

# Hands In Clay

February 2003

## General Meetings

Our meetings are held at the Nepean Sportsplex at 1701 Woodroffe Avenue. Meetings start at 7:30, the library opens at 7:00. Executive Meetings precede the general meeting and begin at 6:30.

### Dates:

March 6 (Thursday)

April 8 (Tuesday)

May 6 (Tuesday)

Our **guest speaker for March 6** is Alan C. Elder, the Curator of Canadian Crafts, Decorative Arts and Design at the Canadian Museum of Civilization. Mr. Elder will discuss the identity of studio potters and their work. He says, "Studio potters....have been portrayed in various ways during the 20th century continuing until today. My talk will investigate the images of Canadian potters, and what these images have to say about the place of ceramics with its contemporary culture. Perhaps by looking at the relationship of potters to their societies in the past, we can better understand perceptions of the role of ceramics today." Mr. Elder's talk will include a slide presentation.

## Gauguin To Matisse

The OPG will be taking a field trip to the Montreal Museum of Fine Arts to see the current exhibition **AVoyage Into Myth - Gauguin To Matisse** from the Hermitage Museum, Saint Petersburg, Russia@ on Wednesday April 23<sup>rd</sup>, 2003. The cost is \$16 for the bus; \$6 for a Senior-s or full-time student admission; \$12 for other than Seniors or students; and, \$5 for a guided headphone tour.

Departure will be from the rear parking lot at the Nepean Sportsplex at 8:30 am. We are booked at the exhibition for 11:00 am. We will leave Montreal to return around 6:00 pm.

Please fill in the form and post to Carolyn Gibbs, RR#4, North Augusta, ON K0G 1R0 (613 924-2323). Applications must be received by 31 March.

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Admission: \$\_\_\_\_\_ Bus: (\$16) \_\_\_\_\_ Headphones? (\$5) \_\_\_\_\_ Total: \$\_\_\_\_\_

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**Editor**

Contact Gord Smith with information for the newsletter. **Deadline for the March Newsletter is March 18, 2003.**

email Newsletter@Northey-Smith.ca  
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Dunrobin, Ontario, K0A 1T0  
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*Guild Website* [www.ottawaguildofpotters.ca](http://www.ottawaguildofpotters.ca)

My apologies to those who are having a difficult time coming to the meetings because of the days on which they fall. I have noted that the members present at our last meeting have, by a show of hands, indicated that meetings are best held on Mondays, Tuesdays and Thursdays. Our meeting room is currently unavailable on Wednesdays and the majority of people prefer NOT to meet on a Friday night. When I book the room in the fall for 2003/2004, I will make certain that I book a variety weekday evenings so more of us have an opportunity to attend.

Lisa-Marie Serafin, VP

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Lisa-Marie Serafin invites you to attend her First Annual "**Almost St. Patrick's Day**" Sale at the scenic Lac la Blanche Pottery on Saturday, March 8, 2003. It's her first sale/open house since she's moved from Winnipeg, so come and help her celebrate her new line of pottery and check out her studio, located at 120 Giroux, Mayo, Quebec from 12 noon -6 p.m. For directions E-mail or call (819) 281-3307 or you can get a flyer from her at the next meeting! Refreshments to be served. Cash and cheques gladly accepted. Feel free to pass this along to other lovers of pottery. Thanks for your support!

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**Almonte Potters Guild**, a.k.a "Mudslingers"! was formed in September 2002 to provide a much needed service for clay lovers in the Almonte area. We have 1100 square feet of space, with three kilns and seven wheels. Our day time slots are not full and we are offering studio space at very reasonable rates as well as classes. Monday to Wednesday evening classes are full but Thursday and Friday evenings and weekends are available for rent. If you have been looking for somewhere to fulfill your creativity, then Mudslingers is for you! For more information call Rosemary McGinnis at 256-5556 or 257-1075

**Moulds, Sprigs and Stamps**

A hands on workshop given by Victoria Jenkins. Make pottery of uniform size and shape quickly and easily. Make decorative handles, feet and knobs. Enliven the surface of your pots with stamped impressions and attached bas relief's. Learn how to make your own press molds and stamps and experiment with a collection of ready made pieces.

