CHARLES H. CECIL STUDIOS

STUDIO HANDBOOK

Florence, 1998

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Compiled by Marc Dalessio with contributions by
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and Charles Cecil.

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Introduction

This manual is intended as a companion guide to the drawing and painting techniques taught over a four year course at Charles H. Cecil Studios. For those not fortunate enough to be able to stay the full course, hopefully this booklet will assist you in remembering your brief training in times of need. If nothing else, the materials addendum at the end should help you to find the highest quality supplies when you return home.

The methods discussed in this book are by no means the only way to paint. They are, however, extremely reliable. The sight-size technique has been used by painters since the Renaissance, and the balsam/sun-thickened oil medium is discussed in Baroque treatises by painters whose paintings have not needed restoration for almost four hundred years. In contemporary art schools the training makes no attempt to introduce the student to his materials. Techniques which were discovered, refined, and handed down generation to generation by the most brilliant painters in history are all but lost. What is forgotten by these art schools is that painting is very difficult. To paint well, one must have every available aid or "crutch" in hand. The tools must be completely understood and of the highest quality and the eyes must be rigorously retrained to see the visual world in a manner which is not entirely natural. Even with the best training and the correct materials, the number of painters over the centuries whose work is considered exceptional is extremely small. To attempt to paint well without this knowledge would be impossible for even the greatest genius and has never been done. Every great painter was trained.

The format of this handbook follows the training over a four year course from beginning cast and figure drawing to advanced portrait and landscape painting. Some students will learn faster than others and progress quickly. The desire to begin painting, however, should not distract the student from humbly and, above all, slowly preparing a strong foundation in draftsmanship. If drawing skills are lacking when the time comes to paint, the complexity of the new medium becomes an insurmountable challenge and the student will find it very difficult to go back. If you cannot draw, you will not be able to paint.

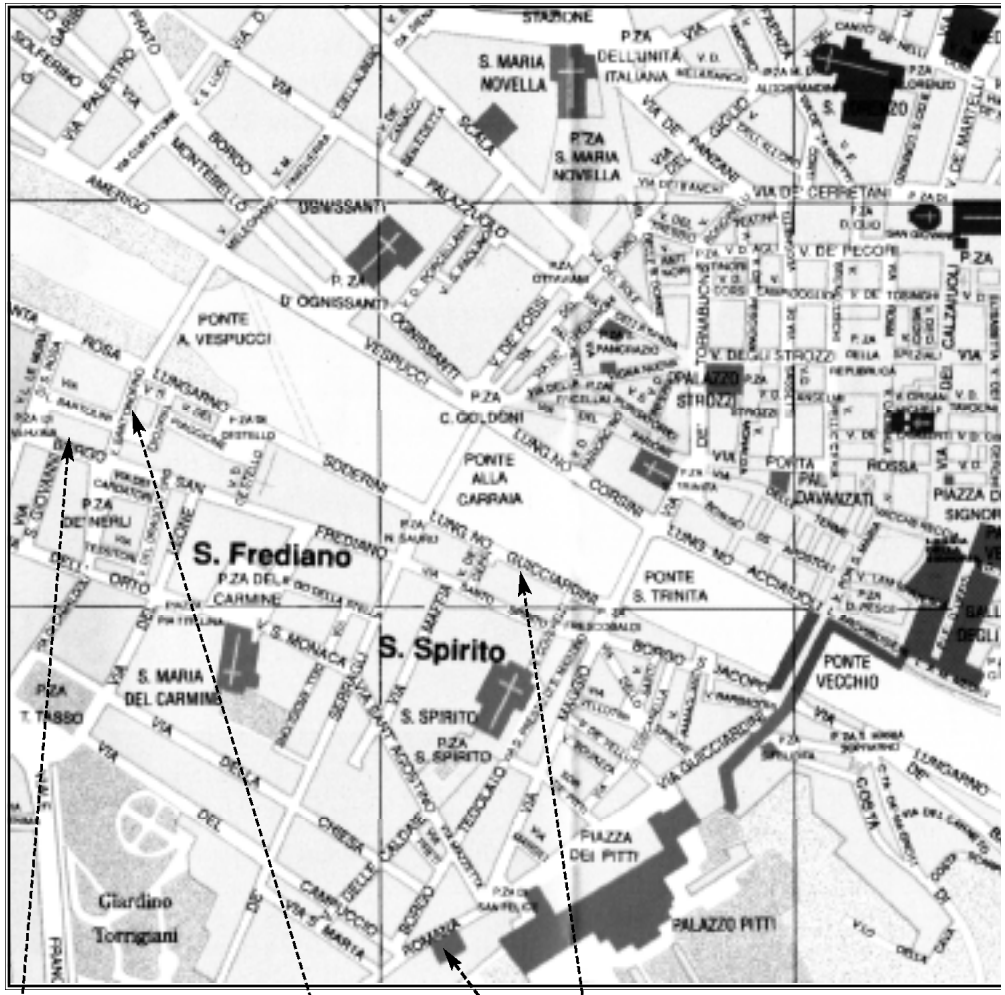
A Brief History of the Studio

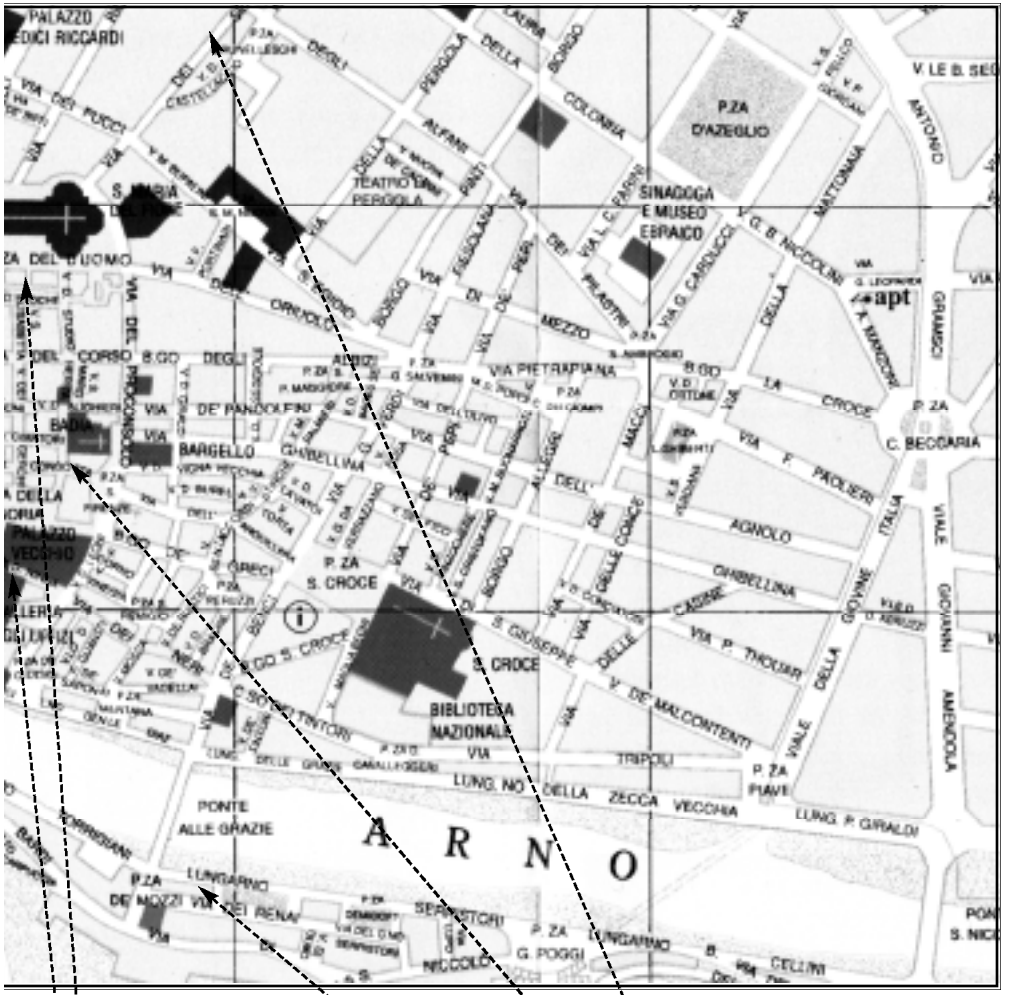
Charles H. Cecil Studios descends from the great Parisian ateliers of the nineteenth century. The materials and methods used today are, however, not the same as those which were the rule in the studios of David or Gerôme. Many of the paintings from the last century have suffered from the use of materials we now know to be impermanent and each teacher over the last two centuries has left his personal mark on the training.

One hundred years ago, painting was still considered a craft, and a very difficult one at that. Tube paints were just becoming popular among painters, but for the most part pigments and materials were still prepared by hand for personal use. Paris was the capital of the art world and aspiring artists travelled from all over to study in the ateliers of the best painters. One of these young painters was an American from Boston named William Paxton, and he is an important link in the chain of knowledge which leads from nineteenth century Paris to the current teaching at Charles H. Cecil Studios. William Paxton studied at the Ecole des Beaux-Arts under Jean-Léon Gerôme. Gerôme was part of a line of French masters whose training descended through Paul Delaroche, J. A. D. Ingres, and Antoine Jean Gros to Jacques Louis David.

Paxton returned to America and began teaching. One of his students was a young Bostonian, R. H. Ives Gammell, who associated with the master for many years. Gammell came from a wealthy family and in the coming years of artistic upheaval which severed the links with the great tradition of naturalistic European painting, the remoteness of Boston combined with Gammell's financial independence, allowed him to continue his dedication to traditional oil painting. The course of art history alienated many young artists whose own sensibilities preferred the emulation of nature, and Gammell was able to teach small groups of these painters the classical techniques. Charles H. Cecil was one of the young painters who studied with Gammell, and in 1983 started his own atelier, of which you are now a part. The building on Borgo San Frediano was the 13th century Church of the Archangel Rafael. It was converted into a studio complex by the neoclassical sculptor Lorenzo Bartolini, and later passed to the current owners, the Romanelli family.

Map of Central Florence





Charles H. Cecil Studios
Borgo San Frediano 68

Cartoleria San Frediano
Via San Onofrio, 5r

British Institute Library
Lungarno Guicciardini 9

La Specola
Via Romana 17

Zecchi
Via dello Studio 19r

Serristori Studio
Lungarno Serristori 27 (bell: Sinibaldi)

Gabinetto del Disegno
Via della Ninna 5

Rigacci
Via dei Servi 71r

Bizzari
Via della Condotta 32r

Useful Information

The telephone number for emergencies (Police, fire, ambulance...etc) is 113. The Police (Carabinieri) can also be reached in emergencies at 112, the fire department at 115.

Taxis in Florence are rarely hailed off the street but must be called by phone. They rarely take more than five minutes to arrive The two numbers are 055 4242 and 055 4390.

The best exchange rate in Florence is on the second floor of the main Post Office (near Piazza della Republica). If you need to mail anything in a rush, use the Post Office below the train station.

The number for flight information at for Peretola Airport is 055 373498. The lost luggage office number (and a better source for flight information) is 055 2336669.

