

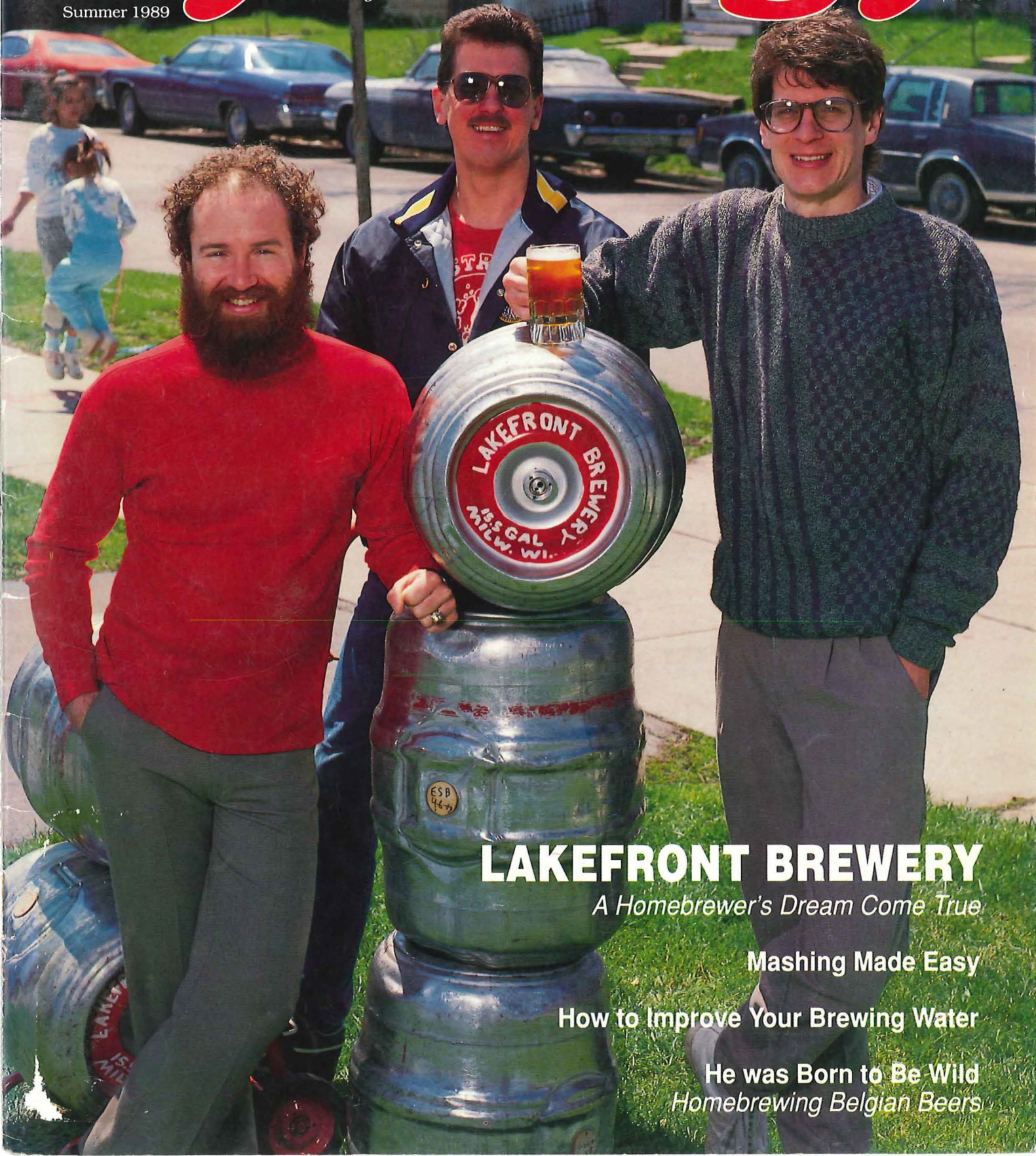
Zymurgy

FOR THE HOMEBREWER AND BEER LOVER

Vol. 12, No. 2
Summer 1989

Published by the American Homebrewers Association

\$4.00



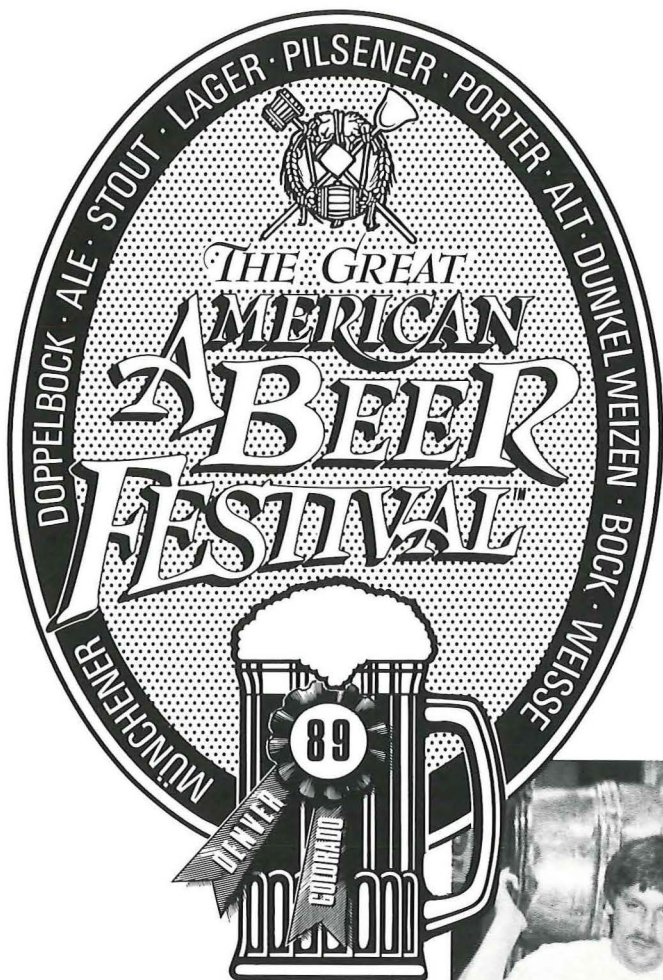
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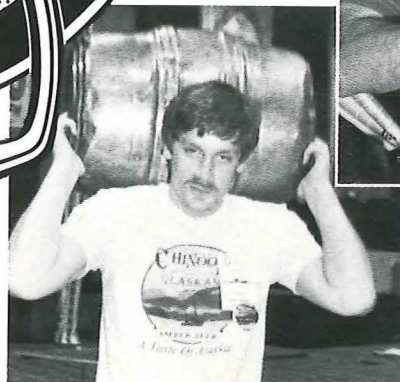
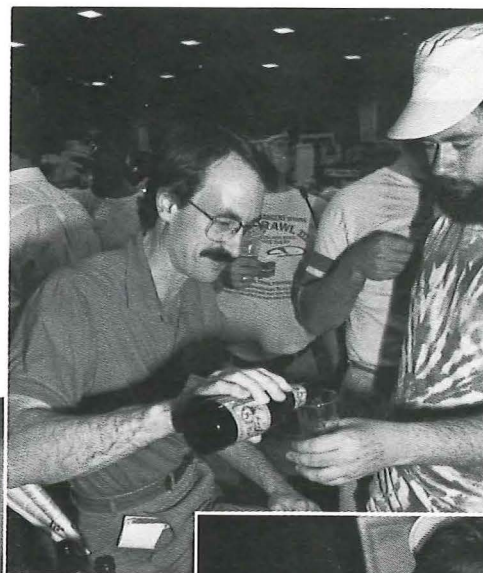
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How to Improve Your Brewing Water

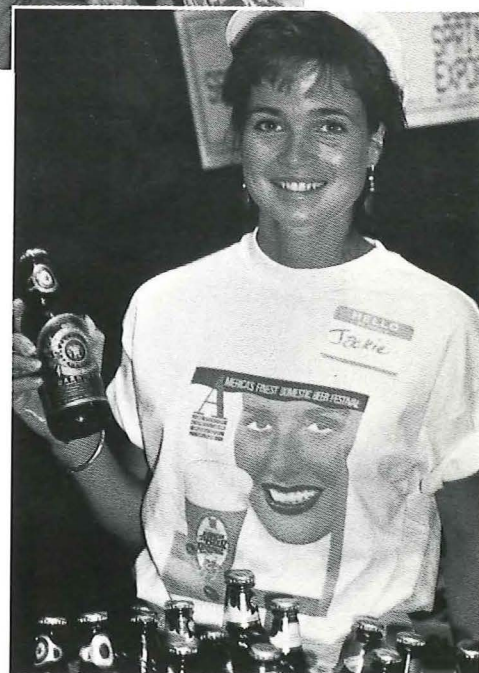
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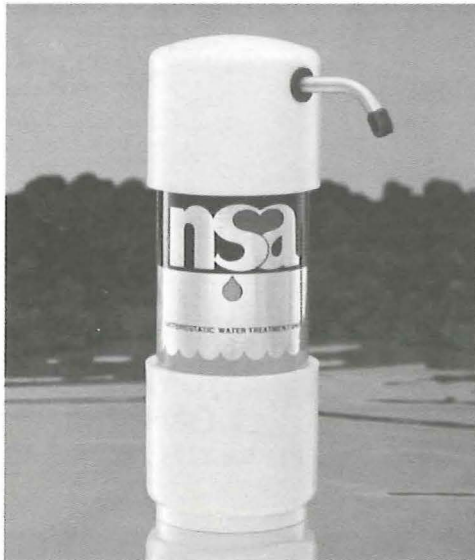
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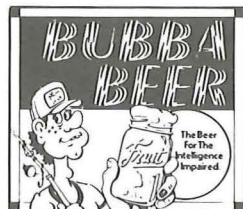
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Gold, Yellow, Green, Black



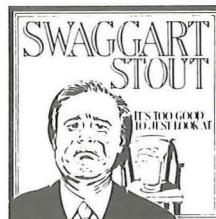
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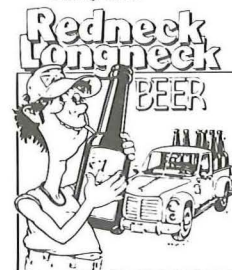
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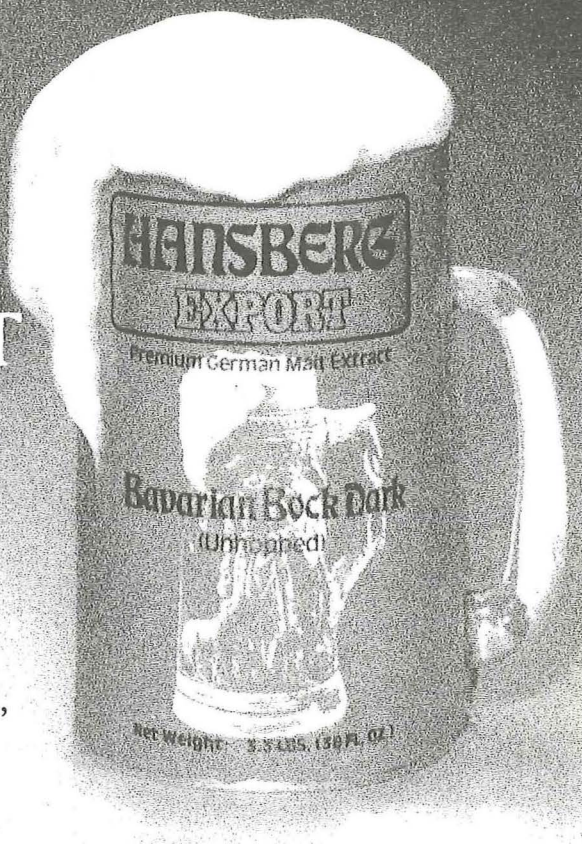
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HANSBERG EXPORT

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Dortmunder Light, Oktoberfest Ale, and Bavarian Bock Dark, the legendary beers of Germany, are now available for home brewing. These exceptional malt extracts can be purchased at fine home brewing shops throughout the U.S. or contact **Dover Vineyards, 24945 Detroit Rd., Cleveland, Ohio 44145** (sole U.S. Distributor) for your nearest supplier.





Zymurgy

Volume 12, Number 2

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Reviews—Colonel John Canaday
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The Association of Brewers Inc. is a Colorado non-profit corporation for literary and educational purposes to benefit homebrewers of beer and all those interested in the art of homebrewing. The Association of Brewers is exempt from Federal Income Tax under Section 501(c)(3) of the Internal Revenue Code. All gifts, grants and contributions are tax-deductible.

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zymurgy welcomes letters, opinions, ideas, stories and information in general from its readers. Correspondence and advertising inquiries should be directed to *zymurgy*, Box 287, Boulder, CO 80306-0287, (303)447-0816. All material © 1989, American Homebrewers Association. No material may be reproduced without written permission from AHA.

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THE AMERICAN HOMEBREWERS ASSOCIATION MISSION STATEMENT

To help maintain quality in the production and distribution of beer; to promote public awareness and appreciation of the quality and variety of beer through education, research and the collection and dissemination of information; to serve as a forum for the technological and cross-cultural aspects of the art of brewing; and to encourage responsible use of beer as an alcohol-containing beverage.

EDITORIAL

CHARLIE PAPAZIAN

You're Not Alone Anymore



ou're having a beer one evening. You're at home relaxing, not worrying and planning a business trip to a city on the West Coast next week or maybe you're thinking about a family vacation to the southeast. You're thinking that the beer you're drinking is so good you should enter it in a competition — soon.

You slowly finish your beer (no sense in rushing things, right?) go to your computer and dial up the Association of Brewer's Beer Forum and get an up-to-date roster of all of the breweries and brewpubs you could visit on the West Coast or whose beer you could buy to bring back from that business trip.

Or you could get a printout of all of the beer-related festivals and club activities in the southeast so you could drop in with some of your own homebrews during your vacation. Or you could get a complete listing of all of the coming homebrew competitions in the United States or Canada to send your blue-ribbon beer for judging.

I'm sitting here with my own homebrew, imagining how nifty it would be to access the most up-to-date information about beer events, organizations, publications, festivals, products, conferences, breweries and get answers to, or at least discussions about ideas and questions I might have on virtually any aspect of beer and brewing a fermenting mind might krausen. I can't think of an opportunity better adapted to enhance the homebrew hobby—a national database of beer and brewing information accessible to anyone with a telephone and a computer.

In helping to fulfill the Association's mission statement (see page 4), the Association has initiated a new beer information service for members and anyone else interested in the subject of homebrewing and related activities. As of April 1, two beer forums, one for homebrewing and the other for commercial beer and brewery

information (see page 7 for details) have been added to the CompuServe Information Service network and are being administered by the Association of Brewers.

It all started last year at the suggestion of the AHA Board of Advisers, who wanted the AHA to explore better ways of adapting services to help clubs and individuals network. Communication is the theme for the next age of homebrewing. As we investigated the possibilities, we became aware of local and national computer beer "bulletin boards" and were encouraged by the activity and interest they generated in the hobby.

Wanting to enhance the hobby and already-existing specialized local and corporate-type beer networks, the Association has linked parts of its own database with the CompuServe Information Service. The purpose is to make quality information accessible to more members and the general public.

What's more, the homebrewing forum will offer members another opportunity to express their ideas, opinions and thoughts about how your American Homebrewers Association can better serve you and enhance the homebrew hobby.

The CompuServe Information Service has initially allocated only a small area for the Beer Forums. When we can demonstrate that there is an interest in this kind of information, CompuServe will then consider giving beer enthusiasts our own space, rather than have it ride on the "coat tails" of the already-established Wine Forum. Meanwhile the Association wishes to express much gratitude to Wine Forum system operators and especially Jim Kronman for allowing us space to initiate our Beer Forum.

So the next time you're at home having a homebrew or brewing a batch and you think that you are all alone, dial into the Beer Forum and then tell your friends about it. We'll be there and so will a lot of others.

ASSOCIATION NEWS

Promoting Homebrewing

Hardly a week goes by without someone from somewhere calling for facts, information, contacts, names of shops and anecdotes for a story they are writing about homebrewing. January and February were particularly active with the *New York Times* wire service, *USA Today*, *Magazine Week* and *Smithsonian* magazine among many others all calling to gather information for stories about the AHA and homebrewing.

In fulfilling its mission statement the AHA continues to do all it can to educate the general public about the many aspects of homebrewing. Our marketing and public relations department in cooperation with the Boulder Brewing Co. and Munton and Fison (sponsors of the Homebrewer of

the Year Award) will initiate a promotion for the winners of this year's AHA quarterly club competitions and the National Homebrewer of the Year. The winners will have an opportunity to brew a 600-case batch of their winning homebrew recipe at the Boulder Brewing Co. under the guidance of Brewmaster Mike Lawrence.

The uniqueness of this prize and opportunity will attract interest from all over North America, generating more interest in homebrewing.

New Clubs Register with the AHA

If you are forming a new club be sure to contact us so we may send you a Club Survey form. Upon completion and return of this form your club will be registered with the AHA, appear on

our nationally distributed club directory and be eligible to participate in AHA National Club Competitions.

The AHA values its link with beer and brewing clubs throughout the world, as it provides the Association with a valuable sense of homebrewers' current needs and interests.

AHA Board of Advisers

Active throughout the year, the 12-member Board of Advisers will have its annual meeting June 7 in conjunction with the 1989 National Conference at Oldenberg Brewery, Fort Mitchell, Ky. Discussions at the meeting will be summarized in the fall *zymurgy*.

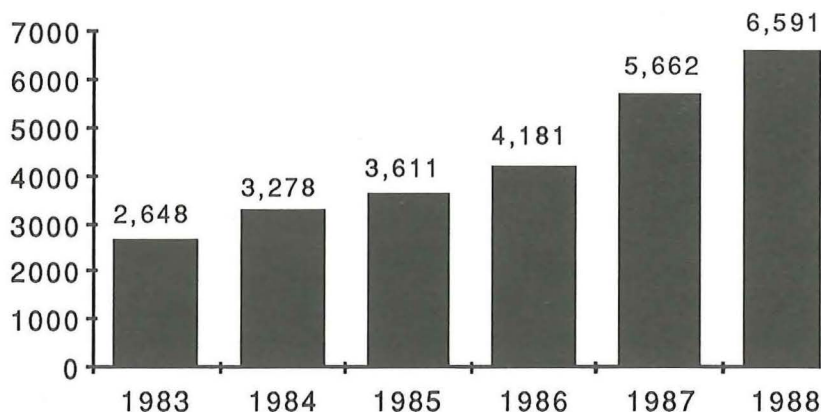
Two Special Issues Reprinted

Because of great demand, the 1985 Special All-grain Issue of *zymurgy* has been reprinted for a third time and the 1986 Special Malt Extract Issue reprinted a second time. The AHA production department maintained all of the original art and negatives but reworked the pages so that updated advertising now appears in these reprints.

National Beer Judge Certification Program

The National Beer Judge Certification Program continues to grow. As of March 1989, 188 Recognized, 57 Certified, six National and one Master judge are active in the program. Co-sponsored by the HWBTA, the program helps improve the quality of beer

American Homebrewers Association Year End Membership 1983-1988



AHA membership has grown steadily over the years, more than doubling in the last five.

judging and organized tastings while drawing attention to the respect beer deserves in our society.

Numerous stories have appeared in local newspapers about activities in the program, providing an added educational and public relations tool for the homebrewing community.

AHA Conference May Move to West Coast

It's never too early to start thinking about next year. AHA President Charlie Papazian was seen visiting potential conference sites in northern California for the 1990 National Homebrew Conference. Details will be announced in the fall *zymurgy*.

New Staff and Not-so-new Staff

A few changes have occurred in our offices. After nearly two years with the Association, Office Manager Ellen Lindseth has taken over the position of accounting manager. The AHA welcomes Tamara Dossett as office manager and Steve Harley as desktop publishing production and design assistant.

Boulder Brewing Co. Offers Prizes for Club Competitions

In the tradition of November's *Best of the Fest* and February's *Hail to Ale*, the Boulder Brewing Co. will award an expense-paid trip to the winner of May's *Bock is Best* and August's *Weiss is Nice* National Club

Brewoff Competitions. The winner will have the opportunity to commercially brew 600 cases of the winning recipe at the Boulder Brewing Co. under the guidance of Brewmaster Mike Lawrence.

AHA Sanctioned Competition Program Now Requiring Two Months' Notice

The AHA's Sanctioned Competition Program, which serves to monitor and strengthen levels of quality in handling and judging at homebrew competitions around the country, has announced a new rule requiring competition organizers to apply for sanctioning at least two months prior to the commencement of judging for the competition. The AHA's SCP credits

judges, stewards and competition organizers with judging points in the National Beer Judge Certification Program for their participation in a competition, but will do so only if SCP standards for maintaining fairness and quality in the processing, handling and judging of entries are followed. Competition organizers who fail to meet the two months' notice requirement risk ineligibility for sanctioning of their competition.

CompuServe Network Update

The AHA is now on-line with the international CompuServe Information Service network offering easy access to all kinds of information about homebrewing and related activities.

1988 Income and Expense Statement (unaudited) American Homebrewers Association A Division of the Association of Brewers Inc.

Revenues

Memberships and sponsorships	\$134,400	49.3%
Advertising sales	50,500	18.5%
AHA-related merchandise sales	14,000	5.1%
<i>zymurgy</i> magazine sales	31,000	11.3%
National Conference	25,200	9.2%
National Competition	6,100	2.2%
Business Membership Program	3,000	1.1%
Beer Judge Certification Program	3,200	1.2%
AHA Sanctioned Competition Program	200	0.1%
Miscellaneous (postage, services)	5,000	1.8%
Totals	272,600	99.8%

Expenses

<i>zymurgy</i>	85,100	33.7%
National Conference	26,400	10.5%
National Competition	6,000	2.4%
AHA-related merchandise	11,100	4.4%
Marketing and public relations	8,300	3.3%
Overhead (salaries, rent, taxes, utilities, insurance)	96,600	38.3%
Business Membership Program	3,200	1.3%
Beer Judge Certification Program	2,800	1.1%
AHA Sanctioned Competition Program	1,000	0.4%
Miscellaneous (travel, postage, copying, telephone)	11,700	4.6%
Totals	\$252,300	100.0%

FREE FROM THE AHA!

General Information

- ☐ **An Introduction to the American Homebrewers Association**
An eight-page pamphlet explaining the AHA history, goals and programs.
- ☐ **zymurgy Mini-Index 1978-1988**
A four-page index listing articles in 46 issues of zymurgy.
- ☐ **The New Brewer magazine Index 1983-1988**
An index listing articles featured in the magazine for micro and pub brewers.
- ☐ **The Beer Lover's Store**
A catalog of beer books, T-shirts, glassware and fun things.
- ☐ **Introductory CompuServe Information Service kit (members only)**
Includes free subscription and \$15 worth of time on the AHA's beer forums.
- ☐ **Application and information for the AHA's Sanctioned Competition Program**

Lists

- ☐ Additives allowed in beers commercially brewed in the U.S.
- ☐ Wholesale distributors for those retailing homebrew supplies.
- ☐ Homebrew clubs in Canada, New Zealand, Australia and the U.S.
- ☐ Beer-related magazines, newspapers, journals, newsletters.
- ☐ Micros and brewpubs in the United States with city and state.

How-tos

- ☐ **How to Teach a Homebrew Class**
Advertising, course description, class size, your first session and more.
- ☐ **How to Start a Homebrew Club**
Organizing, getting members, meeting places, activity ideas and more.
- ☐ **Editorial and Photo Guidelines for submissions to zymurgy**
- ☐ **How to Brew Your First Batch of Beer**
- ☐ **Outline for Intermediate Brewing**
- ☐ **How to Use Specialty Malts, with Malt Extract Conversions**
- ☐ **The Zymurgist's Guide to Hops**
Bitterness, percent alpha acid, freshness stability and origin of 27 hop varieties.

HERE'S HOW TO OBTAIN THE ABOVE INFORMATION:

- AHA members: It's all free to you but you must enclose 50 cents for each item to cover postage and handling costs.
- Non-members of the AHA: Please submit \$1 (\$2 minimum) for each item requested. All foreign overseas airmail requests enclose \$3 extra for postage.

Direct all inquiries to AHA Member Services, Box 287, Boulder, CO 80306 USA.

Name _____ Phone _____
Address _____
City _____ State/Province _____
Zip/Postal Code _____ Country _____

SUM89

For the startup phase we have graciously been given two areas for brewing-related activities in the already established Wine Forum. When we can show CompuServe that there is interest in beer information, we anticipate being able to get our own dedicated service area.

To make it easier for AHA members to use our new service, we are offering them a free introductory CompuServe Information Service kit while supplies last. This is a \$30-plus value that includes free enrollment and \$15 worth of free time on the system—a great way to introduce yourself to the beer forums at no cost.

Once you are in the CompuServe system, to access the AHA-administered Homebrewing Forum, type in "GO WINEFORUM." Area No. 14 is titled BEER - HOMEBREWING. There you will find a library of files containing a club directory, *zymurgy* index, beer-related periodicals list, calendar of competitions and other national events, homebrew supply shops, press releases and news about the AHA, and articles including "How to Brew Your First Batch of Beer," "How to Start a Club," "How to Write for *zymurgy*" and "How to Teach a Class."

You will be able to leave messages, ask questions, answer other messages, propose ideas or participate in a general discussion about homebrewing.

