

INNER GRAIN OF SAND

the website of
Jon Appleton

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This site brings together a kaleidoscope of ideas derived from 60 years of enquiry: it shares insights into fields as disparate as:- Archaeology, Landscape alignments, Megaliths, Henges, Prehistoric measurement, Astronomy, Mythology, Calendars of the past and Seasonal celebration.

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Following the String from the Meg to the Mile

Some time after writing the preceding piece about Megalithic Measure I was drawn back into the world of the mathematicians of the Stone Circle era. The similarity that appeared between some of the ancient measures and those of the British “Imperial” system of feet, inches and yards created an interest in seeing whether there were other related survivals that linked the mensuration work of four millennia BC to the end of the second millennium AD.

The most important concept of the “String of Ideas” piece was the Megalithic Hand (MH) of 4.08” or 103.6mm. There are eight of these in 1 Megalithic Yard (MY). I argued that the hand was divided into 4 parts of 1.02” or 25.9mm a dimension I called the Megalithic Thumb (MT). It was also divided into 5 parts of .816” or 20.52mm which Thom called the Megalithic Inch (MI). It can be seen that the MT is very close to the modern Inch. Margaret Curtis (Ponting) suggests that $\frac{1}{4}$ MI of 5.104mm is also very close to $\frac{1}{5}$ of 25.9mm (5.18mm) the M Thumb. My thought was that the name Meg, short for Margaret, or the Megalithic Corn (MC) would be suitable for this small basic unit of length. For the purpose of this piece I’ll call it the Corn or (MC).

I feel happier with the good old British system of feet and inches and will try to keep the use of metric units to a minimum to avoid the confusion that might develop from having too many overlapping systems.

My argument for the use of the Megalithic Hand is advanced in the preceding piece and appears to show that the hand as a unit of measurement for horses is a sort of living fossil from ancient times. What we seem to have arrived at is that there were at least four units of measure that were interrelated and fit the quantum derived by Alexander Thom for the stone circles and other constructions of early people in Western Europe the Megalithic Yard. Although he identified the MY and proposed the M Inch as one fortieth of the MY together with the M Rod of $2\frac{1}{2}$ MY he didn’t consider any other unit, not even the $\frac{1}{2}$ MY.



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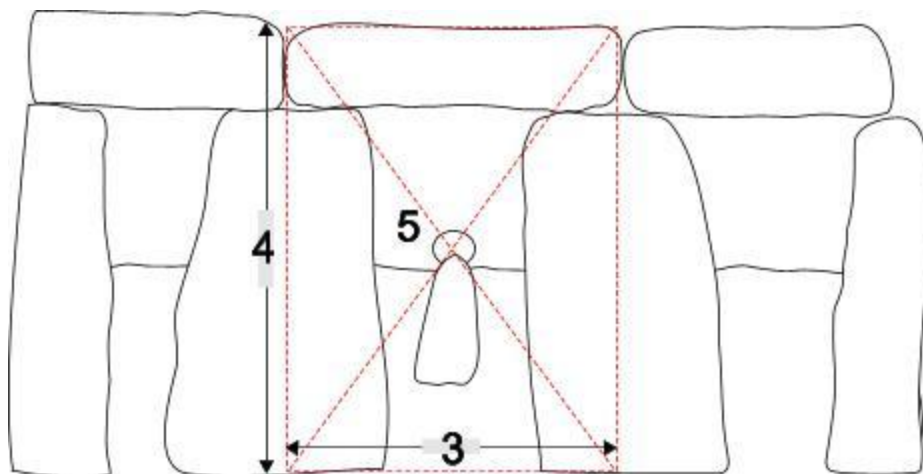
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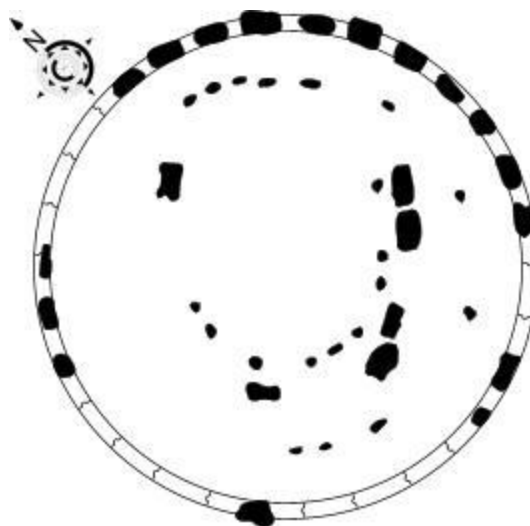
The Meg to the Mile Continued...

