

## Homebrew Blues.

There are many reasons why you haven't received a recent edition of *Brewer's Contact*, all too tedious to bore you with.

The important thing is that we are back on target and promising you a regular production. However! New brooms sweep clean and therefore as the new editor you will firstly have to listen to my *crie de Coeur*.

- Many thanks for the huge number of contributors. You all enrich the paper hugely! But, if at all possible please send your oeuvres by e-mail or on disc. You are more likely to see your article in its most accurate form if copy typing and scanning can be eliminated.

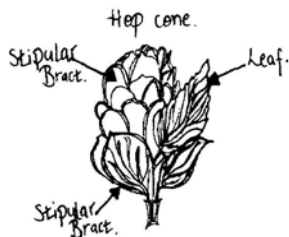
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Of course you can have both!

-Apologies to contributors whose work does not appear in this edition. It is a sign of our success that I've actually been able to edit and I already know I have top rate material for the next edition. I'd like still more though.

Keep the feedback coming in too!



## Nearly time to start picking

## Faversham Excise

by Keith Andrews

By way of introduction, I was inspired to join the Craft Brewing Association when I stopped by the stand at the GBBF at Olympia last year and sampled the bitter on offer there.

It was a remarkable brew made, I imagine, exclusively with pale malt to a modest gravity but with outstanding hop flavour and aroma. If whoever made it would tell me how they achieved the hop quality, I shall be forever in their debt.

My background to the alcoholic drinks industry dates back to the 1960s when I was appointed as an Officer of Customs & Excise. For the benefit of anybody who is unsure of the distinction, "customs" may be defined as a duty on imported goods (these days from outside the EU) which is levied principally to protect our industries from being undercut by cheap foreign imports. "Excise", however, is a duty imposed on a narrow range of goods, whether indigenous or imported, for revenue purposes. Hence we have excise duties on home produced beer, wine, spirits, tobacco and oil-based fuels. After some time doing customs work at the docks in Dover clearing freight, I settled at the town of Faversham in Kent where I specialised in excise work. Faversham is a brewing town which in my time had two largish breweries plus a couple of pub breweries in the area. The

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## Passionate about Beer – and Spreading the Word by Chris Ridout

I first started making beer about 6 years ago. I was inspired initially by John and Sally Seymour's book 'self sufficiency', which described how to make beer using the raw ingredients. It didn't seem that difficult. I bought the ingredients, got an old boiler from the free ads and started to make my first five-gallon brew. I followed the instructions and just hoped for the best. The result certainly looked and tasted like beer and the flavour wasn't too bad, but I felt there was room for improvement!

Encouraged by my first attempts, I was determined to improve my beer brewing skills. I read several books, and was particularly intrigued by Dr John Harrison's book, 'Old British Beers and How to Make Them'. Many of these recipes now form the

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Book Reviews, Barley Behaviour,  
German Decoctions and news from  
the Regions &c.

## Faversham Excise

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large traders were Whitbread Fremlins (now closed) and Shepherd Neame (still there and going strong) which claims to be the oldest brewing company in the UK established in 1698. Excise control was very “hands-on” in those days and depended heavily on physical presence and knowledge of the trader’s operations so that the correct duty could be levied. For example, the excise service did all the vessel gauging for the brewer because accurate measurement of the quantity of worts collected was critical to the tax charge. In addition, the dip and gravity of a brew as found by the officer took precedence by law over that of the brewer if the former was considered to be greater. Thus, the art and science of brewing became very much a part of my life for the 12 years or so that I was there. I eventually left Faversham to work in Customs & Excise HQ for a short while before being offered a job in the oil industry as a taxation adviser in which I remained until retirement this year.

Excise duty on beer was first levied as a revenue-raising device during the English civil war (with apologies to any Scots reading this article, I’m not sure what happened North of the border; we had a joint Crown by then but it was before the Act of Union). The excise charge has continued unabated since then in some form or another, either as a duty on malt, hops, worts or directly on beer itself as of today. During the reign of Charles II, the excise revenues were granted directly to the King for the upkeep of his household. Examination of the records from that time show enormous sums given to a certain “Mistress Nellie” (Nell Gwynn) who must have been able to live in sumptuous luxury on the proceeds. Duty has also been used throughout history as a regulator of public morals, as in the 18th Century when beer was unaffordable to the poor of London who turned to cheap imported gin from the Netherlands to anaesthetise themselves from their awful living conditions. The social consequences were immortalised in the paintings of Hogarth (Gin Lane and Beer Street), the former showing deprivation and the latter prosperity. An adjustment of the spirits duty upwards and the beer duty downwards quickly weaned the people onto a healthier drink.

Prior to Victorian times, there was no real scientific method of calculating the strength of beer. The story goes that the excise men of the day would sit in a small puddle of ale whilst they allowed themselves to be fed and watered by the brewer. Upon rising to leave, if their leather breeches were stuck to the bench, the beer was strong and was charged accordingly. The method of testing spirits was similarly colourful. A sample of the liquid was mixed with a measure of gunpowder normally reserved for the excise man’s musket. If it failed to ignite, it was watery and weak. However, if it went “bang”, then that signified “proof” of spirits. This is where the proof scale of

spirit measurement originally came from, although the Victorians later brought it into law with an impractical and convoluted scientific definition, in which state it remained until sometime in the early 1970s when we adopted the much more sensible percentage abv system. Note that 100 degrees proof under the Victorian definition is equal to approximately 57% abv. However, by the latter part of the 19th Century in the time of Gladstone, the hydrometer (for spirits) and its sister instrument, the saccharometer for wine and beer, had been invented. It was therefore possible to be a lot more accurate (and fair) when assessing a tax charge based on the relative alcoholic strength of the beverage. The excise service was still at that time part of the Inland Revenue (the Board of Excise did not merge with the Board of Customs until 1909) thus it was the Inland Revenue Act of 1880 that imposed the worts charge based on the quantity and original gravity before fermentation of the brew. Brewers will realise that this method of taxation did not exactly correlate to the alcoholic strength of the final product, this being dependent upon the degrees of attenuation rather than the original gravity. However, it was near enough and a far better method than had ever been used before. Shortly after the worts system was imposed, the excise service decided that it wanted a “standard” gravity to be adopted, not with the purpose of regulating brewers but purely to ease calculation for the duty charge (i.e. the total quantity of worts collected at their respective gravities would be recalculated and expressed in a single “standard” gravity before multiplication by the excise rate). It was not obvious which standard gravity to use, so the Government Chemist was asked obtain samples of cask beers on retail sale throughout the UK and analyse them for OG. Having tested several hundred such samples and averaged the results, the answer was found to be 57 degrees. Think about it for a minute ..... this was the average strength of pub beer in late Victorian times! Think about it a bit longer this is approximately the gravity that you would get from normal extraction if you mixed the high-gravity early runnings with the low-gravity late runnings with no addition of extra liquor which speaks volumes about the quality of the product offered to the public a century or so ago. The exercise was repeated a couple of years later and found to be 55°C. This then stuck permanently as the exciseman’s “standard” despite the fact that beer gravities decreased dramatically during the two world wars. The worts charge structure stayed in place for over 100 years until the early 1990s. I was actually in the room in Customs & Excise HQ in 1988 when my then boss made the statement that the worts system was archaic and we now had the technology to assess the excise charge directly on the alcoholic content of the final product. It took about 4 years to convince Ministers that this was a good idea and then to get the present system in place in law. By the time this happened, I left the Civil Service to join the