Housing can be found through the following agencies:

Anglea Harwood Postiglione
Vittorio Manci Agency
Via dei Bardi, 30
Tel/Fax: 055 234 5902

Adams & Co.
32 Via Romana
Tel: 055 22 24 01

Susanna Pitcher
Tel: 055 24 44 56
Fax: 055 23 43 354

Studio Immobiliare Conti
Via dello Sprone 12
(ask for Sig. Conti or Frederica)
Tel: 055 28 89 45 / 055 29 47 49

Peter Oberst
Via Orti Orticellari 10
Tel: 055 29 52 53
Fax: 055 28 75 30

Kit Fattorini
Tel: 055 29 30 70
Fax: 055 238 1098

Immobiliare dell'Albero
Via dell'Albero, 3/A
Tel/Fax: 055 29 10 81

Florence and Abroad
Via San Zanobi, 58
Tel: 055 48 70 04
Fax: 055 49 01 43

Unfortunately the studios are unable to offer accommodations to our students. The above agencies have been helpful in the past and all speak fluent English.

Studio Rules

Students are expected to attend classes from 9.00 until 12.00, and from 1.00 until 4.00 Monday to Friday and the Thursday lecture.

During working hours, the classrooms should be silent.

The studio spaces should be kept tidy.

Drawing boards and paintings must be put into their correct allocated places after each session; they should not be left leaning against the wall.

Drawings must be removed from the boards at the end of each project, and paintings should be taken home.

Students should keep their equipment in the allocated spaces. The Studio will not be held responsible for loss or damage of student work or equipment.

Students should not leave personal property at the Studio. The Studio will not be held responsible for loss or damage to personal belongings.

The privacy and silence of Charles Cecil's personal studio space (the Back Room) is to be respected.

The kitchen in the Oval Room is only to be used for food.
If used, it must be left tidy and clean.

The kitchen at the back of the studio is to be used for washing brushes and the preparation of materials. It should not be used for food. It must be left tidy.

Smoking is not allowed in the working spaces.

Students are expected to keep the casts and easels in good condition.

DRAWING

Never a day without a line.

Apelles
c.450 b.c

Take care not to do as many who learn to draw on small tablets. I prefer you to practice by drawing things large, as if equal in representation and reality. In small drawings every large weakness is easily hidden; in the large the smallest weakness is easily seen.

Leon Battista Alberti
Della Pittura, 1436

He who can draw well ... can paint everything created in this world.

Francesco da Ollanda
1549

Drawing is the probity of Art.

J. A. D. Ingres
Pensees, 1840

"Make a drawing. Start all over again. Trace it. Start it and trace it again... You must do over the same subject ten times, a hundred times. In art nothing must appear accidental even a movement."

Edgar Degas

The Drawing Materials Checklist.

The drawing media and paper can be purchased from the cartoleria near the school or from Zecchi or Rigacci.

Paper

Carta Ingres
For short projects in pencil.

Carta Roma
For extended projects in either charcoal or pencil.

Media

Graphite pencil
Conté makes a very good pencil with a green handle. Other brands are Tombow (Japan), Rexel Cumberland (GB), Staedtler (G), or Berol (USA). Mechanical pencils can be very useful for keeping sketchbooks.

Charcoal
The fusain brand can be purchased from the cartoleria. Buy all three grades: Dur (H), demi-dur(H B), and morbid (B).

Additional supplies

Kneadable eraser
Chamois skin From Zecchi
Bag or box for drawing materials
Stumps
X-acto knife
Fixative
The fixative should be purchased from Zecchi. Buy either the aerosol spray by Lefranc & Bougoiese or white shellac and rubbing alcohol. Home made fixative will require an atomizer (also from Zecchi).

Drawing

Section One: *Materials*

a. Paper

Paper. Carta. The best papers are hand-made from acid free cotton or linen. They will have a watermark in one of the corners to guarantee quality and indicate the drawing surface. Hand-made papers are extremely durable, and the surface can be reworked many times before it begins to break down. For extended charcoal drawings a medium weight (90 to 140lb, 180 to 300 gm.) and texture (cold-pressed) will be most suitable. Acid free wood-pulp papers are also available that have had alkalies added during manufacture to neutralize the lignin acids contained in the wood-pulp which would otherwise cause yellowing and brittleness. Wood-pulp papers are suitable for shorter projects and for sketching. The two papers generally used at the studios are the Ingres paper made by Fabriano and the Roma paper. The Ingres is used for short projects or studies and the Roma for extended projects.

b. Media

Pencils. Matite. Pencils are best used for line-drawing or studies under flat light, as well as being the perfect medium for sketchbooks. Pencil lead is made from a mixture of pulverized graphite and clay that has been fired in an oven. The proportion of graphite to clay determines the relative hardness or softness of the lead; more graphite results in a softer pencil. The range usually runs from 8B (very soft) to 8H (very hard) although for most purposes the grades between 2H and 4B will suffice.

Charcoal. Carboncino. Charcoal is made by burning willow or vine twigs in a sealed oven. Different sizes and grades are available; soft sticks are easier to erase and do not scar the surface of the paper, while medium and hard sticks may be used as modeling develops and when more precision is required. The charcoal should only be used when sharpened to a fine tapered point. Of the drawing mediums, charcoal is the most similar to oil paint both in tonal range and directness of expression.

b. Additional supplies

Erasers. Rubbers, gomme. Both Kneadable (gomma pane) and India erasers are necessary for corrections. They should remove marks cleanly and not scar the paper or smear the surface.

Fixative. White shellac dissolved in rubbing alcohol, fissativo, gomma lacca chiara con alcool. Applied with an atomizer. Fixative should be used to protect all finished charcoal and chalk drawings. Good quality fixative will have a minimal effect on tonal values.

Stumps. Tortillon, sfumini. Stumps are available in several sizes and are used to blend and soften charcoal. (fingers are not recommended for this purpose because they will soil the surface of the paper). They are made from tightly rolled paper and are pointed at both ends.

Chamois Skin. Shammy, pelle di camoscio. The softened skin of a small european deer, the chamois skin is used to gently erase charcoal without damaging the paper.

c. Advanced materials

Silverpoint. Punta d'argento. A thin rod of metallic silver, silverpoint is used for extremely delicate line drawing. A smooth paper must first be prepared with a faint wash of chinese white or the point will not leave a mark. Exposure to the air will cause the silver to tarnish and darken and the drawing can then be fixed. Silverpoint cannot be erased, so accuracy is essential and its use is suggested only to the advanced students.

Sanguine. Red Chalk, sanguina. Sanguine is a natural red clay and can be used either compressed in "pencils" or in raw form. One of the oldest drawing materials, sanguine was used with great effect during the Renaissance, and for finished drawings can be one of the most beautiful media. Black and white chalks can be used in conjunction to strengthen and heighten the drawing.

Pen and Ink. Penna, Inchiostro a china. Pen and ink was a favorite drawing medium of the old masters. It is recommended for studies as no corrections can be made and half tones are created through hatching or diluted washes. Good quill pens can often be purchased inexpensively at flea markets.

Section Two: *The Sight-size Technique*

by Nick Beer

This is not a how-to manual; it is an introduction to the principles involved in drawing a cast using the sight size method. It should be emphasized that there is no substitute for guidance under an experienced atelier-trained painter who can direct the student according to traditional practices, the most important being regular critiques and demonstrations. Although to modern minds the process sometimes seems academic, it should be remembered that the purpose of sight-size is to enable the artist to approach any drawing or painting in a systematic way. Beginners often find the initial stages somewhat mechanical but with experience the method allows for great freedom and expression. By following the prescription of outline, shadowline, shadow pattern, background, and modeling, the artist is able to resolve problems step by step, each in preparation for the next. In the past students often spent as long as two years 'working from the antique'. I would recommend drawing from the cast for at least six months during which time some eight or ten drawings should be completed. Drawing from the cast using sight size is the best way to train the eye, of course it takes time and guidance.

Cast drawing allows the student to analyze shape and proportion and to render the effects of light and shadows correctly. This process includes outline drawing, modeling, and the study of values. Because the cast is both stationary and white it enables the study of light on form without the complication of colour. The cast is set up at eye-level alongside a vertical drawing board under a north light (that falls at about 45 degrees) with between a quarter and a third of the surface in shadow. The artist works from a position centered between the cast and the drawing some ten to twelve feet away. All observation is from this position; decisions are effectively made away from the drawing, remembered, rendered, then checked by comparison from the sighting position. Because cast drawing is essentially a study in values, vine charcoal is used on good quality hand-made paper with a medium texture. The charcoal should be regularly sharpened on a fine sandpaper block. Tools include a plumb-line, a kneadable eraser and a mirror; their use will be explained in the text.

a. Initial Measurements

Before you start to draw it is important to establish some points of reference, the first being a line on the cast that connects two or three central points vertically (eg. corner of eye with outside of nostril). Next, draw a line suitably positioned on the paper to represent this. Working from the sighting position and holding the plumbline horizontally at arms length (so that measurements will be consistent) look for any obvious horizontal divisions such as top of cast, tip of nose, chin and base of cast, while remaining sensitive to relative proportions (it is easier to locate the mouth and eyes once these larger divisions have been fixed). The plumbline moves up and down the cast like a cursor, the eye tracking along the plumbline to where it intersects the line drawn on the paper. The artist notes the point of the intersection, walks forward to mark it and then checks it from the sighting position. With practice it is possible to make these measurements quickly, but the beginner should take time to make them accurately so that the eye gains expertise. Any alteration in the sighting position will affect the accuracy of the measurements, so check that you are in the correct position by measuring again the top and base of the cast each time you return to the sighting position. Having established the important horizontal divisions, the plumb line is next used to determine widths. It is again held horizontally at arms length, and measurements are taken between the thumbs as follows: One thumb slides along the plumb until it finds the centre line on the cast, while the other slides to the point being measured (eg. the outside contour of the cast). Maintaining the position of the thumbs, pivot so that the thumb which located the centre line on the cast now lines up with the drawn line on the paper. The point indicated on the paper by the other thumb denotes the width required. The artist notes this, walks forward to mark it, then checks from the sighting position. In this way widths on both sides of the centre line are established.

Woodcut by Albrect Durer from 1525 demonstrating a version of the sight-size technique. The painter traces the forms of the sitter on a piece of glass kept at arms-length, always looking from the same position. The portrait resulting from an apparatus such as this will be under life-size.

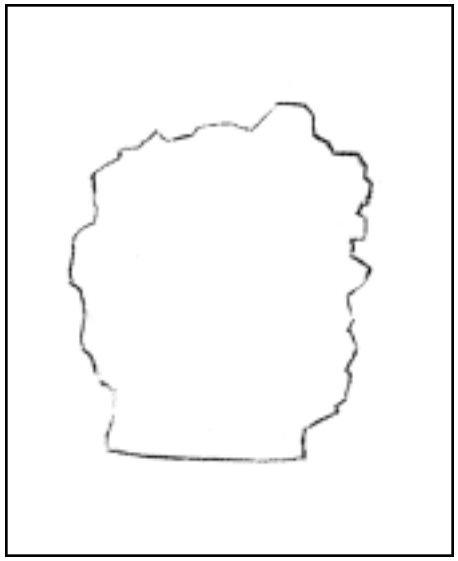
b. The Outline *See figure 1 on the next page.*

Using these marks as a guide, the next step is to draw a simple outline of the basic shapes whereby overall angles are more important than small inflections within the line. With practice this initial lay-in becomes surprisingly accurate and even after only one cast drawing the eye will have become more critically sensitive. It cannot be overstated that care exercised in these initial stages will result in fewer revisions later. With a good lay-in, there is every chance of a good finished drawing (or painting) whereas a careless lay-in will plague the student through to the end of the project. If the outline is fairly precise, it should approximate the general shape and features of the cast to scale when compared side by side from the sighting position.

