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*BWMA records with gratitude the honorary membership of the late John Aspinall
Nirad C Chaudhuri CBE & Jennifer Paterson*

A change of scene

After the Thoburn trial in Sunderland that ended on 2 March, judgment will be delivered on 9 April. Having raised over £19,000 towards the defence costs – a magnificent achievement! – BWMA will figure prominently in the publicity arising from the verdict.

Following this first prosecution, which is widely recognised as a test case, we are clearly entering a new era. At long last, battle is joined on the fundamental constitutional issue. Is this the beginning of the end for compulsory metrication?

Our **Annual General Meeting and Conference**, to be held on **Saturday 19 May**, has a new venue: the Quality Hotel in West Street, Brighton (about 600 yards from the Railway Station, down Queen's Road and across Western Road towards the sea-front).

By then we should know of any Appeal procedures and other consequences of the trial. Also, the Peter Collins case in Sutton may be under way – and we could have a new administration at Westminster.

Fast trains run from Victoria. A car park is near the Hotel. From north of London, you may drive to a station on the Thameslink line (e.g. Bedford, Luton, Harpenden, St Albans) direct to Brighton. The AGM (admission free) starts at 11.00 am: registration and coffee from 10.00. Lunch anywhere among the great variety of eating-places in the vicinity – or in the Hotel if you make a reservation (tel. 01273 220 033).

The Conference starts at 2.00 pm and finishes with tea at 4.30. Please enclose the Conference fee of £5 per head, including refreshments, with your ticket application.

Speakers will include **Sir Patrick Moore**, **Christopher Booker** and **Michael Shrimpton** (Defence Counsel). Numbers are limited, so **book now!**

Annual General Meeting and
Conference in Brighton
on Saturday, 19 May.

The Thoburn case

Heading a list of heroes in a feature on "Heroes and Villains" in *The Daily Mail's* review of the year on 28 December 2000: "STEVE THOBURN, Sunderland greengrocer, who is facing prosecution for his patriotic and sensible decision to refuse the supposed Brussels 'order' to sell his wares in metric measurements."

From an article by Andrew Roberts in *The Sunday Telegraph* on 24 December 2000: "When John Hampden refused to pay a mere 20 shillings of the – in itself perfectly reasonable – Ship Money, he started a movement of protest that ended in a revolution. When the American colonists refused to pay their taxes – which were a fraction of those being levied on their cousins back in Britain – they began a struggle that led to independence. When Gandhi refused to pay the Salt Tax – an imposition so low that it had never before been an issue – he helped the sun to set upon the greatest empire the world has ever seen. It is probably not too fanciful to suggest that the willingness of people such as Steve Thoburn, a Sunderland greengrocer, to fight for his right to sell his neighbour bananas in imperial measures might one day be seen as the first nail in the coffin of the new Euro-empire being created in Brussels."

From a letter, dated 11 January, addressed to our Director by our Patron, The Rt Hon Lord Shore: "Let me say how delighted I am at the response that the BWMA have received in their sponsorship of the Dinner at the Stadium of Light, to raise funds on behalf of Steve Thoburn, who is rightly challenging both the legality and the legitimacy of the European decrees that seek to outlaw the use of our traditional imperial weights and measures in our own land. I send my good wishes to Mr Thoburn and to all who are assisting him in his most worthwhile cause."

This Gala Dinner at the Stadium of Light on Saturday 13 January – timed to maximise support for Steve as well as embarrassment for the City Council immediately before the start of the trial on Monday 15th – was a spectacular success, in terms of numbers attending (about 300), publicity generated (3 TV crews plus numerous radio reporters and a posse of press), funds raised and sheer entertainment.

Four of our Honorary Members kindly joined us: Christopher Booker (with Dr Richard North), Robin Page (one of the principal speakers, R W F Poole (who treated us to a hilarious vocal epic) and Norris McWhirter, who made a special trip all the way from Chippenham. Vivian Linacre conducted an auction of the many items (inscribed books, etc) that Bill Peters had persuaded several other Honorary Members to

send. On behalf of BWMA, David Delaney and Bill Peters presented a billboard cheque to the "Metric Martyrs" fund for £8,960 (Why that figure? Because 8,960 lb = 4 tons!).

In the principal speech of the evening, Steve's local campaign manager, Neil Herron, revealed that what had made them determined to fight was a circular letter from John Gardner advising traders that they should continue to trade in pounds and ounces because the metric regulations were unlawful. The dinner menu included "Three Stone of Prawns" (naturally – the price for a single ticket was the equivalent of £42 – but heavily discounted for a pair or a table), "Chicken Gordon Blair with unelected brussels sprouts" and a banana soufflé ("without abnormal degree of curvature"), while the wine list featured "Cabernet Reshuffle" ("well past its sell-by date"), "Kinnock Hock" ("slips down well"), "Brussels Beaujolais" ("hard to swallow"), as well as "Thoburn's XXXX Lager"!

The trial itself was attended by Vivian Linacre, David Delaney, Bill Peters and Robert Stevens, throughout the three days allotted, and by several other Members for part. As you will mostly know, two more days proved necessary, which took place on 28th February and 1st March. We now await the judgment, to be delivered in open Court on 9th April, when Vivian will again attend with one or two colleagues. A copy of the judgment will be obtained on the day and a press release issued shortly thereafter. Whichever way the verdict goes, an Appeal seems inevitable, to be heard by the Divisional Court in London, well after the forthcoming General Election. So Members should be well informed in good time for our AGM and Conference on 19th May.

The following two letters, published in *The Times* between 16 and 19 January, were drawn to our attention by Mike Plumble.

From Clive Lewis, Past President of the Royal Institution of Chartered Surveyors and Past World President of the International Real Estate Federation: "If greengrocer Steve Thoburn... or his defence counsel Michael Shrimpton were to challenge the prosecution to quote their collar size, chest and waist measurements... length of their longest golfing drive and the birth weight of their children, one wonders how many of the answers given would be in metric. I dread to think how many kilos of bananas could be bought with the money wasted on bringing this trial to court."

