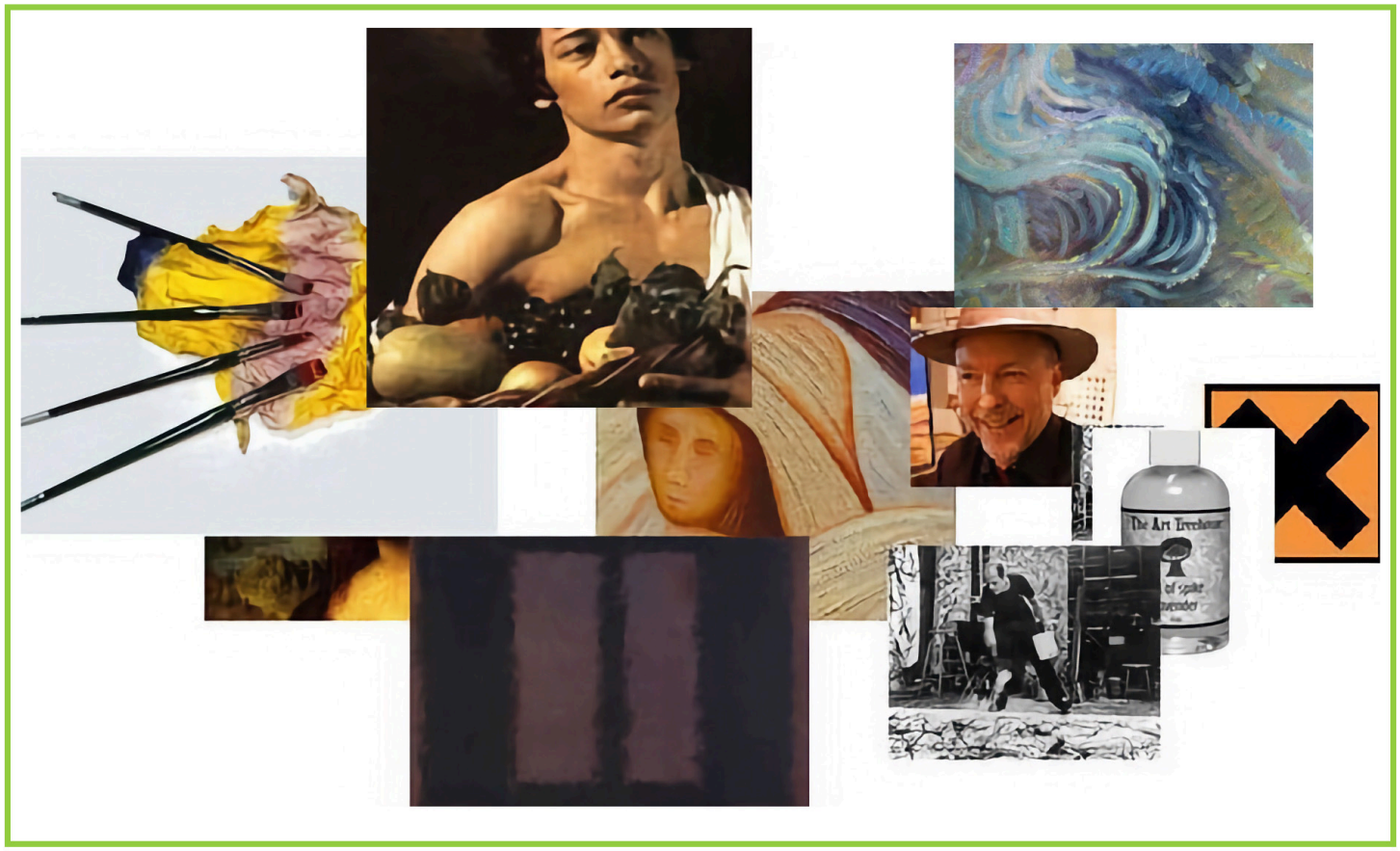
Goodbye to Turpentine



by Robert Maynord

It is common for an art student to show up for the first day of painting class and discover that other students in the room will be brushing with various solvents

such as turpentine,
mineral spirits, and odorless mineral spirits (OMS).
In the last painting class I attended,
two students left on the first night
because of the fumes.