February 21-23, Friday 6 pm.-9.30 pm; Saturday 10 am - 4 pm; Sunday 10 am to 1.00 pm.  
Fee \$165 includes all materials; refreshments and dinner on Friday evening and two lunches provided by Comus Café. There are several excellent Bed and Breakfasts situated in the town of Mississippi Mills if you wish to include an overnight stay for a pleasurable weekend away. Call now for detailed course outline and to register: 613-256-5556 or 613-257-1075.

**Who's Who**

<i>President</i>	Vickie Salinas	<i>Vice President</i>	Lisa-Marie Serafin
<i>Past President</i>	Anne Creskey	<i>Secretary</i>	Roz Tabachnick
<i>Treasurer</i>	Jean Jaffe	<i>Membership</i>	Cathy Payne
<i>Newsletter</i>	Gord Smith	<i>Members Workshops</i>	Gina Marin
<i>Outside Workshops</i>	Chandler Swain	<i>Librarian</i>	Barb Engel
<i>Exhibition Convener</i>	Sandra Marshall	<i>Standards and Education</i>	
<i>Sales Committee</i>			Doris McIlroy
	Carolyn Gibbs		Louise Simonson
	Lis Allison		Catherine Brewster
	Pat Jessop		Diny van den Berg
	Veronika von Nostitz-Tait		Chandler Swain
	Klara Bruehlmann		Rosemary Swan
<i>Refreshment Convenor</i>	Joyce Lemke		Rita Redner
			Lucie Rossignal

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**Community Pottery Studio**

An initiative has begun to acquire a space for a community pottery studio. This studio would provide space for potters to work independently. Here, one could fire their own kiln loads of pots, make their own glazes and have access to a spacious, well appointed studio in the company of fellow potters. The space that a core group is already trying to arrange to rent is large enough to handle many potters comfortably in a studio potter situation. There is room for teaching classes without disrupting studio time; space for a gallery/shop; space for a lounge/library. The space is centrally located near Gladstone and Preston. Although there is limited on-site parking there is parking on neighbouring streets and it is on a bus route.

To proceed the group needs to have commitment from enough people to start paying the rent: NOW! We are applying for several grants to help with set up. The space is in excellent, move-in condition. There will be volunteer technical support for those hoping to become more independent in their work, especially those hoping to sell their work. Co-operative space will be available 24/7 for lease holders for approximately \$100/month each. Larger personal spaces where one could bring their own wheel etc. for their exclusive use would be approx. \$200/month. It would be possible to share space or to rent 1/2 time access.

Lots of leg work has to be done to get this off the ground. We are looking for enthusiastic folks to help with this venture. It is an incredible opportunity and the people who have already seen the space and come on board are very excited about the possibilities. ie exhibitions, workshops, classes, a great work space close to many amenities. If you are interested please email Marek at [marek@feelgoodcars.com](mailto:marek@feelgoodcars.com) or call Chandler for more info. Tell your friends!!

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**OTTAWA GUILD OF POTTERS-- MONTHLY UPDATE --as of February 2003**  
Contact Cathy Payne with inquiries etc., (819)827-3504, fishart@magma.ca

Marek Warunkiewicz	Marek@feelgoodcars.com	
Rhona Richardson Rhona@magma.ca	416 Sunnyside Ave. Ottawa, ON K1S 0S7	730-1398

**To Carolynne's Tile Workshop Participants**

My sincere apologies! The tiles painted in my workshops were in a kiln that had a melt-down, consequently, the tiles have all melted, too. I will try to bring the resulting 'sculpture' to a guild meeting. If you want to drop by to see the results anyway, call me at 233-9455.

Thanks, Carolynne.