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**Faversham Excise** *(continued from Page 2)*

oil industry thus rather lost sight of what was happening in the beer world. However, the duty point has now been amended to the end point of manufacture i.e. when the product actually becomes beer and is set aside for distribution. I believe that that two measurements are required to calculate the present excise charge on beer. One is volume (the hectolitre is used these days); the other is alcoholic strength (i.e. abv) to the nearest one place of decimals rounded down as determined by laboratory analysis. The brewer will of course be required to make all the necessary calculations and submit a monthly return with payment. The excise service now does most of its checking by audit but an occasional sample will be drawn for distillation test by the Government Chemist to check the abv. I know little more about it but did hear that the brewing industry does not object to the philosophy of the new structure but is not happy with some of the details that have been imposed. It's probably too bureaucratic for their liking but can't be much worse than the system that preceded it.

At quiet times in Faversham, I, together with two colleagues, decided that it would be entertaining to experiment in brewing using just buckets and a Burco boiler. Our office was effectively a self-contained flat above some shops which included the usual amenities plus a kitchen. The professional brewers thought that this was hilarious but joined in the spirit of the enterprise and raised no objections to materials frequently being "borrowed" for our brews. We used full-mash techniques from the start but early efforts were not very good. However, we quickly progressed and started to earn a little respect. I remember one occasion when the brewers had attended our office on a work-related matter and had been offered the normal courtesy of a drink. By then, we

knew more or less what we were doing and the brew had been a powerful one. They told us afterwards that the afternoon had just floated by.

I make no claim to special brewing knowledge in the academic sense, although, by now, I have had a lot of practical experience. I currently brew just for myself in a converted cool box (mash tun) and plastic bucket with two elements (boiler) supplied by Hop & Grape of Darlington (helpful people by the way who run an efficient mail order service for materials). So here is my recipe for "Excise Ale" which seems to work just fine ... a special bitter style fermented down from (of course!) the exciseman's standard gravity of 55 degrees

One kg. of malt should produce close on one gallon (4.5 litres) of wort at standard gravity. I can squeeze just about 10 kg. of grains into my plant thus would look for an extract approaching 45 litres of 55 degree wort from the quantities below. Adjust materials accordingly to the size of your plant

9 kg pale malt; 1 kg. crystal malt; 250g hops at 5% or so acid content to produce about 50 IBUs (hold back around 50g. for late addition). I normally choose East Kent Goldings for sentimental reasons. Mash at about 66° and sparge in your normal way to collect 40/50 litres of sweet wort. Boil 90 minutes, then cool and adjust the gravity by the addition of water if necessary. I usually use a Munton's Gold yeast which has never caused me any problems provided it is started at least 24 hours prior to pitching. Ferment down to perhaps 13 or 14 degrees, fine with gelatine and transfer to cask for maturation and/or conditioning/priming for bottling ... it doesn't matter. If you miss the target extract and/or gravity; that doesn't matter either. Just enjoy it as it is – simple and consistently good.

**Editorial**

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Hop plant drawings from *The Craft of House Brewing*©

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**Passionate about Beer** (Continued from page 1)

basis of my current brews. The Norwich home brew shop closed down several years ago, but this wasn't a problem since I found I could get all the ingredients by mail order. I really look forward to the postman delivering my order! My main strategy for improving my skill as a brewer was to get stuck in and make several different kinds of beer. If I made a bad brew (*ma/em cereviaiae fecit*), then I figured I would learn something and I would know better next time. I also read several other books to develop my skills, and fortunately now rarely suffer from making a bad brew.

I always have a supply of beer. This region (East Anglia) lends itself to dark beers, the water being high in bicarbonate. This is fortunate because I am fond of old milds and porters, several of which are described in Dr. Harrison's book. I have tried repeatedly to make good bitters. Often they are satisfactory, but not quite as good as I would like being somewhat harsh in flavour despite attempts to treat the water. Recently, however, I think I have made a breakthrough. I obtained a water analysis sheet from my water board, and treated the water with Brupaks Professional Brewing Aids as described in James McCrorie's article (*Brewer's Contact*, 1 (6), 2 1-24, 1999). The result is now a pint that I would be pleased to get in a decent real ale pub — and all for a price of less than 20 pence!

It is ironic that I now live in an old pub in the heart of Norfolk! I now make beer in 18-gallon batches during the spring and autumn, and have a room that I keep at 19°C

for fermentation. I also have a North-facing cellar room that keeps the beer cool during the summer months. I am passionate about beer, and want to encourage people to have a go at making it themselves. On joining the CBA, I found that there are several other members in East Anglia. I am hoping to make contact, and to try and get a tasting session going. However, the closest to me is some 20 miles away, and driving home after a session is not really an option.

I am trying to support the aims of the CBA by spreading the word to develop a local concentration of craft brewers so that we can get together and swap notes. This Autumn, I will run a course at adult education classes on 'Craft Brewing' in the hope that I can inspire a few more to revive this ancient craft locally. If any of you feel confident in a classroom situation, I would encourage you to do the same. One only has to turn the clock back a short while to realise the importance of small scale brewing. Back in 1852, there were no fewer than 212 licensed houses in Norfolk alone that brewed their own beer and sold it to people locally. However, the future is bright! Enthusiastic homebrew retailers and innovative suppliers such as Brupaks enable us to obtain almost any type of malt or hops so that we can make most kinds of beer at home. Now that the CBA has been formed to stimulate contact between brewers and promote the craft, everything is in place to ensure that the skill of the craft brewer not only survives, but goes on to thrive and flourish!