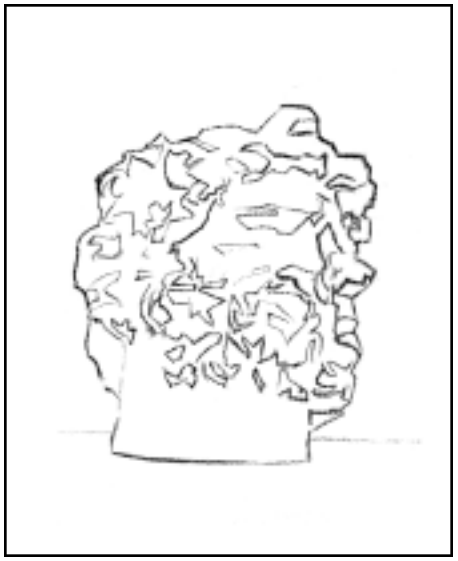
c. The Shadow Line and Shadow Pattern *See figures 2 and 3.*

Once the outline has been indicated the next step is to look for the shadow line (the line that divides the areas of the cast in light from those in shadow). If the outline has been drawn reasonably well, it is fairly straightforward to find the shadow line and then to fill in the shadow value. Try to look for the big shadow shape and not to become distracted by looking into the shadow. I repeat, look at the shadow not into it. Beginners often confuse shadows with half-tones, and give too much emphasis to areas of reflected light. The shadow pattern is simply that area of the cast which receives no light; it is often easier to see by squinting. This simplifies the masses of light and shadow: half tones tend to become lost in the light while reflected lights become absorbed into the shadow. The student should be looking for a broad shadow pattern that indicates the direction of light and which gives the illusion of a three dimensional object, albeit in a simplified form. In fact, at this stage it is useful to think in abstract terms and to forget what is being drawn. If you think of a line drawing of a cube seen from above with one corner towards the viewer it remains two-dimensional until one of the sides is filled with tone. This not only gives the impression of three dimensions but also indicates the direction of light. The principles are the same when drawing the cast and, if done well, the drawing should assume a three dimensional effect. When blocking-in the shadow pattern aim for a unified value a little lighter than that on the cast. Look carefully at the shape of the shadow pattern as it moves into the light; at a later stage the shadow line becomes one of the most important areas of the drawing as it conveys information about the underlying form. Keep the light areas clean; do not look for half-tones or reflected lights yet.

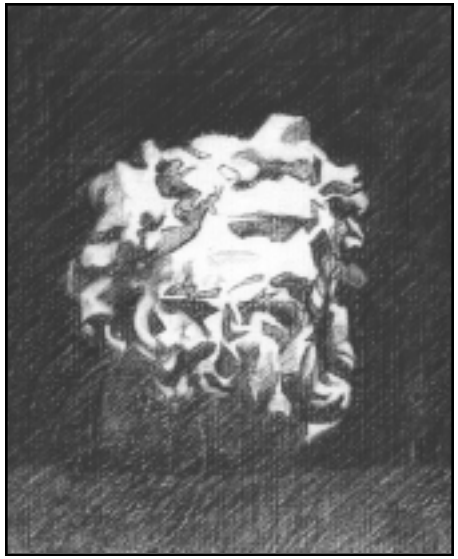
d. Figures



1. The outline



2. The shadow line



3. The shadows and background

4. The finished drawing

Finished cast drawing by Brandon Soloff

e. The Back ground *See figure 3.*

By blocking in the background the transformation of the drawing from linear to tonal is complete and it becomes possible to perceive the drawing in terms of values and modeling. For this reason it is important to key the value of the background accurately (although it is a good idea to keep it a little lighter than in nature) because it provides the context in which all other values are judged. As usual the mirror should be used to check progress. By this stage it will be necessary to use a stump to push the charcoal into the laidlines of the paper to provide a suitable surface for development. The stump will also tend to soften edges and give a more unified look. During later stages the stump is very useful for manipulating the charcoal on the surface of the paper rather like a paintbrush. Much of the groundwork has now been completed and all that remains is to work on the modeling and to increase the value range.

f. Modeling *See figure 4.*

If you have followed the prescription of outline, shadow-line shadow-pattern and background your drawing should now have a broad unified effect with all the parts contributing to the whole; it should not be made up of separate piecemeal observations that bear no relation to each other or to the whole. You will have found your basic shapes and have introduced a range of simple values; light, shadow pattern and background. Be careful at this stage of over-modeling. It is better to leave the half tones a shade lighter rather than darker, which would make the cast look dirty and 'over-modeled'. Hard (H) charcoal should be used in these final stages and kept sharpened to a fine, tapered point. Lastly, the "darkest darks" should be drawn in at this stage to increase the value range.

g. A Final Note on the Use of the Mirror

Leonardo da Vinci wrote "The mirror is the true master." When drawing the eye quickly tires, so we soon become accustomed to what we are seeing and are likely to pursue a defective course. By offering a reversed image of the cast and drawing, or an inverted one, the mirror makes mistakes more obvious, and I encourage its use from the earliest stages. The use of the mirror is recommended, among others, by Alberti, Leonardo, Durer, Velazquez. Reynolds, Sargent, Whistler and De Lazlo. It is an honest critic and it should often be used.

Section Three: *Bargue Drawings*

This is an example of how to lay-in a figure drawing. The school secretary can give you photocopies of others which should be copied as examples and can be used for memory excersizes.

Section Four: *Evening Drawing Excersizes*

The following is a suggested course of study for the diligent student to follow during the evening poses on Tuesdays and Fridays.

Regular visits to La Specola for anatomy studies and to the Gabinetto del Disegno for copying old master drawings are also recommended. A letter from the school secretary will be required on the first visits.

Week 1. Small pencil drawing on Roma paper.
E.g. Ingres.

Week 2. Charcoal on blue-toned paper, heightened with white chalk.
E.g. Prud-hon

Week 3. Red chalk on lightly textured cream paper. Conté Sanguine pastel pencil on Ingres, Umbria or Canson type paper.
E.g. Pontormo, Andrea del Sarto, Annibale Carracci.

Week 4. Red chalk heightened with white chalk on mid-toned paper.
E.g. Michelangelo, Parmigianino.

Week 5. Red chalk, white chalk , sepia and charcoal on mid-toned paper or blue-grey paper.
E.g.Watteau, Tiepolo, Rubens.

Week 6. Pen and ink line drawing on tinted paper, using sepia ink.
E.g. Michelangelo, Rembrandt.

Week 7. Pen and sepia wash on tinted paper, heightened with white gouache.
E.g. Veronese, Tiepolo.

Week 8. Silverpoint on prepared paper.
E.g. Holbien

Week 9. Oil-sketch on mid-toned, primed panel. White lead and raw or burnt umber.

Week 10. Oil-sketch on mid-toned, primed panel. White lead, yellow ochre, vermilion and ivory black.

PAINTING

The painter will produce pictures of little merit if he takes the works of others as his standard; but if he will apply himself to learn from the objects of nature he will produce good results.

Leonardo da Vinci
Treatise on Painting

...what you mix on your palette is not white, red, or black pigment, but the very substance of things; it is the air and light itself which you take on the tip of your brush and place on the canvas.

Denis Diderot
J. B. S. Chardin (Salon of 1763)

This famous quality, the beautiful, which some see in a curved line and others in a straight, all are determined to see in line alone. But here am I, sitting at my window, looking at the most beautiful countryside imaginable and the idea of line does not enter into my head.

Eugene Delacroix
Journal, 15 July, 1849

Painting is not very difficult when you don't know how - but when you know, ah! then, it is a different matter.

Edgar Degas
quoted by Paul Valéry

A student's progress seems to him like the falling of successive scales from his eyes.

R. H. Ives Gammell
Twilight of Painting, 1946

The Painting Materials Checklist.

For priming canvas:

At least one week is needed to prepare the canvas and to allow it to dry. To begin sooner use the 'Vasari' pre-primed canvas.

100 gr white lead Cremnitz
100 gr raw umber
100 gr yellow ochre
zecchi oil primer
rabbit skin glue In sheets, not pellets or powder
stretcher bars 40 x 50 cm for a cast painting, 50 x 80cm for the nude
fine grain linen canvas The 'Artemesia' (Zecchi) or 66J (Utrecht)
copper tacks From a ferramenta

For preparing sun-thickened oil:

Preparing oil takes two to three weeks and can only be done from March to September. During the winter months, or if pressed for time, use the Zecchi sun-thickened oil.

Lead sheet 1/2 meter will fill four small trays
Cold pressed linseed oil

For grinding colors:

Grinding the flesh palette will take a couple of hours.

Dry Pigments: 100g of each	Oils: 1/4 litre
Lead white	Cold-pressed walnut oil
Ivory black	Cold-pressed linseed oil
Vermilion	
Yellow ochre	

For preparing the painting medium:

Balsams	Varnishes
Either Strausbourg or Venice turpentine or Canada Balsam	Either Mastic tears or dammar crystals

Brushes

Kolinsky
- lingua di gatto # 00, 2, 4, 6, 8

Hog bristle
- filbert 4, 6, 8, 10, 14
- flats * any size
- rounds* any size

Squirrel
- fan blender*

Everything Else:

Rectified turpentine From Zecchi or Bizzari..
Mineral spirits* From a ferramenta
Wood palette
Three metal cups or dippers
Palette knives Small, medium and large
Empty metal tubes One for each color
Glass jar For keeping lead white*

Before beginning landscape or portrait painting, the palette will need to be extended.

For grinding the extended palette:

Dry Pigments: 100g of each

Ultramarine blue deep†
Cerulean blue†
Cadmium red medium
Red ochre, English, Indian (Persian) or Pozzuoli red*
Alizarin crimson†
Naples yellow light
Cadmium yellow light

Oil:

Poppy oil* For grinding Naples yellow

* recommended, but optional.
† can be bought in tubes, use Old Holland or Lefranc & Bourgeois.

Painting

Section One: *Supports*

Supports for oil paintings are traditionally either stretched linen canvas or wood panels. At the studio we use canvas as it is much easier to transport and the weave can be used for effect. Some painters however prefer the smooth hard surface of wood panel and for small-scale studies it can be easier to prepare.

a. Canvas

Traces of colored linen canvas have been found in northern Africa dating back to 3000 B.C. As a painting support canvas first came into general use in Venice during the 15th century. It had been used in previous centuries throughout Europe for processional altarpeices, but the wealth of Venice required large paintings and the humidity of the lagoon made fresco impossible and warped the wood of large panel paintings. Since then canvas has become the most popular support for painters. The long molecular structure of linen makes it especially durable. However, like any fabric it is susceptible to moisture and will shrink and stretch depending on external humidity, often damaging the dried layers of paint. If properly prepared, however, the movement of the canvas can be minimized and the linen protected from the damaging influences of both the atmosphere and the paint.