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**Advertisements**

**Plaster gauze bandages.** Originally intended for casts to set bones, but suitable for a multitude of inventive uses, such as forming masks using friends' faces or other body parts. Twelve (12) rolls per can, twelve (12) cans per carton. \$10 per can or \$100 per carton. Call Cheryl-Ann Webster at 832-5501 or cherylann@websterwood.com

**Pottery Instructor**

I am now accepting students at my home studio in Mayo, Quebec, 45 minutes from downtown Ottawa. Classes are only offered in English. The course is 8 weeks in duration (2 hours once per week) and includes handbuilding, throwing, glazes and firing. For more information please call (819) 281-3307 or e-mail Lisa-Marie Serafin at lms\_potter@sympatico.ca.

**Kiln** -Top loading cone 10, 7 cu. ft. with a 23" x 27" firing chamber, 2300°, 3 switches, 220 volt, 2 wires. Has full furniture kit. This kiln has only been used as a bisque kiln for five years. it has been in storage for about 18 years and is in very good condition. \$600.

**Pug Mill** -British made 5 hp, 220 volt, with 2" extrusion and coil templates. Excellent running condition. \$1600 (may be paid in installments)

**Shelves** -21 industrial strength silicon carbide kiln shelves, 12"x18"x1", \$18 each.  
Contact: goldieking@sympatico.ca or call 613-757-0218

**Lynwood Ceramics Ltd.** in going out of business. Bargains are to be had during this blow-out sale. All inventory is up to 70 % off suggested retail prices. Brushes - tools - colour products - electrical - musical - kiln parts - pyrometric cones. In short everything in the store. Call Edda A. Meixner at 831-1250.

*Many thanks to Karen Latorre for her permission to reprint this series of articles that she originally created for the Kingston Potters Guild newsletter.*

**Glaze Talk**  
**By Karen Latorre**

This is the third of a series of columns focused on glazes.

Boric Oxide

There is one other oxide that has not been covered in previous columns. Boric oxide is a source of Boron (B), and its molecular formula ( $B_2O_3$ ) puts it into the category of a stabilizer ( $R_2O_3$ ). Despite this, this particular material has some peculiar properties and is actually a glass former, and given its low melting range (between 300C and 700C), it also acts as an additional flux in pottery glazes.

The Unity Formula

In the last column we talked about a balanced glaze and the effect you got by adding an excess of one of the glaze components.

How do you know when you have an excess of a glaze component?

The unity formula is a way to show the relative amounts of the oxides in a fired glaze. It provides us with a way to do an “apples to apples” comparison of two glazes. In addition, calculating the unity formula of a recipe allows us to make informed adjustments to achieve different results in the glaze since each of the oxides behaves in its own way and by changing one of the oxides in the unity formula, we can have greater success in achieving the results we’re looking for in our glazes. The unity formula is also known by a number of other names, such as the Seger formula, empirical formula, ratio of molecules formula, or RO formula.

The unity formula is usually displayed in three columns, corresponding to the role the oxide plays in the glaze (flux, stabilizer, or glass former). A number follows each oxide and represents the relative amount of that oxide in the glaze. Following is an example of a unity formula for a Cone 6 glaze:

GLAZE 1

$K_2O$	0.07	$Al_2O_3$	0.34	$SiO_2$	3.16
$Na_2O$	0.14	$B_2O_3$	0.20		
$CaO$	0.51				
$MgO$	0.28				

Notice that when you add the amount of the fluxes together they equal 1 (or one unit). This is why this formula is called the unity formula.

As already mentioned, the numbers indicate the relative amount of each oxide in the finished glaze. This means that in the glaze structure for glaze 1 above, for every 7 molecules of potassium oxide ( $K_2O$ ), you have 34 molecules of alumina ( $Al_2O_3$ ) and 316 molecules of silica ( $SiO_2$ ). Don’t get confused by the fractions in these formulae. A glaze structure has millions and millions of molecules. You’ll never have .14 of a molecule. The

numbers are simply used to display the comparative amounts of each oxide.

