

Japanese Patinas

Eitoku
Sugimori



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Eitoku Sugimori
"Time Dreamer"

Bronze, silver, brass
8" x 8" x 6"

Art is a battlefield
Where I fight with myself.

E.S.

金工師

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Eitoku Sugimori
April 2004

職人

Introduction

This book is the result of my ten years of research in metal-smithing. I am proud that Japanese metalwork is appreciated around the world, but concerned that little has been written about the techniques. As the pace of modern life quickens, there is a natural risk that some of our history and traditional methods may be lost. It is my hope that this book will play some small part in stemming that sad possibility, and perhaps inspire future generations of metalsmiths and sculptors to keep the traditions alive.

As a contemporary artist, it is important for me to acknowledge the traditions and techniques of the past and to simultaneously endeavor to move forward into an unknown future. In addition to the specific technical knowledge of the metalsmiths who came before, I am aware of a universal search for beauty that binds us to each other. As our ancestors searched to give form to their visions of what was beautiful, they created what we know today as the tools and skills of our craft.

The Japanese term *onko-chishin* describes the dual need to honor the past and grow into the future. As artists we have an obligation to respect our predecessors and to give something



new to those who come after us. In addition to learning the techniques they have passed on to us, we must also take up the ongoing search for beauty. Our definitions will be different, but the search is the same. As we work in our studios, the very work we do leads us along this path. As we cut, grind, and polish in search of our forms, we become philosophers, searching for beauty.

Through the work we feed our souls, and reach into a spiritual realm. We do not work hard to create a beautiful thing, but make an effort to attain beauty within ourselves. When one is beautiful, what one makes naturally becomes beautiful. Art objects are what is left in the wake of this process, a memento of spontaneous beauty. As a creative person, a *mono-tsukuri*, I continue to search for my own definition of beauty.

To understand Japanese culture we must take into account the fact that Japan is an island nation. This geographic isolation had both positive and negative affects. The island location prohibited easy trade with other countries and therefore cut off access to new technologies and aesthetics. At the same

time, the lack of trade left Japanese artists dependent on their own resources, and can be seen as the source of tremendous innovation. Similarly, artistic styles grew without the potentially compromising influence of other cultures. The value of this unique situation is apparent in the wealth of extraordinary objects of iron, bronze, and precious metals that have been produced in Japan in the last ten centuries. Still today, Japanese craftsmen are respected for their great skill and dedication.

The rich history of Japanese patinas is the result of hundreds of years of experimentation, innovation, and tradition. Contemporary artists continue to press ahead, always seeking new ways to bring uniqueness and beauty to their creations, always with honor and respect for the history of artists who have come before.

The recipes on the pages that follow are historically accurate, but it is in keeping with the tradition that each artist should vary the calculations as he or she feels right to achieve personally satisfying results. I sincerely hope that this book will be a help to metalsmiths and artists.



Jim Kelso
"Evening Moth Box"
Shibu-ichi, shaku-do, gold
Photo courtesy of the artist

日本國

Observations on Japanese Aesthetics

Japanese life and aesthetics are interrelated. For example, flower arranging, martial arts, and calligraphy, *ka-do*, *bu-do*, *sho-do*, all contain philosophical elements. The influence of culture on the arts, and the equally important reciprocal influence of the arts on Japanese culture, can be traced back to early periods. An example can be seen in the relationship between Zen philosophy and the traditional Japanese tea ceremony, *cha-do*. Late in the Muromachi period (1333-1573) and into the Azuchi Momoyama period (1573-1596), the tea ceremony, also known as *wabi-cha*, held an important place in the culture of Japan. This precisely ritualized experience emphasizes the importance of simple activities and heightened perception. The silent austerity of the tea ceremony gives nobility to simple acts. It asks only that we exist, as we are.