Dr. Chris Ridout

Dr. Ridout is a scientist, specialising in diseases of barley!

*Look in the next edition of Brewer's Contact for our specialist article by Chris on Barley. Ed.*

**News from the Regions.**

One of the most important functions *Brewer's Contact* can have is to pass on news from the regions to other Craft Brewers in the Country. Of course the Editorial Board cannot assemble this information without your help, and by "your", I don't mean your area secretary or the guy or gal who normally does all the legwork. Everyone can write a report on a visit, provide some photographs, write a criticism of a talk etc. It is the diversity of input which makes a periodical interesting. Please feel this space is reserved for you to tell us what is going on in your region.

I'm already assured of something regular from Scotland. The Craft Brewers there put us all to shame. I put it down to the long dark evenings and inclement summer weather. The North of England looks in solid shape too, meetings attracting 30-40 brewers, mainly from Yorkshire and Lancashire. Our recent trip to York brewery was everything a day out should be, and generated a marvellous atmosphere. Hats off to Steve Taylor. But who is going to put a few lines together to tell the rest of the country? It does not have to be long. Lots of short articles (50-100 words) can be highly entertaining and informative.

And maybe the knowledge that other areas are flourishing and *Brewer's Contact* will be appearing more often may provide the incentive for a few sleeping regions to become active again.

My aim is to go to press quarterly. Our venerable publisher is worried about the sums. Someone has to be! Two big ones or four at 12 pages? Take ownership and let us know how you feel!

*Clive La Pensée*

**Intemperate Beers** by Colin Penrose

When I started brewing around twenty years ago I probably did what 99% of first time brewers do. I bought a kit.

I brewed. I poured the drain cleaner down the sink. I drank a commercial beer. I whinged about the price and bought another kit. This time it was at least drinkable. My mates laughed and called a spade a spade, as we do down under.

"You can't drink that possum piss!" But I did. I then bought some malt extract, hops and liquid yeast and did what homebrewers are good at. I experimented.

Okay, let's jump a few years now. I am now making decent, drinkable beer, but, not good enough. Now what do homebrewers do ??? They talk to other brewers and read, read and read.

My deduction at this time was that, apart from cleanliness, the biggest problems in beer come from when you finish the boil to when you bottle or keg. The fermentation. Of course you must use a good quality yeast and give it all the love and attention it deserves. But my one crusade at that time was to keep it happy while it was doing its work. In Australia our main brewing problem is the temperature. My garage (brewery) can vary from a morning temp of 10°C to a mid afternoon temp of 50°C. Imagine the poor ale yeast trying to work at 10°C or that delicate Pilsner yeast at 50°C. Never mind all the other problems and off-flavours. The obvious answer was "Constant Temperature Fermentation."

The not so obvious answer was how to achieve it. I personally don't like heat mats and there is no way I would ever stick anything into my wonderful beer like an immersion heater. My answer was a very elaborate "Hot Box". I made it to fit two 9 gallon kegs if required. Three inch thick cool store material was used and fully sealed with as much gunk as I could use. Now I find that on the hottest days the inside may reach 25°C or so. Re-useable icepacks help keep it down also. Obviously for brewing ales in winter all you need is a thermostatically controlled heating source such as a light globe. Cheap to run and gentle. I know most brewers use a fridge and this is fine for Pilsners etc but make sure your fridge has got a very good and sensitive thermostat. I am sure you will have to change the fitted one, but good replacements are cheap. If you keep your yeast at a constant temperature it will be much happier and you will get the results you desire. I will always remember brewing an ale back some ten or so years ago. I used a liquid English Ale yeast, an open fermenter and a constant temperature.

You should have seen the mess !! I opened my hotbox door to find the froth pulsating over the top of the fermenter. Actually pulsating every few seconds pushing froth out in regular bursts. It was a wonderful sight, apart from the mess I had to clean up. That ale was to be one of the best I had made up to that time.

It doesn't matter what we do, but if we don't protect our fermentations from the climate extremes of the Southern Hemisphere and provide our yeast with the best and cleanest brewing environment all the best materials in the world won't rescue all the hard work and materials that we've invested.

*Colin Penrose has been editing Ausbeer against the odds now for over ten years. I remember being told by another fellow Australian that Ausbeer wouldn't do more than two issues. It is now on issue 25 and has to do the balancing act of keeping publisher, advertiser and homebrewer happy. Not an easy mix but Colin has our respect. Ed.*

**For the Bookshelf.** The latest craft brewer's read has been published by CAMRA books. *Classic Beer Styles: IPA* gives you the history and recipes of some awesome ales and will require some rethinking by members without a 20 lb mash tun.

I think this is an excellent book, but then I wrote most of it! Available through usual outlets and CAMRA website, priced £8.85. There will be a more impartial review in the next issue of *Brewer's Contact* as will there be of another book I like a lot by Ian Hornsey. *Brewing* (RSC paperbacks) is a marvellous production for the hobby and serious chemist/brewer, available through the RSC website (www.rsc.org) for a King's ransom but worth every groat. *Historical Companion to House Brewing* will also be ready for Christmas stockings so start dropping hints. Ed.

**JAMES'S BIT**

Welcome back!!

And welcome to our new Editor, permanent I hope.

Clive first 'hit the home brewing scene' when, frustrated by the lack of recent books on home brewing, he self published 'The Historical Companion to House-Brewing' in 1990. By coincidence, this was the year that CAMRA published the first edition of Graham Wheeler's 'Home Brewing'. A case of 'Great minds thinking alike' perhaps. As it happens Clive's first book is about to be re-published, in an up-dated form, by a commercial publisher. He was a great supporter of CBA from the start, we have become good friends, the sort who often don't agree but don't fall out over it, so it will be an interesting relationship. One thing we did agree about from the start was that we had to try to get away from the public image of 'home brewing'-hence the 'house brewing' in his title. His frustration at my using 'Craft Brewing' before he had thought of it was reflected in the title of his second book 'The Craft of House-Brewing' in 1996. By this time CBA had been established and he included, free, an advert for CBA on the back page. Only Gillian Grafton (our then Membership Secretary) regrets this as she still gets the occasional enquiry.