These solvents are assumed to be part of the artistic process, with painters working in rooms without ventilation, using materials that can cause serious reactions — materials that are illegal in schools and restricted in the general workplace. Further, the art stores are largely unaware of these problems, not selling protective masks, gloves and coats that would normally be required in the workplace.

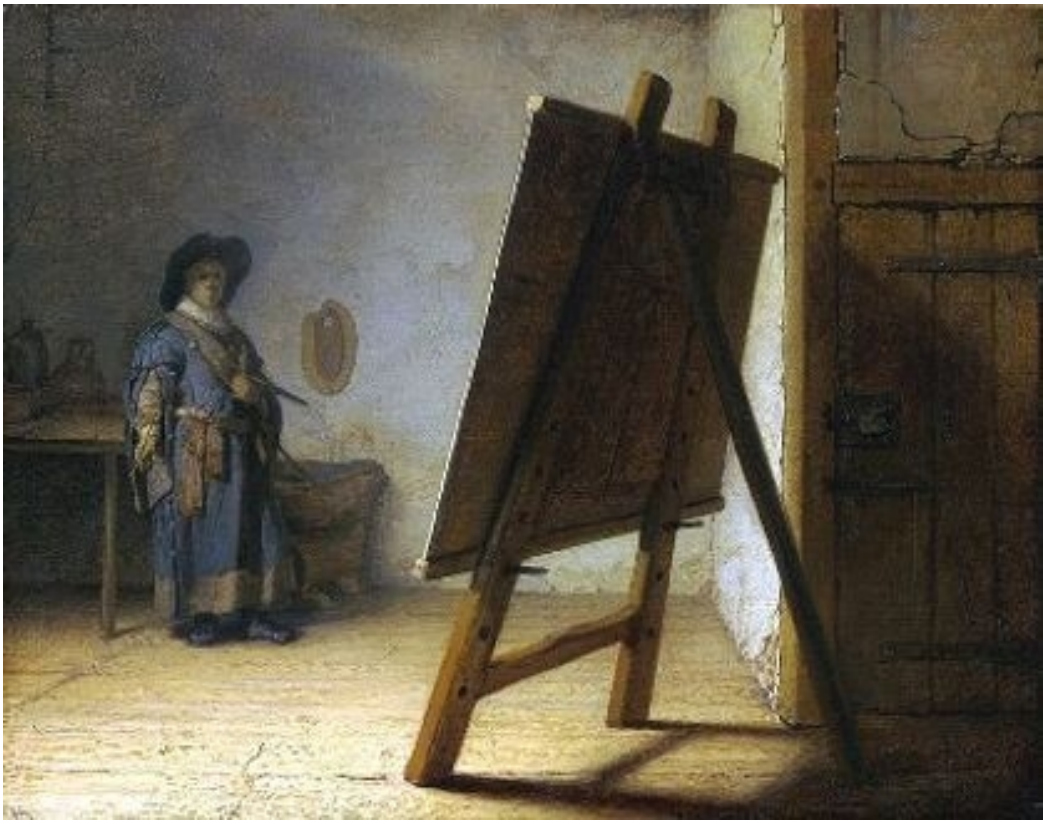
a painting made with the spike lavender oil painting technique (ArtTreehouse)

Just this past week, I was attending an art fair, and had the opportunity to converse with the featured artist. She was using watercolors and acrylics in her work, but confessed her real desire was to work with oil paint. She had actually worked with oils in the past, but gave them up because she couldn't stand the fumes. Unfortunately this artist, like many others, didn't know that oil paint can be one of the safest, least toxic, least polluting and most natural of all art media!

Many artists today link oil painting with the use of turpentine, commonly called "turps". Turps, or turpentine, is the strong smell that is associated with an oil

painter's studio. But turpentine causes problems for many people. As OSHA notes, "turpentine is a skin, eye, mucous membrane, and upper respiratory tract irritant in humans.

> NOTE: Some brands of spike lavender oil have been found to be too volatile and concentrated — even corrosive — for unprotected studio use, and may induce headaches. These products need to be handled with an organic respirator. Check with the supplier about best working practices.



