

# IOP BOTTLED WATER CORRESPONDENCE

Here is the correspondence from REMS members on the *IOP Bottled Watergate*:

The original letter from John Bausor, which sparked it all off ...

At the "At Home" of the REMS on 7 July several members were surprised by the bottles of water supplied at lunch. On both the still and the sparkling versions of 76 Portland Place water a notice appeared stating "Our environmentally positive water is helping to reduce your carbon footprint".

No-one could imagine any way in which your bottled water was more "environmentally positive" than tap water, so we concluded that the comparison must be with other bottled waters. Someone suggested that 76 Portland Place water might be more environmentally positive if it involved less transport than other bottled water. This led to the idea that it might well be local tap water put in bottles (carbonated if sparkling).

Perhaps you could confirm whether our supposition is correct, and if not, what meaning we should attach to "environmentally positive".

If physicists find the notice misleading or unbelievable, it might bounce back against the Institute or IOP Enterprises Ltd.

Reply from the IOP ...

## Environment

Vivreau - Environmentally Positive Water

At Vivreau we have always cared about the environment. Since the genesis of our company in the late 1980s our philosophy has been to provide the best quality water from the most local source, eliminating the need for costly and polluting transportation and packaging. We are proud of the fact that our products have been designed and manufactured specifically to reduce our clients' impact on the environment.

Our company launched the original Table Water Bottling System in 1990 and Vivreau water is now served in the meeting rooms of approximately 75% of the top 100 UK companies, vastly reducing their carbon footprint and assisted many of them in achieving LEED Certification and the ISO 14001 environmental management rating.

The food industry talks about "food miles" and in the water industry we talk about "water miles". Transporting bottled water around the UK from Europe and even nowadays from the Fiji Islands, creates a huge negative impact on the environment. Not only is water being transported by road, creating congestion and pollution, there is also the issue surrounding glass and plastic packaging waste. Our research shows that 80% of a typical city office's glass packaging waste is attributed to pre-bottled mineral water.

Although recycling facilities are available, this still has a negative impact on the environment and re-using will always prove to be more efficient than recycling. Therefore the installation of a Table Water Bottling System, with re-usable Designer glass bottles for pure chilled still and sparkling water, has an immediate and dramatic impact on a client's carbon footprint.

Purifying mains water on site...

- Eliminates deliveries - reduces transport CO<sub>2</sub>, eases congestion and pollution
- Eliminates packaging waste associated with pre-bottled waters
- Reduces refrigerated storage requirements by chilling water on demand

I see nothing in the attached response about how the bottles are sterilised before being re-used.  
That's very worrying to me.

Regarding the water, there are two issues - carbon footprint and cost. Our policy for many years has been to ask for a simple jug of tap water ("Chateau Pump") at restaurants and to avoid any that refuse. This minimises both carbon footprint and cost. It would be interesting to know what "purification" the IOP apply to their on-site mains water and how much they charge for the purification process and for putting in the bubbles. It sounds as though it generated a lively lunch time discussion.

Perhaps IOP could buy some jugs and only serve tap water. A one off cost for jugs and the water is free and as I understand perfectly drinkable.

I have in the past been puzzled by the concept of 'organic' water; having studied chemistry as well as physics I wondered where the carbon compounds came from. But even this pales besides the pet food that is advertised as not having been tested on animals.

Most scientists would prefer tap water with its chlorine than bacteria in filtered water.

Interesting issue with the company's answer not covering the possibility of using IoP HQ tap water I have found this quite satisfactory and avoid the transporting costs of still water. No doubt the company or the IoP caterers prefer to supply bottled water. If REMS asked for tap water, one must expect the caterers not to reduce the cost per head for the meal.  
If the REMS at Home meetings were in Edinburgh, Oxford or Liverpool then bottled water would be essential!

I think we should take this up with the Management of the IOP, this reply gives no details of cost, either of the original machine or of the running costs, not just the money but how much electricity is used while running it. I assume they use water from the Mains. Why is that inadequate for REMS members? If Thames Water supplied water is not potable the IOP should take that up with Thames Water, not buy in fancy filtering systems.

I think the meals provided at the 'At Home' are vastly overpriced for what we get.  
How much cheaper would they be with plain tap water?