This attitude can also be seen in the cultural relationship to the land as evidenced in Zen stone gardens, *karesansui*. Respect for the natural order of seasonal cycles finds resonance in the natural shapes of stones, and reflects again the ability to discover the universe within the closed space of the garden. The term *wabi-sabi* is difficult to translate, but for me it relates



to the beauty that exists in nature. *Wabi* can be translated as “quiet taste” and *sabi* refers to an antique look or an elegant simplicity. When I look at an imperfect thing, it gives a feeling that something is missing. This lack, in turn, leads me to imagine the item as complete, or made whole. To take a flower as an example—we see the full bloom as lovely, and yet we know that soon it will wilt, and that this is also part of its beauty. At the height of its blossom, a flower is beautiful but I know that as part of the natural process, the flower will fade. This awareness, this sympathy with the many forms of beauty, is *wabi-sabi*. In metalworking, and particularly in the application of patinas, *wabi-sabi* seeks a partnership between the maker and the natural behavior of oxides to make an imperfect surface on a perfectly finished work. We do not try to prevent oxidation, but instead we work in concert with it. This concept is fundamental to understanding Japanese patination.

Another term that provides insight into Japanese culture is *yonobi*, which describes beauty as an aspect of function. In craft objects, the goal is to achieve both the beauty of function and the beauty of appearance; only in use is the full beauty

of an object revealed. A wonderful example can be seen in the vases, called *kaki*, that are used for *ka-do*, the art of flower arranging. When it is used to hold flowers, the vase, already beautiful, is made richer because of what it holds. At the same time, the arrangement of the flowers is made possible and enhanced by the vase. Both elements require the other, and both are improved when they come together, fusing into a single and unique beauty.



Toshimasa
Tsuba with Red Tree
Photo courtesy of the artist.



Chapter 1

The Patina Studio

It is impossible to pretend that a single description of tools, materials, and equipment will suit all needs. Obviously these elements will depend on the scale of the work you do, the layout of your studio, and the resources at your disposal. A sculptor working in large-scale bronze castings will have different needs from a jeweler. Still, the next few pages offer a summary of the sort of equipment and materials that are discussed in this book.

It is important to have your studio as fully prepared as possible before undertaking patination. Not only is it inefficient to run out to the store every time you discover something you need, but it disturbs the concentration that will lead to the desired result. As you will see, most of the procedures described here involve many steps. It is easy to forget what you've done, or to accidentally skip a step if you are distracted. One way to make the process go smoothly is to gather and layout your supplies in advance.

Studio Supplies

To prepare the studio for patinas, collect a wide assortment of pots and pans. The size you need will depend on the kind of work you do, but you'll want a wide range at your disposal. Plastic tubs and buckets are useful, as are deli containers. In all cases, these vessels will be permanently retired from use in the kitchen.

A strainer or colander is useful for rinsing work under running water, and for immersing objects into a warm patina bath. The advantage of plastic is that there is little chance of scratching the work or the patina layer. It is good to have several different size strainers on hand.



