

A Very Old Art.

EMBOSSING IN METAL.

"There is nothing too arduous for mortals to attempt."—HORACE, *Ode III.*

"Work is the condition of man."—CARLYLE.

HAMMERING in metal has come down to us from antiquity. Of its birth and early gradual development we have no history; in many aspects its working reminds us of the potter's-wheel, itself prehistoric, which to-day is the same as before man made records and wrote books.

The most ancient history records Tubal-cain as an artificer in metal; Genesis tells us simply in the fourth chapter, that he was an artificer in every article in brass and iron; legend following with the story that his sister Naamah was the first woman to spin. Nor is this all, for though we would assent at once that the word artificer implies a skilled workman, we further learn from Exodus of work by Bezaleel, the first goldsmith, and his fellow-worker Aholiab—and of not only the skill of their manipulating in metal but the beauty of its design—again especially the detail of the ornament. Modern research has confirmed this: owing to the labors of a Botta and a Layard, the great museums of the world have examples of the excavations at Nineveh, the bas-reliefs of which show the metal-work of the period of Ninus to have been "beautiful," as we use the word to-day. "The bracelets, armlets, on the sculptured figures, were adorned in a style worthy of the exquisite chasing of the Middle Ages;" and if you turn to the book from which I quote, Layard's *Nineveh*, and compare the early Assyrian ornament at Nimroud, and later at Kouyugik with the later Greek honeysuckle ornament, observing carefully the conventionalizing in both and (in combination) the honeysuckle and tulip in the Assyrian, it will be seen that the later Greek treatment has not so much the advantage in grace, while, if one allows himself the freedom in taste (which that gentle conservative Sir Joshua Reynolds yields in that much disputed quality) many will be found to award the grace to the earlier Assyrian for its lily-like uprightness and suggestions of fresh naturalness.

In Exodus the writer seems to revel in sheer enjoyment of describing the purity of the "beaten gold"—beaten into lilies and almonds; of knobs (boxes) and flowers.

"Of beaten work shall the candlestick be made; its shaft and its branches, its bowls, its knobs, and its flowers shall be out of one piece with it.

"And six branches shall come out of its sides; three branches of the candlestick out of the one side, and three branches of the candlestick out of the other side.

"Three bowls, almond-shaped, shall be on one branch with a knob and a flower, and three bowls, almond-shaped, on the other branch with a knob and a flower; so on the six branches that come out of the candlestick."*

And although the writer distinctly gives us to understand that these details were of divine inspiration, many, however orthodox, will incline to the *naïvete* of a later writer who says, "It is probable that the metallurgy of the Hebrews was not very unlike that of the Egyptians."†

As there has been so much doubt about the semi-branched candlestick (arch of Titus) being partly of Roman restoration, I will not describe it, but a really beautiful metal work, one of the bronze lions excavated by Mr. Layard of the time of Sennacherib is interesting from this fact alone as well as showing the love of ornament of these people who adorned such merely useful things as weights and measures, for this lion is one of a series of sixteen copper-weights.

In Solomon's reign the magnificence of the hammered gold and silver and copper is simply awe-inspiring. Owing to the abundance of gold, the state or royal furniture was made of it. His throne of ivory was partly covered with gold; two large golden lions supported it and twelve smaller golden lions were placed two and two on the steps that led to it; and in the house that Solomon built "on all the walls of the house round about he carved figures of cherubim and palm trees and opening flowers in the debir and in the temple."

"And also upon the two doors of oleaster wood he carved figures of cherubim and palm trees, and opening flowers, and overlaid them with gold and spread the gold by beating upon the cherubim and upon the palm trees."*

Of Hiram of Tyre we only know of him outside of his skill, that *his* father was a worker in brass, but that he was filled with wisdom and understanding and knowledge to make every work in brass," and that his ornaments were nets of checker-work, and wreaths of chain-work; network of pomegranates; also that the capitals of the pillars were finished with lily-work. The rim of the laver that held "two thousand baths" was "wrought like the brim of a cup with lily-buds," and the bases had borders and the borders were of pendant wreaths of plated (metal) work.

Indeed, the full and enthusiastic description of Hiram's skill has only a parallel in later times in that Michael Angelo in metal work—Benvenuto Cellini—whose boyish admiration of his own ornament causes the reader to smile as well as wonder.