Clive wrote many articles for, the now defunct, 'Homebrewing To-day', 'Ausbeer' and many other publications.

He has many ideas as to how 'Brewer's Contact' can be improved. Hopefully, his printer friend will not only print on glossy paper, enabling us to reproduce photographs properly, but also to collate, staple, stuff into envelopes and post each issue, all at a reasonable cost. Sounds like a dream come true! Clive, with Roger Protz, has just finished writing a new book, published by CAMRA, a review is due in our next edition.

Talking about CAMRA, it was ironic that, despite all our efforts, they paid little attention to our efforts at GBBF yet wrote an article in their 'GBBF 2001' supplement when we were not going to be there. Those of you who

*(Continued on page 12)*

## *Special Feature*    **A Cleaning Regime for the Craft Brewer**    *by Tim Johnson*

“You seem to do an awful lot of washing up with this hobby of yours!” my wife said to me during one Saturday brewing session. She was quite correct in her remark too, since every brewing process seems to be followed by a very serious bout of cleaning. The words ‘cleaning’ and ‘sterilising’ are very quickly added to every brewer’s vocabulary, but what exactly do we mean by sterilise; how clean is ‘clean’?

The purpose of brewing is to convert sugary wort into beer, a task which yeast performs remarkably well. Unfortunately, our wort, and the beery end product, is a happy breeding ground for a variety of bacteria and wild (uninvited) yeast, whose foul tasting and smelling reproductive and metabolic bi-products are singularly undesirable. Preventing these enemy microbes from infecting our carefully crafted brews is of paramount importance and an effective cleaning regime is the brewer’s primary defence; and this is what I aim to present in this article.

For this article I shall use the term cleaning to mean removing any alien material from an item (of brewing equipment) by soaking, washing, rinsing, scrubbing etc. The item can be considered clean if all visible signs of the dirt have been removed. The term ‘sterilising’ is used rather loosely by home brewers to mean disinfecting or sanitizing, i.e. removing the large majority of microscopic organisms. In fact, sterilisation is the complete removal of living organisms and is impossible to guarantee without the use of an autoclave.

The first stage in our regime is removal of loose dirt. Use cold water to do this. Hot water can cause protein to bind and set, becoming harder to remove later. A soft brush or cloth might help but never use an abrasive pad. Scratches, especially in plastic

surfaces and even on stainless steel, provide a protective home to bacteria that might not be removed by subsequent cleaning.

Dried yeast protein, hop residue, gum, dried wort, and dried beer drips etc, are all breeding grounds for beer spoilage bacteria and must be removed as soon as possible after their formation. In the kitchen we would use washing-up liquid and other detergents but these products possess poor rinsability, are usually perfumed and traces would possibly pass into the beer, tainting its flavour and affecting head retention.

The best agent for removing these organic residues is caustic soda (sodium hydroxide) and is easily found in hardware and DIY stores for drain clearing purposes.

However, this is best reserved for very stubborn cleaning jobs where a particularly strong solution is required. In addition to caustic’s poor rinsability, hard water can precipitate carbonates out of sodium hydroxide solution, leaving a film on surfaces and degrading its cleaning power. Commercial breweries tend not to use caustic soda in the pure form, preferring proprietary caustic cleansers which contain sequestering agents to prevent the precipitation of carbonates, keeping them in solution.

Unfortunately, asking the DIY store assistant for directions to the aisle containing Ethylene Diamine Tetraacetic Acid (E.D.T.A., a common sequesterant) is not likely to be very successful. Although using pre-treated water (to remove carbonate) with the caustic soda should work, it would also add the water treatment process to the schedule of work. Much simpler would be to follow the commercial brewers’ example and use a pro-

prietary cleanser.

Several caustic based cleansers, specifically for brewing equipment, are available. Two such examples are Chempro SDP and Brupaks Steriliser. These are formulated to provide effective removal of organic soils and include surfactants and wetting agents to improve the penetration and suspension of dirt particles. These additives also help the product to rinse away easily — an important requirement since we don’t want to simply replace one contaminant with another (the cleaning agent)!

An amount of chlorine is liberated by these products, which will go some way to sanitizing the items being cleaned. At the recommended dilutions there will only be a moderate odour of chlorine — it doesn’t have to smell very strong! In fact, the sanitising effect of the chlorine in these products can be rather limited and largely negated by the need to rinse with water. Contact time for these cleaners is usually around twenty minutes.

It was interesting to see how the large, open, stainless steel fermenters are cleaned at my local brewery. Loose debris is removed with a pressure hose, and then a highly sequestered caustic cleaner is sprayed onto the stubborn soiling and left for twenty minutes. Another spray with the pressure hose finishes the cleaning job.

Take care when using caustic / chlorine products as they present a health and safety risk if not used correctly — manufacturer’s instructions and warnings should be adhered to closely. It is worth mentioning aluminium at this point. Caustic cleansers can attack aluminium and dissolve it quite quickly. Even cleansers specifically designed to be safe to use on aluminium should have minimal contact with the items concerned.

Items that have been washed and rinsed and are not required further should be dried with a clean towel and then thoroughly air-dried. Bacteria cannot survive a dry environment (although their spores can), but the slightest dampness will keep bacteria alive and also encourage mould to form.

For items that cannot easily be dried, or casks / kegs that are likely to become musty, Brupaks provide a very useful product called 'Stayclean'. This will keep such items free of bacteria and wild yeast, and smelling 'sweet', for up to six weeks. Before using the item, drain and discard the Stayclean, rinse with water, and then follow the sanitizing guidance below. The next level of cleaning is sanitizing or disinfecting. This stage is applied either to items that have been stored clean or have just been washed with the caustic cleaning stage described above. Items, which are not visibly clean, *must* be thoroughly cleaned first. None of the sanitizers described here are effective cleansers; in fact their sanitizing power is compromised by the presence of soiling. The purpose of the sanitizer is to kill any organisms that may be on the surface of the item concerned.

There are a number of sanitizers available but a product to mention first, though, is sodium or potassium metabisulphite. Popular amongst winemakers, Camden tablets (the potassium form) release sulphur dioxide when dissolved in water, but there are just too many beer spoilage organisms that are not significantly affected by it for it to be of use in the brewer's armoury. But if you have Camden tablets, or the powdered sodium metabisulphite, don't discard them. A 5ml dose of a 10% solution of sodium metabisulphite, or one Camden tablet, added to 50 litres of freshly drawn tap water would remove the chlorine, in an instant.