Copper pan

Steel or enameled pot

Measuring cups

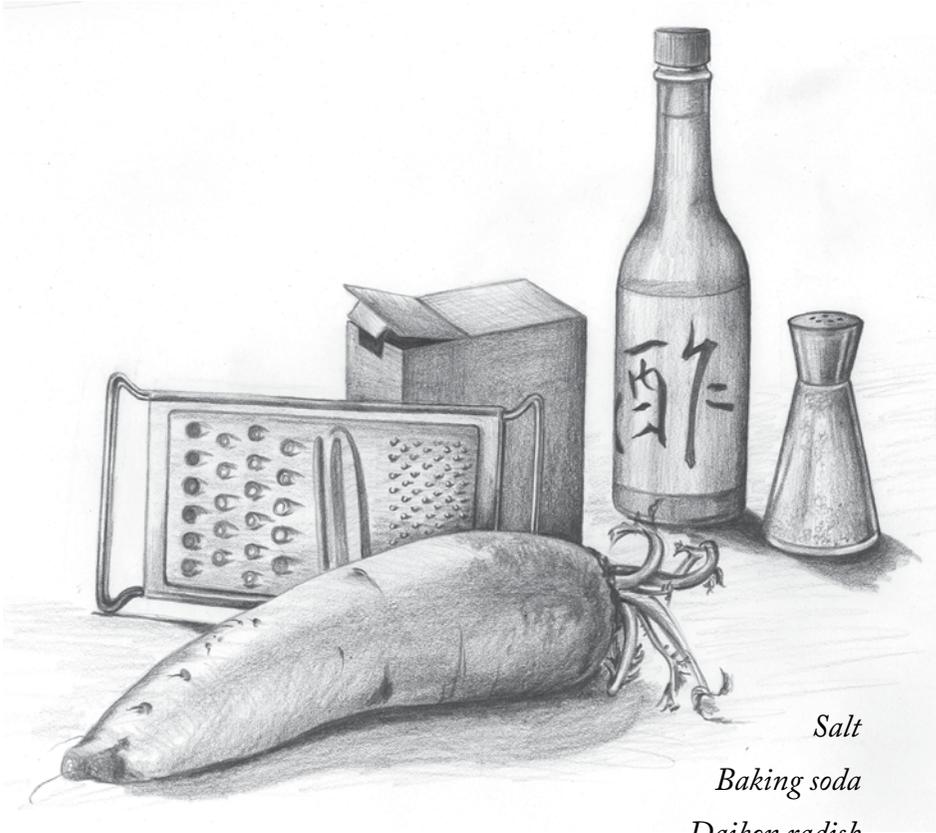
Bowls: glass, metal, wood

Plastic strainer (colander)

Assortment of small dishes

Household Materials

Many of the chemicals we use can be found right around the house. These are exactly what they appear to be—the familiar kitchen supplies you buy in the grocery store. Besides being easy to obtain, these are also inexpensive. Buy separate supplies for the patina studio, so you won't risk accidentally carrying an unwanted substance back into the kitchen.



Salt

Baking soda

Daikon radish

Bottle of vinegar, sake, or beer

Special Chemicals

Some of the chemicals you'll need can be bought at the local supermarket or pharmacy, but not all. Unfortunately, buying small quantities of chemicals can be difficult. The list of suppliers at the back of this book offers a few companies that specialize in chemicals for artists. In addition, you might consult the local Yellow Pages, (look under Laboratory Supplies).

Sometimes it is possible to purchase supplies from the chemistry department of a university or high school. For most people, only small batches of patina solution are needed, so relatively small amounts can last a long time. Though they are not in the business of reselling chemicals, schools can often be persuaded to part with small quantities.





Rokusho

Rokusho, also called “copper rust,” is not a patina solution, but an ingredient that will be used later in various solutions. *Rokusho* is sold commercially in Japan, but until recently, it has not been available in the United States. See the Supplier list at the back of this book for a domestic source.

Some artists might prefer to make this “alternate *rokusho*.” This recipe has been modified from suggestions culled from several resources and adapted for commonplace American ingredients and measurements. Readers are invited to adjust the proportions slightly to develop their own solution.

Alternate Rokusho

40 grams	copper acetate, $\text{Cu}(\text{C}_2\text{H}_3\text{O}_2)_2$
14 grams	calcium carbonate, CaCO_3
14 grams	sodium hydroxide, NaOH^*
1 liter	water

Mix these ingredients well and allow the solution to sit undisturbed for a week. Pour the liquid through a coffee filter to strain it and catch the particles, which is what you want. This recipe will yield about 30 grams of *rokusho*. Store the *rokusho* in a jar to keep it slightly moist until ready for use.

(* also called caustic soda, lye, sodium hydrate, and Drano)



Jar of wax

Rubber gloves

Jar of lacquer

Pine resin

Charcoal block/stick

Whetstones

Sandpaper/sanding stick

Cloth



Finishing Supplies

If metal is imperfectly finished or insufficiently cleaned, patinas will not only fail to look good—they often exaggerate imperfections.

The general idea behind finishing is consistent around the world. Metalsmiths use tools and abrasives of progressively finer impact to sequentially smooth down the blemishes that are formed in the construction of a piece. In Japan, we use slightly different tools for this, and these have been mentioned here in order to bring this alternative approach to the West.

The two items that will seem most unusual to American and European metalsmiths are whetstones and charcoal. Europeans might be familiar with Water of Ayr stone, also called Scotchstone, a naturally occurring soft stone that is found in Scotland. Enamelists are certainly familiar with the use of abrasive stones to refine a surface, but this technique is not common in western studios. In Japan, whetstones have been used for centuries and continue in common use today.

For final finishing, we use charcoal, which we buy in large blocks. These are rubbed against the finished metal object, where they quickly wear down to match the shape of the work being polished. The process is a bit messy, but surprisingly effective. Compressed charcoal sold for backyard grills is not appropriate for this, but a grilling charcoal labeled as “natural charcoal” is satisfactory.