TURNING TALK

Newsletter of the South Auckland Woodturners Guild

Number 115 : August 2003

Coming Events

Our Auction, 16 August 2003. See inside for details

National Woodskills Festival, Kawerau, 12 to 14 September 2003

The Art of Turned Wood, entries close 10 October 2003

Tauranga Festival of Woodcrafting at Baycourt, October 17-19 2003

Spin Around Waitaki, 31 October to 2 November 2003

The Art of Turned Wood, exhibits to the organisers by 5 November 2003

The Art of Turned Wood, Aotea Centre, 10 to 29 November 2003

Papakura Christmas Sale, 8 to 24 December 2003

Timber and Working with Wood Show, 12 to 14 March 2004

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Programme for the Third Term 2003

We will continue to meet at Papatoetoe High School at 7:00 pm. For those who wish to make use of the machinery, do some shopping, or get a little extra advice, the doors open at 6:00.

This term sees the continuation of a Table Prize for each term – so keep your good work and lessons learned flowing to the show-and-tell table each meeting night.

6 August **Some Aussie Ideas**. Guilio Marcolongo will demonstrate some of his work.

13 August **Natural Edges.** Terry Scott explores the use of the natural edges of the wood.

20 August **Hands on** making the salt, or pepper, or salt and pepper for the term project. These will be on the show and tell table at the end of the term.

27 August **Square Bowl**. Brian Petterson shows us how it is done.

3 September **Chucking Without a Chuck**. Mac Duane turns a bowl without using a scroll chuck.

10 September **A Vacuum Chuck**. Dick Veitch will make a vacuum chuck for the club lathe.

17 September **Chess Pieces**. Terry Gordon will show us his way to make these small items.

This night is also the Show and Tell for a salt, or a pepper, or a salt and pepper.

Term four starts 8 October 2003

Club Night 23 July 2003 A Salt, or …..

This is the project for Term Three. Peter Knox, Mac Duane and Dick Veitch showed as few of the numerous ways it is possible to make a salt, or a pepper, or a salt and pepper. The intention is that these devices should be good enough to grace the dining table when the best china is in use.

Dick produced one of the most simple devices to start the evening – a turned piece of wood with a salt hole in the top and a cork in the hole in the bottom.

Peter then produced glass inserts that are available from Carba-Tec. He shaped a piece on the lathe and inserted the glass to show us a very acceptable salt.

Mac then came up with a Claytons threaded salt. To do this he cut the threads from a milk bottle and its cap and fitted them into the appropriate halves of the salt shaker.

Dick produced a threading jig to do the job properly but had left a bit behind so just had to keep on talking.

There are just so many ways to make a salt, or pepper, or salt and pepper. The hands-on evening should be interesting and the end of term show and tell even better.

While all this was happening one club member asked what the name is for the salt and pepper together and then came up with the answer "cruet set". Quite right as a "cruet" is a small container for salt, pepper, oil, or vinegar for use at table. Hence a gathering of such items must be a cruet set.

Club Night 30 July 2003 Hollowing

Russell Snook showed us a fine array of his finished and almost finished works. Some had been wet turned and then dried using the freezer process. All ended up as good looking pieces.

At the lathe he had a helper. He explained the when hollowing a vase the turner is away at the tail end of the lathe and all too often the hollowing tool gets wound around with shavings and cannot be withdrawn from the work – it is then impossible for the turner to get around to the switch to stop the lathe. On his lathe at home the switch is mounted on a flexible arm which will reach to the tail end of the lathe. For the demo his helper was there to switch the lathe off.

He shapes the outside to smooth curves and often these are dictated by the wood. He showed us a series of hand-held scrapers that he uses to finish his work as this saves a lot of sanding.

He likes to take the neck of a vase down to a small diameter so that small hands can't reach in to test the cut. He does sand the inside of the neck using a sanding stick that is longer than a woodturners finger.

His sanding stick had a steel shaft around which he had a thick layer of rubber and then velcro. It was then no trouble to apply velcro backed sandpaper and work down the grits.

To hollow the inside he drilled as wide a hole as the neck permitted down to almost the full depth of the finished work. Then he used a Woodcut hollower to remove the rest. He noted that it is very necessary to hold the hollower handle securely under the right arm. Holding the handle out at arms length allowed chatter to develop.