The copper work, the homely vessels of domestic use in Solomon's reign, were richly polished as well as beaten. In the time of Joseph and Moses (reign of Thotmes the Third) the Egyptians were skilled in the making of statues and vases of beaten gold.

A beautiful example of *repoussé*, an Egyptian poignard with a gold blade, still extant, in the collection of the Khédive of Egypt, is of the date of 1,500 years B.C.

Some archæologist expresses his doubt that the gold used in antiquity was an alloy known (later) to the Greeks as *archaleum* of copper and other metals, but the sacred writer ever insists upon the statement, and even reiterates it, that the gold was pure, and with him partly agree Dr. Birch and Mr. Layard, the former adding the fact that the toreutic work of Asia largely influenced the Greek work at a later period, rivaling and at length gradually superseding it.

In the time of Phidias gold was beautifully engraved on its modeled and hammered surface. The Homeric heroes had gold shields; nor can these be put down to poetic imagination, for it should be remembered that the poet wrote at the period of Ionian immigration, and the splendor was "painted from the life." The gold belts, etc., discovered by Dr. Schliemann are believed to be of this early date.

The British Museum was offered in 1876, 1,500 specimens—gold objects of Egyptian, Babylonian, and Asiatic-Greek workmanship, dating 1000 years B.C.

After the long struggle with the Persians, the Greeks became great by commerce. Then followed the great age of Greek art. Their sculpture, the perfection of which we know, was kindred to their metal-work—their great sculptors worked in metals. Phidias made statues of gold and ivory of colossal size (chryselphantine), and these gold parts were *not* cast (as has been asserted) but hammered. Darius erected to his favorite wife a statue of hammered gold, so also did Croesus; for this devoting wealth to religious shrines was not confined to the Greeks, "but attracted royal devotees to Greek sanctuaries." When Phidias was accused of

* Exodus, Chap. xxv. (Mr. Leeser's trans. of Hebrew Scriptures.)

† Pollen.

* 1 Kings, chap. vi., 29-32. Same trans.

embezzlement of the gold of the statue of Minerva, he insisted on its being weighed. It was estimated at about forty-four talents—£118,000 English gold.

Only few specimens of ancient Greek art in goldsmithry remain. These few are now in St. Petersburg and a few other collections; some have been dug up in Italy and Cyprus. Ancient Greek gold vases are very rare. The first place in working in gold among the Greeks belongs to Mentor, who is said to have been an immediate successor of Phidias.

Phidias, Mys, Mentor, and Polycletus cut the *reliecos* on the most celebrated vessels, and the work of these *torontae* were eagerly sought for in classic Rome.

The description of the Egyptian *salon* of a Roman house of wealth and taste reads:

"There was a cup by the hand of Phidias, ornamented with fishes, that seemed only to want water to enable them to swim. On another was a lizard, by Mentor, and so exact a copy of nature that the hand almost started back on touching it."*

"There was a bowl, the color of opal,† surrounded at the distance of the fourth part of an inch by an azure net-work, carved out of the same piece as the vessel and only connected with it by a few fine slips that had been left. Beneath the edge of the cup was written the following inscription; the letters were green and projected in a similar manner, supported only by some delicate props: '*Bibe, vivas multis annis!*' ('Drink! Mayest thou live many years!') Antipater (of unknown date), says Pliny, engraved a sleeping satyr on a bowl so perfectly that it seemed laid on in relief."

Pytheas was a generation later than Pompey; his famous work was a bowl in *repoussé* of a composition of figures representing Ulysses and Diomed stealing the Palladium. His works were so delicate that they could not be cast from, nor in Pliny's time were there artists capable of copying them.