The ideal sanitizing rinse is one that does not itself require rinsing. Popular with commercial breweries is peracetic acid. A composite of acetic acid and hydrogen peroxide, peracetic acid (diluted to 1.5% — 3% with water) is sprayed onto surfaces just before they come in contact with wort or beer. The sanitizing effect is immediate and thorough, but short lived; so it is important to wait until the last moment before application. Be cautioned though, peracetic acid in its wholesale form is vicious and can cause severe irritation and burning if it comes in contact with skin and soft tissue, and blindness if it is splashed into eyes. Even diluted, sprayed peracetic acid would irritate eyes and lungs. Some would argue well that peracetic acid is not suited to a domestic environment!

Another acid, but a more manageable one, is sodium hypochlorite in solution (hypochlorous acid) and is easily obtained as household bleach. There are several variants available, but the one sold as 'thin bleach' containing only sodium hypochlorite is the one to use. (Thick bleach contains sodium hydroxide, surfactants and perfumes, and should be reserved for the brew house floor and toilets). A solution of 15ml sodium hypochlorite in 5 litres of water will kill bacteria (by oxidising critical enzymatic processes within the cell) within a contact time of 10 minutes. At this dilution the sanitised item ought only to require draining, but the free chlorine can combine with phenols found in wort and form chlorophenols, giving a medicinal flavour to the beer, so I have always preferred to rinse with sodium metabisulphite solution.

Very popular with our American colleagues is iodophor. This is a complexed iodine solution that maintains a balanced level of free iodine required for killing microorganisms. This is diluted to give a concentration of 12 ppm free iodine,

which requires a contact time of 2 - 10 minutes for effective sanitation. In the UK, iodophor is commonly available as Betadine and is used in hospitals and surgeries, and especially in operating theatres, as a microbicide. There are several formulations available — liquid hand washing soap, preparations containing lanolin, and other undesirable forms. The one to use is 'aqueous povidone-iodine solution for microbicidal preparation of operative sites', and is available in 500ml bottles from pharmaceutical retailers. Superdrug retail pharmacies currently sell the product for around £2.60 per 500ml.

Betadine contains 10% Povidone-iodine so 1.25ml made up to 1 litre with water would give a concentration of 12 ppm. The solution can be used as a dip for small items or in a spray gun for applying to fermenting bins, Cornelius kegs, etc. However it is used, the items to be treated must be thoroughly cleaned, as the iodine will bind rapidly with any organic soil, inhibiting its microbicidal ability. Unlike bleach, though, iodophor does not require rinsing; simply drain off the visible excess from the item and it is ready for use.

Once sanitized, all items should be used immediately or kept covered to prevent recontamination with airborne microorganisms.

So, to re-cap:

- Rinse off loose material with cold water.
- Soak and wash items in a good proprietary sequestered caustic cleaning solution, keeping contact time to the minimum.
- Rinse and dry or store with a proprietary storage solution.
- Sanitize with a no-rinse sanitizer and drain well.

For further reading try <http://realbeer.com/jjpamer/cleaning.html> - 'A Complete Guide to Cleaning and Sanitation', by James Liddil and John Palmer.

## Gluten-free beer

This article is based on a letter received from *Robert Palgrave of the Coeliac Society*

The Coeliac Society is a charity supporting people with a life-long medical condition called Coeliac Disease. There are about 50,000 diagnosed patients in the UK and probably as many or more who are undiagnosed. The treatment is to exclude gluten, found in wheat, barley, oats and rye, from the diet. Gluten persists through baking and brewing processes, but not through distillation. The consequence is that we cannot eat bread, pasta nor drink beer. Grain based spirits and wines are OK.

I have found a brewer in the USA – Sean Sweeney, who has been working for several years to create a gluten free beer. He has published 8 recipes, some with tasting notes, on his web site. The grains he uses are primarily sorghum, with millet and maize. I have enclosed the two most up to date recipes, and you can see the full set on the web site at:

<http://www.fortunecity.com/boozers/brewerytap/555/gfbeer/recipes.htm>

I would like to find an amateur brewer in the UK willing to help us work on developing a gluten-free beer in the UK. I think the first stage would be to assess the viability of these recipes given supply considerations – there would be little point trialing a brew of something based on sorghum for example, if sorghum is not easily available in the UK at a reasonable price. The second stage would be to brew a small batch and verify it as gluten-free and of course to assess its drinkability.

These are Sean Sweeney's recipes

Batch #7  
(The 'session' beer)  
(Brewdate: March 31, 2000)

### Grains & Fermentables

59.3% Corn malt - 8 lbs.  
14.8% Millet malt - 2 lbs.  
7.4% light candy sugar - 1 lb.  
7.4% rice syrup solids - 1 lb.  
11.1% honey - 1.5 lbs.

### Hops

**Hallertau Tradition** - commercial whole leaf type, 4.9% alpha  
1.5 oz. for 60 minutes - bittering, 19.9 IBU

**Hallertau Mittelfrüh** - commercial whole leaf type, 4.3% alpha  
0.5 oz. for 10 minutes - flavor/aroma, 0 IBU

### Yeast

Wyeast liquid - #2112 California Lager

### Details/Notes

OG: 1.050, FG: 1.006, 5.76% abv  
1.5 hour mash, 1 hour sparge, 1.5 hour boil.

0.3 oz. powdered amylase enzyme added to mash.

Mash temperature, 154°F falling to 148°F in 1.5 hour mash.

1 tsp. Irish moss added to boil at 15 min.

0.5 lb. malto-dextrin added to boil at 5 min.

Honey added to boil at 5 min.

First trial use of rice syrup solids, honey and millet malt in gluten free beer.

Final gravity rather low due to highly fermentable adjuncts.

**Tasting Notes:** Not a terribly remarkable beer, but rather drinkable. For an ale, it was rather clean in flavor.

Batch #8  
(The lager beer)  
(Brewdate: January 6, 2001)

### Grains & Fermentables

75.1% White sorghum malt - 9.5 lbs.  
7.9% Millet malt - 1 lbs.  
7.9% light candy sugar - 1 lb.  
9.1% rice syrup solids - 18.5 oz.