Linen Canvas. Tela di lino. Linen is made from the flax plant, the same plant which gives us linseed oil. The best flax is grown in northern Belgium (Flanders) and Holland and the best linen canvas we've found is the 66J from Utrect art suppliers. Linen is a very durable fabric and as a support for painting cannot be bettered. The round shape of the linen fibers results in the textured surface of the canvas which imparts a sense of depth when painted. For portrait and small paintings only the smooth, tightly woven linen should be used. Pure linen is very expensive and great care should be taken by the student when preparing the ground. Linen canvas can also be bought pre-primed (the Vasari canvas from Zecchi or 60F from Utrect) though priming one's own canvas allows for complete control of texture and absorbency.

b. Size

The size should protect the canvas from the ground without weakening it. To accomplish this the glue must never be allowed to boil, which would break up the molecular structure. Additionally, the size must not soak through to the back of the canvas where it can absorb moisture and rot.

Rabbit skin Glue. Colla di coniglio. Made from pieces of rabbit skin, the glue has both adhesive and gelatin qualities which allows it to attach to and fill the porous surface of the canvas without passing through to the back. To prepare the glue, soak two broken sheets in water overnight (200g of glue for 1 litre of water), then heat slowly, stirring gently, until the glue dissolves. Never let the glue boil. When completely dissolved, take the glue from the flame and let it cool until it forms a gelatin. At this point there are two ways to apply the glue. Either (1.) re-heat the glue until it liquifies, then let it cool to room temperature (just before it begins to solidify again) and apply it to the canvas with a brush or (2.) use your hands and rub the gelatinous glue gently over the canvas. After a couple of hours, the glue will have dried and, after sanding the surface lightly, a second coat should be applied.

c. Grounds

Grounds protect the canvas from the destructive effects of the paint and protect the paint from the absorbency of the canvas.

Oil ground. Fondo a base di olio. Of the two methods of preparing the bone-colored oil ground in use at the studio, the first and best is to grind a thin paste of lead white in linseed oil, adding yellow ochre and raw umber pigments to achieve the correct tone. The second is to purchase the Zecchi oil primer and to add the same dry pigments as well as Cremnitz white in powder. The lead white both thickens the primer and speeds the drying. To obtain the correct tone and colour add 100 g of lead white and 2 to 3 tablespoons (not heaped) of both ochre and umber to one tin of primer. One tablespoon of linseed oil can be added as well to speed the drying time, but the surface of the canvas will be slicker as a result. Some painters prefer their grounds lighter or darker, some slicker or more absorbent. The primer should then be delicately applied with a large palette or priming knife and the excess paint whisked off with folded pieces of monda-carta. The surface should be sanded lightly when dry.

d. Stretcher bars

Good stretcher bars can be used over and over again as your work improves by removing the old canvas and rolling it up. The time and expense of preparing good stretcher bars is always worth the effort. If possible, use copper tacks to hold the canvas.

Stretcher bars. Telai. Used to hold the canvas, the stronger the wood the better. In Italy, stretcher bars come in three thicknesses: 4.5 cm, 6 cm, and 8 cm. For small studies up to 40 x 50 cm, the thinner stretchers should be fine. For larger projects, the thicker sizes will be necessary, as well as crossbars, to keep the wood from warping if the canvas shrinks. To keep the canvas from touching the bars a quarter-round strip of wood (from a lumberyard) can be nailed along the outside border. Keys (either of wood or plastic) are used to stretch the canvas flat if it begins to buckle. Always put in all eight at the same time and slide a postcard or piece of cardboard between the stretchers and the canvas to protect the canvas against a misplaced swing with the hammer.

e. Panel

Panel has been used as a support since the earliest beginnings of oil painting. The wood was carefully chosen by the painter and, depending on the region, was usually either poplar, cypress, mahogany, or oak. The important factor in choosing wood for panels is that it is well aged and quarter-sawn, and therefore unlikely to warp.

Wood Panel. Panelli di legno. A wood panel should first be lightly sanded, then sized with four coats of thin rabbit skin glue solution cut 1:1 with chalk. Canvas can also be attached to the panel by generously applying a coat of warm rabbit skin glue, after which the panel can be primed with an oil ground. Plywood panels have become very popular with painters as they are cheap and readily available. However, the glue used in making plywood can produce acids over the course of time which can destroy the painting. A better solution is to buy discarded wood panels from antique dealers or cheap old furniture at auctions, which can be dismantled. Panels can be sanded lightly after preparation to increase the absorbency. If the panel is too slick the paint will have difficulty adhering during the initial stages.

Section Two: *Binders*

Since the middle of the sixteenth century oil painting has been the standard medium for easel paintings. The oil, however, should be seen as a necessary evil used for binding the pigment and in general as little should be used as possible. The principal advantages of oil are the flexibility of the medium, the number of obtainable effects, and the standardization of production and its availability. The disadvantages are the eventual yellowing of the oil and the possible cracking of flaking of the paint film. These can be reduced or removed by the use of the highest quality materials and by the correct handling of materials.

a. Drying or Fatty Oils

The drying oils do not actually dry. They absorb oxygen from the air and change chemically into a substance which is entirely different from the original liquid oil. The outer layer is in contact with the air and first forms a skin which slows the drying process for the oil underneath. As the oil absorbs oxygen it increases in volume (which can lead to wrinkles if too much oil is present). All the oils should be cleaned by leaving them in water for a week, periodically shaking (gently) the mix and then draining out the oil, leaving the water and impurities. Always buy oil which has been cold pressed and never the refined variety.

Linseed oil. Olio di lino pressato a freddo. Linseed oil is pressed from the ripe seeds of the flax plant (which also produces the fibers for our linen canvases). The region where the flax is grown is responsible for the final quality of the oil, the Baltic states and the Netherlands being the best producers. A good oil should be golden yellow, clear, and very fluid. Ideally one should used only freshly pressed oil, which is recognizable by its lack of the distinctive linseed oil smell. Sometimes, for economical reasons, linseed oil is forced from the seeds by the application of extreme heat and pressure. This is called refined linseed oil and its resistance to aging is greatly reduced in comparison to the cold pressed variety. True cold-pressed linseed oil is far superior in respect to fluidity, brightness, and purity. Linseed oil is the vehicle for grinding of all our pigments except lead white and Naples yellow. Linseed oil dries in 3 to 4 days.

Walnut oil. Olio di noce pressato a freddo. Pressed from the seeds of ripe walnuts, this oil is used in the grinding of our lighter colors. As with linseed oil, only the cold-pressed variety should be used. Walnut oil is lighter in colour than linseed oil, yellows less with age, but is a slower drier (4 to 5 days). In old painting treatises, walnut oil was often preferred to linseed oil and it is probable that its use was far more diffused than it is today. The main reason it has fallen out of favor is because manufactured tube colors keep longer in linseed oil. Obviously, this should not affect the painter who prepares his own colors. Leonardo recommends the thickening of walnut oil in the sun. The student can experiment with substituting it in the various mediums.

Poppy oil. Olio di papavero. Poppy oil is pressed from the seeds of the white poppy and should be clear and without a reddish tint. As always, buy cold-pressed and not refined poppy oil. Poppy oil is a very slow drier (6 to 8 days) and at the school we use it only in the grinding of Naples yellow to counterbalance the pigments natural siccative effects. Poppy oil yellows less than linseed or walnut oil but is considered more likely to crack. Poppy oil is generally only recommended as a binder for alla prima technique (painting wet into wet) because you can paint for days without the paint drying.

b. Sun-thickened Oil

Ceninni says of sun-thickened linseed oil “I can give you nothing better”. De Mayerne writes of how Rubens prepared his medium by putting oil in lead trays and leaving it to thicken for weeks in the sun.

Sun-thickened linseed oil. Olio di lino inspessito al sole. Linseed or walnut oil, if left in the sun for two weeks, will thicken to a honey-like consistency. Thickening oil has three effects. It oxidizes the oil through the contact with the air; the oil is partly polymerized by the heat; and finally, the suns rays bleach the oil. By putting the oil on a lead tray, it will absorb some of the lead, thus increasing its drying speed. Thickened linseed oil can be used for a number of effects (especially for fusing colors and as a glazing medium) and dries quickly to an enamel-like finish. Sun-thickened oil should be prepared with the utmost care.

c. Pre parin g Oil

The oil used for thickening should always be a high quality cold-pressed linseed or walnut oil. It will need to be cleaned first by taking a 1 1/2 litre plastic bottle of uncarbonated mineral water and replacing 1 litre of water with the oil. The bottle should then be shaken gently once a day for four days after which the impurities should have settled to form a light yellow layer between the oil and the water. Finally, a puncture is made in the bottle just above the layer of debris and the oil allowed to run out into another container.

The best months for preparing oil are April and May.

To thicken the oil, a sheet of the purest lead one can find is folded around the edges with a pair of canvas pliers to form a tray. The lead tray is placed in a south-facing position where it will receive direct sunlight all day. The clean oil is then poured into the tray to a depth of 1 to 1 1/2 cm. The tray must be covered with a sheet of clear glass in such a manner to keep out the dust and insects and yet to allow air to pass under it to oxidize the oil. The oil is then left in the sun for two or more weeks, depending on the weather, until it thickens to a honey-like consistency. Stir the oil every day or it will form a skin. When the oil has reached the desired thickness, it is poured through a strainer to remove the insects and debris (which always sneak in under the glass) after which it is ready to be used in the medium.

d. Balsams

Balsams are produced from the pitch of various conifers. The species of tree and the region (like good wine or coffee) determines the quality of the balsam and its suitability for painting. Whereas turpentine evaporates leaving no residue and linseed oil dries by forming a skin, balsams partially evaporate and leave behind a resin which dries to a very strong enamel finish.

Strausbourg turpentine. Olio d'Abezzo. Made from the silver fir of the Tyrol region in northern Italy, Strausbourg turpentine has been historically the most popular of the balsams for painting. It is recorded that Van Dyck used it in his medium, and it was certainly used by the German masters. It should be very clear (Zecchi currently stocks a very clear variety) and will dry to an enamel finish with no yellowing. It has the best colour and smell of the three balsams and does not show any of the signs of brittleness associated with Venice turpentine. Cut it 1:1 with a high grade turpentine.

Venice Turpentine. Trementina veneta. Venice Turpentine is made from the larch trees found in Austria and northern Italy. Ideally, it should be clear and of a honey-like consistency. On the whole, Venice turpentine has very similar properties to Strausbourg Turpentine, however the brownish varieties found on the market today contain impurities from the bark and are likely to darken. Venice Turpentine, however, should always be used in conjunction with another binder such as sun-thickened linseed oil or it will become very brittle when dry. Venice turpentine should always be heated and cut with turpentine before mixing it into a medium.

Canada Balsam. Balsamo di Canada. The most recent addition to the balsams used in painting (the others were in use before Europe's discovery of Canada), Canada Balsam comes from the balsam fir found in the Eastern United States and Canada. This balsam has the advantage of still being used as an adhesive in various industries. What this means to the painter is that it is widely available and the supplies one finds on the market are very clear and lack the impurities found in Strausbourg and Venice turpentine. However, Canada balsam is very expensive and as the balsam fir and the silver fir are very similar trees, Strausbourg turpentine is the better choice if one can find a supply of high grade material. Like Venice and Strausbourg turpentines, Canada balsam is cut with one part turpentine.

e. Siccatives

Don't use them. If you must, the drier should never be more than 2% of the medium.