From Simon Holden, a barrister: "I was astonished to read that Sunderland City Council had taken a local fruit trader to court on a ridiculous charge – 'two counts of having imperial-only scales' – and, to compound the hilarity, had even instructed a Queen's Counsel for the prosecution. Realistically, however, the episode is far from funny. Instead it

highlights the blatant disregard for reality with which local authorities use taxpayers' money. Central government should weigh up the alternatives of prosecuting an innocent self-employed trader or refuting what appears to be a wasted European piece of drafting."

An e-mail from Annandale, Virginia, USA, read: "Looks like the government has its hands full with ONE Steve Thoburn. Tell them if they don't straighten up I'll fly over and see how much they like dealing with TWO of them. Regards, STEVE THOBURN!"

The great Michael Beloff QC, in his foreword to a book entitled "*The Rape of the Constitution*", as John Douglas reminded us, had pointed out that if English judges ever decide that primary legislation is overruled by regulations from Brussels, then

Parliament effectively abolished itself 29 years ago by passing the European Communities Act of 1972. That is the issue being considered in the Thoburn case.

Following the National Opinion Poll organised by Abbott Mead Vickers BBDO (courtesy of Warwick Cairns) and conducted by ICM Research, David Delaney issued a press release on 29 December. With these credentials, this survey commanded the highest authority.

The question put to a random sample of 1,000 people was: "On 15 January a greengrocer in Sunderland will appear in court charged with weighing fruit and vegetables in pounds and ounces, rather than EU approved kilos and grams. Do you think he should be prosecuted?" **91% of replies were "No".**

Honorary Members

BWMA patrons and honorary members, and their views, proved of great interest to the press during the course of the Thoburn trial, and helped to secure very favourable coverage.

Four of them, **Christopher Booker, Robin Page, R W F Poole and Norris McWhirter**, attended the fund-raising dinner at the Stadium of Light, and added greatly to its success. Many generously donated such items as signed books for the "celebrity auction" which, together with the cartoon donated by *Matt*, of *The Daily Telegraph*, raised well over a thousand pounds.

We, and Steve, are very grateful. Perhaps the following from **Andrew Roberts** best epitomises the many messages of support: "Please send my fondest regards to Mr Thoburn and wish him the best of luck in his noble struggle. I enclose two signed copies of my books. What a wonderful cause..."

Michael Barry said that he believed that the prosecution was "unnecessary and malicious", and **Edward Fox** that the case "represents something that is being fought on ALL our behalfs."

We are delighted to welcome four new honorary members. **Beryl Cook OBE** brings a keen and kindly eye to her immensely popular paintings. It is a huge encouragement - though perfectly natural - that her obvious affection and respect for human character and idiosyncrasy should prompt her to endorse the cause of our weights and measures. Of the Thoburn case she writes: "There are surely weightier matters to take up very expensive court time."

Roy Faiers is the man behind *This England* magazine, "*Britain's Patriotic Quarterly*," which enjoys enormous popularity and which, under his editorship, has long given staunch support to our

cause, and last year so handsomely recognised the tireless efforts of our director. He writes: "... from the hundreds of letters I receive from readers all over the world, I know that the retention of our imperial weights and measures is a fundamental part of our nation's sovereign independence."

Late of *The Express*, **Peter Hitchens** now writes his lucid and incisive columns for *The Mail*. He took the trouble to be present at Steve Thoburn's trial, and we quote from his report: "Weights and measures are among the landmarks of our lives, like familiar trees or familiar tunes. We worry about them when someone tries to destroy them or alter them out of all recognition... Meddlers and experts have been trying to enforce the metric system on us since 1895, but had to wait for a century for British national pride and culture to grow so weak that they could succeed..."

Since 1992 **Jools Holland**, a man of diverse interests, former host of *The Tube* and member of *Squeeze*, has brought his musicianship, his verve, civility and vast, eclectic knowledge to *Later With Jools Holland* on BBC Television, which is the most authoritative and respected programme devoted to the many forms of contemporary popular music.

He writes: "I get many requests for me to help with various causes which because of my many commitments I invariably decline. However, I was delighted to get your invitation. I am an armchair architect and work in feet and inches. The most important buildings in Great Britain are also largely designed in feet and inches. Further, I have a lot of 12" records and grand pianos are always measured in feet and inches. I am delighted that you have taken the initiative to make a stand because if we allow these people to take an inch, before we know it, they will make it a millimetre."

Signs of the times

BWMA's campaign against metric signage is proving successful. Here are some of the examples that have been reported. Please take similar action whenever you see metric direction or distance signs. The law, for once, is on our side, and it gives great satisfaction to compel a local authority to change back to traditional measure!

In response to his complaint about a metric direction sign in Windsor Great Park, E.J. Huxley of Egham received this assurance from The Crown Estate Office: "I took the opportunity of having a look at the sign myself and I fully endorse your views that the Crown Estate is being inconsistent with their signs, showing this one particular sign in metric rather than imperial measurements. I am, therefore, arranging for it to be changed to yards in the near future."

Likewise, Austin Spreadbury, one of our most effective activists, wrote to Oxfordshire County Council to complain of road signs on the A41 NW of Bicester which warned of pedestrian crossings "250m" and "200m ahead" and they were promptly changed to "275 yards" and "225 yards" respectively.

Again, Mrs Rosemary Wickenden of Staplecross received this assurance from East Sussex County Council: "The Council's present policy is to show distances expressed in imperial only, within the Hastings and St Leonards area; the only exceptions being height and width restriction signs where the distance may be shown in imperial and metric - which complies with the Department of Environment Transport and Regions' regulations." But beware that weasel word "present" - for how much longer?

A.A. Turner of Bromsgrove also had a success with Solihull Borough Council concerning contractors' signs in metric at road works. So did Jeffrey Titford MEP with Essex County Council, whose Assistant Engineer (Traffic and Safety) wrote to him on 23 January: "The County Council as traffic authority has made its legal position and the duties imposed on its agents very clear. I have since your correspondence written to all agents/contractors reminding them of the requirement to act within the legislation. Existing signing not complying with Traffic Signs Regulations and General Directions will be corrected or replaced as soon as possible."

Mrs Flora Jenner of Etchingham in Sussex heard as follows from Bromley Borough Council's Technician Engineer (Traffic), in regard to Weight Limit signs on Masons Hill: "You are indeed correct that these signs have the distance to the bridge with the 10 tonne weight limit in metres rather than yards. In fact out of the four advance warning signs on the approaches to the bridge three of them are incorrect. I have therefore arranged for the word 'metres' on the three offending signs to be replaced with the word 'yds' as prescribed by the Regulations."