I followed up the link to the supplier of the bottling machines and wrote enquiring about cleaning the bottles.

Somebody telephoned today to say that the company supplies trays for dishwashers so the bottles are held upside-down and washed and then sterilised by a burst of steam.

I said that clearly the system only worked if the bottles were washed in that way, and he was forced to agree.

I said that there was nothing to stop the bottles just being refilled.

He said that people would NOT drink out of them - I said I was NOT convinced; the call ended soon after that!

One member (Alan Jennings) pointed out two *Feedback* pages in the New Scientist – the last three items in the first, and the first item in the second are amusing ...

(I like the Parcellforce item as well!).

To finish with, and nothing to do with water, there is an amusing article by Alan Jennings entitled *Was hospital physics more fun in the mid-twentieth century?* I'm sure the answer is "yes"!



WE HAVE run several stories in recent months about signifiers that relate to obsolete concepts – either in the form of words, such as blueprints which were blue once but aren't any more (25 June), or pictures, such as a sign showing a steam locomotive to warn of the proximity of a railway carrying modern trains (14 May), or gestures such as the “air signature” used to order the bill in a restaurant (7 May). Now Daniel Smith directs us to a discussion on BBC news about obsolete sounds that are deliberately fabricated ([bbc.in/safesounding](http://bbc.in/safesounding)).

Engineers, the article says, have taken to tweaking acoustics to make us feel good about products that are being sold to us, or for the sake of safety. Examples include the rigged “satisfying clunk” of a car door closing, the faked noise of a shutter on a digital camera, or the artificially created “engine sound” of a silent electric car that warns pedestrians of its approach.

PAUL MCCOY

Daniel notes that in this way, sounds that would otherwise be lost in the relentless progress of technology are preserved. “Imagine,” he says, “if this concept of familiar sounds had been developed earlier. Would cars all make the sound of horses’ hooves instead of the newfangled and confusing drone of an internal combustion engine?”

SOME kind of record is, we think, set by the notice that Ross Russell received from UK delivery company Parcelforce, inviting him to track the progress of a parcel in his general direction. It points him to a website that uses a string of 1024 characters to reference his parcel, each a digit or a letter from A to F. Assuming this is a number in the hexadecimal (base-16) system beloved of computer software, the system is set up to track  $16^{1024}$  separate parcels – around  $10^{1233}$  in mundane decimal numbers.

As Ross notes, this is considerably

larger than the number of atoms in the universe – generally estimated to be around  $10^{80}$ . So each atom in the universe could receive  $10^{1253}$  parcels before Parcelforce ran out of identifiers. Even Feedback’s colleague who, doing an MA, has developed a severe second-hand book habit, manages fewer than two parcels a day... it’d take her more than  $10^{1150}$  years to use up one atom’s allocation...  $10^{1140}$  times the age of this universe.

Does Parcelforce, being set up for privatisation, know something about emerging markets in parallel universes that we don’t? If so, they’re even weirder than we think.

Ross did something that only a Feedback reader would, and inspected the 1024-character string closely. It contained no instances of 2, 3, 5 or 6. Either this is a staggeringly improbable coincidence, or this is a very unusual number system.

We can say, though, only that we “think” this is a record. Feedback’s fallible human memory tells us we have mentioned similarly huge numbers in the past. But can we find these mentions in the supposedly precise and omniscient electronic archive? Can we heck. Perhaps we should add tracking numbers to our stories.

NONSENSICAL quackery of the week comes from Hydra Hi-Energy water, whose website employs a panoply of woo-woo fruitloopery to tell us: “Enjoy the natural energy boost of a new level of cellular hydration. Hydra’s proprietary process restores the natural polarity and high frequency energies once found in the most healing waters on Earth...”

“Hydra Energizer contains 50 bipolar trace minerals that are enhanced with quantum physics technology to deliver into your extracellular matrix the full range of frequencies found in your body’s energy field. This restores natural polarity to your body, which reduces stress, boosts energy production, helps protect against EMFs and improves

detoxification and cell hydration.”

As far as we can see, none of this means anything, but the writer qualifies for our outstanding fruitloopery of the week award.

