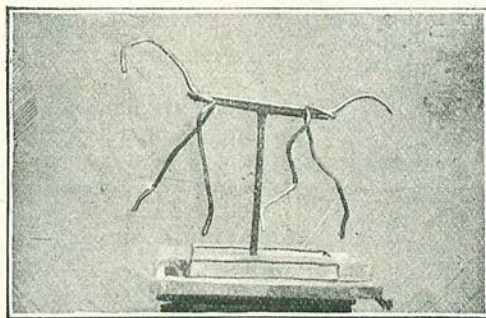


FIG. 1.

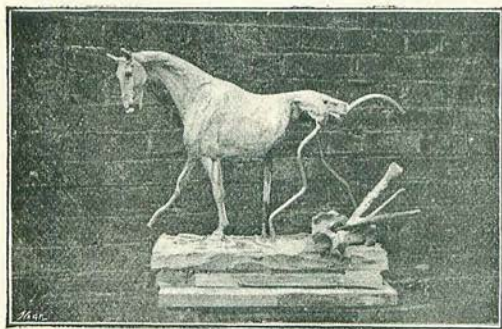


FIG. 2.

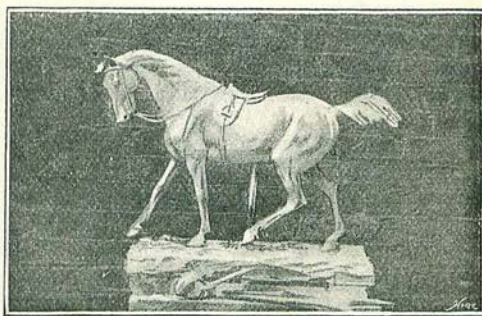


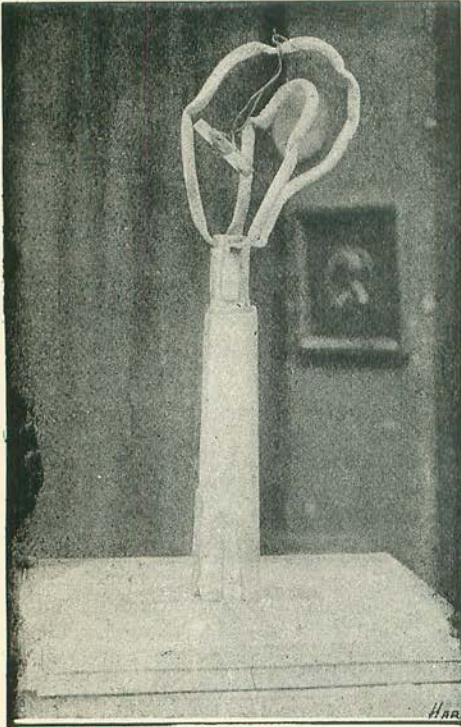
FIG. 3.

his proposed group or statue. This is called his sketch model; and, in making it, he goes to work exactly as he must needs do in executing the larger design. That is, he must, first of all, construct a framework upon which to build up his figure. Many persons suppose he merely takes a piece of clay of about the size of the proposed work, and gradually fashions his figure, or figures,

the head of a sitter. By this means the reader is more easily enabled to grasp the a b c of the method. The photographs of the horse explain themselves. Fig. 1 shows the skeleton upon which it is built, Fig. 2 the form partly developed; while Fig. 3 exhibits the completing stage.

As regards the photographs of the bust, more explanation is requisite. They do not





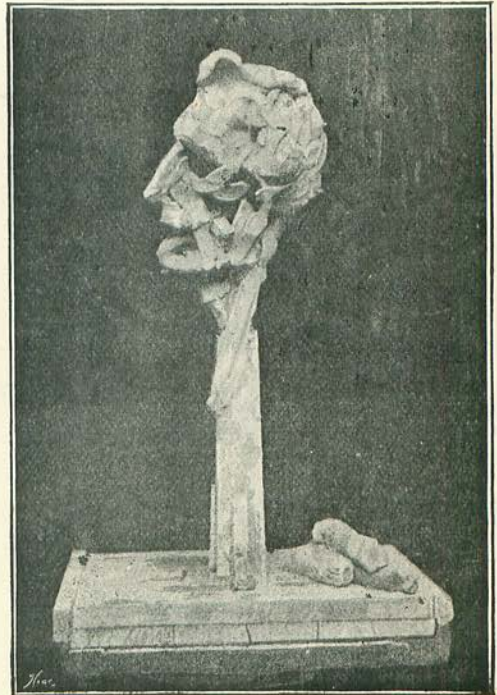
THE SKELETON.