John Tomlin of Wigan scored against Halton Borough Council, whose Section Leader (Lighting) confirmed that: "You are correct in stating that the distance should be in yards not metres. The signs will be amended or replaced when resources permit." So can any trader charged with the offence of selling in pounds and ounces plead that his offending imperial scales "will be amended or replaced when resources permit"?

E.N. Rouse points out that the very first paragraph of the Introduction to the Highway Code states that "The Highway Code is essential reading for everyone. Its rules apply to all road users: pedestrians, horse riders and cyclists, as well as motorcyclists and drivers." Accordingly, local authority transport officials who try to excuse some metric distance signs on the grounds that they are "solely for the direction of pedestrians and are not intended for road users" should be told to consult the Highway Code.

J.M. Hill of Sedbergh received this extraordinary letter from a North Yorkshire County Council Divisional Engineer, concerning road signs in Wensleydale: "With reference to your letter... while I agree that signs with distances indicated in metres are not advisable I am not aware that they are illegal. However, the signs were ordered in error and adhesive tape had been ordered to change the distances to miles. Unfortunately, during the Christmas holiday all the signs were stolen and the replacements have now been ordered with imperial distances."

As Mr Hill commented: there is a surprising incidence of road signs being ordered in error, and one must wonder who is responsible and whether anybody is ever disciplined for these persistent errors? Also, the adhesive tape routine could be a cheap way of covering up the "error" with a view to removing it later or apologising, if necessary, for it having been removed "accidentally". He enquires, too, whether it would be illegal to remove illegal road signs without the knowledge of the local authority ("the A1234 phantom metric sign remover strikes again!"), but BWMA cannot countenance any such "vigilante" activity!

Patrick Carroll from Lowestoft received this equally strange letter from a Waveney District Council Engineer, concerning "shoreline closure signage" at Corton: "I acknowledge that the distances should have been displayed in imperial units. However, the signs have been erected as an emergency response to a safety hazard on the coastline. I am investigating options on minimising the risk of damage to property by the action of the sea, and the current year's budget must be utilised to its most beneficial effect. I will therefore amend the signage with distances in imperial units when physical replacement becomes necessary."

Does this mean that any shopkeeper threatened with prosecution can explain to the Trading Standards Officer that “the current year’s budget must be utilised to its most beneficial effect and so I will replace my imperial scales with metric when physical replacement becomes necessary”!

Yet another means of evasion was adopted by the Head of Service (Traffic and Transportation) at Cardiff County Hall, who replied to Mr E.C.A. Phillips’ complaint about a public car-park’s restricted headroom signs by explaining: “The Traffic Signs Regulations and General Directions, which you quote from, apply to the public highway as adopted by the highway authority. The car-park concerned used to belong to Cardiff City Council, which was not the highway authority, and the height restriction signs were provided under separate regulations specifically applying to that car-park.” Really? What “separate regulations”? He doesn’t say!

He added: “The TSR&GD do not apply to the signs in question, even though the car-park is not administered by Cardiff Council, as the car-park is not on the adopted public highway.” But it *is* a public car-park, administered by a highway authority, so he’s wrong. This shows to what lengths authorities will go to wriggle out of the law – so long as those “lengths” are metric!

The notorious letter dated 22 January from Portsmouth City Council’s Director of Corporate Services to Jeffrey Titford MEP was boldly headed “ILLEGAL METRIC PEDESTRIAN SIGNS – PORTSMOUTH CITY CENTRE” and stated: “I have indeed advised the Council’s City Engineer on this matter. I accept the signs do not comply with the regulations but I have to tell you that it is not our intention to remove them.” That would serve as another model for a retailer to copy, informing the

Trading Standards Officer that “I accept that my imperial scales do not comply with the regulations but I have to tell you that it is not my intention to remove them.”

The Yorkshire Post reported on 7 December that a Leeds City Council spokesman admitted, in connection with metric signs at road works near Wetherby, that “a batch of the wrong signs had been sent to the Council and they were being stockpiled ready to be returned but confirmed that one had accidentally been used. It will be removed and replaced using a sign with the correct distance.” An RAC spokesman commented: “The idea of road signs is to present information to the most number of people in the simplest way. Posting distances in kilometres is not going to be particularly helpful.” But where do all these “wrong signs” come from: who specifies and orders them?

The same query arises from a letter by the Brecks Countryside Project (funded by the East Anglian local authorities) to Kenneth Burton of Thetford, thanking him for his complaint concerning metric finger posts and explaining that: “Originally, the intention was to have the distances given in miles and kilometres because many walkers and cyclists use Ordnance [sic!] Survey maps that are marked out with kilometre grid squares. Unfortunately a mistake was made and the finger posts were installed with only kilometre distances. The mistake will be corrected as soon as possible.”

Now, leaving aside the fact that most OS maps still in circulation were produced before they went metric, why are “finger posts with only kilometre distances” produced at all?

Please keep writing to local authorities, and let us see the responses you get. These replies are useful, whatever they say.

Metric doodlebug strikes the Ordnance Survey

Steve Tamblin

If, before the mid-1970s, you sat a geography “A” level exam, you will be familiar with them. If you took your family holidays in Britain, you very probably purchased one. If you regard them with the affection that many people do, you almost certainly possess one or more. They are the One Inch maps of the Ordnance Survey.

The OS map was not just a driver’s navigational aid. It was a portrayal of the landscape and, dare I say it, a minor work of art. So much was to be found in so little space and only occasionally did it become a little overcrowded.

Take, for instance, sheet 187 (Plymouth, 1961, revised 1964). This informed the hardy walker returning from Dartmoor and making his way

between Lee Moor and Penn Moor (grid square SX5963) that he will pass an “Enclosure & Hut Circle”, and an “Enclosed Hut Group”, a “Cairn Circle” and a “Stone Row”, before coming across more recent human activity at the Lee Moor china clay works. Here he would find not a slurry pit or lagoon but a “Mica Pit”. Such precision!