This setting of the fluxes to equal 1 is also basic to the idea of being able to compare glazes, since it forms an “anchor” for the numbers.

Let's take another Cone 6 glaze unity formula for comparison:

**GLAZE 2**

K <sub>2</sub> O	0.07	Al <sub>2</sub> O <sub>3</sub>	0.29	SiO <sub>2</sub>	3.16
Na <sub>2</sub> O	0.11	B <sub>2</sub> O <sub>3</sub>	0.10		
CaO	0.52				
ZnO	0.30				

When I compare these two glaze recipes, I see that the second one has more of the lower strength fluxes (the ROs) than the first, and it has less stabilizer (Al<sub>2</sub>O<sub>3</sub>) than the first. From this I would expect that the second glaze would be a little less glossy (less flux to melt the same amount of silica) and it would perhaps be a little runnier (less stabilizer to hold it onto a vertical surface). Mixing up test batches of these two glazes will indicate whether the change in oxide amounts is enough to make a visible difference in the glaze.

The Silica to Alumina Ratio (Si:Al ratio)

The two numbers in a unity formula for silica and alumina form an important ratio. Take glaze 1 as an example. Silica is at 3.16 and Alumina is at 0.34. Take the silica number and divide it by the alumina number ( $3.16 / 0.34 = 9.29$ ). This glaze has a silica to alumina ratio of 9.29 : 1. Glaze 2, by comparison has a ratio of 10.90 : 1.

Why is this important?

This ratio indicates the relative viscosity of a glaze, and will also indicate whether or not the glaze might be in balance (no excess molecules in the structure). A ratio of 10:1 tends to provide a glossy transparent glaze (one in balance). If a glaze has a ratio of 6:1, it will be very viscous and may tend to pin hole. It will also tend to be opaque and matt due to an excess of Alumina (an alumina matt). If a glaze has a ratio of 15:1, it may be very runny and run off the pot.

The silica to alumina ratio does not change with the temperature at which you fire. A ratio of around 10:1 is valid for a balanced glaze regardless whether it is fired to cone 1 or cone 10.

When a glaze has B<sub>2</sub>O<sub>3</sub> in the unity formula in amounts greater than 0.05, it can no longer be compared to a glaze without boron due to boron's fluxing and glassforming properties. There is a ratio that associates Si + B to the Al in the recipe (Si+B:Al ratio), and while this ratio would follow similar rules as the Si:Al ratio (higher ratio would indicate glossier and runnier glaze), there is very little documentation indicating what an appropriate ratio would be for a balanced glaze, or if this ratio would change with the temperature at which we fire.

Limit Formulas

Limit Formulas are a list of ranges for each of the oxides in a glaze. Limit formulas differ depending on the cone at which the glaze is to be fired (remember that at lower temperatures, you need more flux to get the same amount of silica to melt).

There are various books available that list limit formulas. For the purposes of discussion, I will show three ranges (earthenware, mid fire, and high fire) that I have pulled from Insight. Limit formulas should be used as guidelines for each oxide in the unity formula.

Oxides	Earthenware Cone 08 – 05	Mid Fire Cone 3 – 7	High Fire Cone 8 – 10
KNO*	0.25 – 0.5	0.1 – 0.5	0.1 – 0.5
Li <sub>2</sub> O		0 – 0.2	0 – 0.2
BaO	0 – 0.2	0 – 0.3	0 – 0.3
CaO	0.15 - 0.5	0.1 – 0.7	0.35 – 0.8
PbO**	0 – 0.6		
ZnO	0 – 0.15	0 – 0.25	0 – 0.3
MgO	0 – 0.15	0 – 0.3	0 – 0.4
SrO		0 – 0.4	0 – 0.7
B <sub>2</sub> O <sub>3</sub>	0.6 – 1.3	0 – 0.4	0 – 0.3
Al <sub>2</sub> O <sub>3</sub>	0.1 – 0.25	0.2 – 0.35	0.3 – 0.55
SiO <sub>2</sub>	1.5 – 2.5	2.5 – 3.5	3 – 5

\* KNO is a short form to indicate the combination of both K<sub>2</sub>O and Na<sub>2</sub>O (potassium oxide and sodium oxide). To determine the KNO amount, add the K<sub>2</sub>O and Na<sub>2</sub>O amounts together.