Let's see what measures give us a starting point :-

4 M Corns	= 1 M Inch		
5 M Corns	= 1 M Thumb		
4 M Thumbs	= 1 M Hand =	20	M Corns
8 M Hands	= 1 M Yard =	160	M Corns
20 M Hands	= 1 M Rod =	400	M Corns = 2½ M Yards



I also include some other interesting illustrations based on the ideas of Gyorgy Doczi in his book "The Power of Limits" which may further illuminate these concepts.



Plan of Stonehenge - Mid Summer Sunrise at top

In her original article "Megalithic Inches Rule OK" Margaret Curtis described some other ancient measuring sticks found in Denmark. These are divided into units of one fifth of a MY. That is 6.53 inches. This represents 32 M Corns and 8 M Inches.

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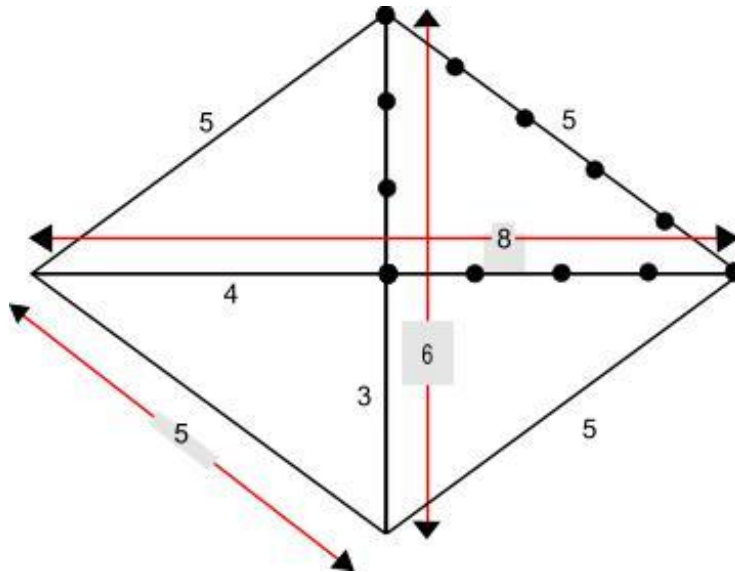


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The Meg to the Mile Continued...

As I have studied and worked with the units used in the earliest days of the Megalithic period and back into the Neolithic it has become more evident that many of them were integrated by the relationship set by the "Pythagorean" right angled triangle. As I showed above this is exemplified by this diagram.



The 5:8 relationship springing from the diamond shape formed from four 3,4,5 triangles put together is also significant in understanding another problem. This was brought to light by the mathematical analyses of site dimensions done independently by Broadbent, Kendall and Freeman who all identified a quantum for Scottish circles of 2 MY at 1.66m. However in examining the English and Welsh circles they found another quantum appearing. This was 1.63m or 1.66 MY. The only way these two numbers can be related to one another is through the same diamond shape.

The ratio is 5:6 or 1:1.2. By the way I'm still wondering how the Bush Barrow lozenge fits in here, that's another story in itself.

Expressed in Megalithic units the English quantum appeared to be 13.334 M Hands, 266.6 M Corns, 53.32 M Thumbs or 66.65 M Inches. None of these dimensions looks at all rational and I felt uncomfortable with the apparent lack of connection with any other measure. Then, as they say the light dawned. Multiplied by 3 these figures become 40.002 M Hands, 799.9 M Corns, 159.96 M Thumbs and 199.95 M Inches. These looked like very close approximations of 40, 800, 160 and 200 Corns respectively. In terms of the MY the figure is 4.98 or 5. It now appears that the designers and users of the English, Welsh and perhaps Irish stone circles used both a 5 MY (40 hands) and a 2 MY (16 hands) unit in setting them out. In Scotland however the 2 MY unit was almost always the only one used. Once again the 5 factor from the diamond comes into play and the 3 appears as the integrating factor.

As a further curiosity, which I'm a bit reluctant to introduce, the same numbers divided by 3 produce the following puzzling result :- 44.44, 88.88, 17.77 and 22.22. This looks suggestive, but of what I'm not sure yet. Has anyone reading this got any ideas?

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The Meg to the Mile Continued...