represent the making of a sketch-model, but a life-size bust. The method is the same in both cases, however ; while in the case of the bust the manner of working with the clay is better exemplified than in that of the horse. Moreover, this series of photographs enables the reader to understand another important department of the sculptor's art. The scaffolding, so to speak, is simpler than in the case of the horse. An upright "peg," some twenty inches in length, tapering towards the top, is fixed into a wooden platform about eighteen inches square. This platform, to prevent warping, is formed of two pieces of wood, the lower piece having the grain of the wood reversed. The peg is simply a stay to hold up the bust. Sometimes the bust is built upon a support shaped like a Latin cross, the transverse, or shoulder, fitting into a slot cut in the upright. In the photograph, however, only the peg is shown, with the addition of what are technically known as an "armature" and a "butterfly." The former is constructed of thin gas-piping, and is used for the purpose of enabling the artist more easily to modify the set of the head, if there be occasion to do so ; the leaden piping enabling it to be

flexed this way or that, according to the peculiarity or habit of the sitter, which is not always perceived at a first sitting.

The "butterfly" consists of a small cross-piece of wood, shaped like a Greek cross, and attached to a piece of wire, by means of which it is suspended from a nail driven into the top of the peg, or, as in the present instance, from the "armature." It hangs loose from its support, and in the modelling is pressed against the upright or framework. It is not always used by experienced artists ; but even they find it useful when the head of the sitter moves to and fro. It is used very largely in all important framework structures for sculpture.

The artist now goes to work with the clay, applying it and building up the bust with his hands, his best tools. With the fingers broader and bolder work can be produced than with any tools, no matter how elaborate. Old Nollekins, the sculptor, used to say : "My best tool is my thumb." With the fingers the artist has more freedom in handling the clay ; whereas by working with even the best tools he is apt to get his work "niggling," as if a water-colour painter endeavoured to produce effects by stippling or cross-hatching, instead of by bold washes. A sculptor said the



FIRST STAGE.



other day that he believed that if the famous frieze of the Parthenon was first modelled in clay, no tools save those nature endowed man withal were used, the general effect is so broad and grand. He added that, in proof of his assertion, he would



SECOND STAGE.

undertake to copy the frieze, using his fingers alone.

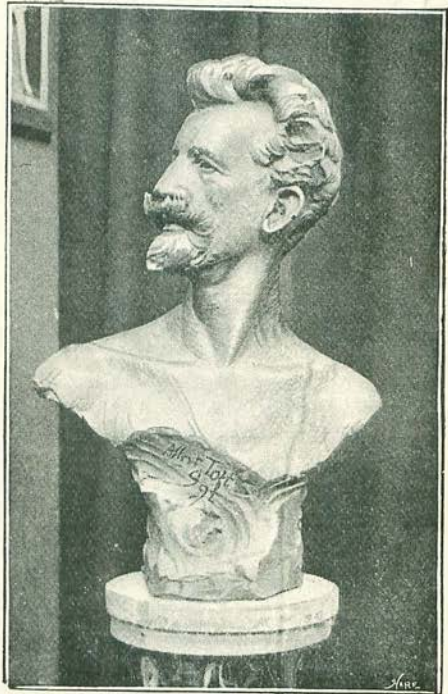
Of course, a portrait bust is not modelled in a day. To do one properly takes several days; for one reason, because the sitter becomes wearied and bored, and loses vivid expression if required to sit more than an hour or two at a time. In the case of the bust from which our illustrations are taken,\* however, all the stages were done in from four to five hours.

While the work is in progress it is necessary to keep the clay moist. This is done by spraying it with a garden syringe, or with what is sometimes called the "mouth syringe."

When the bust is finished, it is cast in plaster; but if it be intended to "fire" it, and make a terra-cotta bust of it, the operation of hollowing is necessary. This

is done by cutting off a part of the crown by means of a very thin wire or thread, and scooping out the inside till only a uniform thickness of about one and a half inches is left. When this is done the bust will come off the stick, with its "butterfly" and other attachments, like an old glove. There are four reasons for this hollowing—it lessens the weight, saves time in drying, eases the firing, and lessens the risk of splitting. The bust is now set aside to dry, and when it has become quite hard, and free from moisture, it is ready for "firing" (which is done in an ordinary potter's kiln).