### Hops

**Hallertau Hersbrucker** - commercial whole leaf plug-type, 4.5% alpha  
1 oz. for 60 minutes - bittering, 13.8 IBU

**Czech Saaz** - commercial whole leaf plug-type, 3.5% alpha  
1 oz. for 30 minutes - bittering and flavor/aroma, 5.9 IBU

### Yeast

Wyeast liquid - #2124 Bohemian Lager

### Details/Notes

OG: 1.050, FG: still fermenting  
1.25 hour mash, 45 minute sparge, 1.5 hour boil.

3ml. liquid enzyme added to beginning of mash

Mash temperature, 145°F falling to 142°F in 1.25 hour mash.

1 tsp. Irish moss added to boil at 15 min.

0.5 lb. malto-dextrin added to boil at 5 min.

### **Future Recipe Ideas**

(Concluded tests will be shown in italics)

Will evaluate quantity of candy sugar used in batch #4 to see if it gives an undesirable 'winey' taste, which some brewers claim to be the case when 'excessive' amounts of sugar are used. *(Up to 3 pounds of invert candy sugar was not noticeable in a 5 gallon batch size.)*

Will evaluate hops utilization in batch #4 for bitterness, flavor and aroma, and adjust accordingly. *(I have concluded that an increased hopping rate of 25% will adjust bitterness in GF beers.)*

I would like to increase amount of grain used, without increasing batch size, in order to boost initial gravity.

On that same vein, possible addition of honey to boost initial gravity. *(See batch #5 above. More on this when batch #5 is complete.)*

I will try to produce a small quantity of dark roasted grain (probably sorghum), to add color and roasted/chocolate/coffee flavors. *(See batch #6 above)*

Possible addition of lactose (milk sugar), an unfermentable sugar that increases body and mouth feel... to counter the thinness of past gluten free brews. *(I discovered that malto-dextrin is gluten free as well, and does a much better job of increasing the mouth feel/body of beers without increasing the sweetness. More on this when batch #5 is complete.) (See batch #6 above)*

**Gluten – free Beer**

*(Continued from Page 8)*

I have a small amount of Amaranth from last years growing season, which when finely ground, gives an amazing nutty aroma. (Think peanuts!) This may or may not translate to a desirable aroma in beer. The next brew may lean towards a Nut Brown Ale, such as a Newcastle.

Must use malted corn in next batch. I have overlooked this non-gluten grain far too long. *(See batch #6 above)*

Future batch emphasis might include:

**Big Beer** (high gravity, above 1.070, stretching the limits of adjunct fermentables)

**Dark Beer** (brown beer, maybe even porter or stout, depending on how well I can make homemade dark malt, *see batch #6 above*)

**Fruit Beer** (Utilizing a fruit for flavor and additional fermentables, think chick-beer!)

**Session Beer** (Low gravity/easy drinking style, i.e. Budweiser, Miller, Coors. *See batch #7 above*)

**Style Match** (Attempt to match traditional styles, i.e. Hefeweizen, Belgian, IPA, porter, etc.)

**Lager** (Attempt the 'other' kind of beer. A cold fermented and aged lager, much cleaner than the usual fruity/flavorful ales made).

*Fascinating project! If anyone wants to get involved then contact Robert at [crossedgrain@coeliac.co.uk](mailto:crossedgrain@coeliac.co.uk) or on 01494 437278*

*Don't forget to keep Brewer's Contact informed of progress and ideas for the future. Ed.*



**Brewing Organic Beer**

By Chris Ridout

With increasing availability of organic beer from a variety of brewers now available, what are the prospects for making good organic beer at home?

In 1995, I tried making beer from organic Golden Promise malted barley. I used a standard simple recipe comprising just pale malt (1 kg/gallon) and Goldings hops (20g/gallon). The hops were not organic because I could not obtain any for home brewing at that time. I recall that the taste of those beers was good, but I became concerned that the yield (original gravity) of those brews was a little less than I would have hoped for. Eventually, I switched to Maris Otter produced by conventional agriculture resulting in a marked improvement in extract yield, and the production of more alcohol for a given amount of malt.

At that time, I tried to source some organic hops. I obtained a small free sample from a grower registered with the Soil Association. However, the sample was too small to make a brew from, and to be honest the quality was not up to the standard expected from conventional production. In addition, the variety was a bittering hop, and at the time I was looking to recreate a light, hoppy bitter.

Since those early days, organic products have become more readily available. But what are the current prospects for making good organic beer at home? Organic pale malt (Golden Promise) is still available, and with more breweries producing organic beer, more roasted malts may become available. A variety of organic adjuncts can also be obtained from good whole-food shops, including crushed wheat, barley and oat flakes. Organic Hallertauer Aroma hops from New Zealand are now supplied by Brupaks. These have a higher alpha acid content (9.0-10%) when compared to hops grown in the Hallertau region of Germany by conventional agriculture (aa 3.0 – 5.5%).

Can home brewers take the lead in developing new organic beer styles?

Home brewers are notoriously inventive! At the present time, the supply of raw ingredients is limited and some experimentation is required when making organic beer at home. You should not be put off, however, because you can certainly expect a good-tasting brew; but how will it be different from beer made from conventional

ingredients? For a given specific gravity, you can expect less alcohol, and a higher residual gravity. The overall character of the beer will therefore change, being more nutritious and less sleep-inducing! If you wish to make a dark beer, put some roasted grains in. If you're a purist, roast them yourself from organic pale malt (ways to do this are described in Old British Beers and how to make them by Dr John Harrison).

However, dark malts are used in relatively low percentages so if you use conventional dark malts, your beer will be mostly organic.

Since the varieties of organic hops are limited at present, you need to be inventive. You can go for a dark beer, lightly hopped, the flavour being dominated by the roasted grains. The high alpha acid content of the New Zealand Hallertauer means that you can reduce the quantities required, producing a more economical brew. If you decide to go for pale beers, you need to be careful to extract the maximum aroma whilst avoiding harsh bitterness. Always work on the alpha acid content rather than the weight! For those of you used to dealing with Fuggles or Goldings, you need to use half the quantity. As a starting point reduce the hops in the boil (based on alpha acid), and increase the quantity added at late hopping (last ten minutes). Preferably, use a hop-back, since this produces more of that delicate flowery aroma. You can also experiment with more dry hops.

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### Organic Beer

#### Future supply of raw ingredients

It is difficult to predict future trends in the availability of organic malt. Naturally, the farmer wants a high and reliable yield, but all current emphasis in the plant breeding world is for the world of conventional agriculture. Old malting favourites such as Maris Otter, Halcyon and Pipkin are being replaced by newer high yielding varieties such as Optic, Chariot and Regina.