And not only in the descriptions but in the drawing too. A One Inch map had a crispness of style that pleased the eye (even if it was sometimes necessary to resort to a magnifying glass to identify the remote farmhouse you had chosen for your holiday). “A” roads strode boldly across the sheet, vividly depicted in a truly arterial red. The sun shone, the world turned, and the dreaded Exeter by-pass lay ahead...

My late father's 1960 sheet 163 (Barnstaple), purchased for a 1963 holiday in North Devon, may be stained brown by ancient Sellotape, soiled by childish scrawl and creased and crumpled from being creased and crumpled into pockets and holdalls, but after 37 years it remains attached to its buff and red paper cover.

My First Series metric sheet 164 (Oxford) has long since shed its cover, perhaps too ashamed to reveal its true identity. The first OS metric maps were an exercise in deception, a photographic enlargement of One Inch maps in washed-out colours, with metric spot heights and contours at absurd intervals – 15 metres, 30, 46 (150 ft to you and me), 61 (200 ft), 76 metres (250 ft). The scale might have become 1:50,000 but they were still visibly One Inch maps. [As it happens, 1:50,000 is very close to 1¼ in: 1 mile anyway!]

Then came the revised and redrawn Landranger series. I suppose the new name was needed because "2cm to 1km" does not fall so lightly off the tongue. Given the larger scale, one might have hoped that the new maps would set new standards in clarity, but no. Townscapes are a fuzzy blur and roads are crudely delineated by lines thick and black yet unable to prevent their colours from leaking onto the verges. Footpaths and cycleways, National Trails and Long Distance Routes criss-cross chaotically.

The contours, now at 10-metre intervals, are so feint that the landscape recedes before the eyes – a landscape in which, apparently, there no longer exists "rough pasture", although I suppose we should be grateful that we are informed of the presence of a "spoil heap, refuse tip or dump", if only to avoid it as we hike along the pink-dashed footpaths.

Nor is it only the large-scale folding map that has suffered the attention of the conversion maniacs. A minor bastion of traditional measures, the popular OS Motoring Atlas, has also fallen recently. In the 1999 edition, spot heights are converted to metres and the relief colour shading key, although retaining its curious imperial divisions of 600, 1000, 1400 and 2000 ft, was turned upside down in the legend to give precedence to the metric conversions of 183, 305, 427 and 610. This latter change has been reversed, but the modern metricator has nevertheless left his mark. The scale of this atlas is 1:190,080.

The legend on the inside of the front cover of the 2001 edition informs us that this is 1 cm to 1.9 km. Well, almost so, give or take the odd 80 centimetres, but in reality it is *exactly* 1 inch to 3 miles! To be fair, we are informed of that fact too, but the metric conversion is given precedence. It is on the front cover that our 80 centimetres go

missing, as here the scale is rounded down to 190,000.

Perhaps the cartographers were confused by their 1997 edition which proclaimed itself as 1:200,000 and 3 miles to 1 inch on its cover, yet inside, in the legend, as 1:190,080 or "about 3 miles to 1 inch". Such muddle and confusion!

I shall leave the reader to ponder upon the obvious contradictions that exist in an atlas where spot heights are given in metres while contours are measured in feet and distances in miles. And, of course, the maps have been redrawn in an inferior style, most apparent in the indistinct relief colouring which fades into the background in the same manner as the contours on the folding sheets, with which the parallels are clear.

The modern Ordnance Survey does more than produce maps for motorists and walkers. It offers a wide variety of mapping and geographical data services to national and local government, educational establishments and private businesses. Paper maps account for a decreasing proportion of its turnover and perhaps that declining importance is reflected in the quality of its current products, although it is possible that their new chief executive might show a new attitude towards these publications.

I recently suggested to the OS that a revival of the One Inch series might be a worth-while venture, but they replied that they "did not see that this would be a practical or financially viable option." And yet only recently I discovered a new one-inch map. True, it was drawn in the modern style, but its scale was 1:63,360 and it bore the OS logo. It belonged to the "Tourist" series and seemed such a curious find.

The OS boasts that computerised mapping techniques allow more accurate plotting and more frequent updating. How unfortunate that these techniques do not permit more accurate drawing. The Landranger series are not so much maps as sketches, diagrams, doodles in pastel shades and gaudy pink – and metric to boot.

So, almost 40 years on, let us return to our walker and his pink pathfinder. He will discover from sheet 202 (Torbay & South Dartmoor) that the Lee Moor works have expanded enormously, depositing numerous "spoil tips" and obliterating the "Cairn Circle" and "Stone Row". The "Enclosure & Hut Circle" and the "Enclosed Hut Group" are downgraded to mere "Settlements".

The "Mica Pit" is now a nameless feature, having expanded to engulf a farmstead. A mile of moorland road has disappeared and with it an easy walk from Tolchmoor Gate to Cadover Bridge. But the sun still shines and the world still turns, even if the Exeter by-pass is now just a busy ring road, long superseded by the M5. And in your local library, the One Inch map has been moved from Reference to History.

The great antiquity and scientific origin of feet and inches

Robin Heath

I have for many years been involved in the surveying, geometry and structure of Stone Circles, which were built throughout what are now the British Isles and NW France between c. 5,000 and 3,500 years ago. In this, I followed in the footsteps of the late Professor Alexander Thom, who discovered and proved the existence of the "Megalithic Yard" (MY), a unit of 2.72 ft. 2½ of these define a "Megalithic Rod" of 6.8 ft., so that 5 MY = 2 MR.

Perimeters and the internal geometry of non-circular stone rings were commonly found by Thom to measure in whole numbers of MR. In addition to the metrology of stone rings, Thom pioneered what he came to term megalithic science, a subject embracing accurate astronomical alignments and an apparent obsession with numerical patterns held by Neolithic man.

Alexander Thom was Professor of Engineering Science at Oxford University from 1945-61. He refined the value of MY throughout the last 40 years of his working life, until shortly before his death in 1985. He defined the unit in the first of three major works published by Oxford University Press (*Megalithic Sites in Britain*), following detailed surveys of over 500 sites in person from Shetland to Brittany. Statistical analysis showed that 2.72 ft was accurate plus-or-minus 0.003 ft.

