



# The Grain Mill

Publication of the Scioto, Olentangy and Darby Zymurgists  
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## *The President's Corner*

*by Bonni Katona*

Happy Brew Year!

Now that our mild Christmas is over with, we can all settle back down to the serious business of brewing. There's no shortage of snow and ice to cool down the wort!

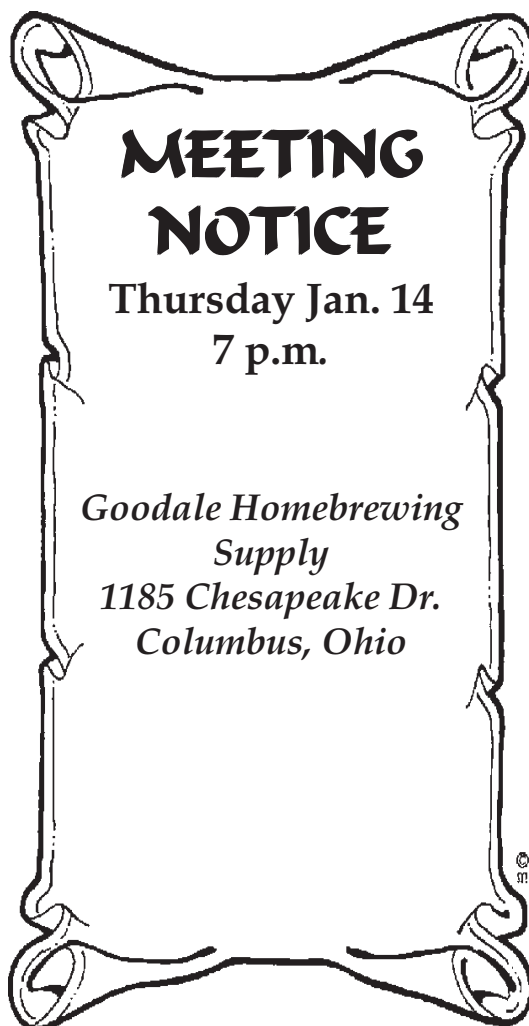
Speaking of Christmas, what a party this past December—21 kegs! Seven of those were parked at AJ's Keg Corral. There was some terrific beer to sample—keep up the good work!

Thanks to Jim Rudy for giving SODZ a Christmas present to start our video library. We have a 60-minute video called *A Tour of Oregon Microbreweries*. Let me know if you'd like to borrow it.

This year I'd like to see us showcase our beers at more competitions. We have a lot of talented brewers in our group, and their beers received a significant number of awards at the State Fair and Beer & Sweat competitions in '98. Now it's time to go after national awards. For starters, let's try to submit more entries in the AHA-sponsored Club-Only Competitions.

Bring your thermometers to the January meeting, as Herb will make a presentation on calibrating your thermometer. AJ will also have a set of small-scale weights with him, in case you'd like to check the accuracy of your scales.

See you Thursday at Bob's place!



**Visit the SODZ Web Site**

[www.iwaynet.net/~zaphod/sodz/sodzhome.html](http://www.iwaynet.net/~zaphod/sodz/sodzhome.html)

## SODZ INFO

The Scioto, Olentangy and Darby Zymurgists (SODZ) meets on the second Thursday of the month at Goodale Brewing Supply, 1185 Chesapeake Dr. , Columbus, Ohio.

Meetings begin at 7 p.m. Membership in SODZ costs \$20 and is renewed during the member's anniversary month of joining SODZ. Dues may be mailed to the Treasurer at 9477 Tramway Court, Cincinnati, OH 45242

Members receive *The Grain Mill*, the club's monthly newsletter. Articles for the newsletter are due by the end of the month. They may be emailed to the Editor or submitted on a 3.5" floppy disk in Word 6 or 5.1 format for either Macintosh or the PC.

The club's Web side is located at [www.iwaynet.net/~zaphod/sodz/sodzhome.html](http://www.iwaynet.net/~zaphod/sodz/sodzhome.html).

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## A Word about November's Meeting and a possible "friendly" competition

A.J. Zanyk

I just came back from lunch at Barelys where I spoke to Scott Francis. He said that anytime we want to hold a meeting at the smokehouse we are welcome. He was impressed with the turnout, and the beers. He was serious when he said one of us could have a guest beer brewed at Barleys.

Here is the scoop. Sometime in the near future, like possibly the March meeting, we could meet at the Smokehouse to judge from member entries one beer that Scott could brew. This is all still tentative and in the "what - if" Stage, but pending approval of the brew by the owners of Barleys and the state your beer could be the flavor of the month.

AJ

This looks like it could become a fun project for the Club. It would get our name out and possibly attract more members if we could publicize this.

# **Thermometer Calibration Clinic**

**Herb Bresler**

Ever wonder if your thermometer was screwing up your mash? Or your fermentation? Bring your thermometers to January's meeting and compare them to a NIST-traceable thermometer. See if your 152°F rest is really 152°F and not actually 162°F or 142°F! I am planning to conduct a little thermometer calibration clinic at the January SODZ meeting. I'll bring my good thermometer — the one that has been calibrated to match the thermometers at NIST (the National Institute of Standards and Technology, formerly the National Bureau of Standards) — so we can compare and calibrate. I'll see you and your thermometers on the 14th.

This calibration is good for both liquid and bi-metallic thermometers.

## **Proper Thermometer Calibration by Herb Bresler**

originally posted in the HomeBrew Digest last month (HBD#2880 & HBD#2883)

Rick Pauly's recent post about calibrating thermometers reminded me that I've been meaning to write about this issue for a while now, so I'm finally getting around to it. The post is a bit lengthy, so for those who have no interest in a primer on thermometers, now is the time to PgDn.