Indeed, Maris Otter last appeared in the NIAB\* recommended list in 1988, with current demand being maintained by brewers of traditional ales (a small market). However, new varieties such as Regina (Winter Barley) are susceptible to diseases such as mildew and yellow rust, so may not be appropriate for organic production. Hop growers prefer high alpha acids and disease resistance, so varieties available for organic production may be limited. Traditional varieties such as Fuggles or Goldings are low in alpha acid and are susceptible to diseases such as *Verticilium* wilt, and are not good candidates for organic production. Perhaps the current demand for organic products will stimulate barley and hop breeders to produce varieties specifically for organic production.

#### Why make organic beer?

If you make beer at home you are already doing your bit for the environment. After all, you are reducing the need to transport what is basically 95% water on roads throughout the country. You are also doing the ultimate in recycling, by re-using your glass or steel vessels without the extra cost to the environment of transporting them to the recycling point! You also have the choice of making and enjoying a product that does not require any animal products if you so wish. So why move to the next stage and produce your own organic beer?

You could argue that organic beer tastes better. Certainly, it tastes good, but I would be hard pressed to say it tasted any better than conventionally-produced beer. More convincingly, it is better for the environment.

Organic production imposes certain constraints that are inherently beneficial to the countryside. Pesticides are strictly controlled in an organic regime, allowing non-target insects to proliferate encouraging greater diversity of birds and mammals. Organic fertilizers enhance soil structure, encouraging earthworms and various arthropods to proliferate leading to greater diversity and a more sustainable ecosystem.

Whatever your own personal reason for making organic beer the raw ingredients are now there for you, but you must be prepared to experiment to develop the kind of beer you want. Let us all know how you get on!

Dr. Chris Ridout

January 2001

\*NIAB is the National Institute of Agricultural Botany  
*I hear that Lancashire and Yorkshire Maltings are taking it in turns to malt organic barley for a small but significant market. Can someone out there supply me with details for the next issue?*

Ed..

### NEWS FROM THE TRADE

By Clive Donald

As most of you will know, the home brew trade has been through hard times over the past few years. Many shops have closed, leaving many of you without a local outlet. Now even the large chain stores are losing interest. All this when the quality and range of products is better than ever. For various reasons thousands of people have given up brewing and their places are not being filled by new faces. Home brewing doesn't seem to have much appeal to today's young people, but why is that? Is it just too much bother? Too messy? Too smelly? Are the financial benefits not tempting enough? If our trade is to survive we need new brewers, and lots of them. So what can be done?

We at Brupaks, and the other manufacturers, have been pondering this problem for several years. It's just so difficult to make home brewing appear 'cool'.

Last year we set ourselves a goal; to produce a product that would meet three criteria.

1. It must produce the best beer ever achieved from a beer kit.
2. The brewing method must be the easiest and cleanest ever.
3. It must cover all of the world's major beer styles.

We believe that with the *BruBox* and our comprehensive *Beers of the World* beer kits our goal has been achieved.

Of course we understand that many of you reading this are experienced brewers, long past the beer kit stage, but these are a bit special. Until recently brewing from kits served only one purpose, it provided cheap alcohol! Nobody expected the beer to be of good quality so they were not disappointed. These days the situation is very different. Although the old style kits consisting of food grade malt extract, the dreaded isomerised hop extract and a packet of bakers yeast are still around, most manufacturers have made efforts to improve the quality of their kits. Our *Fine Yorkshire Ales* have found favour with new and experienced brewers alike. A great deal of effort went into their design. We used the finest extracts available (with real hops not isomerised extract) and a genuine top fermenting yeast. We even added some extra aroma hops in order to get as close as possible to 'mashed' beers; and very close they are too! At that time, however, we felt that our FYA's only fulfilled the first criteria, so we decided to attempt to create a completely new range that met all three conditions. The main difficulty here was, how to make better beer than the FYA's while at the same time simplifying the process. It was obvious that if we were to achieve this, the beers must be indistinguishable from mashed brews. The best

(Continued on page 11)

**A Letter to James:**

Dear James,

We recently discussed the future of the CBA by telephone and the essence of this conversation is hereby recorded for the benefit of the Members.

I was becoming concerned about the future prospects of the organisation because there had been no contact for some time. I now understand from you that the CBA is alive and well particularly in some parts of the UK.

In order for the CBA to develop further, we are agreed that regular communication amongst ourselves is essential. *Brewer's Contact* has not been published for a long time because it is labour-intensive to produce. However, without it, the CBA will struggle to satisfy the aspirations of enthusiasts on a national scale.

It is perfectly normal for members of a "club-type" organisation to share the responsibility for running it. I therefore now propose that we consider the formation of a Committee (or National Executive – call it what you will) with you in the Chair. It means that the labour is spread and others can be substituted should any one individual become indisposed. I would counsel trying to draw representatives from different areas of the UK in order to promote national cohesion. Inevitably, the structure would have to be loose-knit as formal meetings would be difficult due to distance. However, the Committee need not be large and ideas/agreements etc. could be shared mainly by e-mail. I imagine that the Committee would appoint officers (Chairman; Secretary; Treasurer etc.) and would further consider the need or desirability of a CBA constitution. Critically, it is always wise when money is involved (i.e. members subscriptions) to have an Income and Expenditure Account properly produced and audited by appropriately qualified people either from within or appointed by the Committee.

It would seem that enhancement of the web-site is the pragmatic solution with regard to improving communication. You tell me that around half of the Membership has access to the Internet, thus *Brewer's Contact* could be posted electronically thereby bringing about considerable savings in both labour and postage. We must continue to cater for Members who still require surface mail copies but their numbers may be predicted to dwindle into insignificance as time moves on.

Should we invite Members to say what they think on these issues?

Keith Andrews 15.5.01.

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**James comments:** This is what I've been waiting for, someone else to run CBA but count me out as Chairman! I must say that my experience in Committees leads me to think that they are not the best idea, particularly National Committees. Apart from the cost of travel and accommodation involved in meetings there is the question of who appoints the Committee members and what qualifications they might have (e.g. What have they done for CBA and what can they do in the future?). My own thoughts are that our first priority is to form local groups, no matter how informal, and then take a consensus from them as to how CBA might be organised nationally. However, these might be negative thoughts. Please let the Editor have your views.