We now return to our sketch-model, to explain the making of which our photographic illustrations and the necessary de-



FINISHED BUST.

scriptive text have been introduced. The model may be only a few inches in height, or it may be a couple of feet (the horse photographed was about ten inches), depending, of course, upon the subject—whether it is to be of ordinary or colossal proportions, and on other considerations. The model may either be worked out simply in the rough, in order to give the grouping and the proportions, or it may be highly finished. As a rule, however, the

\* The photographs are from Mr. Toft's bust of Mr. Cuninghame Graham, M.P., at present in the New Gallery.





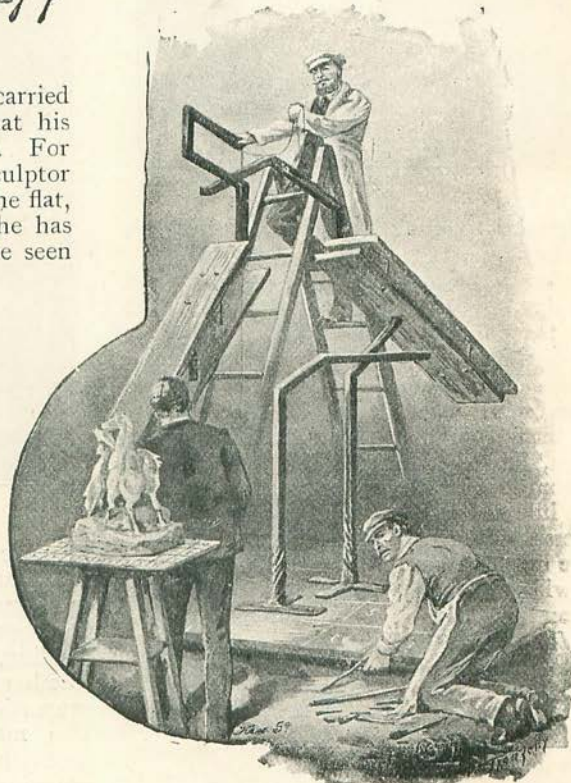
THE SKETCH MODEL.

sketch is not highly finished, but only carried so far as to enable the artist to see that his idea will work out to his satisfaction. For it must be remembered that the sculptor does not, like the painter, work on the flat, and so present but one view; but he has to bear in mind that his work will be seen all round.

Having completed this sketch-model to his satisfaction (which is frequently only done after months of thought), the artist's next work is to build up the skeleton for the statue or group of full size. This, of itself, if the group be at all elaborate, is a work requiring great precision and mechanical skill. In the piece of sculpture I have taken to illustrate the process of building up an ideal work\*, we have an equestrian group measuring 10 ft. 6 in. in height, 8 ft. in length at the base, by 6 ft. 6 in. wide. Each of the three horses has to be built up

on a framework which must be planned and fixed, not only with a view to the requirements of the action to be represented, but also to the weight of clay it has to sustain, which in this instance means several tons. In some cases the skeleton may consist simply (as in that of the bust described above) of an upright and a crossbar made of a piece of wood or a bit of gas-piping. But in the group before us the trunk and limbs of the horses have to be modelled on a framework of solid iron bars, and it has to be done with mathematical accuracy, or it is of no use. In order to secure this perfect accuracy, the plinth or base upon which the model is made is divided into a multitude of squares, all of which are numbered. In like manner the platform upon which the full-sized group is to be built, is divided into an equal number of symmetrical squares. This done, the iron supports (as shown in the illustration) have to be fixed and bent to their proper positions, etc., by careful measurement with the plumb line, square by square.

When the skeleton is thus completed



SETTING UP THE FRAMEWORK

\* The illustrations are taken from Captain Adrian Jones's "The Horses of Douglass," at present in the Royal Academy Exhibition.





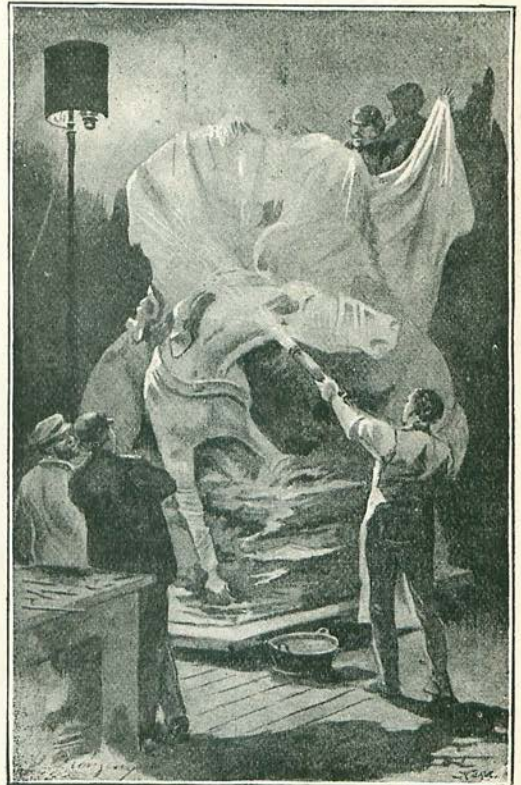
THE FIRST COVERING WITH CLAY.