He measured the wall thickness using an Ellsworth style wire gauge and continued to hollow until he had a consistently thin wall. He then described the careful use of a scraper to finish the inside – even though nobody can readily see it.

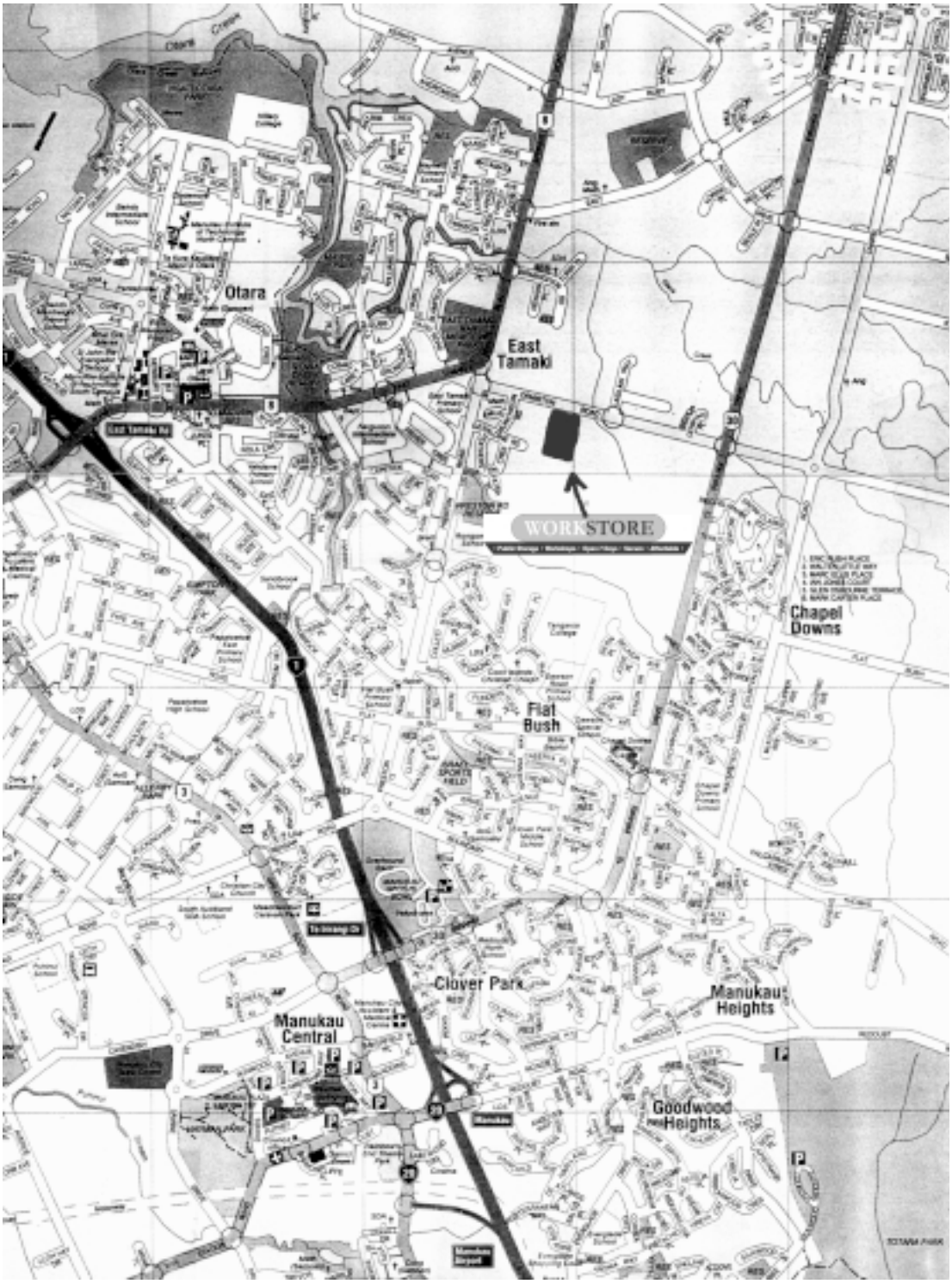
AUCTION – ALL BUYERS WELCOME

SATURDAY 16 AUGUST 2003

AT THE WORKSTORE SHEDS, 19 ORMISTON ROAD, EAST TAMAKI

DOORS OPEN AT 0800. SELLING STARTS AT 0900

This is the property of three of our recently departed woodturning mates. All proceeds go to their families.