Another beer-related area in the system is available, titled BEER AND BREWERIES (area No. 15). It will be administered by the Association of Brewers Institute for Brewing Studies division and will focus exclusively on commercial beers and breweries. Its library will include such material as a complete up-to-date listing of all microbreweries and brewpubs in North America. The forum will be devoted to discussions and questions about commercial beers, tastings, beer news and international information.

We are very pleased to offer this service and hope you will enjoy using it.

AHA Staff On the Road

Fulfilling an ongoing commitment to talk to the homebrewing

community throughout North America, AHA President Charlie Papazian, Marketing Director Daniel Bradford and *zymurgy* Advertising Manager Linda Starck have been spending time on the road. In Anchorage and Juneau, Alaska, Daniel participated in a beer tasting and met with amateur and professional brewers. He is scheduled to participate in homebrewing demonstrations and beer tastings at Montana's centennial celebrations in Missoula June 2.

Charlie traveled to northern California to help set the stage for the National Microbrewers Conference to be held Aug. 30 - Sept. 2 in San Francisco. While there he visited 12 breweries and brewpubs and had the pleasure of meeting several Gold County Homebrewers Association members in Sacramento.

Charlie traveled east during the first two weeks of May for a variety of activities. His first stop was in St. Louis to participate in the Homebrewers Alliance Conference. He spoke May 6 at a gathering of the New York City Homebrewers Guild and area clubs on National Homebrew Day. He was in Syracuse, N.Y., to attend a homebrewers gathering hosted by the Amateur Brewers of Central New York. On May 10 Charlie gave a presentation to Toronto area homebrewers and brewers on beer flavor evaluation. His visit was hosted by Cask Brewing Systems and Wine and Homebrewery Retail of Kitchener, Ontario.

For his final stop, Charlie met up with Linda and Daniel at this year's Home Wine and Beer Trade Association's Conference May 11 - 13 in Toronto. They spoke with manufacturers, suppliers, distributors and shop owners from all over Canada, the United States and the United Kingdom.

Homebrew Shops, Where Are You?

The AHA receives hundreds of inquiries a year from homebrewers looking for supplies. It is our policy to give them a list of shops in their area. If you are a homebrew supply shop, are you on our roster? If in doubt, write or give us a call and let us know

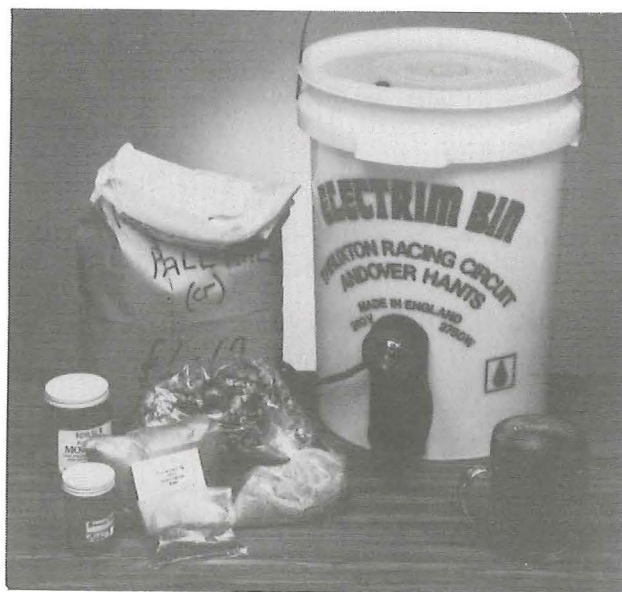
who and where you are so we can let homebrewers know where their local suppliers are.

AHA Adds More Freebies to List of Services

If you haven't noticed yet, the list of free items available to members has grown longer. With a desire to continually expand services and provide information requested by members, we are now offering reformatted ver-

sions of information and charts formerly appearing in the 1986 Homebrewer Wallchart (now out of print).

Also available is a one-page outline of brewing techniques for intermediate brewers, information on how to sanction your homebrew competition and a free introductory Compu-Serve Information Service kit, which includes a subscription and one free hour of time (a \$30 value) on the system (for AHA members *only* while supply lasts). To order these materials, see page 8.



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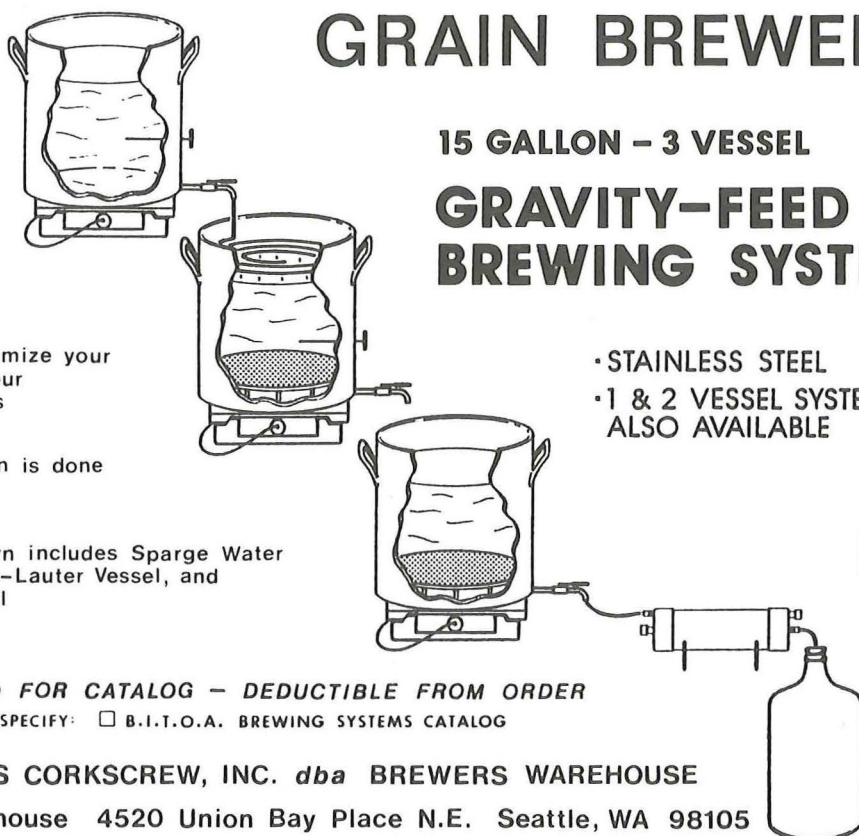
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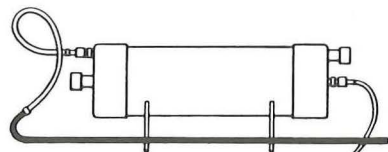
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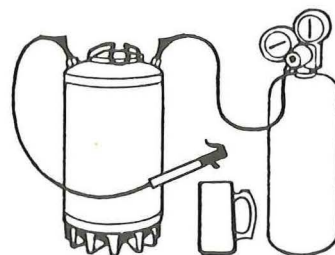
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DEAR ZYMURGY

OUR READERS

A Tough Day in Africa

Dear *zymurgy*,

The homebrewing scene in Cape Town is alive and well. South Africans have a long tradition of homebrewing and some brew at least once a month. However, they usually make the traditional *utwyala* or maize beer that goes from brewpot to consumption in three days. It is a tasty, nutritional brew, low in alcohol and consumed in great quantities. When the host presents the beer the guests cannot leave until it is finished, making for quite a social occasion.

My versions of homebrew have been well received by Capetonians. One of my friends dubbed it *bandyo* (a good cold brew).

I hope you are following the gist of this letter as I am presently a captive drinking *utwyala* and cannot go away until the lot is gone. Another tough day in Africa.

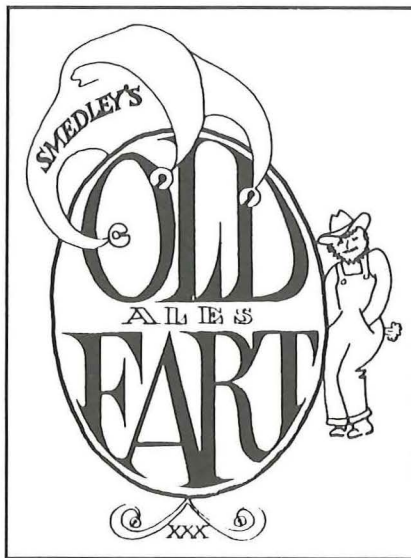
The language of brewing is international, and if I can in a small way help bridge the divisions that permeate this society by sharing brews and brewing techniques, I will be happier for my efforts.

Best to you all,
Bill Franks
Cape Town, South Africa

Celebrity Journalism

Dear *zymurgy*,

I'm afraid the homebrewer profiles in the 1988 special issue on equipment (Vol. 11, No. 4) were like many American lagers: overcarbonated and



Smedley's Old Fart Ales label by Bill Smedley, Jersey Shore, Pa.

lacking substance. You may have overlooked some more interesting stories from your very own pages!

For example, Michael Matucheski (first place, Belgian-style specialty beers) evidently grew his own barley, wheat and hops; malted his own grains; fermented in oak barrels with home-cultured Belgian yeast; and did everything well enough to win rave reviews from the judges. What an amazing accomplishment! How did he do it? That story would be much more interesting and useful to me than profiling homebrewers because they are pretty and/or eccentric.

C'mon, folks! Stick to beer and brewing information and leave the celebrity journalism to the supermar-

ket checkout lines, along with the lite lagers.

Don't worry; be hoppy.
Jim Fownes
Honolulu, Hawaii

Dear Jim,

Michael Matucheski caught our eye as well. See this issue for his article on brewing his award-winning Belgian-style beer, *Goudenband*.

—Editor

References Needed

Dear *zymurgy*,

I and many of my homebrewing friends work as research scientists and are often frustrated with the lack of good technical information available to homebrewers. Although many books have excellent treatments of certain topics, none are comprehensive and most fall short of fully explaining the subject matter.

All of this points out the value of your publication: to bring detailed information on a given aspect of brewing to the homebrewer. Examples that come to mind are your special issues on Troubleshooting and All-grain Brewing. However, even with these, a valuable piece of information was missing from the articles: Where to find more information. The authors would be doing many of us a great service to include references (trade journals, brewing science textbooks, personal observation and research).

For example, in the All Grain special issue there is a great article by Gary Bauer on the influence of raw

materials. The tables he presented were the answer to something that had been bothering me for a long time: the criteria for distinguishing the many different styles of beer and how to control those criteria when homebrewing.

The article dealt pretty well with the concept of color units and how each grain contributes to the overall value for a given recipe, yet the most obvious questions went unanswered: where did these data come from, who determined that a bock beer typically has 18 to 25 color units and 24 to 28 bitterness units, and where can I get more information? I'd bug him personally but a complete address is not given for him at the end of the article! Can I contact him through you at AHA?

Sincerely,
Gregg W. Langlois
Walnut Creek, California

Dear Gregg,

We're happy to forward any letters we receive to authors of *zymurgy* articles. We will include references when space allows. You can always call us and ask how to find more information on a subject.

—Editor

Macintosh Beer Labels

Dear *zymurgy*,

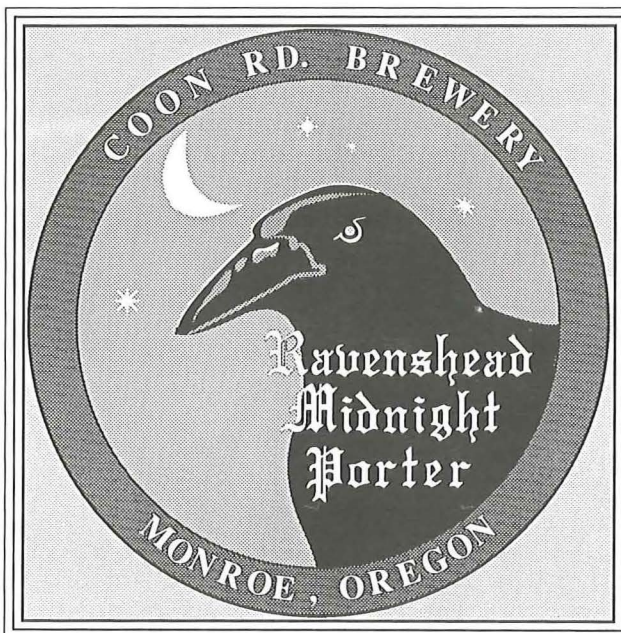
I thought you might enjoy seeing some output from a Macintosh using Illustrator software. [See label this page. —Ed.]

I've been brewing since last October and I just racked my 13th brew. I had fun inventing the labels and working them into graphic designs with my friend Rich Cordero. Each brew inspired a name and a label, and is part of the fun of homebrewing.

My appreciation of beer and ale has grown by leaps and bounds as I discover the many ways that flavors are created in brewing. I am trying to learn the individual flavors of hops and already I can identify certain flavors in some quality commercial beers.

I enjoy your magazine and the information and news you have to share. My favorite topics, which you amply cover, are the many and varied ways to brew beer and ale. I was astounded at the many flavors possible in beer. Wow! It's a big world out there.

Sincerely,
Steve Goehring
Monroe, Oregon



Ravenshead Midnight Porter label was designed on a Macintosh computer by Steve Goehring, Monroe, Ore. The original was in full color.

Professional Homebrewers?

Dear *zymurgy*,

It seems that an aspect of our hobby has become overly controversial and, to my taste, too political. Many of the competitions of the past year and this year are excluding professional brewers from entering. Why? My view is that these competitions are for homebrew and anyone who makes beer at home should be allowed to enter a homebrew competition.

One competition [in California] excludes professional zymurgists. Does this mean that people who are paid to make wine and who also like to make beer at home are not allowed to enter? What about those involved in any other fermentation process, vinegar, yogurt or fuel alcohol, for ex-

ample? Another competition "is open to all amateur homebrewers." Does this mean there is a classification called "professional homebrewer"? Could this be someone who receives compensation for brewing at home? Don't let the revenuers catch you!

Some of the reasons given for not allowing professional brewers to enter homebrew competitions are: (1) Pros have access to fresher ingredients and pure yeast strains, (2) Pros have more knowledge and (3) Amateurs will be discouraged if the pros win most of the awards.

Let's examine these arguments. (1) Fresher malts and hops and pure yeast do make better beers. All the brewers in this area (Sacramento and probably northern California) get the basic ingredients from the same sources. Pale malt comes from Great Western Malting, specialty malts from Briess and hops from Hop Union or Freshops. Red Star and Munton and Fison packaged yeasts just don't cut it anymore, but there are newer and purer sources of yeast available at the homebrew shops around the state. Culturing and propagating pure yeast is becoming more common among homebrew-

ers and most professional brewers I know are willing to give you a sample of their yeast for homebrewing. In fact, the yeast I use at the Rubicon Brewery came from another brewery that was willing to let me use theirs. It is quite common for my fellow homebrewers to come to the Rubicon and pick up a quart of fresh yeast. So where is the advantage there?

2) The more you know and the more you brew, the more you learn and the better beer you make. If knowledge is a factor then why are the people who run homebrew shops not excluded also? They are the local "experts," the ones that people go to when questions about beer and brewing come up.

Why not exclude authors of homebrew books, or your local college professor of microbiology or biochemistry, or even some of the advanced

brewers in your own club? Certainly all these people possess more knowledge about brewing than the beginning brewer.

One of my fellow brewers in the Gold County Brewers Association brewed 50 batches of beer his first year. He brews good beer. Should he be excluded because he gets lots of feedback on his brews and has amassed sufficient knowledge to be a consistently good brewer? If so, then at what point in learning about brewing should a brewer be excluded?

3) Amateurs may or may not be discouraged if they go up against a professional brewer and are defeated. I feel competitions essentially are a vehicle for self-acclamation and people usually don't enter until they have reached a level of competency that they feel gives them a chance of winning.

I remember the first ribbon I won. My extract pale ale tied for second place with a brewer who was into mashing. I figured if I could make beer as well as Larry, I could make as good a beer as anyone could! I was inspired. Imagine entering a competition and going up against Scott Morgan, Byron Burch, Kevin Cox, Steve Norris, Charlie Papazian and winning! Not winning could be discouraging, but most likely easily justified because of all the "professional" brewers in the competition and not because there might (heaven forbid) be something wrong with the beer. Stiffer competition makes better brewers too!

I don't believe these reasons are justification enough for excluding professional brewers from *homebrew* competitions. So why exclude anyone?

I feel that the organizers of these competitions are creating a lot of potential work for themselves that is not necessary. Since I started brewing for the Rubicon I don't have time to brew at home very often, and when I do I keep the beer to share with my friends and family.

In fact, a couple of problems immediately come to mind. When does one cease to be an amateur and commence being a professional? How is "professional brewer" defined? (Try it, it's not easy). How do you enforce the rules?

Enough of my diatribe; I welcome further discussion on this topic. Anyone interested please stop by the Rubicon Brewing Co. and we'll hash it out over a brew.

A *homebrewer* is a homebrewer is a homebrewer, and a beer made at home is a homebrew is a homemade beer. After all, life is too short—let's relax and have a homebrew.

Happy trails,
Phil Moeller
Sacramento, California

P.S. The Latin root of amateur is *amator* for lover, from *amare*, to love. People who can work all day at brewing and then go home and brew in their spare time have to love what they are doing.

Dear Phil,

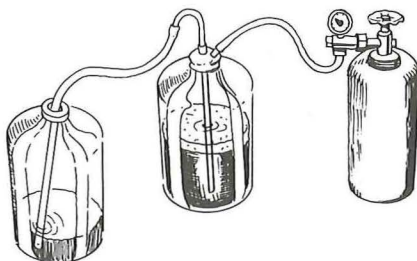
Your points are well taken. Please note that the AHA does not exclude professional brewers from entering our national competition—but they must brew their beer at home (no equipment used for commercial purposes is allowed). That way the entries truly are homebrewed.

—Editor

Sterile Siphoning

Dear *zymurgy*,

I've read lots of letters and articles in your pages about sterile siphoning, but I've never quite seen this in print here. I've been doing this for the last two batches, and it seems to work just dandy. Actually, it's an adaptation of Jim Homer's rubber glove method described in the 1988 special issue on equipment (Vol. 11, No. 4). All you need is a carboy cap, a curved racking tube, nine or 10 feet of tubing and a tank of CO₂. Sanitize everything, then set it up like this:



Give the system a tiny shot of gas, wait for the beer to transfer and then

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turn off the gas. No muss, no fuss, no air, no mouth, no worries. Well, I feel better about it, anyway.

Yours,
Dave Michon
Troy, New York

Dear Dave,

Good idea, but you must be extremely careful when "giving it a tiny shot of gas"—too much will blow up your glass carboy. For safety's sake we wouldn't recommend it.

—Editor

More Sterile Siphoning

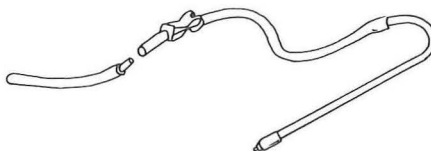
Dear *zymurgy*,

Reading the article in the 1988 special issue about how to start a siphon without contaminating the hose with one's dirty mouth, I thought I might as well tell you about the way I do it. It's very easy, cheap and obvious—once you know.

You first need a piece of siphon hose two to three feet long and a piece of siphon stick two inches long or so. I just cut a piece of the siphon stick,

insert it into the hose and there is the siphon starter.

Here is how it works: As usual, put the sterilized siphon rod with hose and shut-off clamp in the beer. Attach the siphon starter, suck hard, squeeze the clamp, take off the starter, attach the bottle filler and it's done.



When racking I don't use a clamp, but quickly insert the hose in the carboy once the siphoning is started. After a couple of trials it also can be done without any spills.

Good luck,
Klaus Peltier
Fort St. John, British Columbia,
Canada

Ballad of Alan Cranston

Dear *zymurgy*,

For our club's February meeting we held a small celebration in honor of

Sen. Alan Cranston of California. Cranston, as you probably well know, was the major sponsor of a bill to legalize the brewing of beer in our own homes. February marked the 10-year anniversary of its passage.

I was asked by our club president, Dick Codori, to write some kind of toast. Upon reading it to our assembled membership it was met with a very favorable response.

The Ballad of Alan Cranston

*Back in the summer of sixty-four,
The good ol' boys were at the Viet War.
Protests and violence were all around—
Cities were burning to the ground...
Riots and murders were on the rise
And ya' couldn't tell the girls from the guys.
Yeah—things were pretty bad, I hear,
But it all seemed better after a beer.*

*Holistic medicine and grow-your-own—
Hey, now; wait—hold the phone!
We could even make our own beer—
Get Bud and Miller outta here
I think it's time we took a stand—
Homebrewed beer for Everyman!
So while they're beating their brains out,
I think that I'll go brew a stout.
I stirred, I boiled, I sparged my grain*

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*With that great aroma inside my brain.
When all at once, like in a dream,
I heard the sirens start to scream.
The noise was closer than before
And now they're breaking down my door!
'Hey boy, watcha doin' here?
Are you some kinda Commie queer?"*

*Next thing I knew, they hauled me away—
'Twas a long time 'til the light of day.
It seemed so senseless to be in jail
When all I wanted was a good ale.
The cop said, "Yer Honor, I know what I
saw.
Judge, that boy, he broke the law!"
I wished that I had hid or run...
There must be something that could be
done!*

*A few days later and miles away,
Way out there in Californ-eye-aye,
A man who lived upon a mount
Read this poor boy's news account.
He vowed he'd kill those stupid rules...
'Td like a good brew, too, those fools!
Someday I'll be a Sen-a-tor
And then I'll give 'em all what for!"*

*Sure enough—he was elected;
Archaic laws were soon detected.
He decided he'd propose a Bill
To all his brethren on Capitol Hill.
He filibustered, he lobbied, he even threw
fits.
And we're lucky to know the results of it.
Lo and behold—he made it all legal!
Homebrew for me! And some for my beagle!*

*That was 10 short years ago—
The art of homebrewing continues to grow.
We no longer worry 'bout midnight raids—
We're free to brew without being afraid.
It's a science which was once detested,
But now, we can't even be arrested!
And we owe it all to a helluva man—*

*Here's a homebrewed Toast to Alan Cran-
stan!*

Turk Thomas, Secretary
Upstate New York Homebrewers
Association
Rochester, New York

Crosby in the Attic

Dear *zymurgy*,

Enclosed is a passage from a book I have been reading; I thought it might be of some interest to you. The title is *Long Time Gone*, the autobiography of David Crosby. Early in the book, he is explaining his existence as an itinerant folksinger:

"... so I went to Arizona and got a job there singing in a coffee-house and then I went to Colorado When I got to Boulder,

I found a typically small and grubby folk club called the Attic Boulder was very, very cold and luckily I was always good at finding a place to stay. This time I found some college guys who were sharing a big old house The college guys were making homebrewed beer; I was able to sneak bottles of the stuff out of wherever it was they kept it to age"

Unfortunately, there is no immediate reference to the year.

Sincerely,
Marty Nachel
Oak Lawn, Illinois

Dear Marty,

No one on the AHA staff remembers offering a brew to David, although some of us do remember the Attic.

—Editor

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BREW NEWS

MIKE SANDROCK

Aphrodisiac Beer

A French brewery says it has produced an aphrodisiac beer from herbs. Fischer Breweries of Alsace, the third oldest brewer in France, has introduced a new beer called "36.15 Pecheur, la biere amoureuse." The beer is "traditionally brewed and purely natural," and is blended with herbs and plants (myrtle, cardamom, ginseng, ginkgo, eleutherococ, kola and some others that are being kept

secret). The beer is alleged to have the ability to "increase and enhance the pleasure of lovemaking and to increase the wish and capacity for an erotic relationship."

The company says the beer is not an advertising gimmick, but is "a serious and delicious beer that prepares for romance and the love game." The name comes from the free computer system that has been installed in about 25 percent of French homes. By dialing 36.15 on the computer, the

beer can be ordered and delivered right to the home. And as an extra bonus, "one can exchange (erotic) talks with other unknown users."

Beer Production Down in Nigeria

A depressed economy and a ban on imported barley malt have drastically reduced Nigeria's beer production, according to an article in *Modern Brewery Age*. As of February 1988,

there were about 41 brands of lager beer in the West African nation, four brands of stout, six brands of malt drinks and one shandy in distribution throughout the country. Nigeria's brewing industry grew rapidly during the "oil boom" of the mid 1970s, but the present economic crunch has reduced beer production to between 30 to 50 percent of capacity in the country's 35 breweries.

Beer and Foreign Trade

In 1987 the United States imported nearly three billion more 12-ounce beers than it exported. The biggest suppliers of imported beer were The Netherlands, Mexico, Canada, Germany and Denmark. The biggest customers of American beer were Canada, Hong Kong, Japan

New England Homebrewer of the Year

Ron Page of Middletown, Conn., became the first ever New England Homebrewer of the Year in March, for his performances in two regional homebrew competitions.

The 1989-90 New England Homebrewer of the Year will be chosen based on performance in five sanctioned regional events: the Connecticut Regional competition (April 1989), the Maine Common Fair competition (September 1989), the Western New England competition (November 1989), the Eastern New England Regional (January 1990) and the New England Regional competition (March 1990). The

program encourages both quality and diversity in beer styles. The winning brewer will have to demonstrate his or her skills by successfully competing in several recognized beer categories.

The Homebrewer of the Year award program is a joint project of several homebrew clubs in New England: The Beer Brewers of Central Connecticut, the Seacoast Brewers (Maine), the Boston Wort Processors, the Underground Brewers (southeast Connecticut) and the Valley



Ron Page, Middletown, Conn.

Fermenters (western Massachusetts).