(and fixed upon a turn-table, so that each side may be brought successively to the light and worked upon), the next thing is to begin the work of modelling with the clay. This proceeds, of course, from the base upwards. The more solid parts are filled up very largely with pieces of wood mixed with the clay. Then along the limbs, where the clay might slide off when left, if the clay be very wet, boards and "butterflies," as described above, are fastened at intervals along the iron bars that serve as framework. The latter, held in place by the copper wire on which they are suspended, and worked into the clay, give it support. This rougher and more mechanical part of the work may be done by a clever assistant; but when it comes to the actual work of modelling the form and the limbs, and giving life and character to the group, then the master hand and eye must needs come into requisition. For instance, it is very necessary to make constant reference to the living model, as also to the anatomical specimens, for correct measurements and action.

Not unfrequently after the work has proceeded thus far, and it seems to be all

but finished, the artist sees, perhaps, some details that do not come out so happily in the large model as they did in the small sketch, and consequently has to make some minor alterations. In any case, such a colossal work as that depicted takes months to build up in skeleton and model. During the whole of the process of modelling the clay has to be kept in a state of moisture by daily wetting and covering up at night with wet cloths; otherwise it would dry, crack, and fall to pieces.

Before covering up for the night, however, the artist takes a good look at the work that has been done during the day, comparing the masses one with another, in order to correct any inaccuracy as regards the relative sizes of the parts. This is best done in the half-light of the evening. The masses then render themselves in their true



WETTING AND COVERING UP FOR THE NIGHT.



values better than during the day, as in the broad light the detail takes away from the masses, while in the half-light the minor details are not seen.

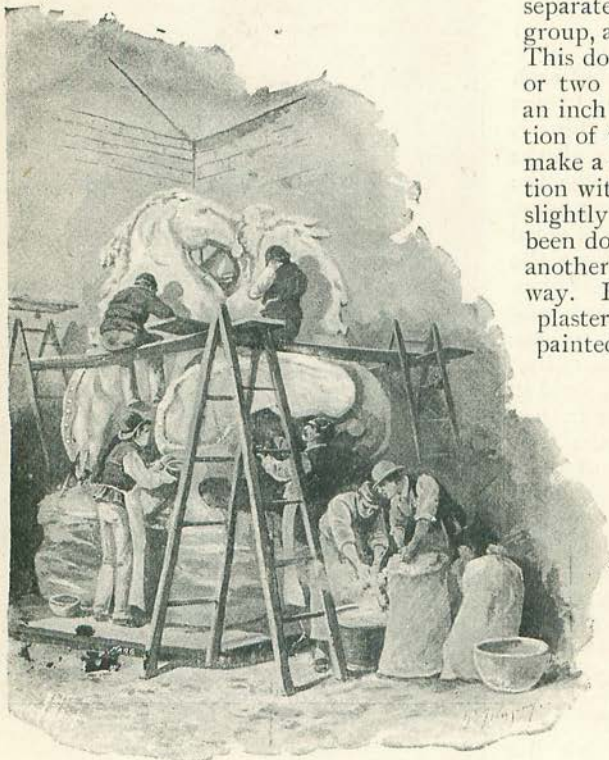
Here, perhaps, a word ought to be said about the clay employed by the sculptor. That commonly used is the china clay of the potter; but before now good work has been done with the clay of an ordinary brickfield. The quality and "state" of the clay, however, have much to do with good work. When the clay is "rude" and dry, it is put into a tub of water over night. In the morning, when the moisture has soaked well through it, and it is in the condition of what is called "slip," it is passed through a coarse sieve to get rid of the rough particles. It is then put on a board to dry, and there left until it is of the consistence of putty. New clay, in working, proves to be what is called "short"; that is to say, it is not elastic. On the other hand, when too old it becomes what is termed "rotten"—it lacks cohesion, is friable, and liable to crumble. In the middle stage it spreads well, is elastic, and, with less labour, produces better work,

having no "spring," and so preserving the intended form.