In my book, *Sun, Moon & Stonehenge*, I show that if one assumes that 1 MY represents a lunation period – the time between two new moons – then the length of 1 imperial foot marks the required calendrical period between the end of the lunar year (12 lunations, which take 354.367 days) and the end of the solar year of 365.242 days. This discovery was so astonishing as to justify spelling out again: if the lunar year is represented by 12 MY then 1 ft corresponds precisely to the extra 10.875 days to coincide with the end of the solar or seasonal year.

Furthermore, the period between the end of the solar year and 13 lunations – 18.656 days – is represented by another unit of length from antiquity, the *Royal Cubit* of 20.63" or 1.72 ft. The Royal Cubit is indeed a most ancient measure, known to Newton who, drawing on the work of the metrologist Greaves, deduced that a value of 20.63" would make the King's Chamber within the Great Pyramid exactly 20 x 10 of this same measure.

In the 1880s, Sir William Flinders Petrie accurately measured the Great Pyramid, using a 10" Gambay theodolite, and identified 20.63" as a

primary unit of length also within other Egyptian dynastic buildings.

Hence the equally astonishing revelation that 1 MY = 1 ft + 1 RC. Assuming that the MY was the primary unit, then the derivative foot and cubit appear to have formed a logical and essential part of the astronomical and calendrical researches of our Neolithic ancestors.

If, however, the foot *preceded* the MY in time – and here we must remember that 1/1,000th of a degree of arc around the equatorial circumference of the Earth is just 365.244 ft in length! – then knowledge of the roundness of the Earth must have predated use of the MY... i.e. well before 3,000 BC. There are no other choices readily apparent! It would have been logical for the key calendrical period – the 10.875 days between the ends of the lunar and solar years – to have been represented by an existing length, and it does appear that the foot of 12.00 inches was adopted as that length.

My story doesn't end there, for there are 12.368 lunations in a full year, of which the fractional part (0.368) is almost exactly 7/19 (0.36842104). Using decimal fractions totally obscures the astronomic wisdom hidden in twelve and seven-nineteenths. As a vulgar fraction, 12.368421 = 235/19, immediately informing an astute astronomer of a nineteen-year synchronicity between lunar and solar cycles. Thus, 235 lunations will last exactly nineteen years. The correspondence is astoundingly accurate – a mere 2 hours [of error] in 19 years – and it is termed the Metonic cycle.

Let's take it even further. A length of 0.368 MY = 1 ft. Again assuming that 1 MY represents 1 lunation, then, totting up the exact number of lunations in the year, all one has to do is add 1 inch to 1 MY each time one observes a new moon, because these extra inches will add up to 0.368 lunations, the required over-run.

When demonstrating accurate calendrical predictions with my student groups over the years, I use a plastic Woolworth's foot ruler, marked in inches, to predict lunations and eclipses to the day, years in advance. Not very megalithic but highly accurate and apparently using those same measures of antiquity now ironically rendered illegal by the government of the same lands that originally built most of these great circles and invented the mathematics.

Many of the greatest metrologists of our age have suggested that the primary units of length were derived from units of time. To quote that greatest metrologist, Stecchini, who died only in 1999: "... all serious scholars of ancient and mediaeval measures have always known that measures of volume and weight are derived from the units of length."

During the late 19th century, two other eminent scholars, the aforementioned Flinders Petrie and Carl-Friedrich Lehmann-Haupt, each concluded that ancient measures were so rigorously organised that they must have a basis on some absolute natural measure. I suggest that this absolute natural measure was the lunation period.

It now appears to me, therefore, that the Megalithic Yard may be considered a calendrical analogue of the lunation period, and that the foot and the cubit are proportioned within it to reveal the duration of the solar year, following the twelfth lunation or lunar year.

The conclusions of this research have enormous implications for archaeology and human pre-history as well as for metrology and mathematics generally. For a start they confirm the primary connection between the science of measurement and the Moon.

They also clearly offer one plausible explanation as to the historical basis for the foot and its twelve-

fold division into inches, contrary to the popular impression that the foot and the inch were merely random evolutions from the anatomical foot and thumb-width, or derivatives respectively from Roman and Saxon measures. Our system of customary measures is not only coherent – it is also almost certainly celestial. Feet and inches are *lunations* better!

[Robin Heath is the author of four books – including *Sun, Moon & Stonehenge* – a 256-page, fully illustrated exploration of the megalithic landscape and its implications for modern culture (ISBN 0-9526151-7-7, £12.99 from any bookshop or tel. 01239 613224).

Once a senior lecturer in mathematics and engineering, he now writes and lectures widely on matters megalithic, living in West Wales. It is a privilege to publish this article, specially written for BWMA, that summarises his latest researches.]

British archives and the threat to our cultural heritage

Stephen M. Dixon

I have a point of view on the subject of compulsory metrication and what appears to be more of an ideological rather than practical objective driving government policy, based on my professional background as a qualified, professional archivist.

The consequences of a society discouraged from or criminalised for using imperial weights and measures must logically extend beyond market stalls, retail outlets and the market place in general. It is clearly apparent that educationally and culturally at large society is intended to convert to metric in such a way that a national amnesia pertaining to traditional measurements is being induced.

This will put heritage professionals like myself in a difficult position as custodians and guardians of the cultural heritage. Archives largely contain references to imperial measures. A researching public, ranging from academics to householders consulting records including title deeds, charters, maps and house plans will be confronted increasingly by information that is illegal in a different context and of which they will have little or no official knowledge or awareness.

The Public Record Office, the UK and English national archives, holds 130 miles of records; the London Metropolitan Archives 30 miles; and other local government archives offices between 2-6 miles each on average. Added to these are the vast corporate, academic and commercial sectors' archives. This is a significant cultural resource and one liable to become arcanelly obscure to posterity if imperial measures are proscribed. To this proscription of an important part of the cultural heritage will be attached a stigma apparently

nurtured subliminally by the courts, which can already be over-ruled by the EU.

While EU and UK legislation may stop short of the destruction of archives so contradictory of their political philosophy (see "The devil lies in the detail: the danger posed by the European Union to Christianity" published in the October issue of *Christian Order* by Dr Gregory Slyszy), the precedent for extending cultural vandalism to the burning of archives can be found recently in Tibet, Bosnia and Kosovo. Nazi Germany, Russia and revolutionary France have also visited this solution on their own and others' heritage.