MORE twaddle of this ilk comes from a company that tellingly calls itself Vibrational Living. This offers the Water Band, a strap costing \$9.95 that you place around the bottom of a glass or bottle of water “or any beverage”. This apparently “Energizes liquids with beneficial vibrational frequencies” and will “improve your health by truly hydrating your body to the cellular level.”



FINALLY, there’s the Langenburg “oxygen water” that Peter Thomson bought in a “very serious earth-persons’ café” while visiting friends in Eugene, Oregon. In addition to reminding him that the contents were “pH balanced” and “mineral balanced” (but without saying balanced to what), the label proclaimed that the water was “structurally restored”, “microclustered for hydration”, and contained “high levels of stable oxygen”.

Oddly, Peter says, it tasted just like ordinary water. He is left wondering if an ice block is “macroclustered”.

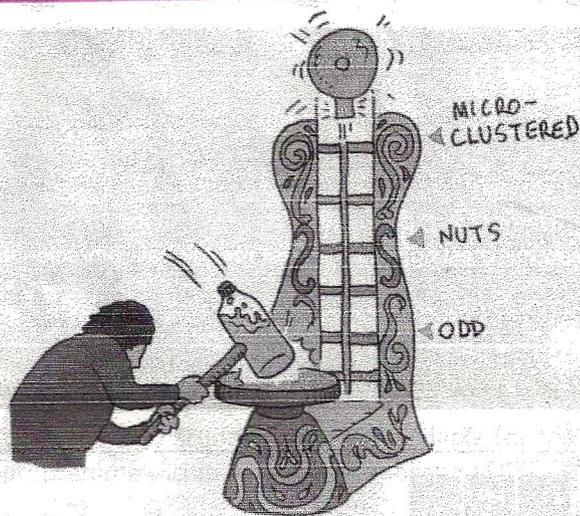
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Profiling port manager Don Mann, *The Oregonian* mentions his time on an ice-breaker ship that “crossed the North Pole three times and the South Pole once”. Ken Lassenen wants pictures

# FEEDBACK

More!

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**QUACKS** selling “curative” water tend to claim it has any or all of three amazing qualities – and the alkaline water that Mark Dodds and Eddy van Zimmer found promoted by Life Ionizers at bit.ly/sillywater advances all three (30 July) in spoonfuls.

The first is that it can apparently “neutralize the acidity of the body caused by stress, modern diet, air pollution, and many bottled waters”. Secondly, because it is “negatively charged” it “improves body function by cleaning your cells from the inside out”. And lastly its “ionization”, we are told, “breaks clusters of water molecules into smaller micro-clusters... Smaller clusters pass through cell walls more easily and hydrate the cells more quickly.”

Handily, Life ionizers sell water ionisers and water filters – a mere £649 for the least expensive counter-top model. Or you could turn on the tap.

It’s time to add “pH balance”, “neutralising acidity”, “negative ions” and the like, along with “microclusters” and “cellular hydration”, to our lexicon of

fruitloopy indicators. Like “quantum”, “far infrared” and “vibrational”, these may have meaning in science but are content-free in product pitches.

A **BILLBOARD** beside London Bridge railway station advertising the latest attraction in the London Dungeon, a spooky theme park in the arches beneath, reads: “The Ride of Your Afterlife: UK’s First 5D Laser Ride.”

Malcolm Bacchus wonders whether the proprietors “have managed to uncurl one of the hidden dimensions required by M-Brane theory”. Or, slightly more simply, the fifth dimension posited in 1921 by Theodor Kaluza (Instant Expert: The theory of everything, 4 June). Either way, “the ride might be quite thrilling, but a rather terminal introduction to one’s afterlife,” Malcolm suggests.

**TEMPERATURES** in the north-eastern US were high recently – but surely not as high as reported in the 22 July Associated Press story that Olivier Dessibourg sent us. “The extreme heat,” it reports,

“is only expected to get worse, and residents are bracing themselves for temperatures near and above boiling point... Boston’s 99 degrees on Friday could feel like 105 degrees; Philadelphia’s 102 degrees like 114.”