\*\* As indicated in the previous column, lead is only available in a frit, and is a banned substance in many studios. Lead is also a government regulated substance and pottery made with lead containing glazes must be tested to ensure that the glaze is stable, releasing (leaching) no more than a given concentration of lead. Further details can be found in Ron Roy & John Hesselberth's book "Mastering Cone 6 Glazes", ISBN: 0-9730063-0-7. The PbO limits have been taken from Daniel Rhodes "Clay and Glazes for the Potter", ISBN: 0-87341-863-8.

One can compose glazes with oxide amounts sitting within these ranges and still not have a good functional glaze. By ensuring that the oxides in your unity formula are within these ranges, that you have a mixture or more than two flux oxides, that you have enough silica (well within the limit formula range), and that your Silica:Alumina ratio is close to 10:1, you have a good chance of producing a stable, functional glaze. Going outside of these ranges produces the excess required for textural non-functional glazes, and some of the effects discussed in the previous newsletters' glaze talk.

Let's take a look at one more glaze recipe:

GLAZE 3 (Cone 6)

K <sub>2</sub> O	0.01	Al <sub>2</sub> O <sub>3</sub>	0.49	SiO <sub>2</sub>	3.20
Na <sub>2</sub> O	0.09	B <sub>2</sub> O <sub>3</sub>	0.23		
CaO	0.86				
MgO	0.04			Si:Al	6.53

When comparing this formula to the limit formulas, we see that the KNO and MgO oxides are within range.

The CaO is much higher than the high end of the range, therefore there is an excess of calcium oxide in this glaze. In addition, the silica is within range, but the alumina is above the range, thereby suggesting that there is excess alumina in this recipe as well. The Si:Al ratio is rather low indicating a very viscous glaze. Given the above information, at cone 6, this glaze would be expected to be matt and opaque, and would be considered a part of the calcium/alumina matt glaze family. The boron in this recipe may be sufficient to add to the melt and glass former enough to make it a stable, functional glaze. Mixing a sample of this glaze, firing it to temperature and having the glaze tested for leaching would confirm whether or not the glaze is stable and functional.

### R<sub>2</sub>O<sub>3</sub> Formula

There is one more unity formula, the R<sub>2</sub>O<sub>3</sub> formula. This formula does not refer to glazes. It is used to compare and adjust clay bodies. In the R<sub>2</sub>O<sub>3</sub> formula, the fluxes are not brought to unity (or 1), instead, the alumina (the R<sub>2</sub>O<sub>3</sub>) is set to equal a value of 1.

### Calculating a Unity Formula from a Raw Material Recipe

There are a couple of texts that are good at explaining how to hand calculate a unity formula from a raw material recipe. These are:

Clay and Glazes for the Potter, by Daniel Rhodes, ISBN: 0-87341-863-8

Glazes for the Craft Potter, by Harry Frazer, ISBN: 0-7136-5141-5

There are also software programs available that will do this calculation for you (in each of these programs, you enter the raw material, and number of grams of the material in the recipe, and the program does the conversion to the final oxides in the glaze, in unity format). These are:

Insight (<http://www.digitalfire.com>) – for Windows and Mac

HyperGlaze (<http://members.aol.com/hyperglaze>) - for Mac

Matrix (<http://www.matrix2000.co.nz/Page2.htm>) – for Windows

GlazeChem (<http://www.glazechem.com/>) – for Windows

The Glaze Workbook (<http://www.dhpot.demon.co.uk/software.htm>) – for Windows & Mac

Glaze Calculator (<http://www.glazecalc.com/>) – for Windows and Amiga

Glaze Simulator (<http://www.glazeexchange.com/topFrame.php3>) – for Windows

There are mailing addresses available to order each of these software programs. Should you be interested, please call me, send me an email, or leave me a note in the newsletter folder at the guild.