Rembrandt: "The Artist in His Studio"

In 1713, Italian physician Bernardinus Ramazzini described in his De Morbis Artificum Diatriba a mysterious set of symptoms he was noticing among artists: "The business of a Painter or Varnisher is generally, and not without reason, considered an unhealthy one."
How Important Is Lead Poisoning to Becoming a Legendary Artist?
The Atlantic, 2013

https://www.theatlantic.com/health/archive/2013/11/how-important-is-lead-poisoning-to-becoming-a-legendary-artist/281734/

It may also cause skin sensitization and central nervous system, gastrointestinal, and urinary tract effects." Often, artists will substitute odor-less mineral spirits for turpentine on the assumption that since the smell is not so strong it might be safer to use. However, turpentine, mineral spirits, and odorless mineral spirits are all regulated by several federal safety agencies. Basically, you shouldn't inhale the fumes of any of them.

There are actually many historical forms of turpentine, all made from the resin of trees. Perhaps the oldest, dating from the 14th century, was made from the terebinth tree, a member of the cashew family. Later, various turpentines were made from pine and fir trees, including Canada balsam, made from the balsam fir, and Venice turpentine, made from the western larch tree. Artists valued these forms of turpentine for their resinous sap, not for their use as a solvent.
Today, what we call "turpentine" is made from distillation of the sap of pine trees,

and as such it is sometimes added to cleaning products, or used as a substitute for gasoline. Turpentine solvent, sometimes called “spirits”, has the opposite effect in painting from the earlier turpentines used by historical painters, thinning the paint rather than adding clarity and brilliance.

Linseed Oil for Painting

In contrast to turpentine solvent, non-toxic linseed oil has been used in painting for centuries. Linseed-flax oil has a mild odor, and in its purest form is sold in health food stores as a nutritional supplement. The odor of linseed-flax oil disappears quickly, and is not offensive. Historically, artists have also used other oils such as oil of spike lavender, which is not toxic and has a strong, but wonderful smell.
Spike Lavender was commonly used during the time of Rembrandt, as well as Rubens, and at least as far back as the Flemish painters such as Hubert van Eyck. During Rembrandt’s time it was even used by cabinet makers when they created varnishes for their wood. Oil of spike lavender works as a solvent, but also as a diluent in the paint. It is used to loosen up paint, as well as to thin paint for under paintings, and it helps to smooth out the brush stroke. But very few artists know about it today.

During the Industrial Revolution, turpentine was produced for much less cost than spike lavender, and artists begin to use it as a cheap alternative. Later, mineral spirits was introduced as a dry-cleaning chemical, and then artists and commercial painters begin to use it. Since that time, research has shown that mineral spirits, marketed as less toxic than turpentine, actually causes chronic toxic encephalopathy with professional painters.

In fact, the disease is called Chronic Painters syndrome. However, spike lavender does not have these problems. Artists have used it for centuries. Further, mineral spirits will not dissolve dammar crystals when making various types of varnish for painting, but Spike Lavender will! Thus Spike Lavender is much closer to turpentine than mineral spirits in performance, without the drawbacks.

It is possible to avoid turpentine and mineral spirits entirely, and create totally solid archival paintings. As we become more aware of environmental and health issues, more artists will no doubt choose this approach, saying goodbye to the fumes.

MORE ON ROBERT MAYNORD's RESEARCH
INTO PAINTS, SOLVENTS, AND PIGMENTS

The artist publishes a section of regularly updated articles on his website ‘Art Tree House’

ARTICLES
https://arttreehouse.com/artstore/articles/

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Should the Hazardous Art Materials Law be Repealed?

September 23, 2018

Recently the Arts, Crafts and Theater Safety (ACTS) people in New York called for the repeal of the labeling of the Hazardous Art Materials Act. This the the law that requires art materials to be labeled so that you know if they are toxic. Their argument is that the law has been a dismal failure, with the art materials manufacturers paying the toxicologists that are evaluating their products â€“ a huge conflict of interest. Repeal of the law would eliminate the financial advantage the illegal non-certifying manufacturers now have over those who comply with the law. ACTS proposes that we rely more on the mechanisms of Proposition 65, a California law. If this happened, it would make it much more difficult for manufacturers to include lead, cadmium, cobalt and other toxic materials in childrenâ€™s art products.

ROBERT MAYNORD's
PERSONAL INTERESTS IN SAFER
PRACTICE

Five years ago I was experimenting with various oil painting mediums, including some that had mineral spirits as part of the ingredients. One of the extremely popular mediums I tried contained naphtha (a petroleum distillate sometimes referred to as OMS, odorless mineral spirits, or Stoddard solvent) as well as 2-butanone oxime, a chemical used for model cement, adhesives, and plastics.