Cobalt dryer. Siccativo di cobalto. Cobalt salts dissolved into turpentine to increase the oxidization of the oil. The drying time can be reduced to a few hours with a great sacrifice in permanence.

Courtrai drier. Siccativo di Courtrai. Courtrai is a town in southern Belgium and the drier is made from manganese and lead dissolved into turpentine. A quicker way to destroy your paintings would be to just set fire to them.

f. Hard Resins

Though not in common use here at the studios, the use of hard resins has some convincing adherents among writers of art materials.

Amber. Ambra. Fossilized tree resin from extinct species of trees, amber is currently available in very expensive pre-prepared mediums usually claiming alchemical preparation and magical effects. The Vermeer society in France or the Alchemist in America are two such sources of mediums and varnishes (see materials addendum). The mediums are prepared by fusing crushed pieces into cooked linseed oil at very high temperatures. An initiation ceremony will be required before acquiring the exact recipe.

Copal. Congo copal, African copal, copale del Congo. A semi-fossil resin made from the hardened sap of long dead but still existing species of trees, congo copal was once found in 28 grades from transparent to dark brown. Today it is difficult to find the lighter, better varieties. According to Italian baroque recipes, copal painting mediums are prepared adding one part fused copal resin to two parts oil, like the amber mediums, at very high temperatures. A medium is then made by adding sun-thickened walnut or linseed oil (see Robert Doak in the materials addendum). Some sources consider copal to be more reliable in mediums than the balsams and soft resins recommended by the studio, as there exists a risk of the final varnish being absorbed into the surface of the painting as well as future cleaning problems. The copal medium, drying to a harder surface, would resist the softer varnishes as well as any cleaning solvents.

g. Volatile Oils

The volatile oils are used as diluents for oils and resins. They speed the drying process of oils by allowing the oil to be spread into a thinner film, thus presenting a greater portion of it to the air.

Oil of Turpentine. Spirits of turpentine, turps, trementina rectificata. Oil of turpentine is prepared from the sap of various pine trees through distillation by steam. It is best to buy rectified turpentine as it is cleansed of any resins which remained from the pitch. The cheaper brands are normally cut and you should always check an unfamiliar turpentine by smelling it for petroleum products. At the school, turpentine is used daily in every stage of painting. The varnishes are dissolved in it, the balsams are cut with it, and the medium is diluted into it for lay-ins and glazes.

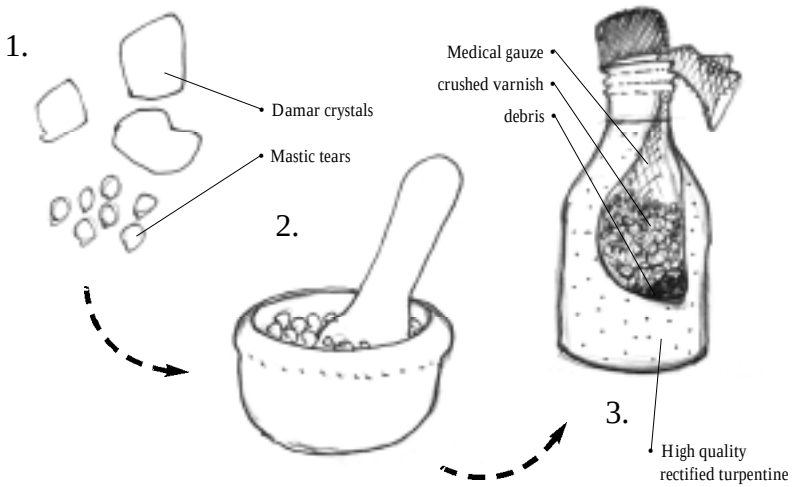
Mineral spirits. White spirits, turpentine substitute, odorless turpentine, aquaraggia. Powerful solvents distilled from crude petroleum oil, the mineral spirits tend to be used at the school for cleaning purposes only. They can sometimes be used as a turpentine substitute by those with an allergy to oil of turpentine.

h. Varnishes

The two varnishes we use at the studio are, like the oils, balsams, and resins, derived from plants. They are referred to as soft resins (soft because they are taken from living trees as opposed to hard resins which are fossilized pitch). Varnishes dry from the bottom up, the opposite of linseed oil, and thus tend to reduce wrinkling in the paint film. There is a fear, however, that the addition of varnish to the painting medium will make the painting impossible to clean at a later date because of its easy solubility.

Dammar varnish. Vernice damar naturale. Dammar resin comes from the Dammar fir found in the forests of Sumatra. It is sold in clear round walnut-sized pieces which must be prepared in the same manner as mastic tears. When fully dissolved, dammar varnish should be a light straw colour, the more yellow the resulting varnish the more inferior the resin. Store-bought varnishes tend to be dissolved in a low grade turpentine cut with mineral spirits and the students are encouraged to make their own.

Mastic varnish. Vernice mastice di chios in lacrime. Taken from the pistaccio tree which is found around the Mediterranean, mastic is the older of the two varnishes and has been in use by painters for centuries. The best grade is called Chian mastic and comes from the island of Chios in Greece. Mastic varnish is taken from an incision in the bark of the tree and sold in small tear-shaped pieces. Over the past two centuries mastic varnish has been gradually superseded by dammar resin which perhaps yellows less and is more resistant to cracking, though some feel that this is dependent solely on the preparation.



The preparation of the varnish..

To prepare a varnish, (1.) high quality mastic tears or damar crystals are (2.) ground with a pestle and mortar to a fine powder. The powder is then wrapped in gauze and (3.) suspended in a high quality rectified turpentine for a few days. During this period, all the crushed varnish will dissolve into the turpentine leaving any impurities in the gauze. The varnish should be added to the turpentine at a ratio of 1:3 and a lid kept loosely on the container so none of the turpentine evaporates. Do not heat the mixture to get the varnish to dissolve quicker as the resulting varnish will be sticky and yellow. Home-made varnish is superior to the store bought variety.

Section Three: *Pigments*

Students at Charles H. Cecil Studios are encouraged to grind their own colors for three reasons. First, because the painter who has a thorough knowledge of his paints can better control their effects. Second, because the quality of the materials can be controlled and finally, because it is more economical..

a. The Flesh Palette

> There is a Jewish Legend that when God created Adam, he first gathered white, black, red, and yellow dusts from the four corners of the world...
>
> C. G. Jung
> Man and his Symbols

The flesh palette consists of four colors: Lead White, Ivory Black, Vermilion, and Yellow Ochre. Zecchi carries all four (though the vermilion is a cadmium substitute), and for the first projects these will suffice to give the student an understanding of preparing and using hand-ground colors.

Lead White: Cremnitz white, flake white, bianco d'argento, bianco di Krems, biacca, carbonato di piombo. Mixture of Lead carbonate and lead hydroxide, it is an extremely toxic substance which should always be prepared wearing gloves and a mask. Lead white is ground in walnut oil, not linseed, and takes a very small quantity of oil (15%). When grinding, it is best to leave the white one night on the glass to settle and then add more pigment the next day. After preparation, the paint can be kept in a jar and covered with a small layer of water which will allow mild oxidation yet prevent it from drying. If kept in a tube the pigment will separate from the oil if not thoroughly ground. Lead white has the greatest covering power of all the white pigments, is the perfect impasto paint when used pure (especially when applied with a bristle brush), and if prepared correctly is entirely permanent. The diligent student can prepare his own white lead by coiling lead sheets and suspending them in a large jar over vinegar and then rinsing the white flakes in warm water to remove impurities (the De Mayerne manuscript reports the care that Rubens and Van Dyck excersized in obtaining the best white possible).

Ivory Black: Bone black, nero d'avorio. Calcined or charred animal bones. A very slow drier but a rich and warm black, ivory black should be ground in about 20% linseed oil to compensate for its relative lack of body. It should never be used in full strength as an underpainting, because anything painted over it will crack. True ivory black is made from burning ivory scraps, and is finer and richer than bone black. Both pigments can be cleaned in warm water to remove impurities.

Vermilion: Chinese vermilion, cinnibar, vermiglione origionale, cinnabro. Mercuric Sulfide. It is a bright, beautiful, warm red, which is unfortunately extremely difficult to find and very expensive when one does. Vermilion comes in two shades: The warmer Chinese vermilion and the cooler French variety. Which one to use is a matter of personal taste, though the warmer variety is recommended at the studio. The student will find the cadmium vermilion light (vermiglione di cadmio chiaro) an adequate substitute for beginning projects. Cadmium vermilion is a mix of cadmium sulfide and cadmium selenium and should be ground in 25% linseed oil. Real vermilion takes about 10% oil. Both colors can be kept under water rather than in tubes.

Yellow Ochre: Ocra gialla. Natural yellow iron oxide. A very inexpensive pigment of outstanding durability, yellow ochre has been used since prehistoric times. The best grades come from the south of France and lack the greenish hue found in Italian varieties. Yellow ochre should be ground thick to compensate for its weak tinting strength. It takes about 60% of its weight in oil

b. The Extended Palette

The range of colors can be further extended for backgrounds and clothing as well as for still-life and landscape projects.

Ultramarine Blue: French blue, outremer blue, blu oltremare scuro. Winner of a scientific competition in 1828 hosted by the French government to discover a substitute for Lapis Lazuli, a semi-precious stone and one of the most beautiful and expensive artist pigments available historically. Present day ultramarine blue is chemically identical to Lapis Lazuli (both are sodium sulfosilicate) but is made artificially by heating soda, sulfur and clay in a furnace. Ultramarine is ground in 30% oil but it keeps poorly in tubes and should be cut with wax. The student can also buy factory-made ultramarine as it is almost always used as a tinting colour and the only noticeable difference will be in colour intensity.

Cerulean Blue: Ceruleo. A compound of cobalt and tin oxides. A bright sky blue, cerulean is ground in about 20% oil with an addition of wax. Like ultramarine, it can be bought in tubes rather than hand-ground. The Old Holland, Senelier, and Lefranc & Bourgeois have the best hues, the others tend to be too green. Cerulean is a very good drier and has excellent covering power but is also extremely expensive.

Cadmium red medium: Rosso di cadmio medio. First introduced in 1907 in Germany, cadmium red is the most recently discovered colour used on our palette. It is made synthetically and consists of three parts cadmium sulfide with two parts cadmium selenide. It is a very strong colour and should be used with care indoors (Alizarin is often better suited). For landscape painting cadmium red can be mixed with ultramarine blue and a yellow to create shadows. It is very permanent, a slow drier, and is ground in 30% oil.

Earth reds: Red Ochre, English red, Indian red, Pozzuoli red, Venetian red, terra di pozzuoli, rosso inglese, caput mortum. Red iron oxide. Red ochre is found naturally, the others are produced artificially (by heating yellow ochres) but are cleaner and stronger. The English and Venetian reds have an unattractive yellowish hue, the Indian red (sometimes called Persian red) is cooler and more suited to counterbalance the warm vermilion already on the palette. Generally the earth reds absorb about 40 to 60% of their weight in oil.

Alizarin crimson. Alizarin red, alizarino. An organic product made from anthracene, alizarin crimson was first developed in the late nineteenth century and replaced the older, more subtle, madder colors which were made from roots and could not be mixed indiscriminately with other colors. Alizarin is the only transparent colour on our palettes and a such is well suited to glazes, especially for lips and cheeks where a cooler red is often needed. Alizarin is ground in 50% oil.