Items for sale at the Auction

1 Stepladder, wooden, 2m
2 Stepladder, aluminium double-sided, 1m
3 Broom and mop
4 Isolating transformer, 6.5 amp
5 Bench grinder, 6" with one grey and one white wheel.
6 3 x bundles of chisels
7 2 x boxes assorted paints and finishes
8 Oven tray loaded with goodies
9 Paints and things
10 Box of Odds and Sods
11 Power drill 1/4" and accessories
12 Blind rivet set
13 Jigsaw, Black and Decker
14 4 x bundles of tools
15 Jacobs chuck
16 Screwdriver set in box
17 Belt sander, 3"
18 Skilsaw, 8" almost new
19 4 x bundles of tools
20 Drill bit collection
21 Electric motors and grindstone
22 Oilstone and smock
23 Oilstone and banksia nuts
24 2 x sandpaper collections
25 Painting kit
26 Power drill 1/4" Hitachi on stand
27 Trolley, flat bed with four wheels
28 Box of bits
29 Box of screws and plumbing pieces
30 Bundle of saws
31 Ladder, wooden 3m extension
33 Electric motor, 2.2 kw 3 phase
34 Nova chuck 100mm jaws and screw centre
35 Nova chuck 50mm jaws and screw centre
36 Cole jaw set
37 Nova 100mm jaw set
38 4 x Nova 50mm jaw sets
39 Nova chuck with pin jaws
40 Assorted hole saws
41 Equipoise lamp
42 Assorted drill bits
43 3 x roller stands
44 Sash cramps (pipe mounted)
45 3 x engineers vices of various sizes
46 Saw stool vice
47 Box odds and sods
48 Record woodturning lathe with outrigger, faceplate
49 Face shield
50 Black & Decker workmate
51 Ryobi Router (3/4 hp) router and cutter set
52 Vacuum cleaner. Combi. Complete set.
53 Skilsaw, 7" with spare blades
54 Black & Decker powerfile
55 Black & Decker 75mm power plane
56 Black & Decker 10mm drill
57 NRG 13mm Hammer drill and F Drive
58 Skil two speed jigsaw
59 Box odds and sods
60 Box odds and sods
61 Ryobi 10mm battery drill and 7.2v charger
62 Black & Decker 10mm battery drill and 7.2v charger
63 Ryobi 100mm angle grinder and accessories
64 Drill stand, multi-purpose
65 Box sanding papers
66 Whetstone in box and step stool combo
67 Random orbital 125mm sander and disks
68 Arc welder, 230v
69 Skil 4" belt sander
70 B&D finishing sander and pen style pyrograhy set
71 Chainsaw, Stihl 14" & spare chains
72 Socket set 1/2" 24 piece
73 Socket set 1/2" 24 piece
74 Socket set 3/8" 24 piece
75 Box odds and sods
76 Pop riveting set
77 Plasterers trowel and 100mm trowel
78 Isolating transformer, 240 v
79 Battery charger, 6v and 12v
80 Box odds and sods
81 Assorted lights
82 Promark 6" grinder and dresser
83 Box of waxes and finishes
84 Benchsaw, 10" with spare blades
85 Bolt cutters
86 2 x oil stones and 2 x slip stones
87 Box spanners & screwdrivers
88 Box carpentry bits and face mask
89 Box odds and sods
90 3 x hand saws
91 Propane torch and hose
92 Bundle assorted woodturning chisels
93 Bundle assorted woodturning chisels
94 Bundle assorted woodturning chisels
95 Bundle assorted woodturning chisels
96 Box cramps
97 Halogen lamp, 500w, on telescopic stand
98 Halogen lamps, twin 500w, on telescopic stand
99 6 x electric motors
100 Sledgehammer head, 12lb
101 Box odds and sods
102 Hand cart
103 Belt sander
104 2x carpenters levels and pinch bar.
B1 8x captive ring chisels
B2 Assorted turning chisels
B3 Assorted turning chisels
B4 Assorted turning chisels
B5 Assorted turning chisels
B6 Assorted turning chisels
B7 Large gouge and lamp drill
B8 Kelton wood chisels
B9 Assorted turning chisels
B10 Assorted turning chisels
B11 Assorted turning chisels
B12 Wagner airless spray gun
B13 Assorted sandpaper
B14 Assorted vernier callipers
B15 2x chuck bodies and jaws
B16 Assorted jam chucks
B17 Assorted drill bits
B18 Mitre box and files
B19 Variable speed unit and 2x electric motors
B20 Safety gear kit
B21 Shellac flakes and buffs
B22 Teknatool live centre kit
B23 Workmate
B24 Jacobs chuck
B25 Cole jaws and slip stone
B26 Turps, PVA, petrol can
B27 McCulloch chain saw and accessories
B28 Teknatool TL1000 lathe, outboard, chuck, accessories