Several of my artist friends had warehouse studios where they painted, but since I have children I wanted to paint at home, where I could be closer to them. The problem was that my family strongly disliked the smell of my medium, complaining of headaches. Likewise, I found that I couldn't handle the smell of the medium, and started having headaches.

Looking for a solution that would allow me to paint, I decided to throw out the suspicious painting medium, and just use linseed oil. This worked reasonably well, but the linseed oil had a thick viscosity which, when mixed with tube paint, made for a paint well suited for general use but didn't have the flow I wanted, especially for detail and special effects.
Further, the slow drying time for linseed oil made it less useful for doing initial

washes on the canvas. I tried linseed oil for cleaning brushes between colours, but it was still somewhat thick. It was then I realized that artists use the less viscous solvents such as turpentine and mineral spirits for a reason – but how could I avoid the problems?

In my continuing search for a way to paint at home, I came across Oil of Spike Lavender, mentioned in old painting manuals, but also discussed on various blogs. I ordered a small bottle out of curiosity ? I figured the price would be worth it, if it would allow me to paint at home. Indeed, it worked as expected, and my family didn't complain of headaches.

The only problem, of course, is that it was extremely expensive. I decided that if I liked the oil so much, I needed to find a source for larger quantities. The small bottles sold by the art materials folks were just too little and too expensive.

So after months of research I made contact with someone who referred me to an importer where I could purchase larger quantities (in huge drums) at wholesale. It cost a lot, but I found there were other artists who could use the oil, and suddenly I was a supplier!

THE ART TREEHOUSE:
A shop for alternative art materials,
solvents and painting mediums

http://www.arttreehouse.com

It should be possible to do art in the studio and home without worrying about toxic materials. Early on, I experimented with "odorless" thinners, and various painting mediums and found that I reacted to them.

A bit of research showed that sometimes these alternatives can be as toxic as their "smelly" counterparts, just with less odour. I had two dogs and two children, and it was not at all hard to imagine the dogs getting into my art materials and getting seriously sick. Not only do I have children at home, I have been teaching children, kindergarten through eighth grade, for many years.

Many of the toxic art materials on the market are simply illegal to have in the classroom. Yet, I find my Middle School students love to do oil painting! A few years ago, I threw out the turps and cadmiums, and began using safer materials in my art classes. Since then, the eighth grade students have all been completing full size oil paintings each year, and they show them to the school on easels at the graduation dinner!

'The Art Treehouse features several items of interest to the "less-toxic" painter. Besides Oil of Spike Lavender, there is a Bio based Artist Solvent that is extremely enviro-friendly. It took six months of testing to figure out the right way of balancing solvency with evaporation rate.

There is no lead, no cobalt, and no cadmium in anything we sell – including our paints. We sell no turpentine, no OMS, and no mineral spirits. Oil of Spike Lavender will dissolve resins (and OMS will not), so we have Copal-Spike and Dammar-Spike mediums available. We even have some rare gadgets such as The Artist Mouthpiece, for artists who paint with their mouth. More interesting items are on the way!'

Spike Lavender Oil Safety

The Art Treehouse commissioned an external safety evaluation of Spike Lavender Oil, what follows is an excerpt from the Executive Summary:

'ChronicHealth Effects Assessment of Spike LavenderOil'

'Evidential data are supportive that Spike LavenderOil would not cause a chronic health effect with acute or prolonged dermal or inhalation exposure. The potential for idiosyncratic allergenicity may exist and should be forewarned, but this effect would be readily identified and reversible. It is not proposed
as a label caution. Adverse effects during pregnancy are unknown but assumed minimal given the history of product use. It is not proposed as a label caution.'
(WalkerDowney&Associates, Inc.)

Click to access SPIKE.PDF

Parts of this essay first appeared in the Huffington Post
(Arts and Culture Section) on 30 Sept 2013.
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http://www.HuffingtonPost.com

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Arts, Crafts & Theater Safety

Providing Safety & Hazard Information for the Arts – Worldwide!

https://www.artscraftstheatersafety.org

http://www.huffingtonpost.com/robert-maynord/art-practice-goodbye-to-turpentine_b_1479346.html

Web links:
The Art Treehouse
http://www.arttreehouse.com

Some Observations on Water Miscible and Alkyd Paints and Mediums.