The lesson seems clear. If a stand cannot be made against compulsory metrication now, far greater damage to our cultural heritage may yet take place. The obvious extension of proscription of imperial measures is eradication of trial by jury, the right to silence, habeas corpus and presumption of innocence and in turn, in order to support the basis for their eradication, the destruction of the archives that record their constitutional integrity.

While this may seem a distant prospect, the signs are clear and the EU is nothing if not insidiously gradual in its development. We already know there are plans for an EU-wide educational curriculum and archives specifically are threatened by the Malvine Project, the project for the harmonisation of member states' archives.

I hope the legal use of imperial weights and measures can be upheld. It is certainly necessary for the wider implications to be taken into account. I hope for a judgment in favour of the non-criminalisation of imperial measures.

North America

US Government

A retired United States Navy Captain, R.M. Flaherty, informs us that, as a US Department of Defense officer in the late 1970s, he took part in a metrication cost/benefit analysis in relation to the Trident submarine/missile program. The findings that the benefits would be barely detectable while the costs in terms of personnel retraining and rewriting of documentation would amount to hundreds of millions of dollars. So the proposed conversion from "English" units to metric was abandoned.

That exercise, of course, was confined to only one part of one government department. The total cost for the US economy would have amounted to tens of thousands of millions of dollars. Compulsory metrication in Britain is, accordingly, costing us thousands of millions of pounds. The difference, however, is that in the US they actually carry out such analyses beforehand, and refer to costs in "tax dollars", whereas in Britain bureaucracy blunders on, concealing the cost behind official euphemisms,

"public funding" and "government resources," which are assumed to be infinite.

Boeing

David Delaney asked Boeing Aircraft Inc. in Seattle, the world's largest aircraft manufacturer: "Please tell me what system is standard in your design specifications: metric or 'pound/inch/quart'?" He received the reply: "**Our airplanes are designed and specified in inches, pounds and gallons**". That nails one of the lies that metric authorities regularly broadcast.

As David points out, this culture of customary weights and measures prevails not only within the Boeing organisation but also among the multitude of suppliers and associated services. Boeing itself employs 198,000 people in more than 60 countries and operates through six major divisions - commercial aircraft, space and communications, military aircraft and missiles, shared services, air traffic management, and Boeing Capital Corporation - all in customary weights and measures!

How to submit a planning application in British measures (and not have it sent back to you!)

Warwick Cairns

If you have ever submitted a Planning Application - e.g. for structural work to your house - you will know that all the dimensions have to be in metric measures; otherwise, if you've shown everyday British measures, the chances are you'll have had it returned to you. Unless, that is, you do it the way I did recently, which is - in a nutshell - to use the common measures *descriptively*, and the equivalent metric measures *pedantically* and *ridiculously*.

Let me explain. I put in an application to have a six-foot by two-foot-six gate in my garden wall, so that is what I said on the form: "a six-foot by two-foot-six gate". But those, you see, weren't the official measurements. Oh no, they were just a description of

the sort of gate that was intended, like "a red gate" or "a wooden gate".

For the proper measurements, I translated 6' x 2'6" into their metric equivalents to such a mock-scientific degree of pointless accuracy that (a) they were of no use to man or beast and (b) it was painfully obvious that I was making fun of the metric requirements, but (c) I was nevertheless obeying the law to the letter. So my application read: "*a six-foot by two-foot-six gate, measuring approximately 1.8288m high by approximately 0.7620m wide*". And the result: well, the permission came through within a month!

Hmm... I notice that there's another metric unit called the angstrom. And 2'6" in angstroms is 7,620,000,000. I wonder... Maybe next time!

More metric muddle

A letter from Derek Doel of Hitchin, appeared in *The Sunday Telegraph* on 17 December: "Please do not hassle the BBC for adoption of a consistent set of measurement units, as monitoring the numerical howlers and use of mixed units provides immeasurable fun. On November 7, a charming weather announcer advised in one sentence: "Overnight, parts of England received 111 millimetres of rainfall, while Nice in France received five inches."

A new Member, 18-year-old Daniel Lockton of Dawlish in Devon, writes: "I, along with my friends, was never - officially - taught Imperial at school, but I can tell you that it is still very much the 'natural' choice for today's children. I am now an Engineering Design student at Brunel University and was delighted to find that the tensile testing machines here are almost all calibrated in lb.ft. rather than N.m. However, the workshop supplies department seemed amused when I ordered a 6' x 4' sheet of

fibreboard. One lecturer was unaware of why so many cans, jars, etc. are labelled 454g.

As someone who spends a lot of time studying physics, engineering and mathematical subjects, I am frankly unimpressed with SI, at least in the form in which it is implemented. The originators had the chance to create a truly logical system but instead it is riddled with inconsistencies and conversion factors that make it a nightmare to use. How often I see mistakes made because someone cannot remember how many kNmm to the power of minus 2 there are in a Gpa, or even how many square millimetres there are in a hectare! It is always 10 to the power of something, but what? I am not saying this kind of mistake could never happen with Imperial, but the use of different factors (12, 14, 16, etc) makes it all vastly more memorable."

Bruce Moon in metric New Zealand sends an advertisement for Chinese tarpaulins which are all in exact numbers of feet, (from 6'x8' to 30'x60'), and birth notices in Christchurch newspaper, showing babies' weights in most cases, with 4 being in kg/g, 44 in lb/oz.

Anthony Cooney wrote in part, in a letter to *The Liverpool Echo*: "The imperial system, of course, avoids any risk of confusion by using appropriate units for each commodity: tons for ships, hundredweights for coal, stone for fish, pounds for potatoes, ounces for sweets, grains for arsenic, miles for roads, furlongs for racecourses, chains for cricket pitches, yards for fabric, acres for fields and square feet for estate agents, gallons for petrol, pints for beer and gills for whisky, knots for speed over water and fathoms for depths, etc, etc."

Several Members have pointed out that the old-fashioned gummed postage stamps, that used to be sold in books of ten, have been replaced by the more convenient self-adhesive type, sold in books of a dozen.

A letter in *The Daily Mail* on 1 February from John Rudge narrated: "When I was working in the test room of a steel mill, the boss got the idea of going metric. He gave me a metric micrometer and told me that all measurements had to be converted into centimetres and millimetres. The steel rods were still in inches and my machine was calibrated in pounds and tons, which then had to be converted into kilograms. Then he told me that all the machine readings had to be converted into Newtons, where 1 Newton equals 102g.