Is the NASA engineer who mixed up imperial and metric units embarking on a new career in journalism? Fellow reader Kevin Ives asks: “What boils at 100 °F?” A quick search gives us methyl vinyl ketone (37 °C, say most). “And why,” he adds, “would that be relevant information in a weather bulletin?” Pass.

**HAVING** spent 15 years working as a futures broker, Brendan Hillary is in a reasonable position to comment on the “candlestick patterns”, used by colleagues to predict price movements, which so puzzled us (14 May) – even after we had the explanation that they plot the high and low prices of a stock or currency, overlaid by a rectangle depicting the opening and closing prices (23 July).

The patterns are attributed, Hillary reports, to a wealthy 18th-century Japanese rice trader called Munehisa Homma, also known as Sokyu Honma. “While his success in trading is perhaps a function of these charts,” Hillary observes drily, “it probably had more to do with the fact he paid for a chain of men to stand on rooftops and use flag signals to send information in code about growing conditions, weather, local prices and other inside information real-time from the growing fields many hundreds of miles away.” Outsider trading, as it were.

An American trader, Steve Nison, popularised the candlestick trading method in the 1990s. “Need I say more?” asks Hillary. We pondered that, and discovered Nison selling a “MegaPackage” of 15 or more DVDs at [candlecharts.com](http://candlecharts.com), reduced from \$3865 to \$1490, with testimonials in the excitable typography of which Feedback has become a reluctant connoisseur. Unfortunately no semaphore flags are included, that we can see.

**MEANWHILE** Simon Raggett has another bibliographic plea, following that which elucidated chimps’ trading performance (25 June). He fondly recalls the days before traders stared at charts in darkened rooms: “Serious investors perused accounts and economic trends, and lunched with company officials.”

The “chartists” were “invariably derided by most professional investors,” he says, “being compared to astrology”.

He adds that “a study of investment performance showed that investment recommendations by astrologers outperformed those of the serious and seriously remunerated investors.”

Feedback has made a fairly serious attempt to track down this study, and failed. Can readers



help? Finding it may not, however, assist with the current interesting state of the markets, especially if, as Raggett recalls, chimpanzees, real or simulated, “still outperformed the astrologers”.

**FINALLY**, Jupiter is an impressive planet, but is it as unusual as Agence France Presse suggests? When covering the Juno mission to the gas giant, on 28 July, it wrote: “With its fiery red eye and a mass greater than all the objects in the universe combined...”

You can send stories to Feedback by email at [feedback@news scientist.com](mailto:feedback@news scientist.com). Please include your home address. This week’s and past Feedbacks can be seen on our website.

Packets for Weetabix Mini breakfast cereal sold in joined-up Europe claim to contain “at least 100% recycled fibres”. John Rogers is as impressed by this as the “New recipe – Original” formulation

# Was hospital physics more fun in the mid-twentieth century?

W Alan Jennings\*, now retired, recalls some of the adventures of his youth

In the 1940s I was a member of the King's Fund Panel of Physicists for London Hospitals, based at the Middlesex Hospital. We were engaged in measuring x-ray outputs with Victoreen dosimeters, checking protection measures, and some treatment planning, where there were no full-time physicists. In addition, one of our duties was searching for lost radium needles, generally accidentally disposed of with patient dressings into hospital incinerators. The resulting ash could then be destined for many purposes. Two examples from my own experience will serve to illustrate this.

Firstly, the incinerator ash in question had been used to cover a path in a chicken-run in the country and, as well as the path, I had to check all the chickens with my radiation monitor. This was a neon-lamp device appropriately known as a 'clucking hen'. I did trace some needles in the path, but none had been eaten!

Secondly, a small party was held for me at the Middlesex on the eve of my wedding in 1947. In the course of this occasion, news arrived that some radium needles had found their way from our incinerator to a lake-fill in East Anglia, and it was my duty to go there the following morning to search for the needles. Fortunately, Professor Eric Roberts insisted that I get married and he would go to East Anglia himself instead! This was the right decision – my wife and I will be celebrating our 64th wedding anniversary this year! I later learnt that he spent some 3 days hunting for the radium and recovered a few of the dozen or so of the needles.

Professor Val Mayncord told the story of a radium needle from the Royal Cancer Hospital in South Kensington finding its way onto a pavement outside and, when discovered, was in use as a needle in a busker's gramophone!