1) Water miscible paints have been around for several decades. Most painters are aware of them, and have tried them, and the market has shuffled out. The common critique of them has to do with the way they flow or feel under the brush.

2) Perhaps the most important point you make is that these paints are better thought of as a different medium – not "oil" paints. I get many questions from painters wanting to know about combining them with natural materials – or with traditional oil paints, and it can be confusing. For example, if linseed/walnut oil is added to the water miscible paints, there can be problems when water is also part of the mix.

3) Regarding the sorbitol (Polyoxyethylene (80))as an agent for making oil paint water soluble/mixable – very interesting! In the paint industry, such "surfactants" are common and widespread. Of course the chemistry of mixing them is equally complex. And of note, Polyoxyethylene (80) can potentially release formaldehyde – which reminds me of acrylics.

Regarding Alkyd Mediums.....

At one point, I looked deeply into the idea of selling an alkyd medium, but decided against it. I learned a few points.

1) Alkyd resins can be made from a great diversity of oils, including linseed, tung, soy, safflower,etc. The oils are chemically processed and modified to become polyester resins. A resin by itself is not useful because it is very slow drying. In

the chemical industry, this is widely known – industrial sources supply "resins" and the wholesale end-formulators experiment with a range of other additives.

2) An alkyd "medium" is actually made from at least two parts – the resin and the dryer. Historically, the cobalt-based dryer has been almost universal. Recently, iron and manganese dryers have become available. However, all dryers are considered highly toxic in the form they are supplied in. (My bottle of iron-based dryer has a warning that says protective body clothing and face mask must be used.)

3) The assumption is that the dryer will be diluted in the resin, and therefore toxicity will not be a concern.

4) Most, if not all, paint manufacturers are un-aware of the full chemical makeup of the alkyds they use. The manufacturers simply order the product in a five-gallon pale from a chemical supplier. Just because it might be called a "linseed based" alkyd, that does not tell the full chemical makeup.

5) Perhaps it is worth noting that alkyd mediums are simply a low-cost replacement for traditional resin mediums made with linseed oil, tree resin, and some form of thinner.

COMING FULL CIRCLE FOR ARTISTS

Robert Maynord, 2017:

"Globally we are coming full circle, returning to biobased materials. In fact, many early artist materials were based on natural oils, rosins, waxes, gums, polysaccharides, and other materials. One of the largest global manufacturers of raw paint materials (with offices in 50 countries) recently commented: Raw material suppliers recognize that oil and other extracted materials are finite resources… hence the attractiveness of biobased or biorenewable materials. Now we are coming full circle, returning to biobased materials.

The Art Treehouse Biobased Artist Thinner has been
receiving a great deal of attention recently, in part because it solves the problem of toxic fumes for artists teaching classes and offering workshops. Artists and teachers are excited to find a thinner that works so well, and that is not petroleum based.

The term biobased generally refers to a product that is made, in whole or in significant part, from renewable agricultural sources such as plant, animal, and marine materials. Coming from farms, biobased products have a distinct advantage in terms of biodegradability, toxicity, and pollution.

Oil of Spike Lavender, Water-Washed Walnut and Flax Oil, Rosemary Oil, Canada Balsam, Beeswax, Damar and Copal, and Oil of Clove all fit the definition of biobased artist materials. Globally, there are many examples of the cultural shift to renewable, safer resources. Recently, in the Netherlands, artists came together to promote artistic research at the Utrecht Science Park.

They are working to provide innovative perspectives about environmental harm. Sustainability is their central focus, attracting a great deal of discussion and research. Their Zero Footprint Campus is made up of several artistic projects and a team dedicated to growing the impact of the project.

Reebok will bring their plant based footwear to the market later this year.

Reebok’s philosophy is to Be More Human, and sustainability is a core part of that belief. Thecar company, Audi, has announced their new clear coat is biobased, and Mazda, has successfully launched a new bioplastic which will mean that its cars no longer need to be painted with toxic chemicals. Scientific research is rapidly developing biobased solutions to creative problems. Artists will benefit from the less-toxic materials and greater performance characteristics. Society will benefit from the sustainable and renewable materials for use in classroom and workshops settings. Coming Full Circle, the world of art will be enriched and renewed â€“ by reclaiming, renewing,
advancing and improving the materials that have been central to art throughout

history."

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