I found that a Newton is worked out by the rate that things fall to the ground, plus a correction that is multiplied by the cosine of twice the latitude of the

place where the measurement is made, minus a smaller correction multiplied by the square of the cosine of twice the latitude, and so on. I decided to resign from that job. A week or two later, I met the fellow who replaced me. He said that, after I had walked out, everything in the mill had gone back to tons, pounds and inches. However, the boss had just given him a metric micrometer...!"

John Strange received a letter from an official in the Food Standards Agency's Food Labelling, Standards and Consumer Protection Division, stating: "The labelling of most food in Gt Britain must comply with the provisions of the Food Labelling Regulations 1996 (as amended). These state that where nutrition labelling is required or permitted to be given, a standard format must be used, and energy values must be given in both kJ and kcal (kilojoules and kilocalories). We recommend that for consistency the value in kJ is given before kcal."

But as John points out, the kilocalorie is not a metric unit: it does not appear on the list of units whose use has the approval of the EU (Directive 80/181/EEC). It does appear on the ECC Nutrition Labelling Directive (90/496/EEC) but it's still not metric. So, at a time when we're supposed to be going metric, the government is insisting on use (in certain circumstances) of a non-metric unit. This is yet further evidence that official policy is not so much pro-metric as anti-British.

John also sent us a letter from the Derek Hardy, Enquiries Officer at the Met Office (Powell Duffryn House, London Road, Bracknell, Berkshire, RG12 2SX - to whom complaints about use of metric units may be addressed, as well as to the BBC), who wrote: "Of course we accept that there is still a considerable minority of folks, mostly of the older generation, who have never readily adopted the changes. Therefore both sets of scales are often used in the everyday media. What the BBC decide is up to them, but it would be very surprising if they were to go against the 'official' policy entirely and revert to methods not used since the early 1960s."

Note the condescending reference to "a considerable minority of folks, mostly of the older generation"! As if only a minority of people, young and middle-aged as well as old, would refer to "2 inches of snow" rather than to "50 millimetres". Scientists are often out of touch with the real world, civil servants generally so, but scientific civil servants live in a world of their own. What is more important is his equivocal reference to "'official' policy". Is it official or isn't it?

BWMA news

We report on four new honorary members elsewhere in this issue.

The great metric "rip-off"

John Gardner drafted a press release, which David Delaney issued on 12 February, on the scandal of "down-sizing" (or "product shrinkage") as a direct result of metrication. John's research

findings had inspired a prominent feature on Christopher Booker's page in *The Sunday Telegraph* on the 11th.

Along with the Anti-Metric Signage campaign, this initiative continues to generate much publicity, to the benefit of consumers generally, while raising BWMA's profile still higher and further discrediting the whole process of metrication.

Third BWMA site on the Internet

John Gardner has set up a third Web site (www.bwma.online.com) to concentrate primarily on presentation of research material, trade and consumer affairs, legal aspects, and special campaigns such as the anti-metric signage initiative featured in this issue. It and our two other sites are inter-linked. Each exercises editorial independence and some overlap in material is inevitable, but the three sites are structurally different and accordingly treat and display their contents differently. They are complementary and equally valuable.

John has launched the new site with a masterly report on a fresh initiative, *The Great Metric Rip-Off*, exposing the scandal of "product shrinkage" or

"downsizing" which has arisen directly from compulsory metrication of pre-packed goods since 1st October 1995. This is a topic we have touched on in the past, but it has become so insidious and so damaging to consumers' interests as to justify a comprehensive survey and media exposé.

Christopher Booker made it the top story on his page in *The Sunday Telegraph* on 11th February and David Delaney put out a press release, generating more publicity. This is another on-going campaign in its own right, reinforcing BWMA's reputation for expert research in the interests of consumers, politically independent yet further discrediting metrication.

Campaign news

Lance Haward sent cuttings from the *Radio Times*, showing - on the one hand - an article on cookery, "where the normal measures are translated into Continental as a totally unnecessary alternative", with - on the other hand - a feature on Channel 4's "Great Estates" series, where every measurement is given in traditional units. As he comments: "where, as in this instance, duplication is abandoned, nobody thinks for one moment of employing anything but English for use in the domestic market."

Steve Fenn sent a beautiful photograph of an opulent pot of "House of Commons Marmalade with Whisky" showing the weight of its contents prominently as "12oz 340g". Yes, indeed, with the imperial, first - a criminal offence! We've got them on toast!

Vicki Gardner sent the glossy box from an Italian "Panettone Verdi", produced in Treviso, and boldly marked "NET WEIGHT 17.6oz (500gr.)".

We have also been sent the gold wrapper from a "Zitronkuchen", produced by Le Gourmet of Ludwigkirchstrasse in Berlin, stamped boldly "NET WT 14.0 oz 400g".

John Pett the butcher in Bude, Cornwall, organised a mass protest outside his shop against the threats from the County Trading Standards Office.

Our friends the Fretwell brothers, Steve and John, proudly publicise their exclusive use of pounds and ounces in their flourishing butchery business at Bare, near Morecambe. Now one of their customers has knitted a large doll, displayed in the shop, which the local press calls the "Imperial Imp" but which the Fretwells have decided deserves a special name. So they have organised a competition, inviting nominations from customers. Each suggested nomination costs £1 (minimum), the final net proceeds to be distributed as to half to St John's Hospice, one quarter to the Sunderland Metric Martyrs' Fund and one quarter to BWMA. This is an admirable and very generous initiative.

The winner keeps the doll, newly baptised. 2nd prize is 1lb sausages; 3rd prize 2lb sausages and 4th prize a holiday for 4 in Brussels, to be paid for by Sunderland District Council. (Only the first prize can be taken seriously!) No fewer than eleven other retailers, in

Morecambe, Carnforth, Lancaster, Kendal and Lancaster, have all volunteered to accept nominations with accompanying donations. The result will be reported in our next issue. Meanwhile, we can only, once again, express our enormous gratitude to Steve and John and our admiration for their enterprise.