Naples yellow (dark). Antimony yellow, giallo di Napoli scuro. Lead antimoniate made by calcining litharge with antimony trioxide, Naples yellow must be hand-ground in poppy or walnut oil as the tube colors are almost always inferior ochre or cadmium substitutes. As with lead white, however, Naples yellow is very toxic and should be prepared wearing a mask and gloves. Naples yellow is entirely permanent (it has been found on tiles in Babylon dating to the 5th century B.C.), has a beautiful hue and great covering power. It is ground in 15% oil.

Cadmium yellow light. Primrose yellow, giallo di cadmio chiaro. The cadmium yellows have been in use since 1830, and are composed of cadmium sulfide and zinc sulfide (the more zinc, the lighter and more green the pigment). Cadmium yellow is a very strong colour and should be used sparingly. Tube colors tend to be cut with barium and lose some of their brilliance. Cadmium yellow takes about 25% of its weight in oil.

c. Further ex perimentation

The student can further extend the palette based on individual need. Use only reliable and time-tested colors. Some examples:

Viridian green. Guignet's green, viridiano. Hydrated chromium hydroxide. A very bright, cool green, viridian can be used to extend the landscape palette. It is expensive and takes 50% oil.

Raw umber. ombra naturale. A native earth containing manganese, the best grade is turkish umber. Gives your paintings that old master feel. Better left in your ground, as a colour it takes 30% oil.

Vine black. Lampblack, nero di vite. The oldest pigment known to man, vine black may have been used more recently by Van Dyck as a cooler substitute for ivory black. A very slow dryer (avoid it in underpainting), it is ground in 100% oil.

Section Four: *Mediums*

Every painter by nature paints differently. The medium one uses needs to be developed individually to allow for the greatest range of expression. Historically, mediums have been developed by painters over the course of years and their recipes guarded as trade secrets. To the best of our knowledge, the mediums listed below have been used by painters for centuries. At any rate, they are all fast drying, allow for a number of techniques from impasto to glazes, and will dry to a very durable surface. Students, however, are encouraged to research and to develop their own medium.

a. The Studio Mediums

Sun-thickened oil and balsam - 1:1. The simplest medium, and perhaps similar to the one used by Van Dyck, this is currently the preferred medium of the advanced painting students. It has excellent fusion qualities, dries in a short time to an enamel finish, and is an excellent glazing medium. Whether one uses Canada balsam or Strausbourg (or Venice) turpentine is a matter of personal choice. The Canada balsam is perhaps the best of the three for fusion and permanence but has been used as a painting medium only this century. Strausbourg has the best colour and smell of the three and it is time-tested (we think) in the paintings of Rubens and Van Dyck. Venice turpentine has also been used by painters since the beginnings of oil painting, but the supplies one finds today tend to be of very low quality. The thickness of the sun-thickened oil is also a personal choice (though the season should also be a factor as the oil will oxidize quicker on one's palette in the summer months). Either linseed oil or walnut oil can be used as the thickened oil. Walnut oil is clearer than linseed oil but it dries more slowly and is expensive.

Sun-thickened oil, balsam, varnish - 1:1:1. Similar to the medium listed above, the varnish (either mastic or dammar) speeds up and evens the drying of the paint. This medium was used for years at the studios with good results. The fear now is that the varnish could darken the paint film over time, and varnish does tend to be more brittle. However, according to some sources, varnish has been used in painting mediums for centuries without problems. During the winter months especially, varnish can be very useful to speed up the drying process which can slow due to the cold.

b. Further Experimentation

Because painters historically developed their own mediums, there are many available with which the student can experiment. Some are very simple, others are very complicated and require hours to prepare. There is, however, no magic elixir to make up for lack of drawing skills and every medium is finally subject to the abilities of the painter.

Linseed oil. John Singer Sargent's medium. Simple, very dependent on your drawing skills, and requires a lot of paint mixing to compensate for its lack of fusion. Linseed oil is an excellent medium for beginning painters as it forces one to draw and to mix colors. However, linseed oil is not very good for glazing and it can yellow with age and should be used sparingly.

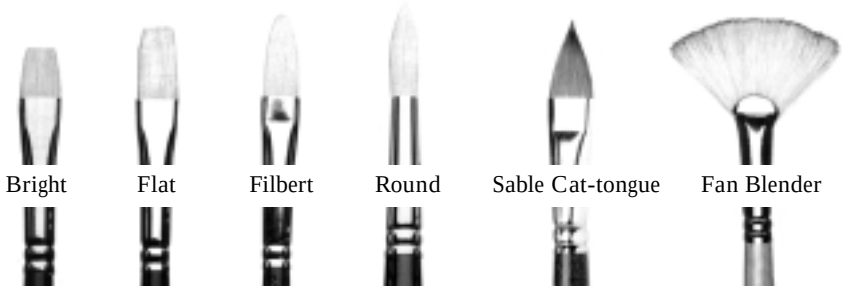
Meroger. Black oil, Meguilp. The Meroger medium was developed by the head director of restoration at the Louvre by examining old master paintings. His research led to two mediums which mimic the matte and glossy finishes of the Venetian and Flemish painters. To make the Venetian medium, cold-pressed linseed oil is cooked over a light flame (never allow it to boil) and crushed litharge and wax are slowly added over the course of 40 minutes. The Flemish is made with the addition of mastic varnish instead of wax. The result is a gel which turns to a liquid when the pressure of a brush is applied (also called a thixotropic medium). The Meroger mediums can be very effective for glazing, but the addition of wax is always a risk (the painting could later slide down the canvas) and resin cooked into linseed oil was the ruin of many a nineteenth century painting. Generally, anything developed or recommended by restorers should be avoided in painting.

Amber mediums. Alchemically prepared mediums made from amber by the Vermeer society in France and The Alchemist in America. The French company's instructions say that the painter is only there to let the medium work its magic. Amber mediums come in little bottles containing lay-in mediums, retouch varnishes, and painting mediums of various densities. The rest of the mediums are similar to Meroger and are probably amber cooked into various oils. Amber mediums are suited to small, highly detailed works (especially as a box of four bottles can cost up to $250) and are possibly similar to the mediums used by the Van Eyck brothers, though some believe that "amber" referred to the color and not the content of the medium, which was really copal.

Section Five: *Brushes, Knives, and Palettes*

The brushes we use today are descended from the nineteenth century and are very different from the brushes used by the old masters. Similarly, our palettes also have little in common with the bread board shaped palettes seen in the Flemish portraits of St. Luke. The modern mahogany painter's palette dates from the time when paintings were done on red-bole or dark grounds where the paint could be correctly matched against the dark of the wood. The brushes are an improvement, but the ideal palette should be of a light grained wood, such as poplar, ash or maple. Mixing colors on a light colored palette will allow for better approximation when the paint is placed on the bone-colored ground. Again, the choice will be the students.

a. Brushes



Bristle brushes. Hog-hair brushes, pennelli in setola cinese. Bristle brushes are made from bleached white hog's hairs. They come in four shapes: Filbert, round, flat, and bright. The old masters used mostly the round and flat shaped brushes; the filbert brush (whose rounded edges resemble a well-worn flat brush) became common in the nineteenth century and they are now the most popular brushes on the market. When buying bristle brushes, always buy the best you can afford; the cheaper brushes sacrifice a great deal in spring and durability. To clean bristle brushes, first wipe excess paint off with a paper towel then clean them with soap and warm water. Finally, wrap each brush with a small piece of paper towel to absorb the water and lay it on its side to dry, not upright or the water will seep down into the ferrule. Bristle brushes are used during the lay-in stage and for impastos. They should be held far down on the handle and not like a pencil.

Sable brushes. Kolinsky brushes, pennelli in martora Kolinsky. Sable brushes are made from hair taken from the tail of the kolinski, a small rodent found in Russia. The brushes are sold in three shapes: round, flat, and filbert. A good sable brush should have a wonderful spring and come to a fine tapered point. Sable brushes should be cleaned with just soap and water and some soap should be left in to allow for shaping the brush before leaving it to dry. To remove the soap, the brush can be cleaned briefly in alcohol or acetone.

Badger hair blenders. Sweetners, fan blenders, pennello a ventaglio. The badger hair blender is used for softening gradations between colors. Fan blenders need special care in cleaning.

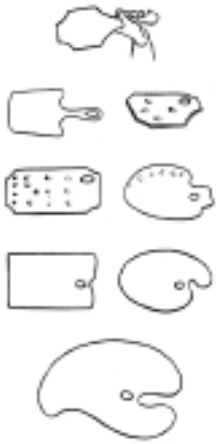
b. Palette Knives *Spatule (in acciaio)*

Palette knives come in three sizes and at least one of each should be purchased. The large knives (also known as priming knives) are used for laying on the ground when preparing canvas. The medium sized palette knives are used for mixing the oil with the pigment prior to grinding; some colors are ground only with the palette knife. Finally, the small trowel-shape painting knives are use for mixing large quantities of colour on the palette and for gingerly scraping down in the early stages of a painting.

Priming knife from the de Mayerne manuscript.

c. Palettes *Tavolozze*

As mentioned earlier, the palettes one finds in art shops date from the time when painting was done on dark red grounds. Today one should use a palette made from a light grained wood. The palette should be well balanced and the wood well aged or it will warp. To make a palette, it is best to buy an old panel of wood from an antique furniture dealer. Most art stores sell palettes made from more recently cut wood. To prepare the palette, sand it lightly with fine grained sandpaper and cover it with warm linseed oil until the wood is saturated with the oil. You will become very attached to your palette, so choose a good one from the start. Buy three metal dippers or palette cups (scodellini in metallo) for turpentine, medium, and retouch varnish.



A brief history of the palette.

Section Seven: *Painting Basics*

a. The Lay-In

Always make sure the easel is set up properly. The base of the canvas should be parallel to the floor and the surface should be perpendicular to the painter. The painter always lines up with the edge of the easel closest to the subject.

For beginning painting projects, it is recommended that the student first draw the subject in charcoal and transfer the correct drawing to the canvas.

Squint (or 'defocus' your eyes) a lot when you sight-size and try to only see the big shapes.

Try to lay in quickly using all the necessary colors. The more one gets down on the canvas the easier it becomes to sight-size the shapes.

Use lots of paint during the lay-in. Push shapes around with both the color of the subject and the background. Do not be timid about making drastic changes if the painting needs them. Scrape down every time the paint gets to thick to work with or goes grey from reworking.

Concentrate on mixing the correct colors from the beginning of the painting, especially the gradations between colors. It is said that Sargent would take minutes to mix one color correctly.

Scrape down and blur at the end of every painting session until fully confident of the shapes and composition. An incorrect line must never be allowed to dry sharp or it will be very difficult to change later.

Remember the cardinal rule 'thick over thin' -that the undercoats must have less oil than the overcoats.

Never be precious about your first paintings. Take advantage of the fact that you are in school and have the opportunity to learn as much through failure as success.

Concentrate. Your eyes and brain should be sore after three hours of drawing or painting.

b. The Middle Bit

Before painting, make sure the easel is set up properly and that the subject 'locks in' when viewed from the correct position.

If working under flat light, the glare on the canvas can be minimized by either tilting the canvas forward or sideways. This should only be done after one is confident of the shapes as angling the canvas will distort the image.