For more information about the program contact Mike Fertsch at 3 Kosciusko St., Woburn, MA 01801.

and Taiwan. The United States also imports twice as many hops and 21 times more malt than it exports.

Beer Drinkers Petition President Bush

The Beer Drinkers of America, created in 1987 as a non-profit education and advocacy group for beer drinkers' rights, has grown from 3,000 members in New Mexico to more than 100,000 supporters in 18 states. The group presented President George Bush with 53,206 petitions on his first day of office in January. The Congress got another nearly 36,000 petitions, asking that the government "treat America's beer drinkers fairly when it comes to excise taxes and advertisement bans." For more information write Beer Drinkers of America, 150 Paularino Ave., Suite 190, Costa Mesa, CA 92626.

Nathan Hale Golden Ale Has National Premiere

Amid fife, drum and jazz, Connecticut's only [contract] beer, Nathan Hale Golden Lager, had its premiere in February. The first product of the Connecticut Brewing Co., the lager is based on pre-Prohibition original Connecticut beer recipes garnered from the archives of the Old State House. Between 5,000 and 7,000 barrels of Nathan Hale will be produced in the first year. Nathan Hale (1755-1776) is Connecticut's official state hero. He was hanged by the British during the Revolutionary War after donning a disguise and going behind British lines to obtain information. The beer is being brewed by

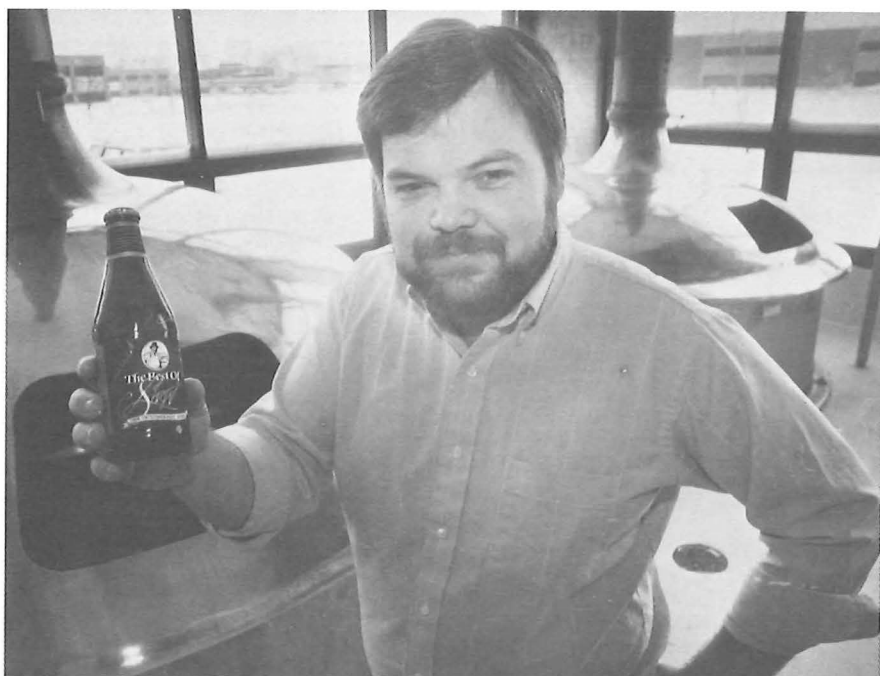


PHOTO BY GIL ASAKAWA/DAILY CAMERA

Jason Held of the St. Louis Brews homebrew club, St. Louis, Mo., holds the first bottle of Boulder Brewing Co.'s limited edition Best of Show series. Held brewed the winning beer in the Best of the Fest AHA club competition.

The Lion Inc. in Wilkes-Barre, Pa., for the Connecticut Brewing Co.

Beer Good for Economy

Federal, state and local governments collect \$4.4 billion annually through taxes on beer. Brewers employ nearly 40,000 people and paid out roughly \$1.3 billion in salaries in 1986. The annual retail value of beer industry products is roughly \$43 billion, and the industry annually buys from American farmers about \$540 million worth of malt. Farmers are paid about \$260 million for other grains such as corn and rice.

David Bruce to Keynote Microbrewers Conference

David Bruce, founder of the Firkin chain of brewpubs in England, has agreed to give the keynote address at the 1989 National Microbrewers Conference. The Conference takes place Aug. 30 - Sept. 2 at the San Francisco Hilton Hotel, San Francisco, Calif.

Other confirmed speakers are George Fix of the Master Brewers Association of the Americas, Gary Nateman of the Beer Institute, Daniel

Bradford of the Institute for Brewing Studies, Michael Lewis, Ph.D., of the University of California-Davis, and Fred Scheer of the Frankenmuth (Michigan) Brewery. Presentation topics include quality assurance devices and systems, practical yeast management, the importance of beer tastings, expanding your market, the role of the brewmaster in the brewery, dealing with local regulatory authorities, and brewery effluent: facts and issues.

The Conference Trade Show will showcase industry suppliers displaying their products and services. More than 20 representatives of the allied trades are expected to show brewhouse equipment of all types; raw materials such as malt, malt extract and hops; and packaging and design equipment and services.

Special events are always a part of the National Microbrewers Conference. Anchor Brewing Co. is hosting an open house for conference registrants at the brewery on the evening of Thursday, Aug. 31. The affair is open to all Conference attendees. On Saturday, Sept. 2, the San Francisco Brewing Co. is organizing three separate charter bus tours of breweries in the San Francisco Bay area. The tours

CALENDAR OF EVENTS

1989

- June 7-8 Finals judging for the AHA National Homebrew Competition, Oldenberg Brewery, Ft. Mitchell, Ky.
- June 7-10 AHA 11th Annual National Homebrewers Conference, Oldenberg Brewery, Ft. Mitchell, Ky. Contact AHA at (303) 447-0816.
- June 24 Oregon State Fair Amateur Beer Competition. Entries must be received at the State Fair office in Salem by June 19. For details contact Jim Hensel at (503) 244-3232.
- July 8 Seventh Annual KQED International Beer and Food Festival, San Francisco, Calif. Features more than 200 beers from 30 nations and a wide variety of pub grub. For tickets and information call KQED at (415) 553-2200.
- July 15-16 Wisconsin State Fair Regional Competition, West Allis, Wis. HWBTA Sanctioned Competition. Inquire by June 24. Contact Jerry or Mary Uthemann, c/o The Purple Foot, 3167 S. 92nd St., Milwaukee, WI 53227, (414) 327-2130.
- July 19 Santa Clara County Fair Homebrew Competition, San Jose, Calif. **AHA Sanctioned Competition.** Contact Robert Hight, 433 California St., Santa Clara, CA 95050, (408) 247-6853 for details.
- July 22-23 Oregon Brewer's Festival, Portland, Ore. Will feature approximately 50 different beers from 35 breweries. Contact Stuart Ramsay, (503) 241-7179 or Nancy Ponzi at (503) 628-1227.
- July 29 Yolo County Fair Homebrew Competition, Woodland, Calif. **AHA and HWBTA Sanctioned Competition.** Open to all California resident amateur homebrewers. For more information contact Vern Wolff, Competition Chairman, Box 538, Esparto, CA 95627, (916) 787-3615.
- July 29 Skagit County Fair Open Homebrew Competition, Mt. Vernon, Wash. **AHA Sanctioned Competition.** Entry deadline is July 14. Contact Tony Bigge at (206) 293-8278 or (206) 293-8070.
- Aug. 5 Weiss is Nice, AHA club-only competition. **AHA Sanctioned Competition.** Entry deadline is July 29. Contact Daniel Bradford, AHA, (303) 447-0816 for details.
- Aug. 6 California State Fair Competition, Sacramento, Calif. HWBTA Sanctioned Competition. Call Bill Vandevort at (916) 965-6285 for more information.
- Aug. 19 Ventura County Fair Homebrew Competition, Ventura, Calif. **AHA Sanctioned Competition.** Entry deadline is Aug. 12. Write or call Diane or Ed Keay, 183 Nob Hill Lane, Ventura, CA 93003, (805) 642-0571 for more information.
- Aug. 19-20 Judging for the Second Annual Los Angeles County Fair Homebrew Competition. Entries

welcome from anywhere as are Recognized or higher Beer Judges. Deadline for entry forms and fees is Aug. 1; deadline for receipt of entries is Aug. 12 at 4 pm. Write Competitions, Maltose Falcons Home Brewing Society, 22836 Ventura Blvd., Unit 2, Woodland Hills, CA 91364.

- Aug. 25-29 Tour of the Breweries, Calif. Tour will start in Los Angeles, end in San Francisco, and visit 12 micro- and pub breweries. Contact the Institute for Brewing Studies at (303) 447-0816 for tour itinerary.
- Aug. 30-Sept. 2 National Microbrewers Conference, San Francisco Hotel, San Francisco, Calif. Contact the Institute for Brewing Studies at (303) 447-0816 for details.
- Sept. 9 Santa Cruz County Fair, Watsonville, Calif. **AHA Sanctioned Competition.** Entries are due Sept. 2 at noon. Entries welcome from homebrewers in Santa Cruz, Monterey and Santa Clara counties. Contact Keith Smock at (408) 335-5416 or (408) 982-5270 for more information.
- Sept. 16 Los Angeles County Fair, Woodland Hills, Calif. HWBTA Sanctioned Competition. Contact Dennis Barthel at (818) 884-8330 for details.
- Sept. 16 First Annual Florida Homebrew Competition, Winter Park, Fla. **AHA Sanctioned Competition.** Open to homebrewers everywhere! Recognized or higher beer judges are welcome. Entry deadline is Sept. 4. Contact Sebastian Brewers Supply, 1762 Sunrise Lane, Sebastian, FL 32958, (407) 589-6563.
- Sept. 30 Mid-South Fair Homemade Wine and Beer Competition, Memphis, Tenn. **AHA Sanctioned Competition.** Contact C.D. Skypeck at (901) 327-7191 for more information.
- Oct. 20-21 Great American Beer Festival, Denver, Colo. Call the Association of Brewers at (303) 447-0816 for details.
- Oct. 20-21 Sixth Annual Dixie Cup Homebrew Competition, Houston, Texas. Entries are due Oct. 16. For details call Scott Birdwell at (713) 523-8154.
- November 1989 Mid-Atlantic Regional, Philadelphia, Pa. HWBTA Sanctioned Competition. Contact Rich Gleeson at (215) 833-2357 for more information.
- Nov. 11 Best of the Fest, AHA club-only competition. **AHA Sanctioned Competition.** Entry deadline is Nov. 4. Contact Daniel Bradford, AHA, (303) 447-0816 for details.

1990

- March 3 New England Regional Homebrew Competition, Westport, Mass. Contact Crosby and Baker, PO Box 3409, Westport, MA 02790; (508) 636-5154.

BEER JUDGE CERTIFICATION EXAM SCHEDULE

- June 10 Fort Mitchell, Ky. AHA, (303) 447-0816.

People wishing to list events should send the information to **zymurgy** Calendar of Events, PO Box 287, Boulder, CO 80306.

Notes to competition organizers: The AHA must receive written confirmation that a competition has been sanctioned by the HWBTA from Pat Baker, Sanctioned Competition Program Co-director, before announcing the event in **zymurgy**. Competition organizers wishing to apply for AHA sanctioning must now do so at least two months before the event.

will travel to one of three areas: South Bay, East Bay or North Bay/Napa Valley.

The menus for all meal functions during the conference are being specially designed by the San Francisco Hilton chef and Klaus Lange, owner of the Seacliff Café and Vest Pocket Brewery. The meals will feature dishes cooked with and accompanied by beer.

As always, the Institute for Brewing Studies is offering its preconference Tour of the Breweries, this year from Aug 25 - 29. The tour will originate in Los Angeles and wend its way up the coast to San Francisco. Tour stops include Crown City Brewery, Gorky's Cafe and Brewery, Alpine Village Brewing Co., City of Angels Brewing Co., Angeles Brewing Co., Grapevine Brewery, SLO Brewing Co., Monterey Brewing Co., San Andreas Brewing Co., Seabright Brewery and Santa Cruz Brewing Co. and Front St. Pub.

For more information on the Conference and tour contact the Institute for Brewing Studies, PO Box 287, Boulder, CO 80306; (303) 447-0816.

Bond to Invest in Hungarian Brewery

According to Reuters, Australian brewing and investment group Bond Corp. has announced its intention to invest in Kobanyai, Hungary's largest brewer. Executive Director for Brewing Bill Widerberg said Kobanyai offers a base for expansion in the rest of the East Bloc's Council for Mutual Economic Assistance, including the Soviet Union.

TV Lager Mix-up

British homebrew manufacturer Itona Products Ltd., was surprised by a recent television ad for Kestral Lager that refers to Kangabrew, one of Itona's products. Itona, founded in 1927, is famous for the Kwoffit line, which includes an Australian-style lager, Kangabrew.

Kestral's ad shows an Australian farmer seated outside a broken-down shack reflecting on how no one was drinking his homemade "Kangabrew" since Kestral had arrived on the scene. The farmer says, "It made



PHOTO BY DANIEL BRADFORD

Pat Oldenberg of the Great Northern Brewers homebrew club, Anchorage, Alaska, shows off the winning beers at Anchorage's annual Fur Rendez-Vous.

Kangabrew taste like woolra wonga," which is Aboriginal for sheep dip.

Scottish and Newcastle Breweries, makers of Kestral, expressed surprise at being told there was any product, homebrew or otherwise, with a name similar to Kangabrew. The ad has since been withdrawn and the homebrew manufacturers say they hope the publicity will bring them and Kangabrew added fame and fortune.

New England Competition Results

There were 202 homebrewed entries in 13 categories at the seventh annual New England Homebrew Competition Feb. 25 at the headquarters of Crosby and Baker in Westport, Mass.

Best-of-Show honors were grabbed by a porter entered by three members of the Boston Wort Processors. Ron Page of Middletown, Conn. was named New England Homebrewer of the Year.

First-place winners included Alan Fleer of Falmouth, Mass. (Oktoberfest, steam beer, continental dark, and American light), John Korpita of Millers Falls, Mass. (pale ale), Ron Page of Middletown, Conn. (strong and weizenbier).

Tom Gorman, Steve Stroud and Barbara Bolton of Medford, Mass., won the porter category, with other

winners being Phil Markowski of New Haven, Conn. (stout), DeWaine Hughes of Boise, Idaho, (brown ale and continental light), Charles Olchowski of Greenfield, Mass. (bock), Jim Waring of Fall River, Mass. (fruit beers) and Alberta Rager of Mission, Kan. (specialty beers).

Alaskans Left Out in the Cold

By Mark Jaeger

Homebrewers, trappers and miners alike gathered for the 10-day Fur Rendez-vous Competition Feb. 11 to 21. How better to enjoy dog sled racing and the blanket toss than with a frosty homebrew from the Great North?

Unfortunately only a temporary permit allowed brewers to participate in the competition. Following the event things again went dark for brewers, under the cloud of a bill rendering homebrew tastings illegal.

Bill No. 181 now backed by more than 3,000 signatures will attempt to legalize tastings, hopefully in time for the August state fair in Palmer.

Free Goat Poster

Merchant du Vin has just published a poster featuring Celebrator beer, and goats performing circus acts for Gambrinus, 13th century patron of brewers and beer lovers. On the back of the poster are statistics on a variety

of import beers. For a free copy, call or write Merchant du Vin Corp., 214 University St., Seattle, WA 98101.

Texans Fight for Rights

By Mark Jaeger

Scott Birdwell, head of the Foam Rangers Homebrew Club based in Houston, Texas, was instrumental in getting homebrew legalized in Texas in 1983. Birdwell wishes he had chosen his words more carefully then, as he is now forced to reintroduce a bill to re-legalize Texas homebrew competitions. Apparently a single complaint filed to the Texas Alcohol and Beer Commission (TABC) prior to last year's Fifth Annual Dixie Cup Homebrew Competition was the beginning of a reinterpretation of the Texas homebrew laws, and a setback for Texas homebrewers.

The existing statute covering homebrew and home wine making in Texas reads, "The head of a family or an unmarried adult may produce or have manufactured by a winery permittee, for the use of his family or himself, not more than 200 gallons of wine, ale, malt liquor or beer per year. No license or permit is required."

Following the complaint, the TABC has now interpreted the section that says "for the use of his family or

In Memoriam

It is with heartfelt sorrow that we note the death of friend and brewer Gil Ortega. Gil died Feb. 19 from an accident he suffered two weeks earlier. As supervisor of the Adolph Coors Co. pilot brewery in Golden, Colo., Gil introduced hundreds of homebrewers to the world of professional brewing. He will be remembered by the AHA staff as the first professional brewer we had the privilege of knowing. He was a gentleman of the brewing industry who best exemplified the true spirit of "the community of brewers," ready to lend a helping hand whenever he could. We will miss him.

himself" to mean that you can't do anything with homemade beer or wine except drink it at home, thus rendering competitions like the Dixie Cup illegal.

Birdwell and the Foam Rangers planned to put their case before the Texas legislature in May.

The Sixth Annual Dixie Cup with proposed theme, "beer, tasteless music and flatulence," will be held in October.

Microbreweries Increase Sales

The decade-old microbrewery and pub brewery industry has captured one-tenth of one percent of the total beer sales in the United States,

according to information released by the Institute for Brewing Studies.

That milestone is "quite an achievement," said Institute Director Charlie Papazian, considering the "magnitude of the presence of the major breweries in the market."

Statistics covered in the March/April issue of *The New Brewer*, show that the 123 breweries, 54 microbreweries and 69 pub breweries represent a 68 percent growth over last year. The breweries are producing more than 25 different beer styles.

Correction

Some figures were incorrectly listed in the article "Wheat Beers" in *zymurgy* spring 1989 (Vol. 12, No. 1).

In Table 4 (Ingredients for Five Gallons of Grain Wheat Beer), the figures for Caramel-40 and Black grist are shifted over one column to the right. The correct figures for Dunkel Weizen are in the Weizen Bock column, and the correct figures for Weizen Bock are in the Berliner Weisse column. Our apologies for the errors.

Small Brewery Update

FORT BRAGG, Calif. — The North Coast Brewing Co., a brewpub housed in a building that was once a mortuary, began selling beer in October 1988.

AHA Sanctioned Competitions

Wort Processors Win Hail to Ale

Five judges deliberated for three hours in a blind judging before awarding the best of show to the Boston Wort Processors in the first national "Hail to the Ale" India Pale Ale club competition.

Boston Wort Processor Steve Stroud took the competition with his Beechwood Biscuit IPA, an extract-based homebrew aged with beechwood chips.

Second place went to the Kansas City Bier Meisters, whose Walt Makin brewed up a pale ale named Christmas Ale. Dennis Arvidson and Cindy Grove took third place for the Maltose Falcons of southern California with their Rust India Pale.

Amateur Brewers of Central New York

Kim Mills took best of show with a light ale, as

well as second-place honors in two other categories at the Amateur Brewers of Central New York's annual homebrew competition April 17.

Other first-place winners included Dick Goyer for light lager, Bob Beaudoin for dark ale, Jamie Veitch for stout and John Barry for specialty beers.

The competition, held at Danzer's Restaurant in Syracuse, drew 29 entries from 13 homebrewers.

Owner Mark Ruedrich and assistant brewer John Jelic are putting out Red Seal Ale, Scrimshaw Pilsner, Ruedrich's Red Seal Ale and Old No. 45 Stout.

MAMMOTH LAKES, Calif. — The Mammoth Lakes Brewing Co., a seven-barrel malt extract brewpub with 45 seats, is located in this town of 5,000. Owner Fred Kukulius bought his brewing system from John I. Cross Distributing to produce Lundy Light, Bodie Bold and Dogtown Ale. At 8,000-feet in altitude, it may be the highest brewery in North America.

MONTEREY, Calif. — Cannery Row, made famous by author John Steinbeck in a book of the same name, is home of yet another new brewpub — the Monterey Brewing Co. A converted dairy barn has become a seven-barrel brewhouse where the beers Whale's Tail, Pacific Porpoise Porter, Abalone Amber and Sea Lion Stout are brewed with malted barley and whole hops. Brewer Mark Lewis said whales can occasionally be seen from the parking lot overlooking the bay.

NAPA, Calif. — Willett's Brewery, in the heart of California wine country, is housed in the area's only authentic art deco building. The 7.5-barrel brewhouse produces Victory Ale, a dark amber brew; Tail Waggin' Ale; Full Moon Light Ale and Old Magnolia Stout.

SAN LUIS OBISPO, Calif. — The SLO brewpub, owned in part by *Sports Illustrated* model Kathy Ireland, opened last September in a historic building. Equipment was designed by Michael Lewis, Ph. D., and brewing is being handled by Mike Hoffman.

DURANGO, Colo. — Carver's Bakery has added brewing equipment to its popular bakery. Owners Bill and Karen Carver bought the Continental Breweries Inc. system from the Century Hall brewpub, which burned down last year. The seven-barrel malt-extract system is making Animas City Amber Ale and a Honey Pilsner with 60 pounds of honey in a 200-gallon batch. The breakfast-bakery area is separated from the Tap

Room, where the brewery is housed in 1,000 square feet of space.

INDIANAPOLIS, Ind. — Naptown Brewing Co. is the first brewery to open in Indiana in 40 years. Owners Rick Harris and Tom Peters, both former restaurateurs, are producing a premium lager called Main Street.

LAWRENCE, Kan. — The Free State Brewing Co. opened early this year, becoming the state's first legal brewing company in more than 100 years. Kansas was the first state to enact Prohibition in 1880. The 5,500-square-foot building formerly housed a trolley depot and is next door to the historic opera house.

ABITA SPRINGS, La. — Abita Brewing Co. is contract-brewing Mulate's Cajun-Style Beer for local restaurateur Kerry Boutte.

GALISTEO, N.M. — New Mexico's second microbrewery is operating in 2,500 square feet of space at the Flying M Ranch, a quarter horse breeding ground. The 1,000-barrel-per-year brewery produces Santa Fe Pale Ale. Owner Mike Levis said New Mexico "has 23 new wineries so I knew I didn't want to open another one."

ROCHESTER, N.Y. — Kevin Townsell, owner of Buffalo Brewpub, has opened a second brewpub in Rochester. Rochester Brewpub is housed in a hotel and makes several specialty beers, including amber ale, oatmeal stout, wheat beer and red ale.

ADDISON, Texas — This northern suburb of Dallas is home to Addison Brewing Co., the state's second microbrewery, following in the steps of the Reinheitsgebot Brewing Co. The 32-barrel equipment is from the old Riley-Lyon/Arkansas Brewing Co. The company's flagship product is Double Eagle, a malty amber lager.

STURGEON BAY, Wis. — Oliver's Station Restaurant and Cherryland Brewing became Wisconsin's third brewpub last year. Brews include Golden Rail, a dark lager; Silver Rail; and Ollie's Cherry Ale, a Belgian-style kriel beer. The 70-seat restaurant has a view into the brewhouse.

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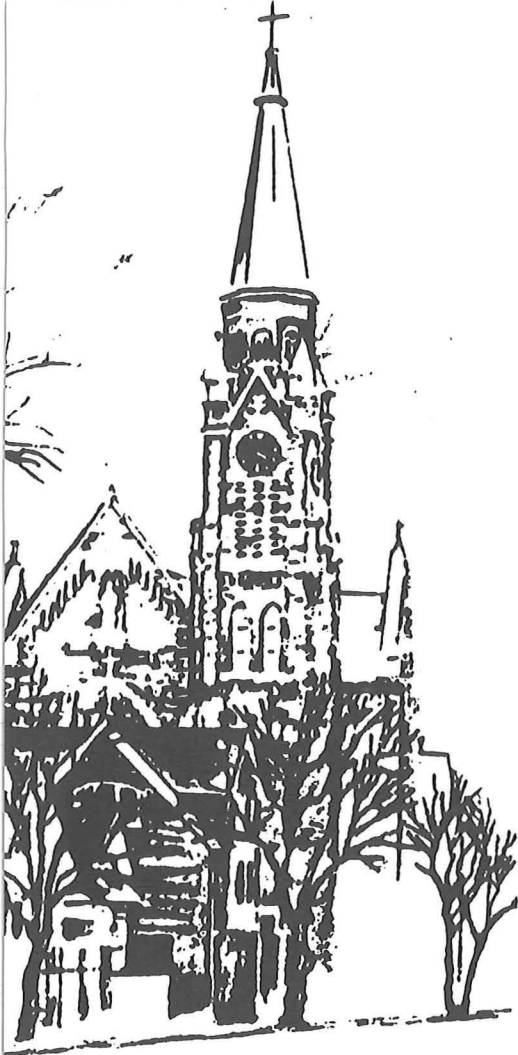


f he hadn't started homebrewing, we probably wouldn't be here today." That much was easily agreed upon. "Here" is the Lakefront Brewery, the nation's smallest, and "he" is Jim Klisch, who along with his brother Russell and partner Carson Praefke, are living every homebrewer's dream.

MARTY NACHEL

Their dream started in the early 1980s. Jim was a year or so into his newfound hobby when he was joined by Russell and Carson. Once they became proficient at brewing, they entered and won many competitions together, including the Wisconsin Vintners' Association's competition and the Wisconsin State Fair, at which they won best-of-show in 1984. Eventually they worked their way up to the American Homebrewers Association National Competition where they have won two second-place ribbons and one third-place. Five hundred gallons of homebrew later, they had amassed a remarkable collection of 35 ribbons in a span of three years.