When the model has been completed, the next thing to be done is to make a mould on it. For this purpose the moulders are called in. Some sculptors do their own moulding; but if they are busy men it does not pay them to do so, the moulding of a large group being a long job. It is, moreover, a strictly mechanical operation, although one requiring much manipulative skill and a fine touch. The first thing the moulder does, when the model is handed over to him, is carefully to consider the way in which he is going to accomplish his task. The problem before him is how to make his mould in such a manner that he will be able to get out the original model, and especially the iron framework, when completed. When he has fully thought out his plan he goes to work, beginning, of course, at the bottom and working upwards. If there are awkward pieces in the way of the moulder (as in the case of the leg of the prostrate horse), or that might be easily broken off (as in the case of the horse's loose drapery), they are removed for the time being. Then he has to consider separately every point and corner of the group, and how he is going to mould them. This done, he takes a strip of clay an inch or two in width, and from half an inch to an inch thick, and with it marks off a portion of the surface of which he is about to make a mould. Then he fills in that portion with plaster which has been given a slightly yellow colour. When this has been done the strip of clay is removed, and another section marked off in the same way. But before this space is filled in with plaster the upper edge of the last mould is painted with clay-water. This is done in

order to prevent the next layer of plaster from adhering to it, so that the two portions won't part when required to do so.

In this way the entire surface of the part of the group that is to be removed is gradually covered. The process is naturally a long one, and takes days to complete, because of the difficulties to be overcome, if a complicated group, and the large number of pieces to be made. In this particular work the exact number was fifty-eight besides the solid portion, or case. During the progress of the work care



SETTING UP THE MOULD WITH PLASTER OF PARIS.



has to be taken to keep the model moist as before, and to see that nothing damages its surface. Each evening it is carefully wetted with the syringe, and covered up with moist cloths.

When the mould has been completed, the next operation is to take it apart piece by piece, or so much of it as will enable the clay model (together with the iron framework), which is no longer of any use, to be removed. If the mould has been well constructed, this is no very difficult matter. The syringe is again brought into requisition, and when the water has penetrated the joints of the separate pieces of the mould it moistens the film of clay deposited by the washing with clay water, and so allows the section to be prized out of its place with comparative ease. When the model has been sufficiently bared to permit of its being worked out that operation is begun.

When this is done we have before us the hollow mould in which the plaster cast has to be made. But, before proceeding with the cast, it is necessary to re-shape and insert the irons (or many of them) which formed the skeleton of the model. These are necessary for the support and strengthening of the group. The irons are further strengthened by wooden struts as the work proceeds. But before anything else is done the various pieces of the mould are carefully washed, so that no particle of the clay of the model remains. They are then given a thin coating of soft soap, and when that is dry they are slightly oiled, so that the plaster of the cast may not adhere.

The process of making the cast then pro-

ceeds. The moulder is supplied with bowls of liquid plaster, which he flings upon the inside of the mould with his hand. When he has thus put on a first thin coating he takes lumps of tow, dips them in the plaster, and applies them to give greater strength and coherence to the whole. This

is done until the inner surface of the mould is covered of a uniform thickness of an inch and a half to two inches. Thus, bit by bit, the entire mould is put together, and gradually filled in until the last piece has been adjusted and the cast completed. The separate pieces are fixed firmly *in situ* by the application of plaster to the joints; but where there is any strain or extra pressure they are held together by strong iron struts and clamps.

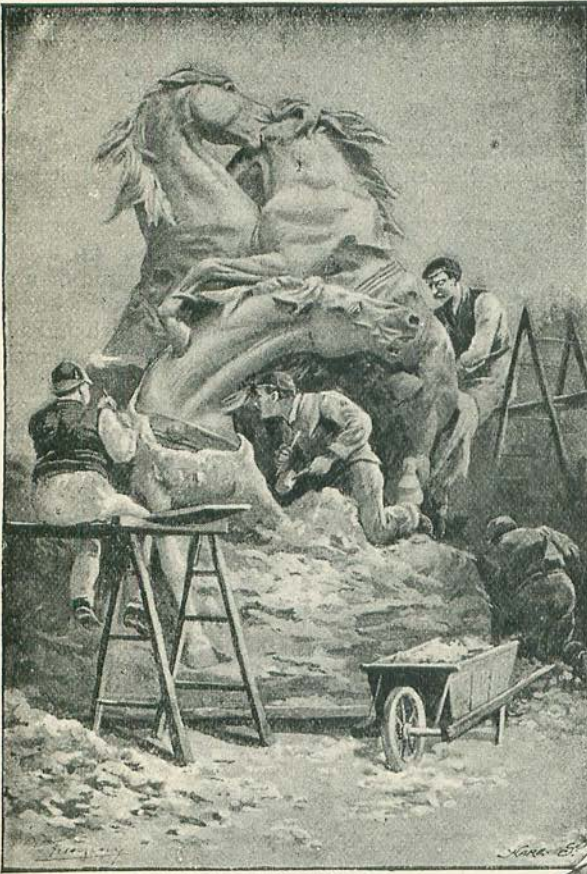
The next and last operation consists in knocking away the mould and laying bare the cast. In order