Of ancient Greece "in those seats of Royalty (the cities of Macedonian rulers) were made an unusual number of chased and embossed silver vessels.‡

The Romans were not, it appears, a race of artists, but they figured as art patrons. Rich men, patricians, or mere money-makers, went to sales and paid prices simply enormous for old gold and silver works made by famous artists—prices far beyond any given by modern buyers of the celebrated art and bric-a-brac dealers of our day. Lucius Crassus, the orator, gave nearly five thousand dollars (over £900) for two cups chased by Mentor. The celebrated bowl, by Pytheas, fetched about one thousand six hundred dollars *per ounce!*

The welding of iron (by the Greeks) is attributed to Glaucus, 600 B.C.§

In the first century of the Christian era, there still remained in the Greek cities, artists, second-rate as compared with the great names of the past, but of great skill. In reproducing traditional designs they were unsurpassed. "They] were inheritors of all kinds of methods of fusing, damascening and in-laying and tempering the metals used in founding, sculpture and decoration, whether of statues, vases or decorative furniture, the after-growth of a creative age."

Wars, conquest, pillage, fire, and theft have left few of the beauties in precious metals extant. The most of them have been melted down for the value of their material; a few have been dug up at Rome, and one hundred silver vases at Pompeii. A rare vase of *electrum* is at St. Petersburg; a beautiful cup found at Antium is in the Corsini

* GALLUS.

† Probably of *electrum*, esteemed by the ancient Greek workers and found in the washing of the Italian rivers, whiter and more luminous than gold, and said to betray the presence of poison.

‡ MULLER'S *Archæology*.

§ GROTE'S *Greece*.

| Pollen.

collection; "a vase with the representation of the apotheosis of Homer is in the Bourbon collection in Naples. The South Kensington Museum has a beautiful vase found at Vicorella. The British Museum has a few in silver and gold; of the latter one, a *patere* is embossed on the inner-side with four bulls. The silver cup belonging to Sir William Drake, made in Augustan times, is an example of the best period of the later Greek art. All the details of ornamentation are admirably designed, and a number of accessories, such as offerings on an altar or table in front of a small sylvan deity, are of extraordinary delicacy. These offerings are cups and vases of nine different shapes and sizes, most of them two-handled, so that with the vase itself no less than ten of these shapes are recorded by it."

When I asked an artificer in London, himself one of the first chasers of the day and of a family who have been workers in metal in London for over two hundred years, what there was to prevent women from being art-workers in metal, he replied, with emphasis:

"NOTHING."

Meaning, of course, that a woman's equal success depended only upon her application and skill and taste, and that if she wrought as industriously as a man she would, in time, be as skilled as he; and he went on to say that the delicate handling of a woman, might give her the chance of superiority. He cited the example of a young lady now employed by the first English goldsmiths on their best work—race cups, trophies and the like—who, a pupil of a splendid chaser, her father, had now distanced him in his own craft.

But at the outset let me warn the reader who would learn embossing, either as an accomplishment to rejoice in merely as a possession, or as a means of support, that she must shun advertised "new processes" and patent methods for learning in a little while. It is quite true that with a few good lessons she may obtain a correct insight—the a. b. c. of procedure—by which she may begin at once to work from a simple design, but she had best steer clear of amateur and half-taught teachers and go at once to a workman in brass, copper, etc., and buy her tools of him. Art-workers in metal make their own tools *because they must be well made*. The tools sold in the shops are worthless—an imposition; they are not made of tempered steel, and a very important tool, an elastic hammer, has (this hammer "that goes with the set") a handle that baffles the "spring" necessary to perfect ease and skill in hammering.

Get the metal embosser to make you a few tools "out of hours;" and if you can get him to give you a few lessons "out of hours," do so. Be earnest about learning if you wish to work at all. (Be as persistent as the little girl who, though naturally naughty, *wanted* to be good, and after asking God to make her "a good little girl," added, "and if at first you don't succeed, try, try again.")

Three or four lessons from a good workman will be of great benefit to you and enable you to decide if you would go on as a thorough worker. If you think it *infra dig.* let me remind you that that sensible and practicable health-minded man, the late Prince Consort, gave every one of his children a trade, by which, if the royal family were turned out of England to-morrow, every one of them might earn their living comfortably.

"Learn from a common mechanic?" say you. Well, I don't call any one who does good work "common," but, for the sake of talk, let us say he is a "common mechanic;" but if you find him employed by the Tiffanys, or Gorham, or in any other good American workshop, do you secure his services for a few interviews at the outset. His time is worth so much an hour, his "labor" is his "capital," pay him for it, don't "sponge" information out of him, for you are not nearly as interesting to him as you are to yourself,

and some of these days all the good Anglo-Saxons on both sides of the water will believe, as a few good people do now, what it says in the old catechisms, that "defrauding a laborer of his wages is one of the sins crying to heaven for vengeance."