Encouraged by their early accomplishments, the trio decided to incorporate and investigate the viability of brewing commercially. They first attempted to set up a



brewery in a residential structure Jim owned. Because this ran contrary to city fire codes, licensing was denied and they were forced to rethink their objectives.

By October 1985 the fledgling corporation purchased a small building with great potential in the ethnically mixed Riverwest neighborhood on Milwaukee's north side. By coincidence, the little brown building on Chambers Street once housed a bakery and now, in a poetic twist of fate, yeast once again meets grain. It proved to be an ideal situation. Not only did the building have a tall ceiling to facilitate a gravity feed system, but a large, centrally located drain as required by plumbing code.

In addition, the building included four apartments up front, two of which are occupied by Russell and Carson. Rent from the apartments covers the mortgage on

the building, reducing the brewery's overhead considerably. Only one major obstacle lay in the path to becoming a brewery: zoning laws restricted the Riverwest area to neighborhood shopping. In order to make their dream a reality, the corporation had to petition the city government and request a change in the existing law. A variance was granted that designated the area as light manufacturing. At last, the brewery-in-waiting had found a home.

\$25,000 Startup Costs

Soon the search for equipment began, but not before satisfying the city building inspectors. By the time the first grain was cracked, no less than five codes had to be met: construction, plumbing, electricity, ventilation and health. Most of the work was done by the corporate members with minimal help from friends and tradespeople.

As for the brewing equipment, it's nothing new, literally. The Lakefront Brewery's hybrid system is à la Dr. Frankenstein, made from various parts discarded by other breweries and food-industry businesses. Schlitz, Pabst, Sprecher and Pepsi hand-me-downs have been put to good use. In this way initial cash outlay for equipment was kept around \$15,000. Total startup costs were a mere \$25,000. What is most impressive is that the whole operation was bankrolled out of personal savings.

Another interesting item is that all their popularity and success have been achieved with an almost nonexistent advertising budget. Besides sweatshirts, T-shirts and table tents, most of their

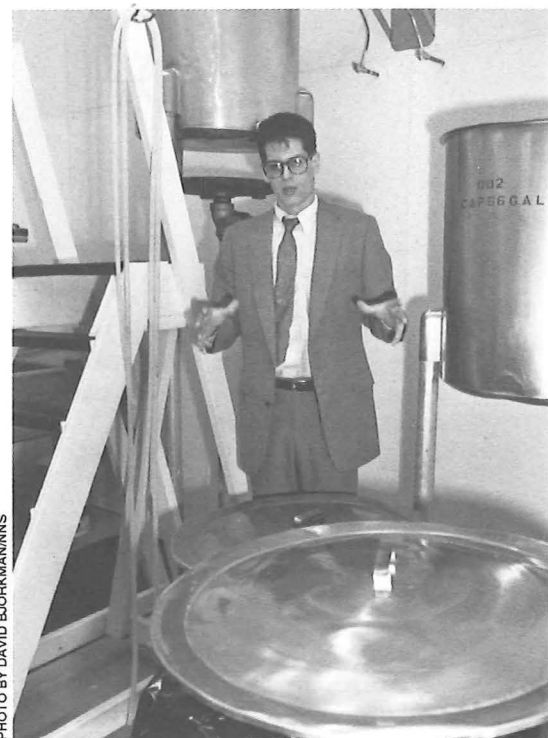
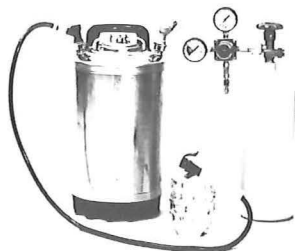


PHOTO BY DAVID BJORKMAN/NNNS

Russell Klisch, partner in Lakefront Brewery, in the brewhouse.

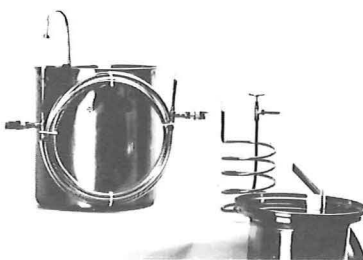
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advertising has been done for nothing, thanks to favorable press coverage. Last year, for example, the brewery sponsored the annual Riverwest neighborhood 10K Run and Festival. They plan to get involved in civic functions as well.

In the beginning there was only one draft account, Gordon Park Pub, right in the neighborhood. It was there on Dec. 12, 1987, that the Lakefront Brewery debuted its first product, Klisch Beer. Soon afterward a second brew, Riverwest Steinbeer, was introduced. A visit to the brewery in March 1988 revealed the virtuosity of the brewmasters. In addition to their regular beers, a bock and a cherry beer were on tap.

Experimental Beers

A subsequent visit to the brewery in January 1989 provided an opportunity to try an experimental variation on the Steinbeer, jokingly referred to as Riverwest Dry and one of the best smoked beers between here and Bamberg, Germany. They also have tried their hand at wheat beer and pumpkin beer. They say they will try anything once and are not adverse to going against the mainstream beers. Like most homebrewers, they like to brew beer with real character. All of the products brewed at Lakefront

are of the lager variety, made from domestic 2-row grain from any one of the three Wisconsin malt houses. Several varieties of hops are used including Hallertau, Saaz, Galena, Eroica, Willamette, Chinook, and Hersbrucker. The yeast used at the Lakefront Brewery is a C. Schmidt strain from the Siebel Institute.

The original brewhouse equipment was sufficient to brew a single three-and-one-half barrel batch per week. The total barrelage for 1988 was 70 barrels. At this rate it was difficult to maintain a supply to meet the demand for their beer. By year's end, three more draft accounts were added, requiring an expansion that began last New Year's Day. The recently purchased stainless-steel kettles had to be installed, but not before knocking a hole in the outer wall large enough to accommodate them. In need of manpower, they went over to their nearest account for assistance. With free pitchers of Klisch Beer as incentive, volunteers were readily available. In the span of a single afternoon the mission was accomplished. The equipment was up and brewing by Jan. 8.

The new seven-barrel system allows them to brew less often and still produce more beer. Estimated output for 1989 is set at around 200 barrels. Thus far, they have been

putting in as few as 20 hours and as many as 60 hours per week between them. In addition, all three still maintain full-time employment outside the brewery. If the anticipated growth is realized, Russell intends to leave his job as a process engineer to devote all of his time to the brewery. Jim, a Milwaukee policeman, and Carson, employed by the state's largest auto parts manufacturer, may eventually follow suit.

In late August last year on the eve of the Institute for Brewing Studies Microbrewers Conference, the preconference brewery tour arrived in Milwaukee to visit that city's small breweries. By some strange omission, the Lakefront Brewery was not included on the itinerary. Once the invitation was extended, however, there was no need for arm twisting. Though late in the evening, the entire group boarded the bus to check out what one person later described as the best stop on the tour. So impressed were the representatives of the Association of Brewers by this mini monument to ingenuity and perseverance that they invited Russell to speak at the American Homebrewers Association's Conference on Quality Beer and Brewing at the Oldenberg Brewery in June.

Russ, Jim and Carson would like to pass on a few suggestions to those who endeavor to follow their lead: (1) Investigate all government requirements regarding breweries from federal law to municipal codes. (2) Buy all secondhand equipment (check out restaurant auctions). (3) Save all receipts, and (4) Make good beer. Actually, that last one wasn't mentioned and didn't need to be. Their actions speak louder than words.

Marty Nachel is a fifth-year member of the Chicago Beer Society homebrew club and is on their Board of Directors. He also is a fourth-year member of the American Homebrewers Association as well as a Recognized Judge in the AHA/HWBTA Beer Judge Certification Program. When not homebrewing, Nachel is a free-lance writer on beer and brewing.



Michael Matucheski grows his own hops and grains, does his own malting, cultures his own yeast and ferments in oak barrels.

Scratch Brewing

I was born for Belgian beers, particularly the lambics and the sour browns. Ever since their

discovery 10 years ago while on a somewhat disastrous bicycle trip that led me in retreat across Belgium, these "wild beers" never fail to please my palate, no matter what my mood. Their ancient brewing and fermentation techniques are an irresistible draw that continues to challenge and corrupt my brewing skills. They are beers out of step with our modern times that continue to defy scientific analysis and our mediocre mass-marketing mania. They blend so perfectly with my better small than sprawl ethic that I best express through my organic fringe farming and my scratch-brewing.

I became a homebrewer out of necessity. I absolutely hated common commercial beers. Like most homebrewers, I started with canned malt extracts and too much corn sugar, but

MICHAEL MATUCHESKI

the Belgian Browns

quickly learned, by trial and error, the rewards of all-malt beers. While officially studying East European history in England during 1978-79, I immersed myself in the local university's real ale and homebrew societies where I had access to all manner of materials and equipment. It was there that I learned the basics of all-grain brewing with the luxury of electric mash bins and boilers and a borrowed firkin to brew the very best best bitter.

All-grain brewing gave me the greatest flexibility, pleasure and an illusion of control, but on returning home I found the availability and price of whole-grain malts to be spotty and outrageous at best. The same was true with hops. Brewing in a vacuum, I felt the best way to meet my needs was to start from scratch, quite literally from the ground up. A complex of circumstances eventually led me back to the Wisconsin home farm where I

drifted into the position of caretaker of land and family. From there, scratch-brewing was only natural, but rarely easy.

Grain-growing was simple enough but still had its share of compromises and disappointments. The preferred 2-row barley was unobtainable in Wisconsin, so I had to settle for the local favorite 6-row types: Morex, Robust and Hazen. Yields were poor at first as years of "strip-mine" farming had taken their toll on the soil. Still, the quality of the barley was quite high and that is what matters the most. I had better luck with oats, but less with wheat, and I employ all these grains as well as rye, either malted or raw, in many of my beers.

The grains are planted and harvested with conventional farm machinery, although the equipment is more contemporary with the late 1950s. I plant with an ancient wooden-wheeled grain drill and har-

vest with the tiniest of pull-type combines, a slow process but economically efficient on my small scale.

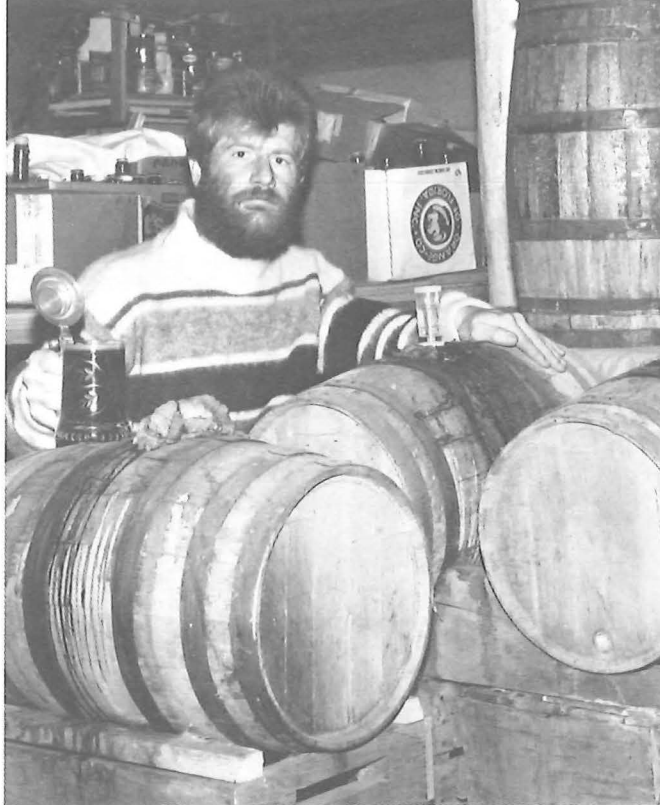
Malting the Grain

After harvest, the grains are stored in an upstairs granary where they sit for two to three months before I have a chance to malt them. On one occasion, I malted barley straight from the combine, a practice that is quite contrary to the common belief that grains must lie dormant for a period of time after harvest because they apparently contain some natural germination inhibitors that must be aged away.

I clean the grains as needed with a hand-cranked fanning mill (circa 1900) that came with the farm when my grandparents bought it. It consists of a hopper that drops the grains onto a series of screens that shake when the crank is turned. The crank also powers a fan that blows away the chaff and the lighter weed seeds. The cleaned grains exit from a side spout at the bottom and into an old wash boiler.

The grains, usually a bushel at a time, are then steeped in 50 degree F well water in an old tin-plated milk house wash tank now located in my cellar. Floating debris, mostly light and broken kernels, is skimmed off before changing the steep water after the first 24 hours. Twenty-four hours later, the grains are drained off the steep water and transferred to the malting boxes.

My malting boxes are constructed of 1 by 4 inch hemlock and measure 2 by 4 feet. Stainless steel or aluminum hardware mesh is stapled to the bottoms. Within 12 hours the grains will start to chit (sprout). I occasionally mist the grains, heaped in as high a pile as possible in the box to keep the surface from drying out. Twenty-four hours later, the pile will begin to heat up and give off a pleasant fruity aroma. Its internal temperature will hover just below 70 degrees F. At that



Michael Matucheski's cellar is full of oak casks for fermenting his Belgian beers.

point, I turn and mix the pile to admit more oxygen and to better regulate germination. Once the pile is heating well, I turn it frequently, roughly every eight hours. This helps keep the grains from matting, allows a more even rate of germination and produces a mellower malt.

Forty-eight hours after the first signs of chitting, I check the grains for degree of modification by scraping the husk away from the dorsal (rounded) side of the kernel in order to see how far the acrospire (shoot) has grown. When it has reached at least three-quarters the length of the kernel, I transfer this green malt to the drying kiln.

I am now on my third generation kiln, each succeeding the last in size and complexity. My latest drying kiln is a box constructed of six 4 by 8 foot sheets of half-inch plywood with 2 by 2 inch supporting members. It contains three shelves placed at an angle 10 degrees above horizontal onto which screens are placed. The kiln was originally designed for drying herbs, still its major function. Heat is provided by a wood-fired furnace whose two hot-air ducts are piped into the lower front of the drying box. A baffle in the front of the box helps to break up the

airflow as does the placement of the screens. A common box fan is located at the upper far end of the box and draws the moist air off the grains.

The green malt is dried at 100 to 120 degrees F for 24 hours. For a classic pale malt, the temperature is raised to 140 degrees F for several hours at the end of the drying cycle. I produce crystal malt in the oven of my wood-fired cookstove, stewing the malt in a whole-grain mash for two hours at 151 degrees F before its final roasting at 248 degrees F. All malts sit for 24 hours to cool and equalize moisture before bagging, unless there is a brewing emergency.

Growing the Hops

My organic hop yard occupies approximately one-quarter acre. The first rhizomes were planted in 1982: ten Cascades, two each of Hallertau and Tettnang. The following year I added pairs of Fuggles, Bullions and Willamettes. Recently I obtained a few Hersbrucker and Elsasser rhizomes but I have had only limited success with them. Bullion is by far the most vigorous hop in my area, followed closely by Cascades and Fuggles. The hop yard now has more than 400 hills, mostly Cascades, which I propagated from the original plants, the mother rhizomes having been purchased from a variety of homebrew shops and smaller commercial hop yards.

The yard is laid out in rows six to eight feet apart with the hills three to six feet apart within the rows. There are three 18-foot high poles per row from which heavy merchant wire is strung along the tops and anchored at each end by fence posts. Common baler twine is used for strings and held in place by wooden stakes. I use in excess of 20,000 feet of twine per season. A fish emulsion and kelp mixture is sprayed on the vines at biweekly intervals and acts as a combination fertilizer and pest deterrent. Spider

mites remain the greatest nuisance, especially following the too late drought-breaking rains last summer.

The picking season lasts from mid-August until late-September. All hops are hand-harvested and are dried in the multipurpose kiln described earlier. I can pick, on average, eight pounds (dried) per day in addition to my regular herb-harvesting chores. The average batch is dry in about eight hours. The hops are then transferred to boxes to sit for 12 hours, to equalize their moisture content and to limit shattering, before they are bagged and refrigerated. Yields have been below average, but so has the weather, to say nothing about the strength of the local silt loam. Last season I harvested nearly 200 pounds and left about 40 pounds on the vines that were severely damaged by frost and spider mites. Still, that leaves me with more hops than even I can use at present. The excess I sell to fellow homebrewers and the friendlier homebrew shops.

Mashing

My mashing set-up is a variation of the double plastic bucket mash-lauter tun used by many all-grain brewers, although I have been known to use a perforated birchwood disk as a false bottom. When mashing the wilder Belgian beers, I clean the disk with repeated hot water soakings and an occasional dash of bisulfite, the latter more of a placebo than anything else. I do have a stainless-steel mash-lauter tun in the works that should greatly increase my brewing capacity.

My malts and grains are ground with a hammer mill picked up at a farm auction. I employ a simple infusion mash, holding at 151 to 153 degrees F for about three hours. This works quite well with my normally well-modified malts and soft, slightly acidic brewing liquor. I usually have conversion in under two hours, even when using better than 50 percent raw grain adjuncts because my 6-row barley malt is jumping with enzymes. Sparging is the conventional slip-slide method advocated by University of California-Davis Professor Michael Lewis. I sparge to collect at least six and one-half gallons of sweet wort.

My brew kettle is an over-the-hill

Sankey keg fitted with a spigot. Boiling is accomplished on my wood-fired cook stove and will last from one to three hours, depending on the beer in question. Hops are added in stages, the timing of which varies from beer to beer, but is generally three-quarters of the total hop bill for the main boil with the remainder for finishing.

A one-hour hot break follows the boil. The method of cooling the bitter wort depends on the type of beer and the time of year. Most are simply cooled outdoors by the natural refrigeration of a normal Wisconsin winter.

Clean beers are chilled with a copper coil immersed in the kettle. The wilder Belgian brews are cooled in the granary over a period of eight to 12 hours after being run from the kettle. For all beers, an actively fermenting yeast culture is pitched when the wort temperature reaches 70 degrees F.

Culturing Yeast

I have used all manner of yeasts and the occasional bacillus in my

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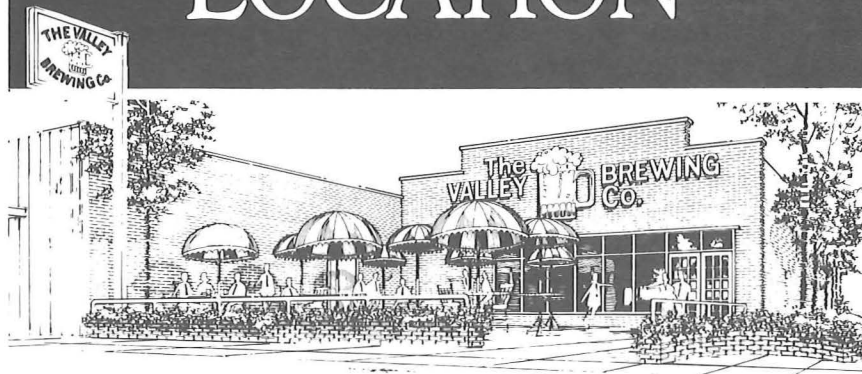
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beers. I have had very good luck with both Wine Lab and Wyeast liquid yeasts, especially the alt and weizen cultures. For Belgian beers, my yeasts are cultured from bottles, most of which I have hand-carried from their source. I have had mixed results culturing from bottles that have weathered the normal import route. Most are simply too old, although my "Goudenband" culture was from a bottle purchased two years ago in Green Bay.

My yeast-culturing technique is very simple. Sterile wort is funneled onto the dregs in a freshly emptied bottle, capped and then thoroughly roused. The cap is then removed and the bottle fitted with an airlock. Once active, the culture is transferred to fresh wort in pint jars in order to build up the volume of the yeast before pitching into the main wort. I have had spectacular success with this method, having cultured the relatively normal Trappiste yeasts as well as the mixed cultures of assorted lambics, Hoegaardse Witte, and even a Berliner Weisse. The biggest problem I find with these cultures is trying to maintain them, because most either die out or are adversely affected over my always hectic summer when brewing comes to a standstill.

Oak-barrel Fermentation

Primary fermentation for my wild Belgian beers, which includes the award-winning "Goudenband," all my fruit beers (a blend of the sour brown and lambic styles), as well as the odd Berliner Weisse, takes place in a 15-gallon oak rain barrel which I bought new five years ago. Repeated use and cleanings with boiling water have removed most of the original paraffin lining, allowing the wood to become "infected" with various yeasts and bacteria. The pulp primary fermentation of unsterilized fruit has no doubt also contributed to the rain barrel's micro-climate.

Secondary fermentation for the preceding beers is carried out in oak casks for at least three months. "Goudenband" spent eight months in oak. I now have two 10-gallon and two five-gallon casks that range from six to seven years in age. They were originally paraffin-lined. I also have

one 10-gallon cask that has a charred interior, now two years old. It is filled with an ever-surprising sour brown, an offspring of my "Goudenband." All the casks have been treated much like the rain barrel primary and therefore have been subject to a multitude of yeasts and mysterious other ferments.

Conditioning beers in oak is not without problems. My cellar is exceptionally dry, and because wood is porous, a certain amount of evaporation takes place. While the exchange between the oak and the beer is essential to these wild styles, too much ullage (the space between the beer's surface and the bung hole) will allow undesirable infections from a host of aerobic bacteria and wild yeasts which can detract from the taste and the appearance of the finished beer. Usually, this is not a problem until after the first month in secondary when the beer's production of carbon dioxide has diminished.

Therefore, in order to "control" the infection, I remove the airlocks and top up the casks with a similar

beer, or failing that, fresh wort, or in a pinch, hot water straight from the tap.

Cleaning the casks between batches consists of boiling-water rinses. I make every effort to keep the casks filled with beer. But, if I am short of beer or expect to be away for an extended period of time, I partially fill the empty casks with a weak sulfite solution to deter the nastier bugs.

Bottling

My bottling process is pretty standard. Priming is accomplished with the addition of either one-half gallon of fresh wort to the aged beer, or by a 50-50 blend of similar beers to set off a third fermentation in the bottle. Adequate carbonation is usually achieved within one month. I use standard beer bottles and crown caps in most cases, but lately I have been laying down a portion of my blends in corked Champagne and "lambic" bottles and find this gives my wild Belgian beers even more character.

I wish good luck to anyone daring

enough to enter the wilderness of scratch-brewing and the magic world of the wilder Belgian beers. And while the risks are many, there are few beers that are so rewarding.

Michael Matucheski, a historian, has been a homebrewer for 13 years and a scratch-brewer for the last nine. He is an organic farmer who specializes in custom-harvested and dried herbs and vegetables, in addition to raising the more traditional forage and feed crops. He hopes to open his own microbrewery someday, using only home-grown organic ingredients to produce beers with a decidedly Belgian character. His other passions include bicycle touring and Polish liaisons, which he combines whenever possible.

Michael's Belgian-style ale, "Goudenband," won first place in its category at the 1988 National Homebrew Competition. See the 1988 Special Issue of *zymurgy* (Vol. 11, No. 4), p. 54, for the recipe.



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The interior of William Penn's brewhouse, reconstructed in the 1930s by the Works Project Administration.

PHOTO BY RICH WAGNER



Bringing Colonial Malting to Life

Even before the state's founder, William Penn, arrived in his colony in 1682, brewing was fast becoming a prominent endeavor there. Penn's visit lasted less than two years, but in his "greene country towne" of Philadelphia, Pa., Penn reported there was "an able man who . . . set up a large brewhouse, in order to furnish the people with good drink, both there and up and down the (Delaware) River . . ."

Penn erected a mansion at Pennsbury Manor, preferring a country estate for his family. He had a brew and bake house built adjacent to the home. Beer was brewed with malt purchased from Philadelphia, and it is reported that hops were grown in his garden.

Penn's love of beer influenced the laws governing the production of beer in the colony. Beer was preferred over distilled spirits, and domestic production was promoted through tax incentives. The government encouraged farmers to grow barley and hops by imposing tariffs on imported raw materials. From the brewing industry's infancy with that "able man" who knew how to

brew good beer, Philadelphia would go on to become famous for its porter, preferred by none other than George Washington. Eventually, Pennsylvania would become a world-renowned brewing center.

In the city of Philadelphia as well as the outlying areas there are examples of colonial architecture and clues to life in the past. There are even a few sites that provide glimpses into the brewing process of colonial times.

Graeme Park

Graeme Park is a preserved country estate that was home to the proprietary governor of Pennsylvania, Sir William Keith. Recent attempts to discern the original intent of the structure have been a source of controversy. Was the house built as a malt house, or as a dwelling?

Architectural consultants were hired to do the authoritative work on the estate to guide future restoration and development of the property. Mark Reinberger's assessment indicates that a small malt house was built behind the house. There were plans to build a larger malt house to process the locally grown barley, but due to economic forces they were dashed.

I toured the grounds in May 1987 and arranged to give a malting demonstration. Preparing it was a lot more work than I expected. I had brewed full-mash batches of beer before, and had even demonstrated brewing outdoors, but this malting business was completely different. I consulted *zymurgy*, some obscure 17th-century references supplied by Clare Lise Cavicchi, Pennsbury Manor's curator, and other sources.

Preparations began with a trip to the Farm Bureau for some untreated feed barley. The smallest quantity available was 40 pounds. I proceeded to spread about 20 pounds of soaked grain over a cloth supported by a screen, propped up on blocks in the back yard.

A sample of the grain was taken every 24 hours for four days and placed in a jar to show the sprouting process. The grain was turned regularly, and when most of it had sprouted, it was heated on cookie sheets in the oven. The result was a caramel malt, of sorts.

The Friends of Graeme Park who attended my demonstration were amazed at the complexity of the malting process.