to do this, the moulder and his assistants go to work with mallet and chisel, beginning this time at the top and working downwards. When the iron struts and clamps have been removed, and the plaster holding the parts of the mould in position cut away, the mould itself easily comes off. The workmen are guided in this operation by the yellow colour of the mould. All the plaster of that tint has to be carefully cut away until the cast itself is reached. Portions, however, still remain in the hollows and undercuts, and these have to be deftly worked out with the proper tools. The process resembles nothing so much as digging out a huge fossil from its enclosing matrix, only a fossil is generally embedded in hard stone, while the cast is surrounded with soft plaster. At first the heads of the horses appear, then



TAKING OUT THE CLAY.





KNOCKING OFF THE MOULD.

gradually the whole of their bodies, until the feet are reached, and the whole group is disclosed.

This is the state in which groups of this description are generally exhibited at the Academy and other exhibitions, for the simple reason that it would not pay to put them in bronze, except in the execution of a commission.

But the work is not allowed to leave the artist's hand just as it comes from the casting. He has still to go over it and carefully remove the seams, and make up any defects in the casting; or he may add to the work, or even change it in minor details. This done, the group is ready for exhibition, with the exception of one more final operation. That is, it has either to be bronzed, or tinted slightly with oil or yellowish clay water (according to the

effect desired to be produced), the dead whiteness of the plaster not being pleasant or natural to the eye.

In case the work be carried to completion in marble or bronze, other operations have to be gone through which it would take too long fully to describe in one article. In proceeding to execute a group or single figure in marble, the model of which has been prepared, the first thing requisite is to procure a block of marble as nearly as possible of the required size, and, so far as can be judged from the outside, without fault. The pointer then goes to work, and, as may be said, roughs out the figure. What he really does is to prepare the marble by means of his chisel and a "pointer"—a measuring instrument which, adjusted to the model, and thence transferred to the marble, enables him to get the relative prominence and bearing of each part. When the pointer has reached, as it were, the rough outline of the figure, he is followed by a carver, who carries the work a stage



TAKING MEASUREMENTS.



further, coming, perhaps, to within an eighth of an inch of what will be the actual surface of the figure or bust, if such it be, when finished, thus greatly lessening the mere mechanical part of the labour, while leaving the artist with ample material and scope for alterations. It is now that the actual work of the sculptor begins, and that those final and finishing touches are given that invest the stone, as it were, with the breath and vigour of life. To many it would appear that, when the carver has completed his work, the thing is perfect, and there is nothing more to be done. But this, in reality, is the point at which the true artist displays his greatest gift for expression. Frequently, of course, both the pointing and carving are done by the sculptor, although, if he have much work to do, it pays him to employ an Italian pointer and carver, and so save time. Indeed, a sculptor is not usually of much account if he cannot carry through every operation, from the making of the sketch model, through the stage of casting, and finally to completion in marble.

It should be said that occasionally, when a work is to be executed in marble, more

especially if the composition be very intricate, and has, in consequence, been modelled in wax, the casting of the model is obviated, the wax or clay model itself serving instead of the cast. This, however, is rare, on account of its inconvenience, because an important work is sometimes months, if not years, in operation, and if clay is used the model has either to be kept moist all the time, or else it has to be fired.

When, in place of being produced in marble, the work has to be cast in metal, the labours of another craftsman have to be called into requisition, those, namely, of the founder or metal caster, whose operations constitute an art, and a very beautiful one, in themselves. For this climate bronze is the chief material used for outdoor statues and monumental groups, marble being reserved for inside work, especially the beautiful Carrara, which quickly perishes when exposed to the weather. Greek marble (the finest and most expensive) is alike unsuitable for our rough climate. The blue Sicilian variety, however, is harder, and will stand exposure, and is therefore often used for monumental work intended for the open air.



A LIFE MODEL.