You will be glad to watch his skilled labor and *practice*, and congratulate yourself that you did not go to a few fine lady and gentlemen *dilletanti* for their theories.

You can at least buy your tools of him for this lesson, and your piece of thick brass, not thin, good modelers do not use thin brass—to begin upon.

This simple ornament is a bit of embossing of the thirteenth century (German), and chosen for its applicability to what I have first to say. (See first illustration.)

For this you will require three "blunt tracers"—one long, one shorter, and one smaller, "half round;" also three plishers, also a "ground-mat," a "grain-mat," which is a texture tool, a "rifle," and a scraper.



The face (or blade or point) of the first long tracer has an appearance like A. The same of the shorter like B. The half-round tracer like C. The point of the plishers used in this design are first, No. 1, D; No. 2, E; No. 3, F.

Do not imagine these numbers are arbitrary, nor that they are so numbered on any "list," nor by the workman. I use them simply for our own convenience here and for you to recognize the "points" when you buy them of the workman, which, remember, you *must* do if you wish proper tools.

You will use ten tools (and a hammer) for this first lesson.

The "ground-mat" has a point indented so as to produce complete or broken circles in a background, these surfaces depending upon your method of shifting the tool.

A "ground-mat" is like G, the circle outside the indentation faintly corrugated.

The "grain-mat," which is for "tooling" the surface of ornament, a solid broad curve, the petal or leaf of a flower, etc., has a point like H—a broadish oval *very* faintly stippled.

A "rifle," a tool that has to be most carefully made by the workman, is brought to a tapering point each end; the points are like I, and finely engraved (this best describes the texture at the points) to the depth of an inch, with fine grooves that are like the finest cross-hatching in engraving.

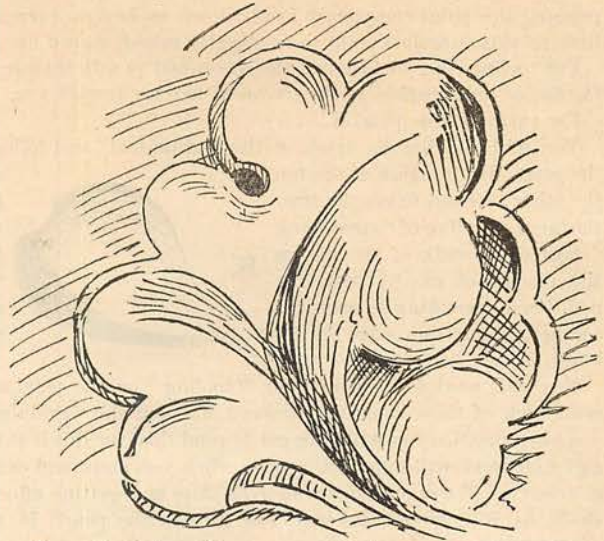
The "scraper" is a long tool, turned in a point one end and the "scraper" end is a three-cornered blade or triangular knife.

These last two tools are for finishing stalks and certain other surfaces.

You will also require from the workman a proper hammer and a pitch cushion. Buy your pitch prepared at the workshop. Do not attempt to make it; but perhaps the composition is pitch, plaster, rosin, and tallow. This composition you melt and cool as the exigencies of your work require. For instance, you melt the pitch on the top of your cushion by passing a red-hot poker over it; this you do in order to fix your metal on which you are working securely in its place (on this cushion). You supply yourself with extra pitch, say when you need it, to build up a mass on the cushion under the concave hammered parts to fill them from an iron ladle; this is a shallow cup with a long handle, in which your pitch can be melted when you need it.

For the ornament here given, the pitch on the surface will be high enough.

Sketch the design in pencil on your bit of brass, and with the first tracer go over the outlines.



Have the light fall on your left hand. Hold the long half-tracer perpendicularly on the line of the design, between your thumb and forefinger of your left hand, the forefinger almost as high as the head of the tool, the thumb an inch or thereabouts below it; your second finger rests on the nail of the third finger, *as on a cushion*, the little finger thrown aside from your work. Do not drop the little finger toward you on the third; if you do, constant hammering will deform it. Do not get into the habit, and you will not need to break yourself of it.