The next two columns will cover the properties of each of the oxides in a glaze, and the raw materials that we use and what oxides each of them provides.

Should you have any questions on the information above or anything covered in previous glaze talk columns, please don't hesitate to ask by sending an email to [pottingeng@hotmail.com](mailto:pottingeng@hotmail.com), or calling me at 613-477-1648. Your question, and it's answer, may form a part of a future column.

Karen

### **Member Workshops**

Here is the second round of terrific member workshops! Registration will take place starting at 7 pm on Wednesday, February 26<sup>th</sup>. The cost to participants is \$7.

Cheers! Gina Marin 724-4877

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#### **Throwing Large Bowls with Christina McCarthy - March 22, 1 to 4 pm**

Want to throw larger bowls (10lbs) and having difficulty? See how Christina has mastered the art of throwing large bowls.

Hwy 2, Prescott. Take Hwy 416 to Hwy 401. Take the 401 west to Prescott's Edward Street exit. Follow Edward Street south to King Street (Hwy 2). Turn right onto King Street and follow it through town. It's the last driveway on the right before "Merwin Lane".

Max 5 people

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#### **Slab Forms with Catherine Brewster - April 26, 1 to 4pm**

Catherine will demonstrate techniques for using soft slabs to create trays, shallow bowls and plates. She will also show how to make molds to use with slabs. She also has a "secret" technique to share...

800 Cork St, Ottawa east, near Pleasant Park and St. Laurent

Max 12 people

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#### **Planter, Bowls and Plates with Victoria Jenkins - May 31, 9 am to noon**

Victoria will demonstrate several techniques for throwing and hand building large planters, bowls and plates.

Pot luck lunch after the workshop for those able to stay.

Take highway 7 to Carleton Place. Turn south on Highway 15. At the next intersection turn west onto Beckwith 10 Line. 2321 Beckwith 10 Line. If you cross the railroad tracks you have gone too far.

Max 12 people

**(continued next page)**

### **Member Workshops (continued)**

#### **Pit Firing with Phillip Black - June 7, 11 am**

Come out to Phillip's Merrickville property and take part in a pit firing. Bring a couple of pieces of bisque and a lunch and spend a fun day in the country.

Take the main street through Merrickville and head south out of the town. Drive about 5 minutes to county road 41 to Easton's Corners. Turn right here and follow it 1 km to Weedmark Road. Turn left onto Weedmark Road and it's #864.

Max 20 people

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#### **Belly Dancing with Lisa-Marie Serafin - March 1, 1-4pm**

Lisa-Marie's emphasis is on moving to loosen up back muscles, strengthening the abdominals and back muscles, stretching all the major muscle groups especially the upper body that we potters use the most and also incorporating a different kind art to help us unlock creativity.

Max 5 people

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### **Empty Bowls**

One person had been to the annual Ottawa Potters Guild's sale the week before, picking up many bowls. She exclaimed as she saw that a bowl by her favourite potter had been donated to The Empty Bowls. One more bowl, and one more apple cider were bought up, and another donation was made to the Ottawa Food Bank. The annual event, which brings together the talents of many potters and the soup or cider from the kitchens of Rasputin's Folk Cafe with 100% of all proceeds being donated to the Ottawa Food Bank, raised over \$2000 this year. Every single bowl was "gobbled" up by admirers of pottery.

On the last day there were two bowls left. In walked a woman who said "I'll take them", and then there were none! Why? This year's kindness was bolstered by the best bowls we have seen in four years. Amazing colour, great glazing, beautiful shape and texture, so that both the eyes and the hands were delighted. In the end the \$2000 collected was multiplied eight-fold with matching grants and bulk purchasing agreements resulting in an effective \$16,000 of food for those in need.

To everyone involved, thank-you.

Dean Verger

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