Well even though it has only scratched the surface of this complex and fascinating subject that was a rather long excursion round the numbers. My purpose was just to provide the background to the table of measures that follow. Because, placed baldly on the page it might warrant the response of "So what?". The answer to that question lies in the fact that it would appear that the measures of 5000 years ago still bear a relationship to the system we were using in this country until very recently, before we went Metric. That would be an amazing and thought provoking survival.

These thoughts started when I wondered whether the long dimension of 12 ½ MY or 100 M Hands, used for a unit of perimeter in the stone circles studied by Thom, was used in larger multiples. Furthermore, since the circumference of the circles went in units of 100 M Hands perhaps hundreds of some other unit might have been used. Now 100 M Rods equal 680 feet and there are 660 feet in a furlong. An interesting coincidence! Out of all this came the table below. I hope you find it as interesting as I do.

There are more units that might be worth including with this series which I kept to a minimum for clarity, they are:-

		Corns	Thumbs	Hands	Yards	Rods
2 hands	= 1 M Span	40	8	2		
3 hands	= 1 M Foot	60	12	3		
4 hands	= ½ M Yard	80	16	4		
6 hands	= 1 M Ell	120	24	6		
200 hands	= 1 M Chain	4000	800	200	25	10

It begins to look as if there is more than one "system" of interrelated subdivisions mixed together here. Through all of them the M Corn seems to provide a common denominator.

For interest The following list shows all the units of length in terms of feet and inches, decimals of a foot and, for the infidels, Metres.

M = Megalithic

M Corn	= .204"	= .017'	= 5.18mm
M Inch	= .816"	= .068'	= 20.72mm
M Thumb	= 1.02"	= .085'	= 25.90mm
M Hand	= 4.08"	= .340'	= 103.6mm
M Foot	= 12.24"	= 1.02'	= 310.8mm
M ½ Yard	= 16.32"	= 1.36'	= 414.4mm
M Cubit	= 20.4"	= 1.70'	= 518.0mm
M Ell	= 24.48"	= 2.04'	= 621.6mm
M Yard	= 32.64"	= 2.72'	= 828.8mm
M Fathom	= 65.28"	= 5.44'	= 1650mm
M Rod	= 81.6"	= 6.8'	= 2070mm
M Pole	= 163.2"	= 13.6'	= 4140mm
M Cord	= 408.0"	= 34.0'	= 10.36m
M Chain	= 816.0"	= 68.0'	= 20.72m
M Furlong	= 8,160.0"	= 680'	= 207.2m
M Mile	= 65,280"	= 5,440'	= 1.657km
M league	= 195,840"	= 16,320'	= 4.970km

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The Meg to the Mile Continued...

Years ago there used to be tables printed on the back of school exercise books that went like this:-

12 Inches	= 1 Foot
3 Feet	= 1 Yard
5 ½ Yards	= 1 Rod, Pole or Perch
4 Poles	= 1 Chain
10 Chains	= 1 Furlong
8 Furlongs	= 1 Mile
3 Miles	= 1 League

Usually, for good measure (ouch), they also gave the units used by surveyors.

7.92 Inches	= 1 Link
100 Inches	= 1 Chain
60 Chains	= 1 Mile

Not much easier than my proposals above, I feel. However, the users of these measures found them quick and convenient to use and could do mental arithmetic with them without recourse to writing.

There are some other intriguing old measurements that are worth consideration. The mile for instance wasn't standardised until quite late. In Elizabethan times it was commonly taken as 5000 feet not the present 5280 feet. In other parts of the British Isles other values were accepted.

Wales	5760' 1920 yards
Scotland	5952' 1964 yards
Ireland	6720' 2240 yards
Cheshire	7680' 2560 yards

So that's why country miles are longer!

One final serendipitous coincidence happened for me at the time when I was preparing the early drafts of this article. I'd moved house and wanted to send out a change of address card. Because the new house was a bit "out in the wilds, in the middle of nowhere" as a friend put it, a map seemed like a useful complement to the address details. Because both Stonehenge and Avebury feature strongly among my interests and are not far away they were included. Then, to my total surprise, we spotted that they were both equidistant from the new house and from each other. A great equilateral triangle stretched across the landscape with me on the eastern apex. When I measured the length along the sides it was 16 ½ miles. Now $16 \frac{1}{2} \times 5280 = 87120$ feet = 16.011 Megalithic Miles, 16 for all practical purposes. It would be nice to have really accurate survey figures to check this but for the time being I'm pleased with the notion and synchronicity. By the way, John Michell says that the distance from Silbury to Stonehenge is 86400 feet = 15.88 M Miles. Still close.