Rick wrote:

I was worried about the accuracy of my thermometers and came up with what I think is a good solution. We have a people thermometer that I assume has got to be pretty accurate around 98.6°F. So I got a sink full of water at about 98°F and tested all my thermometers against it.

Can I stop worrying now????

Rick, you are on the right track. Proper calibration of a thermometer indeed should be based on a reliable source for calibration. This is why most people suggest using an ice bath to calibrate at 0°C/32°F, or a boiling water bath to calibrate at 100°C/212°F. We all know the melting point and boiling point of water, so we use them as benchmarks to calibrate our thermometers. So far so good, but by using this method we are calibrating our thermometers at temperatures that are far away from where we need them to be accurate. Thermometers are not perfect. How many of you have adjusted the calibration of your bimetal brewing thermometers so that an ice bath reads a perfect 0°C/32°F, only to find that it doesn't read exactly 100°C/212°F in boiling water (even

accounting for differences in altitude)? I would bet that this is a common event. Thermometers should be calibrated against a reliable standard IN THE RANGE OF USE FOR THE PURPOSE INTENDED (sorry to shout, I just needed to add emphasis). So to calibrate your brewing thermometer you should calibrate against a standard that you know is accurate at mashing/sparging temperatures, say in the range of 95°F/35°C to 170°F/77°C. So Rick is right on track when he chose a “people thermometer” to calibrate his brewing thermometer. Sure is a lot closer to mash temps than ice!

There is a problem in using a “people thermometer,” however. Most clinical thermometers are made to record the highest temperature and stay there (this is why you have to “shake them down” to get the mercury back into the bulb). So if you try to calibrate with a “people thermometer” in 98°F water, and the water cools while it’s sitting there, the water may actually be cooler than 98°F by the time you set the calibration on your brewing thermometer (even though the “people thermometer” says it’s still 98°F). So all your temps will actually be lower than what your newly calibrated brewing thermometer says. Could be a problem for mashing.

The proper way to calibrate a thermometer is to start with a standard reference. These are called “NIST traceable” thermometers. NIST is the National Institute of Standards and Technology, formerly the National Bureau of Standards. You can buy NIST traceable thermometers from scientific supply catalogs for a few dollars more than a regular lab thermometer (don’t get “Primary Reference Standards” unless you want to spend \$200+ for a thermometer). You don’t use the NIST traceable

thermometer in your mash, you only use it to calibrate your other thermometers. To ensure accuracy, you should calibrate all your bimetal thermometers periodically (every few months or after each time it’s dropped on the floor, whichever comes first). For a liquid thermometer, once you have calibrated it, you’re done calibrating it forever (unless it becomes damaged). You simply note how far off it is from the NIST traceable and use that to correct the reading. In this way, all your thermometers become “NIST traceable;” you connect them to the NIST traceable standard yourself.

You should use a NIST traceable thermometer that just covers the temperatures of interest. The narrower the range of the thermometer, the more accurate your readings. This is the rule for liquid-filled thermometers (and for thermometers in general). Usually thermometers are accurate to within +/- one calibration mark. So, if the scale is marked every tenth of a degree, the actual temperature is within a tenth of a degree of the reading - if the calibration is marked every 2 degrees, then your actual temp is within 2 degrees of the reading.

Be sure to get a partial immersion thermometer (not a total immersion). Partial immersion thermometers are meant to give the proper reading when they are immersed to a specific depth, usually 100mm (there’s a line there to tell you proper immersion depth). This is what you want to do when you calibrate your brewing thermometers. If you use a total immersion thermometer that is only partially immersed, you will get inaccurate readings. (I know this should be obvious, but) be sure to allow the temperature reading on any thermometer to stabilize.

Bimetal thermometers are notoriously inaccurate right out of the box. I don't think I've ever had one that didn't need adjusting. I've also had them go bad on me, that is, become un-calibratable (if that's a word). Periodic checking is the best way to guarantee accuracy.

If you don't want to rely on your bimetal thermometer for accuracy, you can use it to get close to your desired temperature and then check the temp with a more accurate liquid-filled thermometer to know that you have hit your target. Again, I don't recommend using your NIST traceable for this; use one you calibrated.

A suggestion: Since you only need to take the NIST traceable out of its secure home every few months, it seems to me to be a good thing for a homebrew club to buy and loan to its members. Just a thought for those of you in active clubs.

It is important to calibrate at more than one temperature. Usually, one calibrates a thermometer near both ends of the proposed use range. For brewing you'd calibrate at 95°F/35°C and 170°F/77°C, or thereabouts. Ideally you should also calibrate in the middle, or nearest your most critical temperature; for brewing, this will probably be about 154°F/68°C. If your thermometer reads correctly at all three of these temperatures, than you can rely on it to give you accurate readings for mashing.

Sorry to be so long-winded about all this, but I hope this info is useful for some of you. I've learned a lot from this forum, and I hope I can give back a little.

Good luck and good (accurate) brewing,

## **AHA Club-Only Competitions 1999**

**Here are the club-only competitions for the next year. Remember, the styles are AHA not BJCP.**

### **February**

**You're Special to Me**

**Category 23**

**Due 2/8/99 - Bring to Jan meeting**

### **March**

**Why don't we do it in the robe**

**Belgian Ales**

**Category 2 only - No lambics**

### **May**

**Bockanalia**

**Category 12**

### **August**

**It's a mead, mead, mead, mead world**

**Categories 25, 26, & 27**

### **October**

**Porter!**

**Category 9**

### **December**

**Winter Warmers**

**Category 10**



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## ***Mark Your Calendars***

***January 14, 1999***

***Meeting at Goodale Homebrewing  
Thermometer Calibrations and other  
subjects T.B.A.***