In the 1950s, some British hospital physicists were invited to the USA to help introduce British practice in their

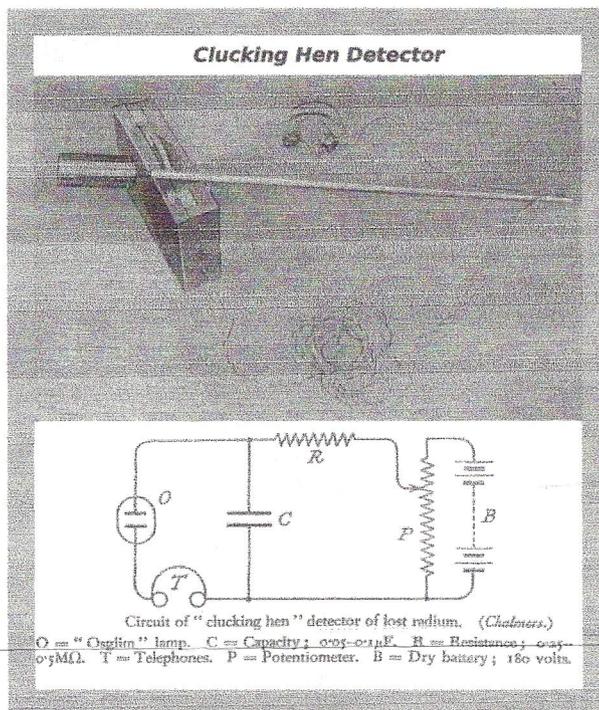
field; for example, direct participation in treatment planning in patient clinics. I spent a year working in a hospital in Chicago, and one experience warrants mention here. I was asked to supervise safety in the use of radium in a gynaecology operating theatre. A nurse was endeavouring to load an appliance with radium needles using some tongs. As she was having difficulties the consultant called out, 'Pick them up with your fingers, they won't bite you'. In view of my responsibilities, I said, 'In a way they might', to which the consultant responded, 'Who is that upstart from Britain?'. I had to report back to my superiors, and this led to the suspension of his use of radium. Thereafter I was afraid I might meet him in the hospital corridor!

Another story resulting in such concerns relates to checking safety from radiation in an American Army Hospital near Venice. Whilst in the States I had acquired a Diploma of the American Board of Radiology which qualified me for such tasks. As the only 'Diplomate' resident in Europe at the time, I received a telegram requesting me to undertake the work, and duly flew out to Italy with my (updated) radiation monitor. Measurements soon indicated that the contractors had omitted any lead in the partitioning erected around a new diagnostic unit, presumably to save money on the assumption that no-one would know. This discovery led to a major row, and I couldn't wait to go home!

Yes, as Professor Steve Webb commented, hospital physics was more exciting in those days – it had the edge on looking at computer screens!

## POSTSCRIPT - SOME MEMORABLE FAUX-PAS

A couple of memorable faux-pas warrant mention here. The first relates to an encounter with a surgeon at the hospital where I was employed as a physicist in the 1950s. Having acquired a glass splinter in a



▲ A clucking hen detector.

finger, I mentioned my concern over lunch in the canteen, and a surgeon kindly offered to deal with it in the theatre at the end of his list. 'Come along Mr Jennings,' he said. Instinctively I pointed out that my name was Jennings, adding that 'if there is one name I cannot stand, it is Jenkins!'. In response, the surgeon said, 'Thank you very much, that is my name!'. He still went ahead with his offer but got his own back with the following commentary during the operation: 'Nurse, could you please arrange some better lighting, I cannot see what I am doing!', and later, 'Nurse, let me know if he passes out and I will have a practice circumcision!'. He parted with 'Mr Jennings, the anaesthetic should last for a while, but whilst driving home you may suffer a sharp pain and possibly crash!'. ■

The second faux-pas occurred at a meeting comprising a series of talks. Over lunch, I told my neighbour, 'Have another glass of wine, it will help you sleep through the next talk'. He replied, 'Many thanks, but better not, as I am giving it!'. ■

\*Founder member, Hospital Physicists' Association, 1943, President 1966-7.