Basics of Design

Keith Jeeves

The question, 'What is a good design?' is all too often answered with, 'There are no rules', 'You just know it when you see it', or 'You either have it, or you don't'.

Reading about design theory tends to give the impression that there is a "black art" that is known only to a very few and that there is no hope for who are not gifted with a natural ability to discern pleasing shapes and proportions. This not the case. Pleasing shapes have been found in every civilisation throughout history, and they all share the same basic rules of good design that were first established long ago. In Ancient Greece, two fundamental and timeless rules of design were produced, the 'golden mean' and the 'rule of thirds'. These are in fact, crude representations of highly sophisticated ratios based upon mathematical and geometric models. This analysis has never been bettered, in a sense it was complete and perfect and combined the philosophical, mathematical, natural and biological, and the aesthetic. Names such as Plato and Pythagoras, names that we do not associate with art, will be found in early design literature. If we deny the existence of the rules, we are either admitting that we are artistically illiterate, or that we refuse to believe that the rules, used for 3000 years have any relevance to articles we wish to turn from wood.

One of the Greek starting points was nature itself. They looked at the growth of cell structures, of patterns of leaves in trees, and of the shapes of individual leaves. They found that many exhibited interrelated, simple mathematical ratios. A single cell grows in a very structured way. Over time, the growth is continuous and proportional and if examined fundamental patterns can be found. On a tree, each leaf, from the largest nearest to the trunk out to the tip of the branch, gets progressively smaller. Multi-leaf patterns also have a regular grading of sizes from base to tip of each leaf. The leaf is an assemblage of many cells, and each cell will be found to follow this grading of size. If we take a single cell and draw it out as it would be at stages of it's growth, the development will be seen to be exponential and placing the stage drawings in line we would see a conical shape. Some life forms trace this pattern of development and reflect it in their overall structure, assuming a conical profile. Many types of seashells are like this. If we lay out the drawing of the conical development of the single cell into a spiral form we create what is called a logarithmic spiral. Growth develops at a logarithmic rate and this precise set of relationships in cell development and overall growth provides one of the strongest themes in classical design.

It is pretty easy to mathematically calculate pleasing proportions using these long established rules without understanding the complex mathematics involved, so let's have a look at ways of doing this.

The Root Two Rectangle

By taking the true spiral and superimposing across it a right-angled triangle with the hypotenuse horizontal, such that the right angle at the top lies directly above the eye of the spiral, we find that the spiral forms the basis for a series of overlapping right-angled triangles, each with a fixed ratio to the next. The complex of triangles also provides the basic framework for an important rectangle, known as a 'root two rectangle'. Root two, three and five rectangles form the basis of much of what is known as dynamic symmetry. and these are the most important design concepts that we need to consider. In a root two rectangle, the ratio of the long side to the short side of the rectangle is 1.414 to 1.

To apply the rule to a bowl design, we would simply divide the diameter by 1.412 to determine its height and divide its height by 1.412 to determine the diameter of its base.

As an example: If we want to turn a 250mm diameter bowl, its height will be:

250 ÷ 1.414 = 176mm and the base diameter is: 176 ÷ 1.414 = 125mm

These dimensions will give us a bowl of pleasing proportions, although what we do with the curves between these dimensions is what produces a pleasing form and we will look at this later.