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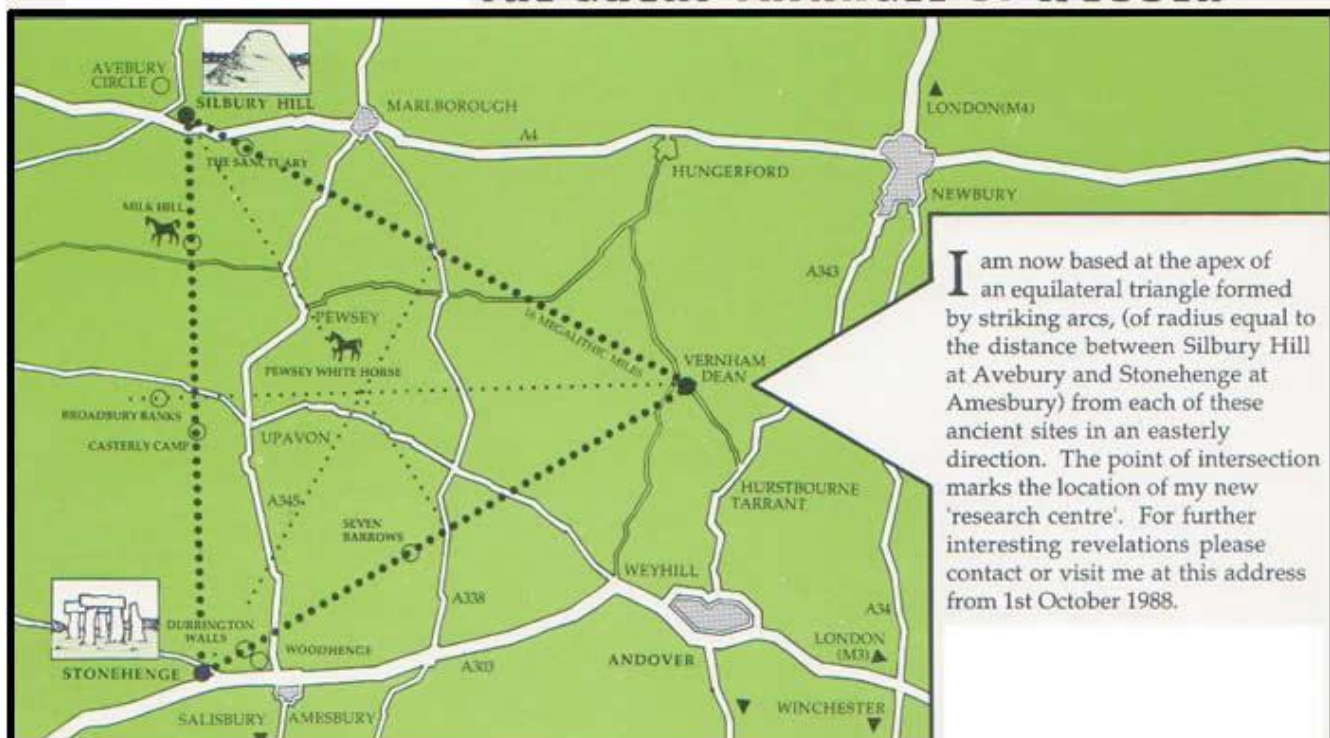
All that I can say in conclusion is that it would seem to be well worth while for anyone interested to check the dimensions recorded for as many of the larger Bronze Age, Megalithic and earlier Neolithic monuments and landscape related sites as possible. This should be done to see whether they show any evidence of the use of the large units I have proposed in their plans or elevations. I have started this process but won't, at this stage, comment except to say that things are looking interesting. It's also important to acknowledge the many writers whose work has provided elements of the picture now built up of the most ancient system of measurement we can identify in these islands. Not the least of whom are John Michell, John North, Nigel Pennick and Alexander Thom.

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4 corns	= 1 M Inch		4			
5 corns	= 1 M Thumb		5	1		
4 thumbs	= 1 M Hand		20	4	1	
5 hands	= 1 M Cubit		100	20	5	
8 hands	= 1 M Yard		160	32	8	1
2 yards	= 1 M Fathom		320	64	16	2
20 hands	= 1 M Rod		400	80	20	2 ½
2 rods	= 1 M Pole		800	160	40	5
50 rods	= 1 M Cord		2000	400	100	12 ½
100 rods	= 1 M Furlong		40000	8000	2000	250
8 furlongs	= 1 M Mile		320000	64000	16000	2000
						800

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THE GREAT TRIANGLE OF WESSEX



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