PHOTO BY RICH WAGNER



RICH WAGNER

Hecklerfest

The Heckler Plains Folklife Society is dedicated to bringing colonial crafts alive and to making people aware of what life was like in the past. I was asked to brew beer at their annual Hecklerfest in September 1987 and 1988. With my homebrewing partner, Dan Brosious, we wowed and zowed countless Hecklerfesters with a full-mash

Brewing and

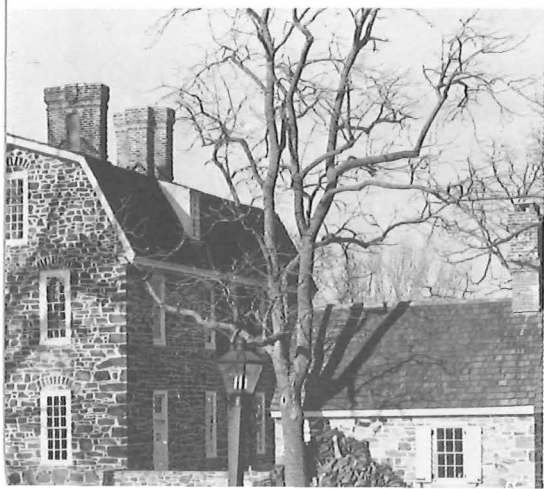
brew from start to finish. The recipe included 25 pounds of 6-row fancy and about five pounds of homemade caramel malt from the Graeme Park demonstration, and some hops grown in Montgomery County, Pa.

For the uninitiated, it is always astounding to see how involved brewing a 10-gallon batch of beer really is. To many, beer is just something that comes out of a tap or bottle. Along with the blacksmith, butter churners, spinners, weavers and quiltmakers, and a wine-maker across the way, the brewers fit right into the act. As an added attraction, Charlie Brem from the Homebrewers of Philadelphia and Suburbs contributed his expertise and some heavyhanded hop additions.

Pennsbury Manor

Pennsbury Manor has beautifully landscaped grounds surrounding buildings reconstructed by the Works Project Administration in the 1930s. The gardens are attended by

Graeme Park: malthouse or dwelling?



Charles Thomforde and include flowers, grape arbors, corn, flax, herbs, spices and other plants.

On a visit to Pennsbury Manor in 1987 I began talking to Thomforde about hops in Penn's garden. He explained that several years ago he had transplanted some hops he found growing on a fence to the

barrels will have wooden hoops. Imagine homebrewing without plastic tubing and liquid bleach! Thinking about the flavor of a dry-hopped ale made from molasses and fermented at room temperature for 24 hours staggers the imagination.

Cavicchi brewed brown ale using a colonial recipe that called for yeast



PHOTO BY DAN BROSIOUS

Rich Wagner (far left) giving a brewing demonstration at the Hecklerfest, September 1988.

garden. I observed they would yield better if they were trained to climb a trellis, which he made of sapling poles to be as authentic as possible.

By mid-July the plants were struggling from the heat and dry weather, but they rebounded by late August and that year the volunteer staff harvested about a pound of hops from the six or eight vines.

Visitors can now see some of the raw materials used in beer making before they enter the bake and brew house. The volunteers received hop pillows for their efforts. In colonial times hops were placed in pillows for their calming or sedative qualities to promote sound sleep.

Fortunately for the Pennsbury Society, Cavicchi has researched beer brewing on Penn's estate. She has begun working out the details for outfitting the brew house, so that future visitors may actually see beer being brewed as it was during Penn's time.

Plans stress authenticity, so the

to be added to the wort when it was "blood warm" (a description used prior to the invention of the thermometer). Her first batch was really good.

Cavicchi has contracted with a craftsman in New Hampshire who specializes in recreating artifacts from the past. Based on her research, she has ordered a scoop, funnel and tun dish, three barrels, three coolers, one working tun, mash tun and underback, as well as some small utensils. She hopes that brewing will begin sometime soon.

Rich Wagner has conducted research on Pennsylvania's brewing history with partner Rich Dochter since 1980. They have amassed an inventory of more than 400 sites throughout the state. In addition, Wagner has been homebrewing since 1983. He has given homebrewing and malting demonstrations and grows hops for brewing.

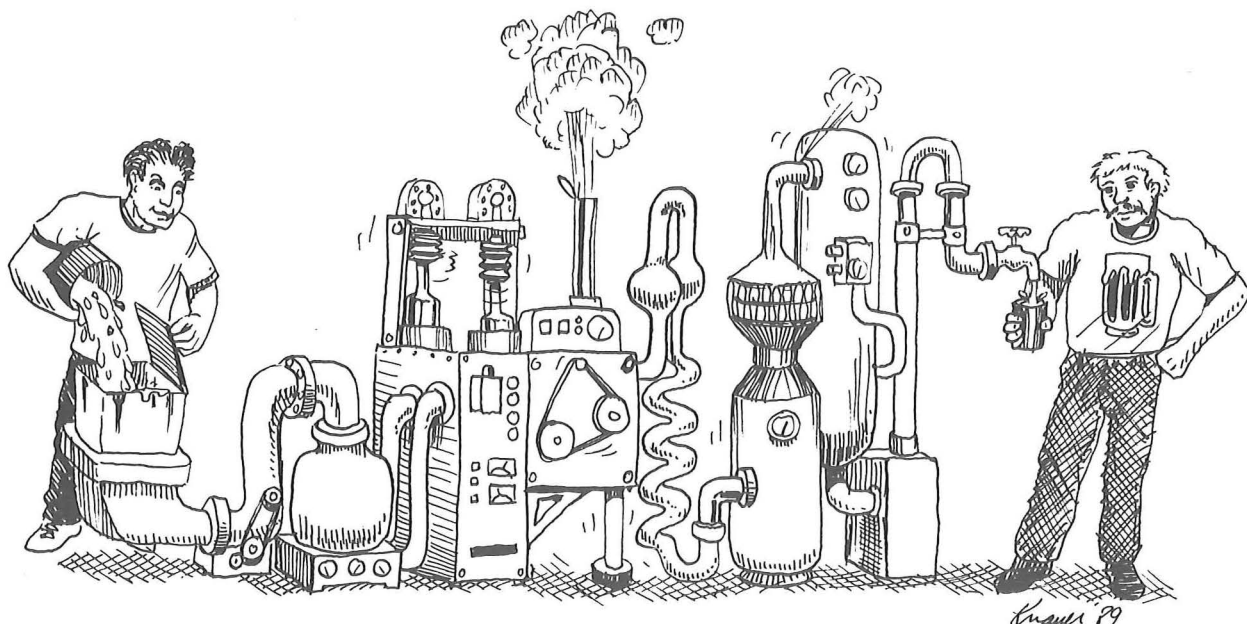


ILLUSTRATION BY SCOTT KNAUER

Trends in Water Treatment

Continuing concern about the quality and safety of our public water supplies has led to revisions of the standards promulgated by the Environmental Protection Agency. Gradually these new standards will bring changes in the way many communities treat their water. As homebrewers, we need to become aware of what these changes are and how they may affect the quality of our beer. But before we can understand the rationale for the new standards, we need to get an overview of water treatment procedures.

Steps in Water Treatment

Most large municipalities draw their water from surface supplies: lakes and rivers. Treatment of these waters follows a general pattern that can be summarized as follows:

Sedimentation → Filtration →
Aeration → Softening →
Chlorination

Often these steps are not carried out in the order shown here, and some

may be omitted entirely, especially in small communities with limited resources and facilities. However, each one plays an important role in creating safe, palatable drinking water.

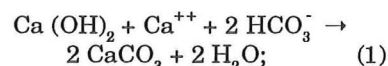
Sedimentation involves nothing more complicated than letting the raw water stand in large, artificial ponds until most of the solid particles settle out. Often alum (potassium aluminum sulfate) is added to help coagulate organic matter and speed precipitation. However, some particles are too fine, or too light in weight, to drop out in a reasonable amount of time, so the water must be filtered.

The filters are shallow pools with layers of sand and gravel at the bottom. Beneath the bottom layer of sand are collecting pipes to carry the filtered water away. Usually the layers are arranged with progressively finer sand towards the bottom. Water is pumped into the pools and slowly drains through the filtering material. Each layer traps smaller particles than the one above it. The water may

go through more than one filter. At the end of this step, all visible particles, including almost all the organic matter, will have been removed, and the water will be clear.

Aeration ponds contain pumps and sprinkler nozzles that continually spray the water into the air to oxygenate it. This step causes most of the heavy metal ions (iron, zinc, and so forth) in the water to form oxides, which are insoluble and precipitate. Water that has not been aerated will usually have a metallic taste.

Water is softened by adding slaked lime (calcium hydroxide) in carefully calculated amounts. The purpose is to remove calcium ions (hardness) and bicarbonate ions (alkalinity) from the water. The chemical reaction is



That is, one molecule of calcium hydroxide combines with one calcium ion and two bicarbonate ions to produce two molecules of calcium carbonate (which precipitate) and two molecules of water.

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Softening the water by removing calcium (and magnesium, which follows a similar reaction except that one molecule each of calcium and magnesium carbonate is formed) minimizes scale buildup in supply pipes and water heaters, and allows more efficient cleaning with less soap or detergent. Because it lowers alkalinity, the process is helpful for brewing and in fact is often carried out in breweries located in towns that do not soften the municipal water supply. The benefit of removing alkalinity is that it makes it easier to establish the proper pH (5.0 to 5.5) in the mash and wort. In the days before water treatment, only dark beers (which use a proportion of naturally acidic roasted malts) could be brewed from alkaline water supplies.

The final step in most water treatment programs is chlorination. The effectiveness of chlorine as a bactericide is well known to homebrewers, and it is used for exactly the same purpose by water companies. However, only a tiny dose is required, because the water leaving the treatment plant is (or should be) germ-free, and all that is needed is to ensure that it stays that way in the delivery system.

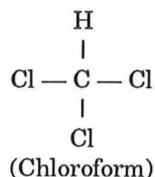
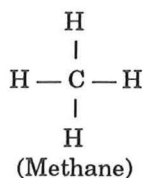
The New Standards

With this background, we can look at the changes the EPA has made in its water quality standards. The first one involves chlorination. To be safe, water must not only be germ-free when it leaves the water plant; it must stay that way all the way to the consumer's faucet. Chlorine is volatile, and tends to come out of solution and dissipate in the atmosphere. Water supply lines are never perfectly sealed, so chlorine tends to "gas out" as it passes through the pipes on its way to homes and businesses. The chlorine level of water at the tap is always lower than when it left the plant—sometimes dangerously so.

The EPA's new standard says that water supplies should contain .5 parts per million (ppm) of chlorine. If the level drops below .2 ppm, anywhere in the system, the water company must issue warnings to customers. Because of the volatility problem, many water companies have to use

high levels of chlorination to meet this standard.

However, increasing chlorination runs the water companies head-on into another EPA standard. This one has to do with the level of trihalomethanes (chiefly chloroform) in the water. Trihalomethanes are compounds formed when organic matter reacts with chlorine, which is an extremely powerful oxidizing agent. It is much stronger, in fact, than normal molecular oxygen. Chlorine can replace the hydrogen atoms in methane gas to form chloroform. Scientific studies in recent years have raised increasing concern about the carcinogenic potential of this compound.



As you can see, chloroform has the same molecular structure as

methane, except that three of the four hydrogen atoms have been replaced with chlorine atoms. Chloroform is called a trihalomethane; the "halo" part of the name reflects the fact that chlorine is a *halogen* (a member of the same chemical family as fluorine, bromine and iodine). However, do not be misled by the diagrams into thinking that chloroform is only created when chlorine encounters methane gas. It is capable of tearing the carbon atoms out of almost any organic molecule with the same result.

The rub is that, while proper treatment will remove *almost* all the organic compounds from water, almost in this case is scarcely good enough. The standard calls for THM levels of below 100 parts per *billion*, which is the same as .1 ppm. Such levels are very difficult to achieve while still maintaining the recommended level of chlorination. What's a water chemist to do?

The first measure most companies take is simply to move chlorination to the end of the treatment process, where I have put it in my diagram on page 32. It used to be common to chlorinate rather early in the treatment, before as much organic matter as possible had been removed. This can lead to THM levels 10 times higher than the allowable maximum.

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A more certain remedy is to replace chlorine with ozone, which is an unstable form of oxygen consisting of three atoms per molecule, rather than the normal two. (The formula for molecular oxygen is O_2 ; for ozone, O_3 .) Ozone is just as powerful as chlorine, and if applied early in the treatment, will oxidize all the organic matter in the water, leaving it unavailable for the chlorine that will be added later in the process.

The only trouble with ozone is that it is frightfully expensive to produce, requiring great amounts of power (enough to double the electric bill of most water companies) and a hefty capital investment.

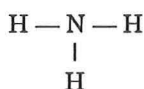
The route most water companies will choose to comply with the new standards will be (1) improved filtration, if necessary, to remove almost all organic matter from the raw water; (2) moving chlorination to the end of the treatment, as described above; (3) in many cases, water softening with slaked lime, if this is not being done; and (4) replacing use of free chlorine with chloramination. The last two steps are the most important for homebrewers.

Chloramination

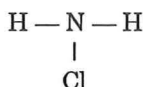
The attractiveness of chloramination lies in its simplicity, effectiveness and low cost. All that is required is to add a molecule of ammonia to the water for every molecule of chlorine. The following reaction will take place:



that is, one molecule of ammonia plus one molecule of chlorine yields one molecule of *monochloramine* plus one molecule of hydrochloric acid. Actually, the latter does not exist in water as a molecule, but as hydrogen and chloride ions (H^+ and Cl^-). Here are diagrams of the main compounds:



(Ammonia)



(Monochloramine)

Monochloramine is so called be-

cause one of the three hydrogen atoms of the ammonia molecule has been replaced by a chlorine atom. Monochloramine is a form of *bound* (as opposed to free) *chlorine*, and it has several advantages for disinfecting water supplies. First, it retains most of the bactericidal ability of free chlorine. But, second, it is less volatile. It does not gas out easily, so chlorination levels tend to be much more steady throughout the delivery system. Third, it is less reactive: that is, it is not as prone to chlorophenol formation. By combining chloramination with the other three steps outlined above, it is possible to produce safe, palatable, soft water with a THM content of under 20 ppb.

Are there any disadvantages? From the water chemist's point of view, only two. The most important is that the reaction shown in equation (2) is pH-dependent. (pH is basically a measure of acidity or alkalinity: 7 represents neutrality, with values below 7 becoming progressively more acidic, and values above 7 progressively more alkaline.) The higher the pH of the water, the more complete this reaction will be. It is best if the

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water has a pH of 9 to 10. Water that has been softened with lime will have a pH in this range, but natural waters rarely have a pH over 8.

At this point we must step aside for a minute and ponder this phenomenon. I just said that lime-softened water has a pH of 9 to 10, while unsoftened water has a pH under 8. But I also said earlier that softening water lowers its alkalinity. How can this be? The answer is that different ions are involved. Naturally alkaline waters have a high concentration of bicarbonate ions, which are not capable of raising the pH of water very high; nonetheless, it takes a lot of acid to neutralize them. The pH of lime-softened water is caused by a relative handful of hydroxyl (OH⁻) ions, which do raise the pH a great deal, but can be neutralized with only a small amount of acid. If this explanation still leaves you puzzled, I apologize; there is simply not enough space to go farther into this aspect of water chemistry here.

In any case, the main point is that lime treatment and chloramination go hand in hand, and are best implemented together. Softening the water

raises its pH and promotes the chloramination reaction. The addition of softening treatment to a water plant is costly (though much cheaper than going to ozone) and many municipalities are probably going to be raising their water rates to pay for this improvement.

The other difficulty with chloramination is that it is harder to manage than simple chlorination. You have to add just the right amounts of ammonia and chlorine to keep the process going right. If things get out of balance, this can lead to the formation of dichloramine. This compound is exactly like monochloramine, except that two of the hydrogen atoms of the ammonia molecule have been replaced with chlorine. Dichloramine is less stable than mono and will lead to off-flavors and odors in the water.

Implications for Homebrewers

In the main, these changes will be good for homebrewers. A supply of soft, bacteria-free water is ideal for cleaning and sanitizing, and home-

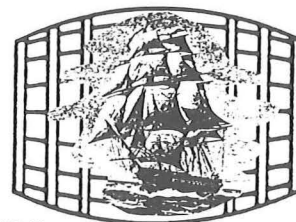
brewers, just like their commercial cousins, use a lot more water for washing and rinsing than they do for beer. Furthermore, increased use of water softening means that fewer homebrewers will have problems caused by high alkalinity. Finally, many companies will actually be able to lower their chlorine dosages without compromising water purity. The result will be safer water with none of the chlorine-related off-flavors and odors that are now so common.

There is, for us, just one hitch, but it is a big one. You will recall that I said that chloramination reaction is pH-dependent. As a matter of fact, it is reversible. As the pH is lowered, monochloramine will react with hydrogen and chloride ions in the water to form ammonia, and our old friend, free chlorine. Now, when you add crushed malt to water to make a mash, or when you add malt extract to water to make a wort, the acids in the malt or extract quickly drop the pH of the mixture to about 5.3. At this level, most of the chlorine will become unbound and go on its merry way.

The problem is that mashes and



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worts are just loaded with phenolic compounds, and there is nothing free chlorine likes better than phenolics. It will react with them to form chlorophenols, a particularly unsavory class of chemicals that can impart medicinal off-flavors at concentrations of a few parts per billion. This danger is particularly insidious because chloraminated tap water shows no signs of trouble before it is put in the brew pot. It totally lacks that swimming-pool odor.

There are at least two ways to avoid this problem with chloraminated water. One is to install an activated carbon filter in your water-supply line. Carbon filtration will remove all chlorine compounds—including THMs, chlorophenols and chloramines—as well as free chlorine. Thus it is a total remedy, regardless of the water treatment system employed by your town or city.

The drawbacks to this approach are two. First, filters are expensive. Second, they make an ideal nursery for algae and bacteria—the very things the chlorine or chloramine were put in the water to stop. Therefore, they may prove to be another instance of the cure being worse than the disease. I recommend the filters which contain a bacteriostatic silver element in addition to the activated carbon. They

are more expensive but should pose fewer risks.

Commercial breweries routinely use carbon filtration on their brewing water, and I do not want to scare anybody out of using them. But keep in mind that the brewing companies follow regular, thorough maintenance schedules, and can check their sanitation using the resources of a fully equipped microbiological laboratory.

I would like to suggest a low-cost, low-tech alternative. Since the stability of monochloramine depends on the pH of the water, and also on its temperature, it is possible to induce the reverse reaction and then drive off the free chlorine before using the water for brewing.

Specifically:

(1) If the water has not been softened, boil it for 30 minutes and let it sit overnight before racking off the precipitated chalk (calcium carbonate). Besides removing most of the bicarbonate alkalinity, the boil should eliminate all chlorine, whether bound or free.

(2) If the water has been softened, lower the pH to around 5.5 with lactic acid. Use an eyedropper, or dilute it 1:25 and add one teaspoon at a time to your brewing water. Use pH papers or a meter. Then either heat the water in an open vessel to 140 degrees F or higher, or let it sit overnight to allow

the chlorine to gas out. The tiny amount of acid required will have no measurable effect on the pH of the mash or wort, or on the flavor of the finished beer. Furthermore, the low pH is actually preferable for sparging. You may still have to adjust the mash pH upward (with calcium carbonate) or downward (with gypsum or calcium chloride), depending on the makeup of your grist.

By the way, if your water company has not yet gone to chloramination, you should definitely remove the chloroform and free chlorine from your water before brewing with it. This can be accomplished simply by heating the water to 140 degrees F or higher and holding it there for half an hour. This is the boiling point of chloroform, and free chlorine gases out very rapidly at such high temperatures. Of course, if you boil your water to remove alkalinity, this gets rid of the chlorine and chloroform as well.

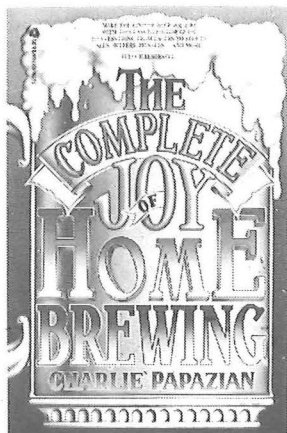
One fact to keep in mind is that *all* the water used to make beer must have the chlorine or chloramine removed. This includes sparge water as well as mash water, and all water used for topping up.

In deciding what needs to be done to it, your first step is to find out what treatment your water has received. And that is the last and most important point I want to make. Almost any domestic water supply can be made fit for brewing. But first you have to find out what is in it and what has been done to it. Water is the most variable of all brewing ingredients, and is, I suspect, responsible for more problems than most homebrewers imagine. You say you've never bothered to call your water company and get a run-down of ion content, treatment methods, and so on? If so, you're working blindfolded. Go to the phone and get enlightened!

Dave Miller has been a homebrewer for 12 years. His all-grain beers have won many honors, including Homebrewer of the Year in 1981. He is vice-president of his local club, the St. Louis Brews, with responsibility for their technical programs. Dave is the author of *The Complete Handbook of Home Brewing*, published by Garden Way.

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Reverse Osmosis Water Purifiers for Home Use

Anyone who has ever tried brewing has been struck by the marked effect that brewing water has on the results. While a fortunate few live near some source of legendary brewing waters, the rest of us find ourselves fiddling around trying to improve tap water. It is pretty easy to add missing things to water: salts, acidity and ingredients. But removing the unwanted contents of your water is another matter entirely.

Traditional water improvement efforts by brewers have involved a combination of boiling and filtration. While these methods enjoy limited success in removing certain salts and gross debris, they have little effect on noxious odors, colors, flavors, other salts and organic chemical pollutants.

Reverse osmosis equipment, long used by industry for both purification and concentration applications, was unavailable to most of us until the mid-1970s. Since then, scaled-down reverse osmosis equipment has become commonplace and prices have dropped to the truly affordable range.

MARTY LABENZ

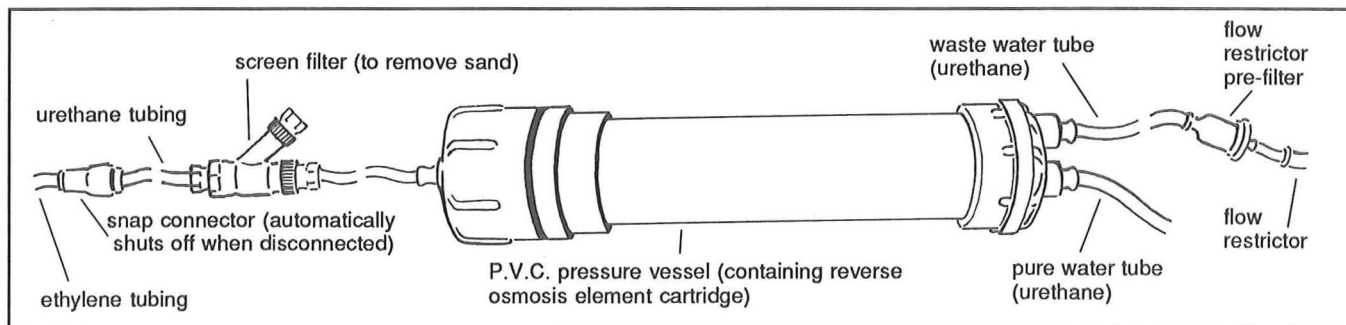
Membrane experts disagree on the exact details of how reverse osmosis works. One useful model holds that water actually becomes *dissolved* in the substance of the membrane, diffuses through it and emerges from the other side having left the impurities behind. Anything with a molecular weight over 100 (diameter over 300 angstroms, 0.03 micron) is physically too large to pass and is rejected by mechanical filtration. Salts and certain other substances of low molecular weight, while capable of crossing through the membrane, do so less readily than water. Membrane material is chosen for the ability to discourage the passage of salts while permitting water to permeate.

Modern reverse osmosis membranes reject more than 90 percent of salts, while allowing water, oxygen and chlorine to pass. They reject virtually all organic chemical pollutants with the exception of those of very low

Make one yourself for about \$100 and an hour of your time.

molecular weight such as phenol and formaldehyde. Radioactivity, while not rejected *per se*, is generally associated with particles too large to pass. The large diameter of even the smallest of bacteria (2,200 angstroms, 0.22 micron) prevents their passage.

This means that you will be starting to brew with water that has been more than 90 percent demineralized and which is free from other common substances deleterious to health and brew quality. While you may find yourself adding salts and various minerals, this certainly beats having to "tweak" your recipe to try to cover up 300 ppm of boron or liquid Tide.



A reverse osmosis system suitable for the homebrewer can be expected to cost around \$100, if you are willing to spend an hour putting it together. It will be about the size of a loaf of bread, produce three to five gallons of purified water a day, and run one to three years before requiring about \$40 in replacement parts. The heart of the system is a spiral-wound reverse osmosis element cartridge. It fits inside a plastic or stainless-steel cylinder (pressure vessel) that is threaded for three plumbing connections. Tap water goes in one end, while concentrated waste water and purified product water emerge from separate fittings at the other end. This whole affair is about the length of your forearm from elbow to fist.

After trying various arrangements, I hit upon the present configuration for my system. I put a tapping valve (used for ice makers and humidifiers) on the cold water pipe under the sink. To this is attached six feet of ethylene hose equipped at the end with a snap-connector that seals when disconnected. When I want to run the system (mostly overnight), I plug the reverse osmosis cartridge into the snap connector, set the filter in the sink and run the product water tube into one of those 2 1/2 gallon rectangular plastic jugs of spring water sold in supermarkets. The product water tube makes a tight slip fit into the little plastic spigot on the jug so the pure water is never exposed

to contamination. Waste water goes down the drain.