In the right hand grasp the hammer by dropping the thumb and fingers about the handle. *Do not pass the right forefinger down the length of the handle.* (You perceive that I am warning you against the beginner's bad habits.)

Tap lightly but uniformly on the traced line, *moving* toward you; the tracing-tool is urged gently along by the thumb and forefinger, the second and third following it intelligently, but not *dragging*.

Your brass being of proper thickness, you will not, even if hitting too hard, pierce the metal, and the effect should be a line deep enough to show the pattern cleanly outlined when the brass is lifted from the pitch cushion or block. Accommodate your tools to the metal, and the metal to yourself, by using the half-round tracer when you turn a curve, the longer tracer in fainter curved lines, and the still longer tracer in the longer curves, or lines that are nearly straight, and shift your metal (or rather your pitch-cushion) in any way that may enable you to do your work with more ease, remembering always to move the tool toward you in hammering the metal.

When the outline is traced, melt the pitch from about the metal by means of your hot poker, turn the metal to the other side, fix it again on your pitch-cushion, and begin to model (hammer). This do with the plishers. Hammer the metal, moving toward you, pressing the metal to a cup-like shape, following the line of construction after you have cup-shaped (or saucer-shaped) the petal-like form. If you have ever modeled a rose petal in wax or clay, this will be familiar to you; in fact any *real* knowledge you have gained in modeling flowers in wax will be profitable here, for the effect desired is often the same, though the means and material differ. Approaching smaller spaces in the metal (within the outline of your design) you use the different-sized smaller plishers. When this design is hammered up melt the metal from your pitch-cushion, then refix again the convex side uppermost. Go over your outlines again sharply, that they may be well defined with your tracing-tools.

For the background, *i. e.* the metal outside your design, use your "ground-work," moving in curves and producing whole curves on the surface by pressing the point completely firmly down on broken curves by allowing a little of this (circular) point to be slightly raised, tipped up, so to speak.

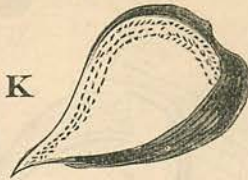
For tooling the surface use the grain-mat (a soft texture tool) following the line of construction of the ornament moving toward you.

For example rose petal K.

You will see that the track of the "grain-mat" tool follows the curve of the petal. Begin again at the top the other side and finish the track the inner stippling of course being

Soften the stalk of the design the blade flat on it) with the additional smoothing is required scraper, using one edge of its blade.

K



of the petal on ing similarly, nearly straight. by scraping (lay "rifle," and if scrape with the three-edged