*Note that James is the only contributor to get his work in 12 point. Deference to his age, eyesight or just squire's rights?*  
Ed.

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*(Continued from page 10)*

***News from The Trade***

way we could think of to achieve this was to incorporate some fresh speciality grains, but surely this would complicate the process rather than simplify it?

***Enter the BruBag.***

Tea bags seemed to be the key to this problem but they were far too small for our purpose. Luckily we were able to find a manufacturer who made larger bags so the *BruBag* was born. With these bags we could use fresh hop pellets and a host of speciality grains without complicating the process. All that is required is a quick steeping in hot water for all that fresh flavour to 'flood out'.

Having achieved criteria no. 1, we then had to simplify the brewing process, but how could this be done? Weren't beer kits simple enough to make already? Certainly making a beer kit is simple for craft brewers like you, but many people find all the cleaning, siphoning, bottling etc. too daunting, and are put off from having a go. We realised that what we needed was an all-in-one brewing and dispensing vessel, the *BruBox*. There have been all-in-one brewing kits in the past, all with the same drawbacks; they were only for single use, which made using them expensive, and the beer they pro-

*(Continued on page 12)*

(Continued from page 5) *James' bit* are CAMRA members will have seen it; it could have been a lot worse!! It's interesting that I wondered if our absence would be noted more than our presence and Bill Cooper has had more than a few enquiries as a result. I think I explained the reasons why we were not there this year—thank you to those members who have phoned or e-mailed me expressing their understanding.

Whilst welcoming our new Editor, the one person above all who we have to be grateful for is Bill Cooper, our Membership Secretary. Apart from his main membership duties Bill deals with many requests from existing members and I rely on his wise counsel on all CBA decisions. He also is able to nag me into action, somewhat more gentlemanly than Clive, perhaps, but equally effectively.

Bill and I were delighted to attend the inaugural meeting of the new Northern CBA group (news of which has prompted at least one member to try to form another new group) - now we have to nag them about writing about their activities for the next edition—hint!!!

You will read a proposal from Keith Andrews on the previous page, ( He also has an interesting article, starting on Page 1). Keith joined CBA last year when living in Hertford but has now moved to Sussex. My first reaction was to respond in the old service term 'Get some time in' but then I remembered that this was an old man's reaction. One should always listen to the newcomer as this is the fresh air which helps organisations grow and survive. I am aware that I could be run over by a bus any day and sitting at my computer now at 10:30 pm on a Sunday having started at 10 am, the thought of someone else taking over is very attractive. Please let Clive have your views.

One area of 'Brewer's Contact' we yet have to sort is that of type-setting. We have an experienced volunteer new member but he moved house, got married, went on honeymoon and we haven't been able to contact him in time for this edition—hopefully for the next.

We decided that getting this edition out quickly was more important than it looking pretty—hopefully the content pleases. That's it for now.

Good night & hoppy brewing,

*James*

(Continued from page 11)  
*News from The Trade.*

duced was invariably of poor or indifferent quality. In order to overcome these problems we enlisted the help of the good old 'polypin'. This already available vessel was perfect for the job. The tap could be converted to an airlock to vent the fermentation gases and the used for its original purpose when fermentation is over. But how would the beers taste? Would they be adversely affected by sitting on the primary yeast deposit for anything up to three weeks? Would the polypins leak under pressure?

Our test brews showed quite clearly that there was no discernible affect from sitting on the yeast sediment even after 6 weeks and, as polypins are intended for storing and dispensing real ales, they are built to withstand quite considerable internal pressure, up to 15 psi. While this pressure is adequate for real ales, what about lagers, wheat beers etc., don't they need a bit more fizz? That is true so it is a simple process to bottle your beer straight from the polypin's tap, still no siphoning.

Now that we had the *BruBag*, meeting criteria 3 seemed much more achievable. By utilising Brupaks' vast range of grains, hops and malt extracts we could reproduce just about any beer we wanted. Added authenticity could also be achieved by the arrival on the market of a genuine bottom fermenting yeast. Brupaks' *Beers of the World* had arrived.

By now some of you may be thinking 'Why is he telling us craft brewers all this? Doesn't he realise that we make our beers from scratch'? The reasons are straightforward. Firstly, I know many craft brewers who occasionally make a kit when it's not convenient to mash, so why not make the best? Secondly, I know from experience that most of you have friends and family who regularly drink your beer but, for a diversity of reasons, won't have a go at making their own. What if you could show them that top quality beer can be made simply and with no mess? What about giving someone a BruBox as a present? They would be sure to try it then. If you do this, by introducing new brewers you will be helping to keep the remaining shops open (maybe some new shops could even appear) and not only will you keep more of your beer for yourself but you will be invited to share others' efforts.

Details of the BruBox and the Beers of the World can be found on the Web at [www.brubox.com](http://www.brubox.com). For other information on Brupaks products please visit [www.brupaks.com](http://www.brupaks.com) or write to us at Unit 12, Honley Business Centre, Honley, Holmfirth HD9 6QB.

*Clive Donald is MD of Brupaks, which is probably the only manufacturer and wholesaler which gives a fig for the brewing requirements of Craft Brewers. I sampled some of Clive's bagged beers and was seriously impressed and I can't say I went to the tasting with an open mind.. Much to my chagrin I have discovered that brewing in bags, boxes or whatever has serious historical precedent. For a while I even feared Captain Cook (possibly the inventor of homebrew as we know it) did it first in Australia, but his earliest mention was off the coast of Africa. A relief to know that in this year of sporting triumph we don't have to ascribe Homebrew to downunder to boot.*

*Cook's contemporary, one Admiral Dalrymple said one should soak the grist in strong sugar solution and then dry it to produce a cake. The concentrated sugar prevented deterioration on board ship and when the sailors needed a vitamin boost to prevent diseases such as scurvy taking hold, any available water (apart from sea water) was mixed with the cake and pitched with pressed dried yeast. It was drunk very young (immediately actually) and pepped up a bit with the rum ration for the day. Dalrymple claimed that porter especially lent itself to this rude treatment.*

*If Clive wants to reintroduce these 18th cent. emergency techniques then I think he owes it to those early mariners like Cook and Dalrymple to pay them homage. I look forward to seeing Cook's Pale Ale (although it was actually his First Mate who did the trials) and Dalrymple Porter on the market.*

*All of these quirky stories and many more will be found in my forthcoming book on Porter with of course a recipe for Dalrymple's Cake Porter. Ed.*