Since the whole thing sits in the sink, there is no worry about leaks or overflow. It's simple, cheap and takes less than a minute to set up or put away. You could permanently install your system without much trouble, but I simply haven't seen the need.

Now, before you dash out and buy yourself a reverse osmosis filter, you need to make some choices. The characteristics of your tap water will dictate which of the two common types of membranes you should buy. Thin film membrane elements are favored for their high rate of salt rejection, slightly higher volume of pure water per hour, tolerance of a wide range of pH and resistance to bacterial breakdown. Alas, they are highly susceptible to degradation by chlorine. Its average filter life is one hour for water with a chlorine content of 1,000 ppm. Before considering a thin film membrane ask your local water department for an analysis. You probably will have to run the tap water through a carbon prefilter, about \$10 and the size of your fist.

Cellulose acetate membranes, on the other hand, thrive on chlorine. Because they are susceptible to bacterial breakdown, they should be operated where there is enough chlorine in the supply water that some comes through into the product water. (Supply concentration of 0.5 to 1.0 ppm is ample.)

Recommended Additional Reading

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Leviton, Richard. *zymurgy*, Vol. 9, No. 5. "Better Water For Your Homebrew," Boulder, Colo.: The American Homebrewers Association, 1986.

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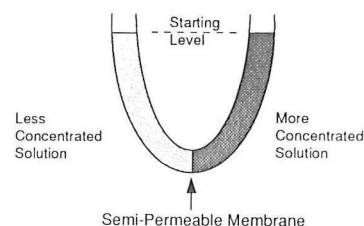
Noonan, Gregory J. *Brewing Lager Beer*. Boulder, Colo.: Brewers Publications, 1986, pp. 25-53.

Papazian, Charlie. *The Complete Joy of Home Brewing*. New York: Avon Books, 1982, pp. 72-74, 228-233.

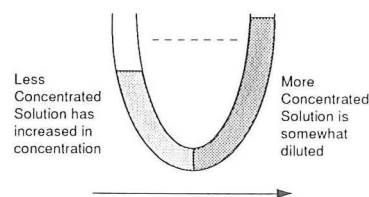
Taylor, Ken. *The New Brewer*, Vol. 1, No. 3. "The Effects of Brewing Water Ions," Boulder, Colo.: Institute for Brewing Studies, 1984.

How Reverse Osmosis Works

FORWARD OSMOSIS



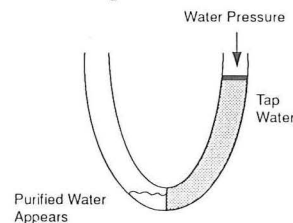
A semi-permeable membrane has tiny pores that allow molecules of water to pass through but block molecules of other substances (such as salts).



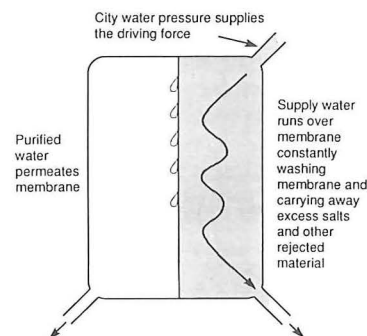
The water on the less concentrated side, driven by osmotic pressure, moves through the membrane and dilutes the more concentrated solution. The water levels stabilize when the head of pressure on the more concentrated side is equal to the osmotic pressure.

REVERSE OSMOSIS

By applying enough water pressure, one can make the process run backward.



This process would continue until the tap water became too concentrated or the purified water accumulated enough back pressure to stop it.



By draining off the pure water and replacing the concentrated tap water with a fresh supply, the process can run continuously.

In order to prevent the formation of chlorophenols and other nasties in your brew, you will want to follow a cellulose acetate filter with a charcoal postfilter on the product water side to pick up chlorine. Should your system suffer a growth of microorganisms, the thin film membrane can be "shocked" with 500 ppm sodium bisulfite, and the cellulose acetate with 10 ppm chlorine for 30 minutes, followed with a two-hour rinse by simply operating the system.

A reverse osmosis cartridge is designed to use five to six gallons of tap water for each gallon of product water. Neither the purity nor amount of product improves if you allow more tap water to flow through the cartridge than the amount dictated by this ratio (5:1 or 6:1). Because a cartridge attached to 70-pound city water pressure may allow 120 gallons of water an hour to pass, some type of flow restrictor is required. This is installed downstream of the cartridge, on the waste water side so as to maintain full city water pressure within the pressure vessel.

The two most common restrictors are a plastic fitting with a tiny sapphire washer inside or a length of small-diameter tubing that restricts flow caused by drag against the walls. My system uses a 0.012-inch aperture and passes 60 gallons a day at 70 psi. I have a fine-screen filter directly upstream of the restrictor fitting to prevent clogging. This can save a lot of aggravation during the first few hundred hours of operation, as a new filter element tends to shed tiny fragments of plastic that can clog the aperture.

The fine-tube method doesn't suffer from the clogging problem but is slightly less rugged and compact. You start with too much tube and cut it progressively shorter until the waste water-to-product ratio is 5:1 or 6:1.

The rate of production will be affected by temperature (increasing 3 percent per degree F around room temperature), salt content in your tap water (decreasing as salt content rises), water pressure (40 psi minimum, the more the merrier within reason) and the age of your filter ele-

ment. Once product water volume drops by 10 percent, you should clean the element according to the manufacturer's recommendations or replace it. You may also check the conductivity of the product water with a meter or send samples out to be tested.

One of the nice things about this system is that a technical knowledge of water treatment is unnecessary. Just hook up the pieces, turn on the tap and you will enjoy the health and brewing benefits of purified water.

I am indebted to Thom McIntyre at Sweetwater Supply in Littleton, Colo., for technical advice in design and selection of parts and for the use of his manuals in the compilation of this article.

Marty LaBenz is a Denver chemist who runs a construction business. His brewing experience includes ale and mead and he judged the 1988 Homebrew Competition. Living between an atom bomb factory and a nerve gas depot has spurred his interest in home water purification.



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Mashing Made Easy

The advantages of mashing are accessible even to beginners.

Mashing is the process of brewing beer directly from grain, rather than using malt extracts. Although the vast majority of homebrewers use malt extracts — and brew good beer doing so — mashing offers such advantages as lower ingredient cost, better control of flavor variables and the satisfaction of making your beer from scratch.

My husband Ed and I had considered mashing for quite some time before finally diving in. On our first attempt we made a great beer very easily and efficiently. So can you, following our mashing-made-easy technique.

Start with malted barley, which is barley grain that has been steeped in water until it begins to sprout and then is kiln-dried. The process produces enzymes and soluble starches within each grain. Mashing uses these enzymes to convert the starches into fermentable sugars for alcohol, plus some unfermentable sugars (or dextrins) for body and mouth feel. During the mashing process, the malted barley is added to hot water and the temperature and time are carefully regulated until the starches have been converted. The liquid is then strained

off and hot water is sprayed over the grains to collect all of the converted sugars. This process is called sparging, and produces wort, which

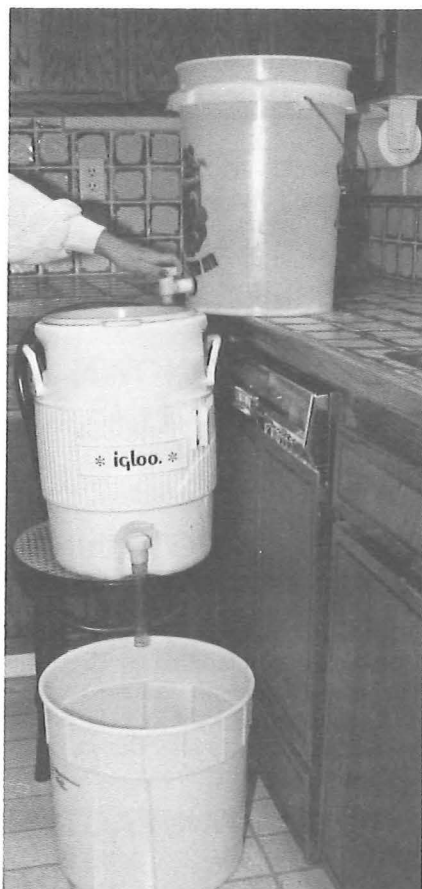
is boiled with hops (just like extract brewing) and fermented. Depending on the grains used, you can produce any kind of beer you'd like — very light through very dark.

There are three mashing methods, each with dozens of variations. This mashing-made-easy technique is our version of the single-step infusion method. It's simple, and can be done in one evening. Best of all, it only uses a large camp cooler, a brew-boiler, and a food-grade plastic fermenter, plus two colanders and a thermometer.

The cooler is used for the actual mashing and sparging. We bought a five-gallon Igloo on sale, but any brand will do. Get one that is tall and narrow, rather than chest-shaped. We made one minor modification to our cooler: the spigot had to be held down to release the liquid inside, so we replaced it with one that twists open and closed.

The brew-boiler heats our mashing and sparging water and also boils the wort. Sold under several brand names, they are plastic buckets with a six-gallon capacity that plug into an outlet and have their own thermostatically controlled heating element. (If desired, you can mash in the brew-boiler, but we prefer our own technique.)

The 7.5-gallon food-grade plastic fermenter collects the liquid during sparging and serves as our primary fermenter. It can withstand the



The three-tiered set-up consists of the brew-boiler on the top level, the cooler on a stool and the fermenter on the floor.

DIANE KEAY

Author Diane Keay displays a colander cut to fit inside the cooler that will hold the grains.



high temperature of the hot mash liquid.

Of course, you can adapt your equipment to suit your own needs. However, this is all you'll need for mashing, sparging and boiling the wort, plus the primary fermentation.

The first step is deciding what kind of beer to make. Six to 10 pounds of grain will yield five gallons of beer. This amount includes adjuncts such as chocolate malt, roasted barley, crystal malt or rice flakes. Ten pounds of grain will yield more alcohol and body than six pounds. The quantity and temperature of the mash water, plus the quantity of sparging water, will vary with the amount of grain.

If you have a recipe you'd like to try, fine. I'll be referring to the quantities and temperatures we used for our first mash. We took our calculations from pages 254 to 256 of *The Complete Joy of Home Brewing* by Charlie Papazian. According to Papazian, you'll need one quart of mash water per pound of grain. When the water is added to the grain, the temperature will drop by 16 to 18 degrees F. Therefore, heat your mash water to a temperature that is 16 to 18 degrees F higher than your desired mashing temperature. Use one-half gallon of sparging water heated to 170 degrees F per pound of grain.

Crack the grains using a grain mill. Don't pulverize them, just

crack the hulls open to expose the white insides. We used seven pounds of pale malted barley and two pounds of crystal malt for a total of nine pounds. Take a plastic colander and cut it to fit snugly on the bottom of the cooler, like a false bottom. After placing the colander in the cooler, pour your grain on top of this colander; it keeps the grains from clogging the spigot. We also cut a small piece of fine-mesh copper screen and fitted it over the inside opening of the spigot to prevent it clogging.

With the brew-boiler on full power, heat your mash water. Use a thermometer, as the temperature is critical. We use 2 1/4 gallons of water heated to 170 degrees F.

Position your brew-boiler on a counter or table with the cooler directly below it on a stool or chair. When the water reaches the correct temperature, open the spigot and allow the water to flow gently over the grains. Attach the cooler lid.

The grains will cool the water to the proper mashing temperature—somewhere between 150 and 158 degrees F. A higher temperature produces a more full-bodied beer, while a lower temperature produces a beer with less body. We mashed at 155 to 156 degrees F.

Because of its insulation, the cooler will hold the correct temperature during the entire mash. Our conversion took 30 to 45 minutes,

although mashing at a lower temperature will take a bit longer. Don't stir or disturb the grains during the mash. Also, don't peek more than once or twice, because opening the lid allows the grains to cool.

However, do check the mash periodically with a tincture of iodine from the drugstore. Open the spigot and collect one tablespoon of liquid on a white plate. Drop 1 to 2 drops of iodine into the cooled liquid on the plate. If the iodine turns black or streaks, the mash needs more time. Conversion is completed when the iodine does not streak or change color.

While you are waiting for the mash to convert, enjoy a homebrew and heat sparging water in the brew-boiler.

When conversion is complete and the sparging water is heated, position your equipment in a simple three-tiered setup: the brew-boiler on a counter or table, the cooler on a chair or stool directly below it and the fermenter below that on the floor. Open the spigot on the cooler, allowing the liquid to drain into the fermenter.

As the mash liquid drains into the fermenter, open the spigot on the brew-boiler, releasing some of the hot sparging water into the cooler. Regulate this to keep a small layer of water 1 to 2 inches deep on top of the grains. Spray the



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sparging water gently over the grains, rather than hitting them with a direct blast that disturbs the grain bed. We found that simply hanging a colander over the top of our cooler is an easy way to do this. Continue sparging until all of the mash liquid plus all of the sparging water is collected in your fermenter. Because the water filters slowly through the grain bed, sparging seems to take a long time.

Once you've finished sparging, pour the liquid from your fermenter back into the brew-boiler. At full power, bring it to a rolling boil, then adjust the thermostat to maintain a rolling boil. Boil your wort, adding hops, Irish moss, etc., as specified in your recipe. The wort from mashing must be boiled for at least an hour to precipitate the malt proteins, clarify it, and extract hop bitterness.

Cool the wort, transfer it into

your fermenter and pitch the yeast. Except for discarding the spent grains, cleaning up is no worse than brewing with extracts.

There are two main drawbacks to mashing in general: it requires a bit more time and effort, and increases chance of error. We've found that our mashing-made-easy technique is quick and simple and uses a bare minimum of equipment. Time and again, it has yielded delicious beer. Plus it's fun, which is what homebrewing should be.

Diane and husband Ed started making beer and wine seven years ago. From their first batch they entered every local competition they could, consistently winning ribbons. Diane wrote *zymurgy's* "For the Beginner" column from winter 1986 to fall 1987.

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FOR THE BEGINNER

JAY ANKENY

Fermenting Your Wort



Gizmo is chasing moonbeams in her sleep. The room is warm, the beer is in the fermenter, the air trap is happily puffing out its CO₂, and all is right with the world and the wort.

Like any beginning brewer, my mighty brew-cat Gizmo knows that fermentation time is a period of reflection and rest. But, of course, just as the calm of Lent follows the frenzy of carnival, this *pax pro wortum* only comes after a firecracking tumult of joyous preparation. For you see, in our furry little brains Gizmo and I are tasting that beer already and we know it's going to be great! So before that magical fermentation began, we took every reasonable step we could to preserve the brew's purity during its two-to-three-week transformation in the fermenter.

In the past two issues, we've discussed the brewing process in terms of three stages: brewing, fermenting and bottling. And we are using the exact recipe and procedures I followed to produce my "Easy Beer Porter" that won a fair number of awards last fall and first place for porter in the Bluebonnet Brew-off (Fort Worth, Texas) in February. You can do it too! These are just good, basic brewing techniques that any beginner can practice.

Homebrewing is an international folk art and although many advanced practitioners can sometimes make it



sound like graduate-level biochemistry, a beginner who gets off to a clear start can be quaffing an enjoyable brew right from the first batch. Or as my brew partner, Dan Dennis, poetically puts it, "Screw it. Just do it!"

This time we're going to discuss the fermentation process from the perspective of the first-time brewer. At the end of the last step, we had boiled up six pounds of malt extract with six ounces of hops in it for our five-gallon batch. But I'm suggesting you prepare a total of only four gallons of cooled wort to start fermentation. We'll add a final gallon of water later. These four gallons should now be sit-

ting in a sterilized fermenter waiting for the yeast to be added, or "pitched."

But the first and most important thing to understand is *xmphkthXw*. Oops! Sorry about that. Gizmo just woke up and rolled over on my keyboard. She's trying to remind me to talk about yeasts and yeast starters.

And right she is, because every beginner must be told early in life that the Achilles heel of home beer making is the unreliability of packaged yeast.

We'll assume you've opted for an ale style of beer, because this strain of yeast ferments comfortably at room temperatures, say 60 to 75 degrees F.

The easiest source of ale yeast is

the dry powder available in foil packets. The problem is, you don't really know where it came from, what it is or how old it is. The brewing club Dan and I are proud members of, the Maltose Falcons, occasionally has sent samples of dry yeasts out for testing. The results have been mixed. Sometimes a packet labeled lager has actually contained strains of ale yeast. And a peek through a microscope has

revealed worlds of greeblies too grungy to mention in a family magazine.

But don't despair. There are good yeasts available, and your local retailer or homebrew club will probably have valuable advice to give on this. Once you've found a clean yeast source make sure you take notes on the results and continue to utilize it. And a yeast starter can help the process sig-

nificantly. Here's an easy way to make one.

Toward the end of boiling your wort, ladle out some of the steaming hops and malt mixture to half fill a sturdy glass jar (the heat will sterilize it). Cover with plastic wrap and set in a bowl of ice water or the fridge to cool rapidly before the main batch is ready. Once the glass is below 85 degrees, not warm to the touch, pour in your dry yeast. Two packets may get things going faster, but they also double the chance of contamination. There's no need to stir, and that kitchen spoon you were about to use probably wasn't sterile anyway.

The little yeast specks will float back to the top and should have kicked up a healthy layer of foam within 45 minutes. If they don't, throw it out. You've just saved yourself a bad batch of beer caused by stale or weak yeast, and you still have time to get another starter going. If the starter looks vigorous, smells fresh and yeasty and has good foam, then you have a reasonable chance of getting fermentation off to a rapid and clean start.

Now you can pitch that yeast into the four gallons of wort in your fermenter. There are several sorts of fermenting vessels to choose from. The trick is to provide a sterile environment for the yeast to turn the malt extract into CO₂ and alcohol, among other things, and you've got to provide a path for that CO₂ to escape without permitting outside air to contaminate the wort. Before the last decade, almost everyone used buckets that were covered either with cheesecloth or simply a loose lid. Often homebrewers used a two-stage process where the fermentation foam was allowed to build up for a few days in one bucket (the primary fermenter) then the wort was siphoned into another bucket for the rest of the process (the secondary fermenter).

More recently, however, carboys have come into vogue for homebrewing. These are the bulbous, narrow-necked bottles that spring water is often delivered in, and can be fitted with air traps (also called fermentation locks). These air traps are plastic bubbler arrangements holding a little cap that bobs up and down on a base of water, releasing the CO₂ from within but keeping air out. Again, a primary/

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secondary system can be used with two carboys. Or, you can fill one carboy up to the top (the full five or seven gallons), fix a large blowoff or overflow tube onto its neck and let the inside pressure pump the foam out through the tube into a collecting bowl.

With a polite nod to other homebrew practitioners, I don't follow either of these methods. The buckets are too vulnerable to outside influences. The two-stage approach risks contamination when transferring the wort. And those blowoff tubes tend to clog, allowing dangerous pressure to build up in the carboy. Both of these approaches are going to great lengths to remove the foam from the top of the wort. And this seems unnecessary. After all, many professional breweries don't seem concerned about removing that head of foam, so why should we?

My recommendation, and the reason I've suggested preparing only four gallons of wort to begin fermenting our five-gallon batch, is called "closed, single-stage carboy fermentation." First, put the four gallons into a carboy that has been thoroughly sterilized with a chlorine cleaner solution as we outlined last time. This will leave a six to eight-inch space at the top for the foam to rise. Pitch the yeast and put on an air trap. Now wait about three to five days. The foam will rise and fall back into the wort.

Then, when this foaming stage seems completed, preboil and cool another gallon or so of water and top the carboy off by filling it to the neck. Be careful not to splash too much. Now you can replace the air trap and wait for the fermentation process to complete itself. Make real sure you do preboil that additional water, though. This would be a silly time to contaminate that precious wort by subjecting it to unsterilized tap water. And what the heck, your brew pot isn't doing anything important right now, so you might as well use it for some good.

Once that carboy has been topped off, you can look at the wort through the narrow neck of the carboy and monitor its progress. Shining a flashlight through the neck may help if you used a dark extract. At first you should see some foam still floating to the top. Then this will become just an active rise of bubbles. Finally, the CO₂ release will almost stop. This should

take two to three weeks depending on the ingredients you used, the strength of your yeast and the temperature.

When the fermenting activity is almost finished you are ready to bottle, and we'll get to that next issue. Gizmo is done with her nap and has decided it's time to play, so we'll just have to say xmpthsfl for now. Oops! Hey cat, get away from that keyboard! Take your paws off those keygrlei.

Jay Ankeney has been brewing beer for four years and writ-

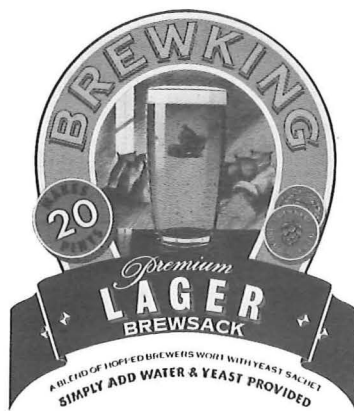
ing about it for three. He and Dan Dennis are authors of *Easy Beer, a Beginner's Guide to Home Beer Brewing*, published by Anthem Enterprises, Manhattan Beach, Calif. Both are members of the Maltose Falcons in southern California.

When not brewing, Jay is a videotape editor at Channel 11 in Los Angeles. His mighty cat Gizmo is two-and-a-half years old and is available for malt extract endorsements.

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DAVID EDGAR



Continuing with our new format for Winners Circle, we are featuring four styles to be enjoyed in the fall months. You have three months to plan and to brew, so you can savor a nice, crisp porter while you watch the leaves turn or sip a fruit beer by the fireplace on the first cool night of the season. Here are eight great recipes, each placing second or third in the AHA's 1988 National Competition.

FRUIT BEER

Third Place W.C. Embrey Bellvue, Colorado "Raspberry Dunkel Weizen" Fruit Beer

Ingredients for 5 gallons

- 6 pounds William's weizen malt syrup
- 2 pounds dark dry malt extract
- 6 ounces chocolate malt
- 6 ounces dark crystal malt
- 6 ounces black patent malt
- 1 ounce Galena hops (60 minutes)
- 1 1/4 ounce Fuggles pellet hops (60 minutes)
- 1/2 ounce Cascade pellet hops (end of boil)
- 2 1/2 pounds frozen red raspberries
- 1 ounce maltodextrin (60 minutes)
- 1 packet Edme ale yeast
- 2/3 cup corn sugar

- Original specific gravity: not given
- Terminal specific gravity: not given
- Age when judged (since bottling): 3 months

Brewer's Specifics

Steep grains in 120 degree tap water for five minutes, then strain and sparge with tap water. Add malt, maltodextrin and boiling hops and boil one hour. Mash raspberries and add at end of boil.

Judges' Comments

"Aroma not unlike sweet corn initially, then changing to nutty, sherrylike, estery maltiness. Beautiful auburn color, nice clarity and adequate head. Nice flavor: elegantly robust, fruity, with a sherrylike quality. Big, intense, nearly liqueurlike ale. Complex and robust. Good effort!"

"Pleasant fruit aroma. Great clarity, color and head retention. Fruit flavor comes through nicely; slightly subdued by hops, leaving a hops aftertaste."

Second Place Fred LeVere Des Moines, Iowa "Beefour Blueberry Beer" Fruit Lager

Ingredients for 4 gallons

- 3 1/3 pounds Laaglander Dutch light lager kit
- 1/2 pounds Laaglander light dry malt extract
- 1/4 ounce Hallertau pellet hops (dry hop)
- 1/4 ounce Cascade pellet hops (dry hop)
- 4 pounds blueberries
- 1 pound honey
- 1 packet Laaglander lager yeast
- 2/3 cup corn sugar

- Original specific gravity: unknown
- Terminal specific gravity: unknown
- Age when judged (since bottling): 3 months

Brewer's Specifics

Boil malt, honey and 1 1/2 gallons water for 45 minutes. Reduce heat and add fruit. Return heat to near-boil for 15 more minutes. Add wort to 2 1/2 gallons cold water and pitch yeast when cool. Rack to secondary after four days and then dry hop. Bottle after 24 days in secondary.

Judges' Comments

"Blueberry aroma comes across nicely. Color great for fruit category. Nice clarity and good head retention. A nice blend of berries and lager. Good job."

"The best aroma! Appearance—beautiful, elegant and inviting. Flavor—absolutely heavenly. Couldn't be much better. Overall—you got a ringer here. This is marketable. I am with a Colorado wholesaler. Let me know!"

PORTER

Second Place

Lloyd Mower

Denver, Colorado

"Melt-In-Your-Mouth Creamy Porter"

Traditional Porter

Ingredients for 5 gallons

- 7 pounds Edme SFX dark malt extract
- 2 pounds crystal malt
- 4 ounces chocolate malt
- 4 ounces black patent malt
- 1 ounce Galena hops (60 minutes)
- 1/2 ounce Chinook hops (10 minutes)
- 1/2 ounce Chinook hops (2 minutes)
- 1 teaspoon Irish moss (last 15 minutes)
- 1 teaspoon gypsum
- 2 packets Munton and Fison ale yeast
- 1/2 cup corn sugar

- Original specific gravity: 1.048
- Terminal specific gravity: 1.024
- Age when judged (since bottling): 3 months

Judges' Comments

"Big fruity, spicy hoppiness like a wheat beer or very hoppy ale; estery. Black color, tan head, head and head retention OK, appears clear. Flavor is a little astringent and a little sweet. Hop flavor is appropriate. Roasted malt leaves a bit of a husky finish. Medium body. Overall a bit astringent with lots of roasted flavor, probably from too much black malt."