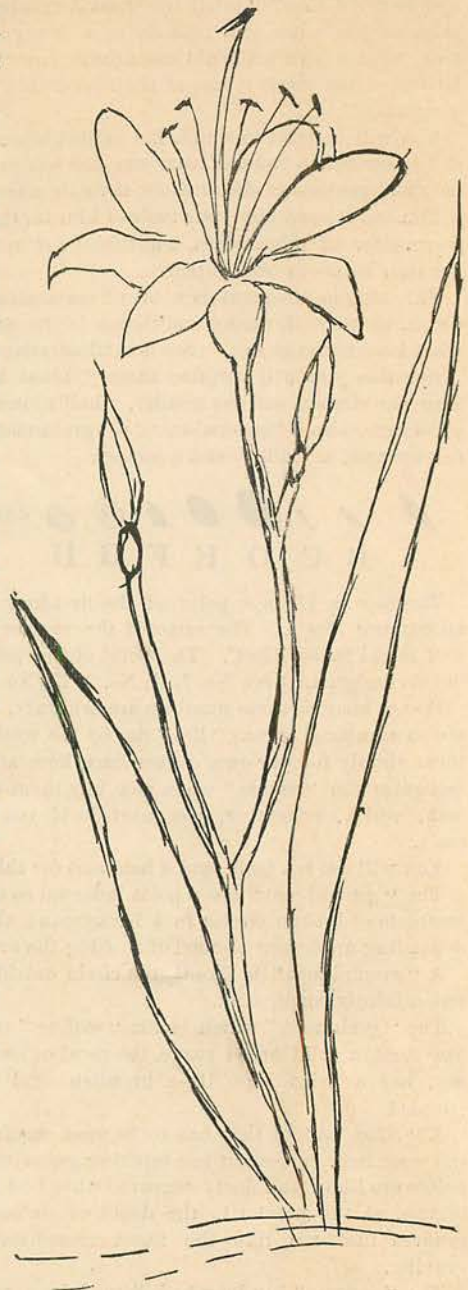
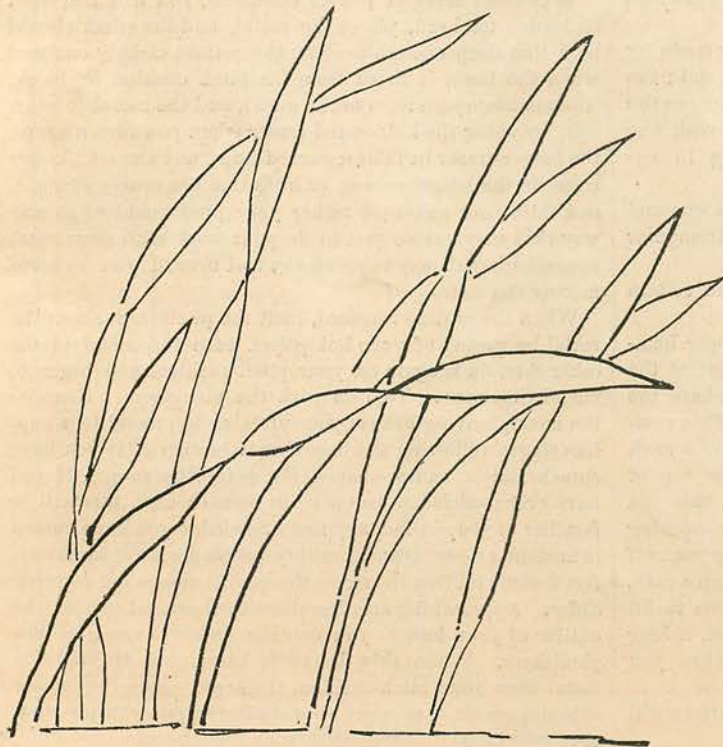
You will need to go over your "tooling" on the petal and background with each of these tools (the ground-mat and the "grain-mat") but when you have practice you will have got beyond this, for this is at best but patchy and your work will approach *success* when you know and can use your tools as freely as *if you were drawing with them* and getting effects in light and shade as if it were "as easy" as it is to the pencil in the hands of a draughtsman.

Clean off your work with turpentine and fine sawdust; work in the former and dry in the latter and with a *coarse* plate brush.

To polish send to the jeweler's or brass founder's where it must be done in your case (as with the professional embosser) by other hands guiding a machine for the purpose.

Do not grudge the time to practice tracing. I give here a group of *fleur-de-lys* blades as a piece of tracing work; it is excellent for acquiring skill in moving the tool, and in a later lesson on chasing you can use the same design and metal to chase on, for I am taking it for granted that the reader wishes to work thoroughly and not as some fine ladies I know of do, *copy* another's design—merely trace the outlines, hammer up the surface, leaving the fine tooling and delicate chasing for the silversmith to do and calmly exhibiting the work to their admiring friends as their own!

I beg of you to do all the *repoussé* yourself. Consider these first illustrations, if you like, as drudgery like the multiplication table or your musical exercises in velocity; they are to teach your hand cunning in tracing a simple "hammering up," which will be all clear gain when you



attempt your first complete object, which I shall give you in the next lesson. In fact, later you may finish the yellow lily here given and it will make a pretty ornamental bas-relief, which you can frame in sapphire-blue velvet or use as the finger plate to a door (with a brass knob).

It may be of use to you to know that the three pieces of brass for this lesson should cost about 20 cents. Go to the foundry for brass; it is about 35 cents a pound, perhaps a trifle more.

You can repeat these practice lessons on other bits of brass and this practice will serve you in good stead, especially the exercises in *fleur-de-lys*, as it is the movement both in tracing and chasing, of which "more anon."

It is not necessary you should be a genius. Be of good courage and to your industry I can promise success.

KATHERINE ARMSTRONG.