Rules-Of-Thirds

There are other rules of proportion that we can use. One of these is the "One Third-Two Thirds" rule, which is similar to the Golden Mean but a little simpler to use.

This rule states that in any frame (square, rectangle or circle) the point of greatest interest is one-third in from the side, and one-third down from the top and a feature placed at this point will create maximum impact. Furthermore, the profile itself will be best balanced if the main features are placed upon the thirds. Artists make considerable use of this rule and if you look at works of the old masters, features of significant interest are placed upon one or other points of intersection of thirds.

To apply the rule;

The bottom diameter is 1/3 that of the largest diameter. Using our 250mm bowl as an example, the bottom diameter would be 83.3mm, say 85mm.

The height is either 1/3 or 2/3 of the largest diameter, with 2/3 being preferred. Using the same bowl, its preferred height would be 166mm, or 85mm in its shallower form. Both would appear to be proportional.

Bowl shapes have a more pleasing appearance when the maximum diameter is not at the top rim, but is located below the rim, which is a smaller diameter. We can determine how far below the rim the maximum diameter should be by dividing the height into three, the largest diameter should be 1/3 down from the top although you could also place the maximum diameter 1/3 up from the bottom. In the case of our bowl, the maximum diameter should be 55mm from the top or the bottom.

If the maximum diameter is not at the rim, what should the rim diameter be? A good rule of thumb is that the diameter of the bowl at the rim is smaller than the largest diameter by half the distance that the largest diameter is

below the top of the bowl. For our 250mm bowl that is 166mm high, the largest diameter is located 55 down from the top and its diameter at the rim would be half that amount smaller, or 27mm less than the 250mm diameter, making it 223mm at the rim. If this bowl had largest diameter near the bottom,(110mm below the top), the rim would be smaller by half that amount, or 55mm smaller that the maximum diameter hence the bowl would be 195mm diameter at the rim.

We use the same rules for a vase. If we treat a vase as an elongated bowl, we can use the same rules with the relationship between diameter and height reversed. All other rules for the magnitude and location of the various diameters will remain the same.

The "Rule Of The Golden Mean".

Perfect symmetry such as the rule of thirds may become a little dull. Another ancient rule, the 'golden intersection' or 'golden mean' in a sense, breaks the rule of thirds to introduce an element of dynamic tension. The Golden Mean and the rule of thirds are not the same thing, the golden mean is almost halfway between root two and root three. The Greeks perfected and used the "Golden Mean", which is simply a formula for establishing the ratio between the short side and the long side of a rectangle that will appear balanced to the viewer. The rule simply determines that the relationship between the small and the large sides of a rectangle enclosing the form is the ratio of 1 to 1.618".

Examples of the rule would be;

An 1800mm long dining table should be 1100mm wide; An oval coffee table that is 1000mm long should be 620mm wide; A bookcase that is 1800mm tall should be be 1100mm wide.

To apply the rule to a bowl design, we would simply divide the diameter by 1.618 to determine its height and divide its height by 1.618 to determine the diameter of its base.

As an example: If we want to turn a 250mm diameter bowl, its height will be:

250 ÷ 1.618 = 155mm and the base diameter is: 155 ÷ 1.618 = 96mm

The Fibbonacci Series

In the seventeenth century an Italian mathematician, Fibonacci, developed a number progression system that approximates to Golden Mean ratios. Starting with 1 + 1 and then adding each pair of adjacent numbers you develop the following sequence:

1+1 =2, 1+2=3, 2+3=5, 3+5=8, 5+8=13 etc.

Above 8 on this sequence the ratio between adjacent numbers is close to 1.618, the ratio of the golden mean.

The Fibbonacci series is often used when laminating strips of contrasting timber for a decorative table top or box lid.

The Regular Pentagon

Another form that was used in early Egyptian and Mayan cultures as well as the Greek, is the regular pentagon (5 sided figure). In nature, a good example of this form is the maple leaf. From this we also get the pentangle, the dynamic symmetry and 'mystical' power of which has long been recognised. Several mystical and religious symbols and many pieces of carving spanning almost all civilisations have used the pentangle as the basis of design, and particularly as a structure to fix points of emphasis within a broader design. The pentagon form provides a useful basis for the design of lidded boxes.