When the painting dries matte or 'sinks-in' over a weekend, either apply a retouch varnish or (even better) 'oil out' by applying a thin layer of medium cut with two parts turpentine over the dry areas. This will also allow for easier fusing of colors during the painting session.

Find the rhythms in the line and color of your subject. Rhythm is the key to expressing life in a static medium such as oil paint and remember always that nature's rhythms are never dull or repetitive.

Never let an incorrect line dry with a sharp edge. A thick line of paint that is allowed to dry sharp will be difficult, if not impossible, to change later. If in doubt, blur your edges.

Try to be methodical in moving the painting along as a whole. Do not let one section of the painting get to far behind the rest and always start after a break by working on the 'furthest back straggler'.

c. The Final Touches

Check again that your easel is set up correctly. I repeat this three times because this is such a common problem in a studio where the easels are shared by different people. Always begin by checking your easel.

Carefully hit your darkest darks and your lightest lights at this stage. Remember always that the full range of light and dark in nature cannot be duplicated with pigment.

Avoid niggling. and try to keep the painting broad. Consider, however, that overpainting a picture is a valuable lesson to be learned and will help in the development of individual style.

Show variety in your painting: Variety of sharp and soft lines, variety of lights and darks, variety in your colors. Try to surprise yourself with the multitude of variations to be found in nature.

Section Eight: *Landscape Painting Basics*

When you arrive in a new location where you intend on painting a number of landscapes, it is always best to first spend a couple of days travelling around with just a sketchbook. The drawings you do are good practice, it is more convenient to travel with a small book, and compositions are formulated quickly with a pencil on paper. You can later transfer the better subjects directly to the canvas.

When deciding on a composition, consider both where the sun is and where it will go during the course of your painting session.

Always set up the easel so the painting is in shade. The final painting will presumably be hung in a house (or a museum) away from direct sunlight and one should key the painting accordingly. Also, oil paint in direct sunlight quickly becomes tacky.

Begin a landscape by keying the sky down to the horizon line. You can paint the haze in distant mountains by mixing your sky color right into the colors of the distant forms.

The landscape palette consists of one white, two blues, three yellows, and four reds. Learn to use these colors well and be prepared for surprises. Often, the final color you seek will be an unlikely mix.

A good landscape painter should have at least a basic knowledge of botany, geology, and meteorology.

Study color theory. Remember that a colored light will produce its complement in the shadows (i.e. the yellow light of early morning produces blue shadows) and the shadow of any object under strong light will have the tint of the complement of the object (i.e. the reddish hue in the shadow of a green bush).

Study Constable, Corot, the Barbizon painters (especially Daubigny), the impressionists (Monet and Sisley) and the Russian School of the late nineteenth century (Levitan, Repin and Serov).

Forget all the above rules and look. Everything there is to know is in the landscape. At the end of the day, the two most important things to remember are concentration and humility before nature.

Section Nine: *Troubleshooting*

How much rabbit skin glue do I add to the water?
See page 25.

The rabbit-skin glue soaks through to the back of the canvas
The glue is too thin. Either not enough glue has been added to the water or it has been applied while still too hot.

The primer soaks through to the back of the canvas.
Not enough or inconsistent coats of rabbit skin glue.

The surface of the canvas is too slick.
Either too much primer has been applied or there was too much oil in the primer. Add more lead white, ochre and umber (dry pigment) to the primer.

The surface of the canvas is too absorbent.
Not enough oil in the primer. Add two tablespoons of linseed oil (or more) to the tin of primer.

I've dented the canvas.
Wet the back of the canvas around the dent then leave it in direct sunlight to dry. The canvas should stretch out in drying. Only try this once though, as repeated tightening and loosening of the canvas can crack the paint surface.

The medium separated overnight.
Sometimes with changes in temperature, the medium will expand and contract. When this happens, a medium which is not properly fused will separate into the heavier and lighter components. Place in a bain-marie and heat gently over a small flame.

New brush strokes onto a wet painting remove the paint.
Painting onto a wet painting when using medium require that the new strokes have a higher paint-to-medium ratio than the undercoat. Use more color.

Blurring with the brush is very difficult.
Use your fingers. Always wash your hands after painting as capillary action in your fingertips will absorb lead white into the body.

Section Ten: *Painting Glossary*

Below is a basic glossary of terms in general use at the studio.

Cuttlebone: Both the bone from a cuttlefish and the process of using it to lightly sand down the glossy surface of a dry painting prior to reworking.

Dipper: A small metal cup attached to the palette and used for holding either medium, turpentine, or retouch varnish. Also called a palette cup.

Finder: Two small L-shaped pieces of cardboard placed one on top of the other to form a small rectangle, finders are used to help the painter decide on or "frame" a composition.

Glaze: A darker color placed semi-transparently over a lighter color. Often confused with a scumble.

Grisaille: The process of laying in the initial stages of a painting only in shades of grey, and adding color at later stages in the form of glazes and scumbles. At the studios an informal "colored grisaille" is the standard practice for the early stages of a painting.

Impasto: A heavy stroke of paint (usually with a bristle brush) placed in relief on the canvas for effect. Although usually glazed over at a later stage, the three-dimensionality of the paint catches more light than the flat surface of the canvas and is thus used to accentuate highlights.

Intensity: Intensity is the saturation or purity of a color. Mixing two pure colors will weaken the intensity of both.

Hiding Power: The opacity of a pigment, in the sense of its ability to cover other colors. Lead white and Naples yellow both have excellent hiding power.

Hue: The 'color' of the paint (red, blue, greenish-blue...etc).

Muller: Used to grind paint on the grinding slab.

Mahlstick: A stick with a padded ball at one end which is laid on the canvas and used to balance ones arm upon when painting more detailed sections.

Oiling out: The process of cutting ones medium with turpentine and applying it all over a painting which has dried matte. The thin medium will restore colors to their brilliance when wet, allowing for accurate mixing of colors before continuing painting. The medium will also aid in the fusion of the new layers of paint. Though similar to retouch varnish, oiling out will not introduce varnish into the undercoats.

Retouch varnish: A varnish prepared by mixing 1 part dammar or mastic varnish to 2 parts turpentine. Used to return recently dried (or sunk in) colors to their brilliance when wet. In practice, every Monday (or any other time a painting has had a couple of days or more to dry) retouch varnish should be applied before beginning to paint. See also oiling out.

Scraping down: The process of gingerly removing excess paint or medium from the surface of the canvas with a palette knife. Scraping down should be done throughout the initial stages of a painting until the painter is confident of the shapes and composition. Always scrape one color at a time, wiping the knife clean between each color.

Scumble: A lighter color placed semi-transparently over a darker colour. Often confused with a glaze.

Sunk in: A painting which has gone matte because some of the oil has been absorbed by the ground. See oiling out and retouch varnish.

Value: The lightness or darkness in a color. A lighter color is higher in value, a darker color is lower.

SILENCE AND SLOW TIME

by

Charles H. Cecil

> Le réaliste s'il est un artiste, cherchera, non pas à nous montrer la photographie banale de la vie, mais à nous en donner la vision plus complète, plus saisissante, plus probante que la réalité elle-même.
>
> Guy de Maupassant,
> Le Roman

> The realist, if he is an artist, will seek not to show us a banal photograph of life, but to give us a vision more complete, more seizing, more probing than reality itself.
>
> Guy de Maupassant
> Le Roman

"Silence and slow time," as Keats described the Grecian urn, are the qualities of the visual image that have moved artists since antiquity. Both the Grecian urn and Keats' ode have endured and shall, defying time. This is the property of art, if not of human life. The visual or poetic image outlives that which gave it birth. Keats lived only twenty-five years. His poem has existed over a century; the Grecian urn, millennia. Yet the visual image even more than the poetic has the capacity to still the passing moment and make it immortal. Keats recognized this and wrote, "Thou, silent form, doth tease us out of thought as doth eternity." It was the Greek desire to perpetuate their reality that flourished into the full naturalism of Periclean art. This reached its ultimate expression in the Panathenaic relief spanning the length of the Parthenon frieze – a moment in Greek life caught forever, time slowed despite the effects of age, action dignified in quietness. What Shakespeare has said of the written word is no less true of visual art: "So long as men can breathe, or eyes can see, So long live this, and this gives life to thee."

The survival of Greek sculpture, in the few originals and many copies, gave Renaissance artists the prototype for their rediscovery of natural form. A fragmentary torso, the Belevedere, inspired Michelangelo to the highest mastery of the figure since Hellenistic times, and when the Laocoön was discovered in 1506, he was among the first to admire and identify the work. His devotion to the antique, however, would have come to nothing without his knowledge of anatomy. Leonardo da Vinci had led the way in this research and most fully embodied his own concept of the painter as natural philosopher. To him nature was an absolute, an image of the eternal, a child of God. In a very significant passage of his notebooks, Leonardo defined the relation of art to nature and its process of evolution:

> The painter will produce pictures of little merit if he takes the work of others as his standard; but if he will apply himself to learn from the objects of nature he will produce good results. This we see was the case with the painters who came after the time of the Romans, for they continually imitated each other, and from age to age their art steadily declined. After these came Giotto, the Florentine, and he... turning straight from nature to his art... not only surpassed the masters of his own time but all those of many preceding centuries. After him art again declined, because all were imitating paintings already done; and so for centuries it continued to decline until such a time as Tommaso the Florentine, nicknamed Masaccio, showed by the perfection of his work how those who took as their standard anything other than nature, the supreme guide of all the masters, were wearying themselves in vain.[1]

Throughout the history of art, there has occurred a succession of rises and declines in man's perception of nature. Renaissance artists like Ghirlandaio, Leonardo, and Titian continued the work of Masaccio, only to be followed by the mannerist school of the late sixteenth century. Then with Caravaggio, painters began to paint directly from life, which gave new impetus to seeing and culminated in the art of Velazquez, Rembrandt, and Vermeer. The eighteenth century was a period of variant styles with Boucher representing one tendency and Chardin the other. Reynolds, a convinced advocate of truth to nature in his discourses, recorded his surprise when Boucher told him he had not painted from life for years; instead, the still lifes of Chardin reveal a naturalism unique to the rococo age. By the time of the revolution, David had overturned the former style and brought about a revival in figurative art conditioned by his emulation of the antique. His atelier was to set the precedent for the study of nature that guided painters throughout the nineteenth century.

The irony of this development is that our own epoch has produced the most mannered art in the history of oil painting. In terms of Leonardo's criterion, modern art would be called a decline. Its apologists, however, claim an evolution. But as Nietzche brilliantly formulated, "What is the point of extending the means of expression, if that which expresses, art itself, has lost the law of its being!"[2] The lost law of the art of painting is nature. And not only has abstract art lost this law, but so has its complement, photo-realism. Drawing and painting from photographs is the same kind of operation as working from other men's styles, the same process that leads to repetition and decline. Like abstract art, realism owing to the camera fabricates another maniera; it is an imitation of an imitation. Photography may have its own law, but its use in painting deadens the artist's perception of nature. It subordinates painting to a stereotype and makes it appear to be that which it is not.