Third Place

Rodney Howard

Oakley, California

"R.P. Porter"

Traditional Porter

Ingredients for 5 gallons

- 7 pounds dark malt syrup
- 2 pounds dark malt syrup
- 3/4 pound roasted barley
- 1/2 pound flaked barley
- 1/4 pound chocolate malt
- 3/4 ounce Cascade hops (60 minutes)
- 2 3/4 ounces Northern Brewer hops (60 minutes)
- 1 ounce Fuggles hops (2 minutes)

- 1/2 teaspoon ascorbic acid
- 1/2 teaspoon salt
- 1/2 teaspoon Epsom salts
- 1 1/3 teaspoons gypsum
- 1 packet Muntona ale yeast
- 1 packet Champagne yeast
- 3/4 cup corn sugar

- Original specific gravity: 1.061
- Terminal specific gravity: 1.019
- Age when judged (since bottling): 6 months

Judges' Comments

"Aroma—very hoppy, alcoholic. No roasty-malty aroma. Appearance—beading, good opaque color. Flavor—needs more crystal malt for residual sweetness. Almost a stout with the strong hop bite and dry finish."

"Very hoppy aroma. Nice, but possibly a little too much for style. Good head retention. Slightly heavy bodied for style. Roast, malt and aroma all very nice. Very drinkable. Try more crystal malt and ease up on the hops a little."

MEAD

Second Place

Wayne Waananen

Denver, Colorado

"Festival Cyser"

Cyser

Ingredients for 5 gallons

- 12 pounds wildflower honey
- 4 gallons apple cider
- 4 teaspoons acid blend
- 2 packets Red Star Champagne yeast
- 5 teaspoons yeast nutrient

- Original specific gravity: 1.102
- Terminal specific gravity: .993
- Age when judged (since bottling): 16 months

Judges' Comments

"Apple aroma comes through nicely. Beautiful appearance. Well done, good balance of flavor. Really nice, appropriate character for cyser. Very cleanly brewed."

"Aroma very apple, fruity, slightly alcoholic with some honey characteristics. Golden color, very clear. Good apple flavor and finish, thin to medium body, dry finish, good balance of alcohol and acidity. A little bit of astringency on finish. Good apples, good balance, good mead."

For a copy of "Outline for Intermediate Brewing," see the "Free from the AHA" ad, page 8.

Third Place
Rolf Franzke
Fountain Valley, California
"Raspberry Mead"
Sparkling Mead

Ingredients for 5 gallons

- 8 pounds clover honey
- 2 pounds corn sugar
- 4 pounds frozen raspberries
- 3 teaspoons acid blend
- 2 packets Montrachet yeast
- 5 teaspoons yeast nutrient

- Original specific gravity: not measured
- Terminal specific gravity: not measured
- Age when judged (since bottling): 19 months

Brewer's Specifics

Boil honey and sugar 30 minutes. In a separate pot heat acid blend, fruit and yeast nutrient to 180 degrees F. Combine in open fermenter. Pitch yeast when cool. After one week rack to glass carboy. Rack three times over the next three months, then finish in keg.

Judges' Comments

"Strong raspberry aroma. Deep, red color; beautiful and clean! Nice overall flavor. No faults. Very drinkable!"

"Aroma—raspberry strong with floral overtones. Reminds me of cherries and strawberries. Appearance—pretty and crisp, clean. Flavor—honey floral flavors somewhat overwhelm raspberry; I would have wished for a more balanced result. Overall it is impressive. The best red raspberry product I have ever tasted! Complex. Delightful."

SPECIALTY BEERS

Second Place
John Korpita
Millers Falls, Massachusetts
"Honey Pilsener"
Specialty Lager

Ingredients for 5 gallons

- 3 1/3 pounds John Bull light malt extract
- 2 pounds Munton and Fison light dry malt extract
- 1/2 pound crystal malt
- 2 pounds clover honey
- 1/3 ounce Hallertau hops (60 minutes)
- 1/3 ounces Cascade hops (60 minutes)
- 1/3 ounce Hallertau hops (45 minutes)
- 1/3 ounces Cascade hops (45 minutes)
- 1/3 ounce Hallertau hops (30 minutes)
- 1/3 ounces Cascade hops (30 minutes)
- 1 ounce Hallertau hops (10 minutes)
- 1/2 ounce Saaz hops (10 minutes)

- 1 teaspoon salt
- Brewer's Choice liquid lager yeast
- 1 cup corn sugar

- Original specific gravity: 1.042
- Terminal specific gravity: 1.012
- Age when judged (since bottling): 5 months

Judges' Comments

"Aroma—A little flowery from honey, nice malt-hop balance. Appearance—dark golden color; tiny bubbles, beautiful head with nice retention. Brilliantly clear. Flavor—aggressively hopped like a continental lager. Good honey characteristic, balanced well with maltiness. Full bodied with big carbonation—nice balance. Overall a clean beer with good honey characteristics throughout. Good balance, nice flavors. I could drink a lot of this."

"Fruity aroma, reminiscent of tangerines. Not really esters; very interesting. Very clear, good color, fair conditioning. Maybe condition at lower temperature. Light, balanced flavor. Seems a little bland, maybe try different ingredients. Good lighter beer. I could drink a lot of it."

Third Place
Jerry S. Dahl
Kirkwood, Missouri
"King Alfred's Ale Mead"
Specialty Ale

Ingredients for 5 gallons

- 4 pounds Munton and Fison light dry malt extract
- 5 1/2 pounds honey
- 3/4 pound roasted barley
- 1/2 pound flaked barley
- 1/4 pound chocolate malt
- 1/2 ounce Fuggles hop pellets (20 minutes)
- 1/2 ounce Cascade hop pellets (10 minutes)
- 1 ounce Cascade hops (steeped 30 minutes)
- 1 teaspoon ascorbic acid (placed in primary)
- 1 packet Red Star Champagne yeast
- 1 cup corn sugar

- Original specific gravity: 1.075
- Terminal specific gravity: not available
- Age when judged (since bottling): 7 months

Judges' Comments

"Rich, full aroma. Golden color with a rich, creamy head. Good hops—sharp bite to flavor. Clean, crisp, complex. Overall, excellent; rich with a sharp, quick finish."

"Aroma—extremely hoppy, lots of esters, lots of ale quality. Wakes the nose up. Appearance—good color, excellent head retention, excellent condition. You're doing something right. Flavor—highly alcoholic. Good balance of hops to malt. It tastes like there is some spice in your product. Try using a different yeast to bring out some more malt. Seems like a mash but at too high a temperature. Tastes like too many hops at the end of the boil. Overall this is a good beer, but go easier on the hops and boil longer."

The New Brewer

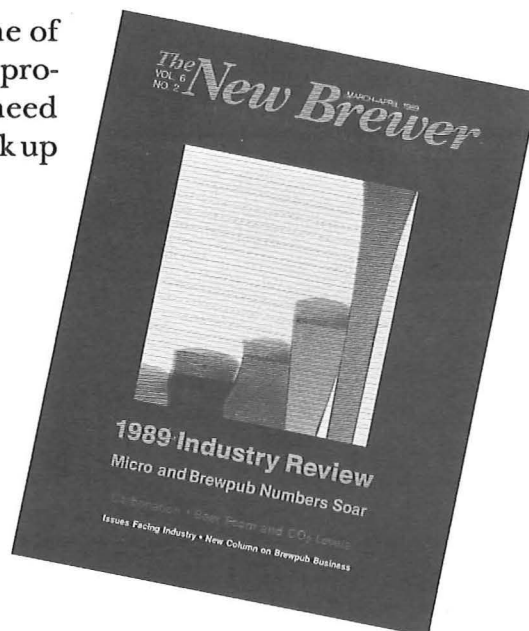
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WORLD OF WORDS

CHARLIE PAPAZIAN

Saunders' Nut Brown Ale

Standing around the kitchen counter I poured two frothy glasses of Midnight on the Interstate Dunkel-bier. My friend Mike Saunders took a sip. Then another. Squinting his eyes in serious contemplation, he took another, then slowly shaking his head said, "I don't know. This just doesn't have it. Maybe it's not bitter enough. Is that what it is? I want something like Samuel Smith's Nut Brown Ale. Can we make something like that?"

I went down to the cellar for a bottle of Armenian Imperial Stout. Pouring two glasses I handed Mike one and asked, "Do you remember this? It was the batch we brewed last year, one of your favorites. Do you like the roasted barley character in this?" He conceded partiality to the stout and its flowery aroma of hops, but said that he was now looking for something less robust, less alcoholic and with more warm-weather drinkability.

Another thought struck me like a sudden high krausen. I dashed down the stairs and reappeared in the kitchen with Tits Up in the Mud, a freshly bottled mild pale ale. The hardly effervescent brew splashed limply into our glasses. "This is still somewhat flat, but what do you think of its caramel-like sweetness?"

Mike hesitatingly admitted a liking to Tits Up. "Yeah, I think I know what you're talking about, kinda like Sam Smith's but I think what I want is

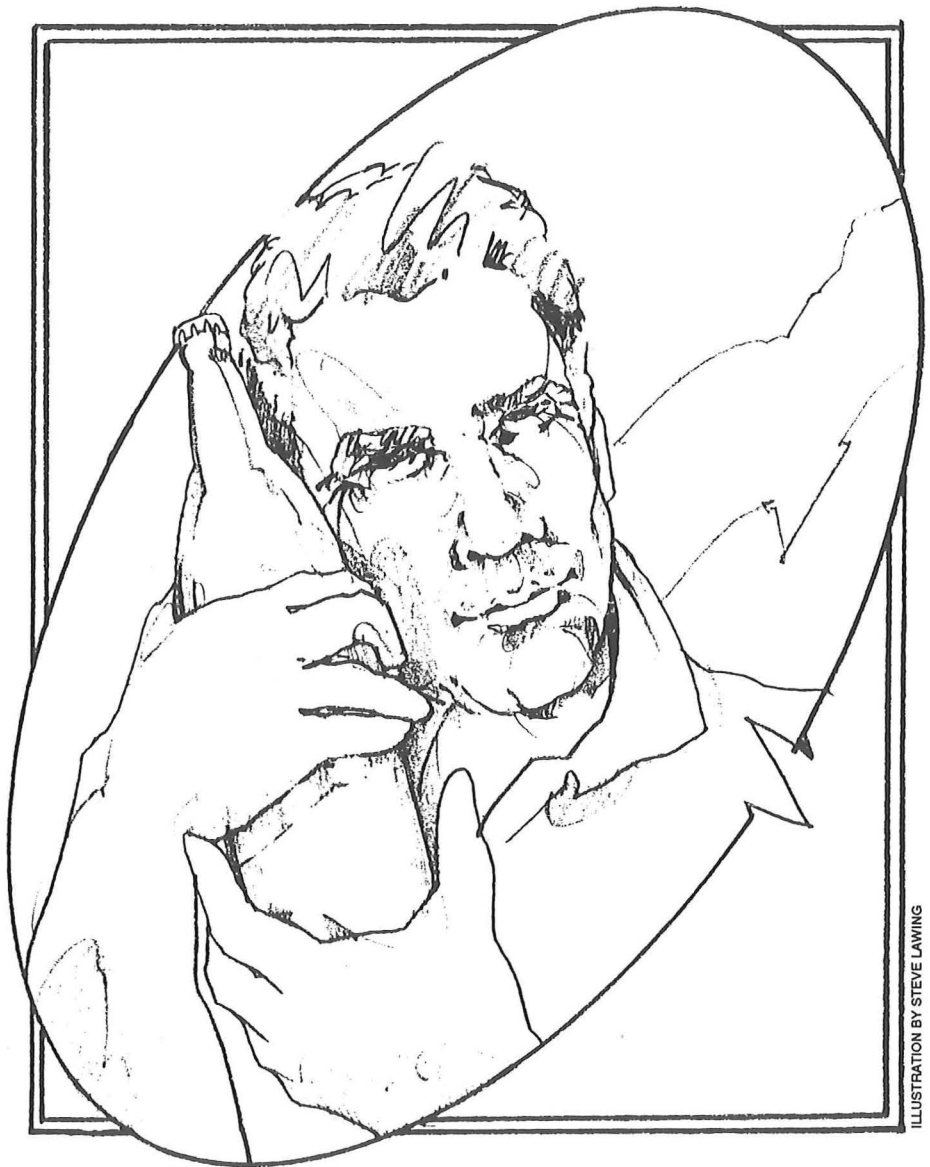


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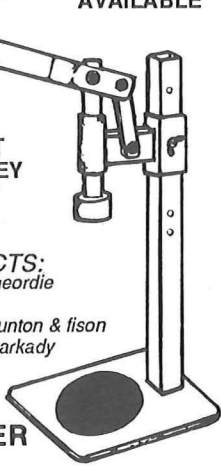
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a little bit more, what did you call it, 'caramel-like'?"

Our investigation thoroughly over, we were ready to brew Saunders' Nut Brown Ale; a medium-colored brown ale with a fresh caramel-like sweetness that finishes with a palate-cleaning bitterness along with a gentle nuttiness of roasted barley. We did get carried away with the original gravity and it's not quite the moderately alcoholic brew we originally wanted. But we aren't complaining.

Saunders' Nut Brown Ale

Recipe for five gallons

- 6 1/2 pounds plain light malt syrup
- 1 1/2 pounds crushed dark crystal malt
- 1/6 pound crushed chocolate malt
- 1/6 pound crushed dark brown (in color) roasted barley
- 7 Homebrew Bittering Units (I used 1 1/4 ounces of Bramling Cross hops for the boiling hops)
- 1/4 ounce Kent Goldings hops for flavor

- 1/4 ounce Kent Goldings hops for finishing aroma
- 1/4 ounce Cascade hops for finishing aroma
- 3/4 cup corn sugar or 1 1/4 cup dry malt extract for bottling
- 1 or 2 packets of ale yeast or liquid culture

- Original Gravity: 1.054 to 1.058
- Final Gravity: 1.014 to 1.018

Add the crushed crystal, chocolate malt and roasted barley to one gallon of water and bring temperature up to about 150 degrees. Do not boil. Let sit for 15 to 30 minutes, then strain out grains.

Add the malt syrup and bittering/boiling hops, one gallon of water and bring to a boil. Boil vigorously for one hour and add flavor hops for the last 10 minutes. For the final two minutes add the finishing/aroma hops.

Strain and sparge your hot wort into a cleaned and sanitized fermenter that already has two gallons of cold water. Make up to five gallons. Add yeast when 65 to 75 degrees F. Once fermentation is active, ferment between 60 and 70 degrees if possible. But don't worry, just keep it clean.

When fermentation is complete boil corn sugar or dry malt extract in one and a half cups of water for 10 minutes. Add as priming sugar and bottle. Drink when ready in about two to four weeks.

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BITTERING UNITS

Bittering units are a measure of the total amount of bitterness in a given volume of beer. Bittering units can easily be calculated by multiplying the percent of alpha acid in the hops times the number of ounces. For example, if 2 ounces of Northern Brewer hops (9 percent alpha acid) and 3 ounces of Cascade hops (5 percent alpha acid) were used in a 10-gallon batch, the total amount of bittering units would be 33: (2 x 9) + (3 x 5) = 18 + 15. Bittering units per gallon would be 3.3 in a 10-gallon batch or 6.6 in a 5-gallon batch, so it is important to note volumes whenever expressing bittering units.

DEAR PROFESSOR

PROFESSOR SURFEIT

Band-Aid Beer

Dear Professor,

I am a novice homebrewer who has a big problem: I can't seem to brew a good batch of beer! Over the past year I have brewed five batches of beer, but every batch has a very "plasticlike," medicinal flavor and aroma. I have been using malt extracts and whole hops from my local homebrew store. I have followed directions to the letter. I can't figure out the problem.

I heard that possibly I am not completely rinsing out the chlorinated TSP I use to clean and sanitize my fermenter and bottles. However, I thoroughly rinsed everything with scalding hot water for 10 minutes—I even put the bottles for my last batch

of beer through the dishwasher (no detergent, of course). I made absolutely sure that there was no odor of chlorine coming from my beer. To make double sure that I didn't have any chlorine in my beer, I used bottled spring water for my last two batches; however, this didn't help either. I'm not convinced that chlorine residue is the problem.

Please note that when I transferred the beer to a secondary glass fermenter, I really smelled a plastic odor in the beer. My family smelled it and they all agreed. The beer continued to ferment for seven weeks. Is that normal? No matter what ingredients I use, all my beers have had a plastic taste.

I desperately want to experience

the joy of homebrewing and produce a decent beer like the ones I have tasted from other homebrewers. I know I should relax and not worry, but frankly, I'm worried! I haven't given up yet, but I'm afraid to brew any more beer until I learn how to avoid that awful plastic flavor and aroma. Do you have any ideas about what is ruining my beer?

Sincerely,
Matthew Ceglia
Cupertino, California

Dear Matthew,

Well, by this time it would be fair to let everyone know that you and I have been writing back and forth a couple of times now and I have been in receipt of a bottle of your not-so-finest.

There isn't anything wrong with your recipe. You have very accurately described the beer as "plastic." Yep, in other words there's a phenolic taste. But also there is a DMS aroma (sweet cornlike) and flavor. It all points to bacterial contamination. ("No, anything but that!") Yes, Matthew, there is such a thing and I believe you've got it. I've tasted it before in brews.

Now one time I brewed with an off-batch of malt extract and got a DMS character, but that is very unlikely with current batches. If you're getting it with other beers and they continue to ferment for seven weeks that's a sign of bacteria and very possibly wild yeasts, which are notorious for producing phenolic characters.

So you've got to take a hard, objective look at your equipment and procedures. Scratched glass, old hoses, plastic, wooden spoons, airlocks, rub-

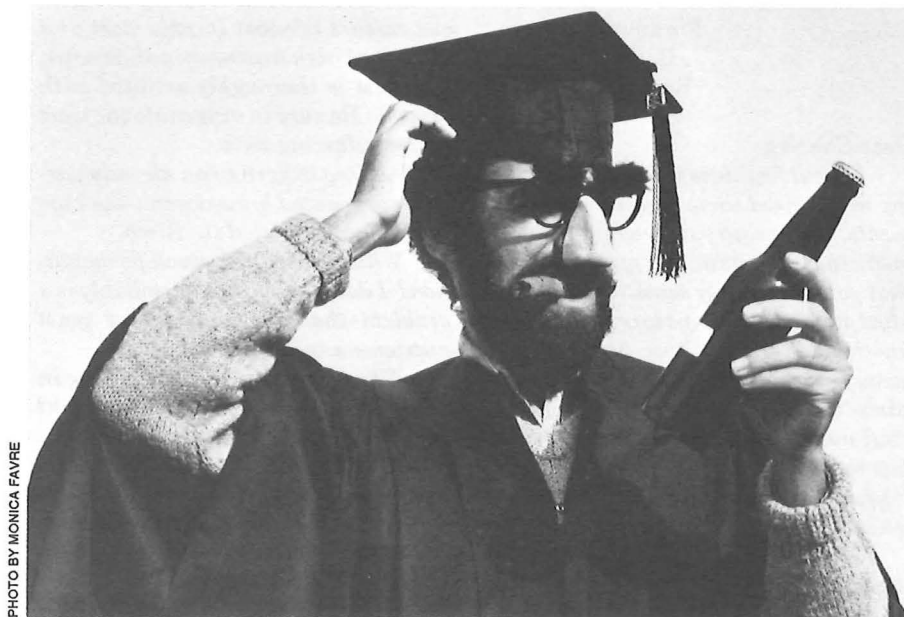


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Professor Surfeit, Hb.D., Wurryphree, Colo.



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ber stoppers, blowoff hoses, bottle caps, stains in carboys. Swab necks of carboys with grain alcohol (and torch it with a cigarette lighter) where surfaces come in contact with siphon hoses as they go into the carboy. Look at everything that comes in contact with beer. Wash your hands well before handling siphon hoses. Sterilize pots and pans used to ladle hot wort from kettle to fermenter. (I suggest an all-enamel pot so you can fire it up on the stove to literally roast any critter in the crevices of the handles.)

Let me know how you solve the problem.

Critters in the crevices,
The Professor, Hb.D.

Gone with the Wind

Dear Professor,

Since discovering the *Complete Joy of Home Brewing* more than a year ago, I've followed the Bible according to Papazian religiously. But the book of St. Charles tactfully avoids a subject that I cannot:

What do you do
with a fine tasting brew
that becomes a colonic catastrophe?

I've got a gaseous ale in the basement that's a real popper. If I don't do something soon, they're going to move the Windy City about 80 miles east. Any suggestions?

Flatulently yours,
B. Charles Leaf
Rockford, Illinois

Dear Charles,

My gut feeling is that your plumbing might need some digestive adjustments. Now mind you, I'm no doctor of medicine, but again, my gut feeling is that you are acutely sensitive to yeast. Most of us are sensitive to one degree or another. Have you ever been with a group of people touring a brewery and sampling the *zwickelbier*, the good stuff out of the tanks before the yeast has settled or the beer's been filtered? It's funny—but not funny, if you know what I mean.

What I'm telling you is that it usually is the yeast. My sentiment is to avoid that sediment! If your doc can suggest some change in diet or dietary

intake that might aid digestion overall, that may ease your sensitivity. (Are there any doctors of flatulence out there among us?)

For the love of homebrew and no change in sensitivity you might want to investigate filtering the yeast out of your beer.

Or lease gas exploration rights.

Just a gut feeling,
The Professor, Hb.D.

Stuck Fermentation

Dear Professor,

If you are going to brew an ale at high gravity, 1.060 to 1.070, and it ferments only to 1.040 or so, what do you do:

1. Pitch a new yeast, preferably the same or similar?
2. Aerate the beer slightly so the incoming yeast has oxygen to work with the remaining sugars?
3. Make a krausen brew and transfer it to the main brew and let it ferment out?
4. Add yeast nutrients to the present brew?

Note: The beer has some of the primary yeast and is in soda kegs at 70 degrees F.

Thank you,
Peter Caddoo
New Orleans, Louisiana

Dear Peter,

I'd recommend starting a vigorous culture of yeast in new wort and pitch it at high krausen, a time when the yeast is thoroughly satiated with oxygen. Be sure to oxygenate the wort you're culturing with.

Adding oxygen to an already partially fermented brew doesn't work too well. I know, I tried it. Blech.

What caused the stuck fermentation? I don't know, but it probably is a problem that the addition of yeast nutrients won't help.

When you have this kind of lag in fermentation it is especially important that your brewing procedures are extremely clean. If you're doing an open fermentation, this kind of problem would be a very serious one because of the ease of introducing airborne contaminants.

A second chance, maybe,
The Professor, Hb.D.

Naked Water

Dear Professor,

I have a question about treating water. A rule of thumb I have been told about water is that if it is good enough to drink, it's good enough to brew with. My dilemma is that I don't drink the water. There is, however, a water store near my house that sells distilled filtered water which I drink, and can use for brewing. My question is how should I treat the water when I brew with it, since it has most (if not all) of the minerals removed? I mainly make ales, but I got my hands on an old refrigerator, so I am going to start playing around with lagers. Is there a rule of thumb for treating "clean" water that I can follow when brewing?

Your humble homebrewaholic,
Terry Krein
San Jose, California

Dear Terry,

If you use extracts there's no need to add minerals. If you do all-grain or even part-grain mashes then mineral balances need to be made to your distilled water. Generally, for five gallons add two to three teaspoons gypsum, but I recommend consulting the "water" sections of brewing books for more details.

*It's hard, hard, hard to be a rock,
The Professor, Hb.D.*

Yogurt Beer Revisited

Dear Professor,

In the letter: "No Culture," page 64 of *zymurgy* Winter 1988 (Vol. 11, No. 5), you state no knowledge of a yogurt-cultured beer. Actually, a beer made with *Lactobacillus Bulgaricus* was briefly produced in Berlin, around the beginning of this century. I think it was made by the brewery attached to the Brewing Research Institute there. It was commercially marketed, intended as a health-food beer. I have never had time to follow up on this story, but will do so one day.

Best regards,
Michael Jackson
London, England

Dear Mr. Jackson,

Thanks, Mike, old chap.

*Fermently,
The Professor, Hb.D.*

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Microwaved Panties?

Dear Professor,

I have been experiencing a problem with mineral deposits on my bottles and glass carboys after they are left in a solution of household bleach and tapwater. The effect seems to worsen with longer contact with the solution. I don't measure the bleach when I pour it in the buckets of bottles or the carboys, so I'm probably using too much. I suppose this has something to do with the hardness of the water here in southern California and the action of ions in the solution. The deposits come off with a rinsing in lime removers you can buy at the supermarket. Can you explain the cause of the deposits?

I also have a question about sanitation. Of what value might a microwave oven be in sanitizing glass, hard plastic, cloth or paper items? I heard on the radio that some doctors recommend that women microwave their (cotton) underwear to reduce the risk of problems with yeast. Couldn't this concept be extended to a batch of bottles that have been cleaned and

allowed to dry? It seems to me that being able to wash and dry my bottles ahead of time and then simply "nuking" 'em right before bottling would make bottling day a little shorter and less hectic.