Practical Design Process

Working on a design with the careful application of classical principles requires first working out the basic profile and then introducing modifications to create interest or tension. The process starts with drawing the basic root rectangles or pentagon and then dividing these up into some proportional grid upon which a shape is sketched.

Useful tools for sketching are a flexible ruler, and a necklace chain. These can be laid on a drawing board and manipulated until a satisfactory profile is produced, the outline is then traced with a pencil and further modified. When the pencil form is correct, it is marked up with a felt-tip pen. A large mirror is also very useful. Drawing half a profile such as one side of a vase is not difficult and holding the mirror in a vertical plane to the paper and at one end of the half profile, the mirror can be moved to produce a complete profile.

Another invaluable tool is a set of French curves, the profiles that can be drawn with French curves can produce quite elegant forms. French curves are based upon a continuous logarithmic development of the radius of the curve, that is, progressive and continuous slight change and a bowl or vase drawn with the curves will almost automatically have a good line.

Curves will determine the form of the finished product and if not correct, no amount of rule following will save the piece. The following is a set of guidelines for getting a good form;

All curves must be flow with smooth transitions as it changes in shape or from a concave to a convex curve.

There must be no flat areas between curves.

The piece should be lifted from the surface upon which it is sitting. Ideally, it should appear to be floating slightly above, rather than being firmly attached to the surface. With the bowl or vase sitting on a table, follow an imaginary continuation of the lines of the sides of the bowl or vase until they have intersected under the bottom of the vessel. This intersection will be inside of the foot of the piece. It should be above the table surface for the vessel to appear as being lifted above it.

Try turning the piece upside down on the table. Its proportions should be just as pleasing to the eye as they were in the upright position. If not, there is something wrong with the proportions or the curves between them.

Make two bowls that are identical in size and shape and place them along side each other on the table, and concentrate on the shape of the space between them. The proportions of the space will be the reverse of those of the bowls, but it should also have a pleasing appearance. When designing any pair of objects, vases, candle holders, etc., will be viewed at the same time, the shape of the space between them can be as important as that of the objects themselves. Always work on their design as a pair, and never as individual pieces that are later placed together.

Wanted/for Sale/Giveaway

Wanted to Buy: Sawbench. Dyco, Tanner, or similar. Phone Bryden Thorpe, 576 5614

Participation 2003

Colour and texture was the theme. So smoke curled up from the pyrograph; smoke nearly curled up from the Dremel; paint slopped to unwanted places; how did the clear look dribble into the black?

There were almost more questions than answers – and it was wonderful to see the people there asking questions and getting answers, help, training, and opportunities to test their skills.

Indeed, 51 people, 41 lathes, 31 bowls and 10 eggcups (if you include the solitary example of a total stuffup).

The people came from everywhere – Taupo and Aussie included.

The lathes were all sorts – from the mini to the maxi (so big he could only bring part of it).

The bowls were for the obligatory part of the weekend – to make a small bowl for our Christmas charity. Just what happened to the other 20 remains a mystery (or maybe we don't want to know). There were no two alike – painted, dremelled, drawn on, beaded, burnt and buffed.

The eggcups. Well, some would hold an egg; some were close to holding an egg; one notable example would not hold an egg. All this came from the Great Eggcup Race won in grand style by Rolly Munro in 1 min 48, just four seconds ahead of Guilio Marcolongo.

Add to all that endless tea, coffee and cake, a bbq lunch each day, and SpitRoast dinner to ensure that there was plenty of time for talking.

Those raffles too. My joy was to get a dig into the doorprize pile (in the dark). Others waited and wanted for some of the huge pile of goodies from our sponsors – toolboxes, pencils, timber, tools, hats, pencils, t-shirts, timber, and more.

That was Participation at its best. Thanks to all who did anything to organise it and make each day run. A very big thanks to all the sponsors, particularly the one who went home late and got there early.

Ooooops! Do you see that eggcup on the left?

I like long walks, especially when they are taken by people who annoy me.

Ooooops2! What about the demonstrator who left the middle bit behind?

If undelivered, please return to:
The Editor, 48 Manse Road,
Papakura, 1703.

Place your timber orders through Les Sivewright so that he can co-ordinate delivery.

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