Realism versus abstraction has been debated for decades, but it is now time for cultural critics to evaluate realism itself. Is it a realism done from photographs or in emulation of photography, or is it a realism done from life? Some realists slavishly copy the photograph with an aim of imitating its finish in paint. Others just as slavishly copy nature and pride themselves on achieving a photograph look. Still others interpret the photograph freely, disguising it in painterly effects. The practioners of these kinds of realism are innumerable and overlap into commercial art and illustration. They produce images as common to our culture as film itself that condition our view of daily life and lead to little beyond the ephemeral. Opposed to this is the realist painter who has neither a photographic method or ideal. He goes straight to nature and seeks values that transcend his particular time. His is a tradition that had evolved over centuries, antedating the industrial revolution and rooted in a humanistic view. The Renaissance origins of his art are yet the animating force of its being. For oil painting was created by Van Eyck as a vehicle to perceive the visual world, and this is basic to the art today. It gives each age a perspective, conveying to it a larger vision of nature and of man.

In distinguishing between the kinds of realism, the concept of oil painting as a fine art should also be clarified. The fine arts are something other than the applied and commercial arts. In Italian, they are called "Le Belle Arti", in French, "Les Beaux Arts". The Beautiful Arts. Beauty is the raison d'être of fine art. It is not conceived as a commodity to be bought and sold, but as an act of philosophy. For beauty is the image of perfection. It reflects a universal harmony, as in it opposites are reconciled and particulars unified. Through beauty art achieves its catharsis; it puts order on the chaos of quotidian life. We see through familiar objects to the perception of the whole. A Vermeer interior cannot be confined to the seventeenth century, though it may seem to be so, for it expresses a greater reality, the reality of light, colour, and form that is ever present. Velasquez's Juan de Pareja yet breathes, and when the portrait of Pope Innocent X was displayed in the Pantheon, R. A. M. Stevenson relates: "Velasquez, by the admission of all the artists in Rome, alone painted reality, the others, some decorative convention."[3]

Velazquez's depiction of reality is so enduring that it inspired the turn of the century painters in their pursuit of nature. As the least mannered of painters, he showed the way to artists like Repin in Russia, Sorolla in Spain, Sargent in England, and the Boston painters in America. The schools that centered around the European masters have mainly died out, but the Boston School was to have another fate. It is one of the few direct links in the naturalistic tradition that exists today.

A key concept of this tradition is the "sight-size" approach to painting, whereby the motif is depicted in scale and focus at a given distance. This technique was first recorded by Alberti and Leonardo during the Renaissance and later became part of the acquired knowledge of the painter's craft. Yet sight-size, which was practiced throughout Europe and America a century ago, has survived and been systematically taught only by means of the Boston School. R. H. Ives Gammell, pupil of William Paxton, conveyed it to his students who in turn, have formed their own ateliers. There are now underway attempts to reconstruct academic techniques through the research of documents and source materials; however, the visual language of picturemaking cannot be revived in such a way. It is instead what Shelley would call a "transmitted effluence". From master to pupil this language will live and evolve to fashion new images – not fleeting like film, but silent and slow – to eternalize that which must pass in the great arc of time.

1 Edward McCurdy, Leonardo da Vinci's Notebooks, (New York: Charles Scribner's Sons, 1906), pp.164-5.

2 Friedrich Nietzsche, The Will to Power, trans. and ed. by Walter Kaufmann; Vintage Books, (New York: Random House, 1968), p.441.

3 R.A.M. Stevenson, Velasquez, (London: George Bell and Sons, 1902); p.107.

Materials Addendum

Europe:

(I)

1. Zecchi.
Via dello Studio, 19r 50122 Florence
Tel: +39 055 211470 Fax: +39 055 210690
http://www.zecchi.com
All the materials described in this handbook can be found here. Of special interest: Canada balsam, olio d'Abezzo, Cremnitz white, sable brushes, mullers, mastic tears and dammar crystals.

2. Bizzari.
Via della Condotta 32r 50122 Florence
Tel: +39 055 211580
Of interest: High grade rectified turpentine, white lead, mastic tears and dammar crystals.

3. Rigacci
Via dei Servi 71r 50122 Florence
Tel: +39 055 216206
Of interest: Everything for the graphic arts.

(F)

4. Senelier.
3, Quai Voltaire 54007 Paris
Tel: +33 (01) 42607215 Fax: +33 (01) 42610069
Of interest: Yellow Ochre, bristle brushes, stretcher bars.

5. Les Ocres de Puisaye.
S.A.R.L. J. Quieffin
53 Av. du 14 Juillet 58200 Cosne-sur-Loire
The source of Senelier's yellow ochre.

6. Vermeer Society.
Le Parquet 1310 Saint-Pierre-La-Riviere
Tel/Fax: +33 (02) 33395883
Of interest: Clear Venice turpentine, copal and amber varnishes, white lead and real chinese vermillion.

(NL)

6. Verfmoolen 'De Kat'.
Kalverringdyk 29, 1509 BT Zaandam
Tel: +31(75) 621 0477 Fax: +31 (75) 621 3825
Eighteenth-century windmill which still grinds pigments on stone rollers using wind power. Of interest: Excellent quality dry pigments, excellent linseed oil, clear Venice turpentine. $2 tourist entry fee.

(D)

7. Kremer.
Barerstr. 46 Munich
Tel: +49 (89) 285488
http://www.kremer-pigment.de
Of interest: Excellent, (relatively)inexpensive balsams, varnishes and dry pigments. The source of many of the suppliers listed on these pages.

(GB)

8. L. Cornelissen & Sons.
105 Great Russel St. London WC1 B 3RY
Tel: +44 (0171) 636 1045
Of interest: High quality art supplies. Excellent rabbit-skin glue, Strasbourg turpentine, rectified turpentine, pigments, varnishes, and high quality Japanese-made bristle brushes.

9. The Compleat Artist.
102 Crane St. SPI 2QD Salisbury
Tel: +44 (01722) 335-928
Of interest: Canada Balsam, high quality Windsor & Newton brushes, pigments, linen canvas, Old Holland tube paints.

10. AP Fitzpatrick Fine Art Materials.
142 Cambridge Heath Rd. London E1 5QJ
Tel: +44 (0171) 790 0884 Fax: +44 (0171) 790 0885
Of interest: Kremer supplier, balsams, dry pigments, quality oils & varnishes, sun-thickened oils, good raw linen and oil-primed linen canvas.

(ES)

11. Escoda
C/ Joaquin Costa, 47 - 53 08206 Sabadell (Barcelona)
Tel: +34 (93) 726 32 19 Fax: +34(93) 725 67 52
Of interest: Excellent, inexpensive brushes, including long filberts, cat-tongue sables and pony hair varnishing brushes.

USA:

1. Robert Doak Assocs. Inc.
89 Bridge St. Brooklyn, NY 11201
Tel: (718) 237-1210/0146
Of interest: Copal and thickened oil painting mediums, varnishes, dry pigments (including six varieties of lead white), electric mullers, excellent bristle brushes, Russian box easels, rare and unpublished materials books,...etc.

2. Utrecht
Stores in many major cities.
http://www.utrecht.com
Of interest: Canvas preparation materials, high-grade Belgium linen, stretcher bars, oil primer, copper tacks...etc.

3. Kremer Soho
228 Elizabeth St. Manhattan, NY
Tel: (212) 219-2394 Fax: (212) 219-2395
Of interest: See Kremer Munich on the previous page.

4. Sinopia
229 Valencia St. San Francisco, CA 94103
Tel: (415) 621-2898 Fax: (415) 621-2897
http://www.sinopia.com
Of interest: West Coast source of Kremer supplies. They also sell a full range of Escoda brushes (see previous page), 'Alchemist' amber mediums, and heavy glass mullers.

5. Flax
1699 Market Street. San Francisco, CA 94103
Tel: (415) 552-2355
http://www.flaxart.com
Of interest: Miscellaneous supplies. portfolios, French box easels, palettes, Old Holland tube colors, medium bottles.

6. Studio Products
http://studioproducts.com
Of interest: Online supplier of Zecchi and Ceninni stuff.

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AND SUGGESTED READING

Artists and Art History:

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2. Velasquez: Technique of Genius, Jonathan Brown. Yale University Press, New Haven, 1998. Excellent technical insight into Velasquez's materials and methods.

3. Rembrandt The Painter at Work, Ernst van de Wetering. Amsterdam, Amsterdam University Press, 1997.

4. Discourses on Art, Joshua Reynolds. Yale University Press, New Haven, 1998

5. The Journal of Eugene Delacroix, Translated by Lucy Norton. Phaidon Press, London, 1995.

6. Artifice and Illusion : The Art and Writing of Samuel Van Hoogstraten, Samuel Van Hoogstraten, Celeste Brusati. University of Chicago Press, 1995.

7. The Art of Ancient Greece -Sources and Documents, Compiled by J. J. Pollitt. Cambridge University Press, 1990

8. The Lives of the Artists, Giorgio Vasari. Penguin Books, London, 1965.

9. The Life of Titian. Carlo Ridolfi. The Pennsylvania State University Press, University Park, PA, 1996.

10. Neoclassicism and Romanticism, 1750 - 1850 An Anthology of Sources and Documents, Edited by Lorenz Eitner. Harper and Row, New York, 1989.

Materials, Technique & Science:

1. The Artist's Handbook, Ralph Mayer. Viking Penguin, New York, 1991. The 'must have' for every painter's studio.

2. The Materials of the Artist, Max Doener. Harcourt Brace Janovitch, Orlando FL, 1984. Somewhat discredited based on the condition of his students paintings after 50 years.

3. Meathods and Materials of Painting of the Great Schools and Masters Vol. I & II, Sir Charles Eastlake. Out of Print Very Interesting, unfortunately also very difficult to find.

4. Leonardo on Painting, edited by Martin Kemp. Yale University Press, New Haven, 1989. Apparently Leonardo intended to write a thorough treatise on art; since he never finished, this compilation from his notebooks will have to suffice.

5. On Painting, Leon Battista Alberti, translated by John R. Spencer. Yale University Press, New Haven, 1956. Offers an excellent insight into Renaissance artistic theory.

6. The Book of Art, Cennino Cennini, edited by Daniel V. Thompson, Yale University Press, New Haven, 1932. Medieval and early renaissance techniques.

7. The Painters Methods and Materials, A. P. Laurie. Dover Publications, Inc. New York, 1967. A good second opinion after reading Mayer and Doerner.

8. Painting Materials A Short Encyclopedia, Rutherford J. Gettens and George L. Stout. Dover Publications, Inc. New York, 1966. A good desk reference for the painter.

9. The Practice & Science of Drawing, Harold Speed. Dover Publications, Inc. New York, 1972. The best book on drawing available today.

10. Original Treatises on the Art of Painting, Mary P. Merrifield. Dover Publications, Inc. New York, 1967. The treatises are a bit obscure, but interesting.

11. Materials and Techniques of Medieval Painting, Daniel V. Thompson. Dover Publications, Inc. New York, 1956. Very good section on historic pigments.

12. Formulas for Painters, Robert Massey. Watson-Guptill, New York, 1988. Excellent compilation of painting mediums.

13. The Enjoyment and Use of Color, Walter Sargent. Dover Publications, Inc. New York, 1923. Silly title, but an excellent book on color theory.

14. Light and Color in the Outdoors, M. G. J. Minnaert. Springer, New York 1993. Not written specifically for painters, but a very detailed and scientific look into meteorological phenomena.

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