J.W. Castley of John Castley & Co, Chartered Surveyors of Peterborough, advised that, following the report in our last issue of Tony Perkins' addition of the "English Spoken Here" logo to his website, he has done likewise. He added that his website, www.johncastley.co.uk, then "under construction," would have the ESH logo displayed on all pages. Will other Members who have a professional or commercial website, please copy this splendid idea?

Mike Plumbe in Hastings advises that his butcher, Roland Jones, has an old Avery Steelyard, which would weigh up to 300 lb of meat. He proposes to put it into his window with a suitably provocative message. Mike will photograph it for display at our Conference on 19th May.

A steelyard is a type of balance which, by having its fulcrum off-centre, enabled heavy goods to be weighed with relatively small weights: e.g. a 7 lb weight at 2 ft from the fulcrum counter-balances a 28 lb weight only 6in on the other side - a simple and useful device.

Mrs Mary Hopson deserves recognition for her single-handed composition and publication of *The Traditionalist*, a home-made quarterly magazine, issued free of charge ("but small sums towards production and distribution costs from time to time are gratefully accepted") from Tregate Castle, Llanrithal, Herefordshire, NP25 5QL. With No.31, which appeared recently, she very kindly enclosed copies of our pamphlet, *Foot, Pint and Pound*. This number also contains a long excerpt from the superb article by Roger Scruton (*Measure for Measure*) published in the *Financial Times (Weekend Magazine)* last 12 August.

The introduction by Sarah Edington to *National Trust Recipes* advises: "A word on measures. It is a knotty problem. As I write this, shops and supermarkets have just been ordered to mark weights in kilos and grams, liquids can be sold in litres and pints, and both imperial and metric weights for scales are available in

the shops. Full metrication is still several years away. After much soul-searching, I decided that the imperial measures should be listed first and metric second, but they are both given equal importance... I feel that most people using this book will still be working with imperial weights."

The International Tennis Federation wanted to overcome the problem of loss of pressure in all regulation, pressurised balls. About one tenth of pressure is lost after one hour's play; hence the frequency with which new balls are called for at Wimbledon. Hence, too, the erratic bounce that occasionally plagues matches and the big advantage enjoyed by the server with new balls. So the first non-pressurised balls are now in use, but not yet sanctioned for Wimbledon. Meanwhile, the tests for pressurised balls are stringent: when a load of 18 lb is placed on the ball, its deformation must fall between 0.22 in and 0.29 in. Who the "deuce" needs metric?

Gold Stars

Three more winners of our award for exclusive use of traditional measures are:

House of Bath, 1 Bartlett Street, Bath, BA1 2QZ, whose catalogue is a joy.

Two Wests and Elliott Ltd, Unit 4, Carrwood Road, Sheepbridge Industrial Estate, Chesterfield, Derbyshire, S41 9RH, - see their 2001 gardening equipment and greenhouse catalogues.

H.L. Linen Bazaars, 41 New Bartholomew Street, Digbeth, Birmingham B5 5QS (0121 643 0030) who sell towels, sheets, blankets duvets, and so on, at keen prices by mail order and in seven branches.

The rule of 42

On page 2 of our last issue the story was told of the sale of "3 stone of prawns" (i.e. 42 lb) to Herron Seafoods in Sunderland by an employee of the City Council which owns and manages the Old Fish Quay, since when the number 42 has become a talisman of our campaign.

Several Members reminded us that the message in that cult novel of 1979, *The Hitch Hiker's Guide to the Galaxy* by Douglas Adams, was: "The Answer to the Great Question of... Life, the Universe and Everything... [is] Forty-two."

Then John Strange drew our attention to Lewis Carroll's marvellous poem, *The Hunting of the Snark*, in the preface to which we find: "The helmsman used to

stand by with tears in his eyes - he knew it was all wrong, but alas! Rule 42 of the [Naval] Code, 'No one shall speak to the Man at the Helm'... " And again, in the poem itself, we find: "He had forty-two boxes, all carefully packed..." All very strange, indeed!

Moreover, thinking of the Sunderland case, there is the declaration by the King in the trial scene from *Alice's Adventures in Wonderland*: "Rule Forty-two. All persons more than a mile high to leave the court!"

Body language

The Sun on 26 January featured a young lady from Doncaster, 6'3" tall, whose legs measure 49 $\frac{3}{4}$ " (4'1 $\frac{3}{4}$ ") from heel to hip. The Guinness Book of Records confirms that, if the claim is authenticated, hers are indeed the longest legs in the world, beating the present record-holder, a girl from Heybridge in Essex, by $\frac{3}{4}$ of an inch. BWMA's offer to carry out the necessary exhaustive tests has so far received no response. Why are the only contenders British? Obviously, the metric system doesn't have a leg to stand on!

Then Matthew Parris's "Parliamentary Sketch" in *The Times* on 19 January began: "Drawing himself up to his full (Imperial) 5ft 5 $\frac{1}{2}$ in at the despatch box yesterday afternoon, Alan Duncan (C. Rutland & Melton) declared: "drawing myself up, Mr Speaker, to my full 5ft 6 $\frac{1}{4}$ in..."

The Tory spokesman on Trade and Industry moved to less disputable ground, however, when he complained that the sledgehammer of trading standards legislation was being used to crack the nut of a small trader selling bananas by the pound - "absurd and unnecessary", said Duncan.

"I'm happy, Mr Speaker, to stand at my full height of 1.6m," replied Helen Liddell. If, as this sketch suspects, Mr Duncan was including high heels in his height, Mrs Liddell must have been including her hair. Without this extraordinary, lacquered, honey coloured helmet, the Trade and Industry Minister may be only 4ft tall." (Mrs Liddell has since become Secretary of State for Scotland).

Finally, in this physical context, an item in *The Times* on 6 January: "Police are doubling payment for two identity parades to £20 a person because they cannot find enough. Ginger-haired volunteers in Southsea, Hampshire, men aged 18 to 22 between 5ft 6in and 5ft 10in, and boys aged 12 to 14 and a couple of inches shorter are sought.

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Membership costs £10 for a year. Send a cheque or postal order (payable to BWMA) to the Hon. Treasurer.

The list of members is kept on computer but not disclosed to commercial organisations.

Views expressed in *The Yardstick* are not necessarily those of the Association.