Thanks,
Sean Lamb
Orange, California

Dear Sean,

Simply put, no, I can't explain your deposits, but do they really need explaining if you've got the solution to them? I mean, like, how does gravity work? Does it matter how it works when you're setting that bottle of beer on the counter? Actually I'm curious just like you, but really, do you want me to investigate this further? (Say no, say no.)

Now about that nuked underwear. Wow, that's fantastic. You know, one can never be too careful these days. The thought about bottles crossed my mind, too, but my microwave isn't tall enough for bottles to stand up in. When placed on their side it took too long for the water to steam off. Seems like a tedious, long process,

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although probably OK for those few bottles you're sterilizing for yeast culturing. But for two or three cases of bottles, I'd stick with chlorine water soak and rinse. It'll be shorter and less hectic.

*Nuclear underwear!
The Professor, Hb.D.*

Bean Blooms Ban Brewing

Dear Professor,

In The Old Farmer's Almanac, 1989, on the calendar it says for June 22, "Don't brew while beans blossom." Please explain.

*Sincerely,
Andrew J. Jones
Rochester, New York*

Dear Andrew,

Everyone knows that June 22 is the summer solstice. We know that as the sun passes over the equator the rays strike the earth in a near perpendicular pattern. This phenomenon allows the reflection to bounce directly back into space creating a warming of the undersides of nearby clouds. Bean blossoms do particularly well during these intervals, but also so do wild yeasts. And for five brief but horrific days wild yeast are the scourge of the earth (in the Northern Hemisphere) and only the most sanitary brewers have a duck's breath chance in hell at brewing clean beer.

Remember, I'm not a real doctor (I have a master's degree).

*Quack, quack,
The Professor, Hb.D.*

Ballads of Suds Rider

Dear Professor Surf-it,

Do you surf? Well we do here in Santa Cruz, and make the best Surf Suds around. I have two questions for you. Do you import cookies on the side? Every issue I get has crumbs in the pages. Must be the mailman. Do you have an HBU chart? You know, Homebrew Bittering Units, that says what a porter, lager or ale needs in bittering units. Lager—7? Ale—10? Porter—8?

*Suds Rider (Frank Bond)
Sunnyvale, California*

Dear Suds,

Thanks for the tip-off. I always suspected that our printer also prints "Crumbs R Us" magazine. Now I got 'em crumbs down. If you had flakes of pie crust between the pages, I would have had to fess up; I'm a pieromaniac.

A Homebrew Bittering Units Chart? What a great idea. Look for it in issues to come.

I like to think I am a surfer of good beer.

*Down the pipeline,
The Professor, Hb.D.*

Sterile Brewing

Dear Professor,

I've noticed that many recipes call for adding cold water to the hot wort to lower its temperature so that the yeast can be pitched as quickly as possible. With all the talk of the importance of sterilization, is it OK to use such a procedure to cool down the wort, or should all the water used in brewing be boiled? Does it make any difference?

*Brewfully Yours,
Mike Desko
New York, New York*

Dear Mike,

Let your conscience and experience guide you. When I brew I like to make the best beer possible with the least amount of work. Boiling tap water and then cooling it is expensive and a hassle. I run my water through a charcoal filter to get the chlorine out. That is worthwhile, but I don't worry about bacterial contaminants in my water. I'm sure there are some. All water supplies have them. But I figure that the amount is miniscule compared to the advantage of using clean and sanitary brewing procedures and clean, healthy, active beer yeast in adequate amounts. Good yeast will overwhelm the small amount of bacteria in most water used for homebrewing.

Yet if your conscience tells you otherwise, do it your way. I know there are many who believe differently.

Until I know that my water is a problem, I won't fix a problem I don't have.

*Conscientiously,
The Professor, Hb.D.*

REVIEWS

COLONEL JOHN

Editor's note: Colonel John routinely brews according to his own procedures, which sometimes vary significantly from those suggested by product manufacturers. He believes these changes result in improved products.



New Product: Yellow Dog Amber Malt Syrup

The Home Brewery of Fontana, Calif., announces a new malt extract — Yellow Dog Amber, an unhopped malt syrup.

Yellow Dog Amber is unique because the makers list the full contents and their mashing procedure on the label. Contents are Klages 2-row malted barley, a small amount of malted wheat and some chocolate malt.

The makers of Yellow Dog recommend that modern brewing practices be used with their product. This includes all-malt-extract brewing, a one-hour boil, rapid wort chilling and closed fermentation. This is very interesting and encouraging. Perhaps a revolution in homebrewing is about to take place.

Yellow Dog is available only from the Home Brewery at this time. Such

conditions could change. Plans are afoot to produce a Yellow Dog light and a Yellow Dog dark extract.

I look forward to brewing and reviewing Yellow Dog malt extract in the near future.



Brewing Premium Lager Brewsack

Brewsack, previously announced in *zymurgy* as a new product, is indeed unique and simple to use. Everything is already inside the polyethylene sack except for water and the accompanying package of yeast. The sack has a filler cap with pressure relief at the top and a draw valve at the bottom.

Easy-to-follow instructions accompany the Brewsack. Add a small amount of boiling water to liquefy the 2.75 pounds of malt syrup and sugar. Add cold water for a total volume of 20 U.K. pints (3 US Gallons). Add the contents of the yeast package and tighten filler cap. Lean the sack against the back of a chair and let ferment at a temperature of about 60 to 70 degrees F. I followed those instructions exactly.

There were no provisions for temperature or hydrometer readings and I could not see through the bag to determine when ferment had started. Fortunately this question was answered when the bag swelled up tight as a basketball.

Brewsack lager was taste-tested six weeks after the start of fermentation. The brew was clear but not quite brilliant with a pale golden color and a respectable head of foam that lasted the life of the beer.

Brewsack had very little malt aroma, probably because of the unknown quantity of sugar, and little or no hop aroma.

The malt flavor was faint and fleeting. A pronounced cidery, appley flavor was quickly detected, almost certainly a product of the sugar. There were no unpleasant flavors or aftertaste to mar the pleasure of drinking Brewsack Lager.

Brewsack beer is very easy to make and should be a user-friendly operation for beginners. It seems that after the beer is all gone the sack remains as a throwaway item. Perhaps it could be recycled.

Iron Master Pilsener Lager Kit from England

Ironmaster Pilsener Lager kit weighs 4 pounds. It contains hopped barley extract and a package of yeast. I wish to emphasize this is not malt extract. It is a syrup extract from enzymes and unmalted barley. There is a difference. Ask your local supplier to explain.

The instructions say to combine the contents with 2.2 pounds of sugar in a small amount of water and simmer for five minutes, then add cold water to 40 UK pints (6 US gallons) and allow to ferment at 65 to 80 degrees F covered with a clean cloth or loose-fitting lid. Bottle after seven days with one-half teaspoon of sugar in each bottle.

I modified these instructions and used 2.2 pounds of dry malt extract in place of the sugar, boiled for 45 minutes, fermented at 60 to 70 degrees F in a seven-gallon carboy and batch primed at bottling time with one cup of corn sugar boiled in a small amount of water.

Original gravity was about 1.040; final gravity about 1.012. The beer was in the fermenter 14 days and in the bottle 21 days when reviewed.

Ironmaster Pilsner Lager was a pale golden color with a small long-lasting head of extremely fine bubbles.

The aroma was generously malty and there were no esters or any strange aromas or flavors to mar a

pleasant brew. The flavor was malty and bitter, with plenty of hop bittering character.

Ironmaster Pilsner Lager was crisp and clean all the way through the aftertaste.

The Brew-Makers Filter

Not long ago I received a Brew-Makers water filter to test out at home. It was a nice surprise, but nothing like the surprise I got when I actually installed it.

Because I'm not known for mechanical aptitude, I viewed the installation with some trepidation. Five minutes later I had the cylinder hooked to the faucet and a steady stream of water coming out. The water was a little dark at first, but that passed with the first quart. I filled a glass from the filter and another from my tap. I could smell the difference from more than six inches away, and the flavor was equally noticeable.

Then I decided to read the mate-

rial. The filter has polyethylene filter disks on either end of a cylinder filled with granular activated carbon that has been impregnated with silver. The seven ounces of carbon have between 15 and 40 acres of surface area, according to the manufacturer.

The countertop model is good for approximately 10,000 gallons, an average of eight gallons daily for a period of 36 months. Some of the filters inside are replaceable, depending on the model.

The porous filter disks remove the organic sediment while the carbon removes some contaminants and silver retards bacterial growth in the water standing in the filter between uses. Chlorine is removed, but the minerals that give water its character (both good and bad) are retained. Chlorine removal makes water taste great in coffee and beer.

For further information on the complete line of filter systems contact Brew-Makers, 1059 Andover Park E., Seattle, WA 98188.

—Daniel Bradford

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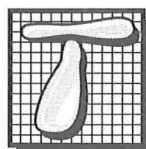
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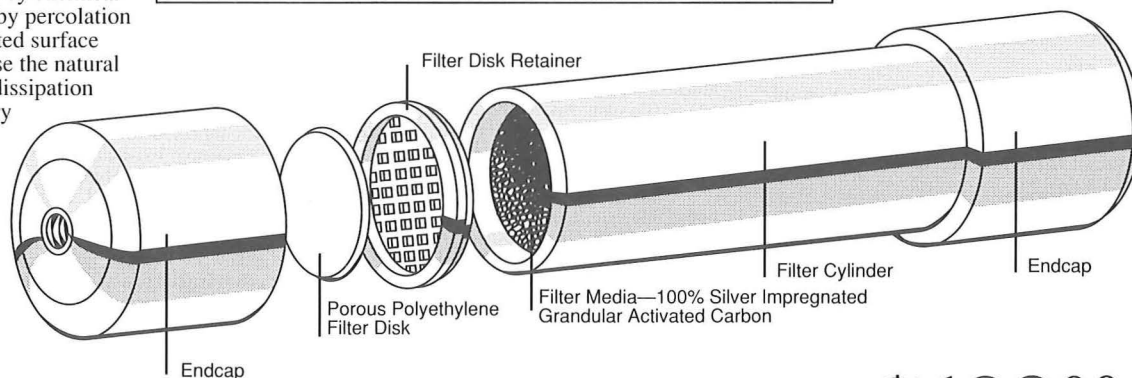
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HOME BREW CLUBS

DAVID EDGAR

zymurgy always welcomes news and photos of homebrew club members and events. Special thanks to all who sent in the Club News Insert forms—remember, this is your column. If you didn't get the forms, write or call the AHA office. Send information to David Edgar, Club News Editor, c/o zymurgy, PO Box 287, Boulder, CO 80306.

NEW CLUBS

CALIFORNIA

Yolo County Homebrewers: A new club that meets in Woodland on the third Thursday of each month. Guest speakers and beer-of-the-month competitions promote good brewing and encourage participation in competitions. Contact: Vern Wolff, PO Box 538, Esparto, CA 95627; (916) 787-3615.

FLORIDA

Good Old Boys of Beer (GOBBS) held its first meeting Jan. 9 at the homebrewery of charter member and recording secretary Jerry Raymond. "The other member also was present," he reports.

Robin Nyquist was elected president and treasurer. Jerry was elected vice president, in addition to his duties as secretary. Contact: Jerry Raymond, 205 Zaratoa Ave., St. Augustine, FL 32084; (904) 824-0122.

MINNESOTA

Bosso Brewing Co.: "Tired of waiting for someone in the Twin Cities to start a homebrew club, I finally just started one myself. Meetings are held at the Bosso Subterranean Blues Bar (and Sometimes Grill) which is located in my basement," writes Martin Henschel, Brewmaster. Darlene Joyer is the first president. Contact: Darlene Joyer, 1397 James Ave., St. Paul, MN 55105; (612) 699-6864.

OREGON

Society for Upgrading Drinkable Spirits (SUDS): Dues are \$12.50 and subscriptions to the *Suds-Line* are \$3.75. Contact: Kerry Carpenter, 1717 Main St., Baker, OR 97814; (503) 523-5057.

WISCONSIN

Brewtown Brewmasters: Sponsored by The Basement Brewmaster, the club first met in January. "Local yeast guru" Bob Burko chatted with members on yeast strains and their different characteristics. The tasting was highlighted by Jim Surwillow's Almond Stout. Contact: Mark May, The Basement Brewmaster, 4280 N. 160th, Brookfield, WI 53005; (414) 781-2739.

ALABAMA

Birmingham Brewmasters: The club meets the first Thursday of each month at the Birmingham Homebrew Shop. Contact: Ben

Meisler, PO Box 19728, Birmingham, AL 35219; (205) 967-6965.

Madison Sobriety Club: The club has no formal structure and meets approximately every six weeks. Contact: Steve Conklin, 311 Red Oak Road, Madison, AL 35758.

ALASKA

Great Northern Brewers held its beer competition at the Fur Rendezvous in February. Congratulations to Carl Hein for taking best of show. However, "We have won the battle but not the war," members report. All are encouraged to continue letter-writing efforts to state senators and representatives to keep homebrewing legal in Alaska. The dispute centers on a 1986 ruling that prohibits home-made alcohol. Apparently it is common practice in the bush to take fruit juice or fruit cocktail (anything with fermentable sugar), add a few pounds of sugar and baker's yeast and let it ferment for two days. About 3,000 petition signatures were collected at the Fur Rondy demonstrating a large base of support from non-brewers as well as brewers. Meetings are the third Tuesday of each month at the bar at Harry's. Contact: Dave Olewiler, 7601 E. 34th Ave., Anchorage, AK 99502.

ARIZONA

Bisbee Brewers: Contact: Bruce "Zub" MacMasters, Box 144, Bisbee, AZ 85603.

Brewmeisters Anonymous: The March newsletter featured recipes for almond ale and "Beer Barrel Meat Loaf with Beer Blaze" (glaze) and a review of Kentucky's Oldenberg Brewery. Contact: Harold Gee, 242 W. Ivyglen, Mesa, AZ 85201; (602) 834-3974.

CALIFORNIA

Anza Brewers and Connoisseurs: Contact: Al Andrews, 5740 Via Sotelo, Riverside, CA 92506; (714) 682-7202.

Barley Bandits: New 1989 officers are president, Fred Riggs; vice president, Bill Grider; and secretary, Dick Reese. Contact: Dick Reese, 105 S. Glendon, Anaheim, CA 92806.

Butte County Brew Crew: Contact: Bill Kalberer, The Home Brew Shop, 331 Main St., Chico, CA 95928; (916) 342-3768.

Clan de Stein: Annual dues are \$15 per household. Contact: Diane Keay, 183 Nob Hill Lane, Ventura, CA 93003; (805) 648-3836.

Crown of the Valley Brewing Society, Pasadena, meets monthly at the Crown City Brewery. For \$12 dues per year, benefits include a monthly newsletter, access to Crown City Brewery's library of brewing literature and a 10 percent discount at the local homebrew shop, The Shadetree Shop at La Crescenta. Contact: Mike Lanzarotta, Crown City Brewery, 300 S. Raymond Ave., Pasadena, CA 91104; (518) 577-5548.

Fellow Fermenters Association held its January and February meetings at the Hopland Brewery. New officers for 1989 are: president, Kit Schweitzer; co-vice presidents, Terri McCartney and Colette Emanuel; and secretary-treas-

urer, Melody Adams. Annual dues are \$12. Contact: David McCartney, c/o MCC Homebrew Supplies, 707 Highway 175, Hopland, CA 95449; (707) 744-1704.

Gold Country Brewers Association:

The first annual Beer and Food Festival was held at the Sacramento Holiday Inn on Feb. 18 with a variety of foods and a multitude of fine micro brews. The Club Celebration in April featured a chili cook-off and a bountiful supply of homebrews. Future meetings will include a dissertation on hops, a sensory evaluation of aromas and the importance of water quality in homebrewing. Dues are \$15 per year. Meetings are held on the second Tuesday of each month at the VFW hall, 3300 "U" St., North Highlands, Calif. Contact: Bill Vandevort (President), 4939 Hollycrest Way, Fair Oaks, CA 95628; (916) 965-6285.

Greater Whittier-La Mirada Foam

Heads: The March meeting featured an amber-to-dark lager contest. Winners were first, Tom Kopacz (bock); second, John Erickson (bock); and third, Ron Baker (continental dark). Contact: Mike Montez, The Brewer's Mart, 16114 Leffco Road, Whittier, CA 90603; (213) 947-5170.

High Desert Homebrewers have reorganized with a new shop, new meeting place and some new members (they're back up to 20 now). Contact: Scott Bryan, 15107 Burns Drive, Apple Valley, CA 92307; (619) 247-0784.

Inland Empire Brewers: The Christmas ale tasting was quite a success, featuring 11 different homebrews (except one). Pale ales were tasted at the February meeting and continental lights in March. Contact: Sam Wammack, 16490 Jurupa Ave., Fontana, CA 92335; (714) 822-3010 or (800) 321-2739 (outside California).

Maltose Falcon Homebrew Society: Congratulations to Dennis Arvidson and Cindy Grove for their third-place finish in the Hail to the Ale IPA competition with Rust India Pale.

Many members are using the Falcons' Nest computer bulletin board. Any homebrewer or beer lover with a computer and modem is welcome to call up the Falcon's Nest, (818) 349-5891.

The Second Annual L.A. County Fair Regional Home Brew Competition will again be co-sponsored by the Maltose Falcons and the L.A. County Fair. This year's competition will be HWBTA sanctioned. Deadline for forms and fees is Aug. 1; deadline for receipt of beers is Aug. 12. Judging will take place Aug. 19, Aug. 26 and Sept. 16 (best of show). Certified judges are encouraged to attend and help with the judging.

Meetings are the first Sunday of each month with elections in July. Contact: Maltose Falcon Homebrewing Society, c/o Home Wine and Beer Making Shop, 22836 Ventura Blvd. Unit 2, Woodland Hills, CA 91364; (818) 884-8586.

Redwood Coast Brewers: Contact: Dave Shields, 617 Amesti Rd., Watsonville, CA 95076.

San Andreas Malts: At the February meeting, Grant Johnston demonstrated his all-grain brewing technique. The February and March newsletters featured questions and answers that Teri Fahrendorf selected from quizzes

given during her studies at the Siebel Institute in Chicago. Contact: Brendan Moylan, PO Box 40744, San Francisco, CA 94110; (415) 994-2771.

Santa Clara Valley Brewers Association: The January-February meeting featured a porter tasting and amber beers were tasted in March. The March newsletter contains an article by Jay Tucker describing his method for calculating the correct strike heat for a mash. Annual dues are \$12. Contact: Rich Moshin, 1876 W. San Carlos Ave., San Jose, CA 95128; (408) 294-7321.

Shasta County Suds'ers and Valley Vintners: On Aug. 19, the Shasta County Suds'ers and Valley Vintners will have their annual barbecue and summer club auction at Anderson, Calif. Contact: Ray Ault, PO Box 839, Anderson, CA 96007, (916) 347-5475.

SLO Brew Club: Contact: Howard Gootkin, 56 Los Verdes Drive, San Luis Obispo, CA 93401; (805) 541-0713.

Sonoma Beerocrats: In January the Beerocrats were treated to an excellent steak dinner at Anchor Brewery in San Francisco for being named California's Homebrew Club of the Year. The dinner, which featured all tasting room taps open wide, was hosted by the Anchor staff. Members also received a guided tour of the brewery. An unexpected highlight of the evening was the chance to meet noted beer authority Michael Jackson.

In February, Mike Hanssen, Mark Hillestad and Byron Burch discussed three different kegging systems. Annual dues are \$10. Contact: Nancy Vineyard, c/o Great Fermentations of Santa Rosa, 840 Piner Road No.14, Santa Rosa, CA 95403; (707) 544-2520.

Wild Yeast Culture held its February meeting at the Pacific Coast Brewing Co. in Oakland. Contact Bob Kattenburg, 1397 E. 28th St., Oakland, CA 94606; (415) 689-9334.

Worts of Wisdom: The club visited the Anchor Brewing Co. in January. A good time was had by all. New 1989 officers are president, Frank Bond; secretary, Dan Goulet; treasurer, Tom Houts; and activities director, Dean Grove.

A questionnaire was filled out by all who attended. Excellent suggestions were presented and will be incorporated as the year rolls along.

The Worts continue to conduct blind tastings at monthly meetings, comparing one homebrew to two commercial beers in the same category. It is not uncommon for the homebrew to receive the highest score. Meetings are the last Wednesday of each month. Contact: Dick Bemis, c/o The Fermentation Settlement, 1211C Kentwood Ave., San Jose, CA 95129; (408) 973-8970.

Yolo County Homebrewers: see listing under *New Clubs*.

COLORADO

Deep Wort Brew Club: Contact: Bob Wood, 110 S. Limit St., Colorado Springs, CO 80905; (303) 520-0348.

CONNECTICUT

Beer Brewers of Central Connecticut (BBCC): Four members entered the New England Regional Competition in February. Ron Page won two firsts (wheat, strong), two seconds (porter, American light), and two thirds (stout, brown ale). Phil Markowski won a first (stout), two seconds (steam, strong) and one third place (continental dark). Judy Lawrence won second place in the stouts. Ron's success at this competition and the regional last November enabled him to win the first New England Homebrewer of the Year Award for 1988-1989. Way to go!

Theme beer styles for the summer months are June—French beers (annual summer picnic); July—Pilseners; August—Belgian beers. Meetings are the first Friday of each month. Contact: Judy Lawrence, Box 511, Marion, CT 06444, (203) 628-4693.

Underground Brewers' Club of Southeast-

ern Connecticut: The March meeting was held twice, in different parts of the state; first in Old Greenwich then in Orange, in the New Haven-Milford area. Annual dues are \$10 to help pay for entry fees in national and regional competitions. Contact: Pat Baker, 11 Riverfield Drive, Weston, CT 06883; (203) 227-8028.

FLORIDA

Escambia Bay Brewers: Annual dues are \$12. Contact: Steven J. Fried, 4544 Monpellier Drive, Pensacola, FL 32506; (904) 455-8722.

Florida Institute of Zealous Zymurgists (FIZZ): New officers are president, Dave McCarty; vice president, Evelyn Robinson; secretary, Liz Conover; treasurer, Helen Rydzewski. At press time FIZZ was gearing up for their Spring Fling homebrew competition May 13. Dues are \$12 per household. Contact: Evelyn Robinson, 2626 S.W. 14th Ave., Ft. Lauderdale, FL 33315; (305) 764-1527.

Good Old Boys of Beer (GOBBS): see listing under *New Clubs*.

IDAHO

Ida Quaffers Homebrewers Association: January found a small but select group gathering at the home of Lee and Nancy Olterness for the Super Bowl. February was the big blow-out with 115 people attending the anniversary meeting. Two kegs of beer were donated by T.W. Fisher's of Coeur d'Alene. Donations were accepted, with the proceeds going to support the third annual Gem State Homebrew Competition in April. New officers are Pat Allaire, president; Byron Defenbach, vice president; Del Motz, treasurer; Loren Carter, newspaper editor; and Terry Dennis, membership chairman.

Meetings are the third Sunday of each month at various places. Annual dues are \$8 per year. Contact: Loren Carter, 3401 Tamarack Drive, Boise, ID 83703; (208) 342-4775.

ILLINOIS

Chicago Beer Society has established a new type of leadership—a board of trustees. Officers include president, Marty Nachel; vice president, Dan Kasan; secretary, Randy Mosher; and treasurer, Bob Lifka. Contact: Chicago Beer Society, PO Box 1057, LaGrange Park, IL 60525; (312) 692-BEER.

Egyptian Zymotic (EZ) Brewers have 45 members who live in the 12 southernmost counties of Illinois. Fifteen members are in or near Carbondale. Contact: Doug Diggle, EZ Brewers, c/o Old Town Liquors, 514 S. Illinois Ave., Carbondale, IL 62901; (618) 457-3513.

Headhunters Brewing Club: Contact: Greg and Lynne Lawrence, Route 1, Box 64W, Sugar Grove, IL 60554, (312) 557-2523.

Northern Illinois Better Brewers Association (NIBBA): Contact: Jon Huettel, 2316 Oak St., Northbrook, IL 60062, (312) 498-6154.

KANSAS

Greater Topeka Hall of Foamers: The club meets the second Wednesday of each month. Contact: Tom Bonnel, 320 Woodlawn Ave., Topeka, KS 66606, (913) 232-8103.

Kansas City Bier Meisters: Walt Mackin's Christmas Ale took second place in the AHA's first Hail to the Ale competition in February. The Meisters were busy in February and early March with their KCBM Regional Homebrew Competition. The March meeting was in Lawrence at the newly opened Free State Brewery and Pub. Contact: Alberta Rager, 5531 Reeds Road, Mission, KS 66202, (913) 236-5953.

KENTUCKY

Kentucky Homebrewers Association: The club's informal meetings provide a medium for exchange of recipes, techniques and, of course, homebrew. KHA is sponsored by Heidenreich's

Homebrew Wine and Beer Supply. Contact: Allen Heidenreich, 6363 Athens-Boonesboro Road, Lexington, KY 40509; (606) 263-9841.

LOUISIANA

Bayou Brewers: Contact: Bill Vollenweider, c/o 190 Specialties, 10553 Florida Blvd., Denham Springs, LA 70726; (504) 665-3226 and (504) 664-8034.

Crescent City Homebrewers: Congratulations to Russ Schlotzhauer, winner of the first annual World's Longest Beer Run. The prize is an expense-paid trip to Munich, West Germany, to have a beer or two and then fly back with as much fresh hock and double-bock as he can carry for the club to enjoy at their next meeting. Four other CCHers joined Russ on his mission. CCH's spring regional contest was in April. Contact: Mike Biggs, 1928 Metairie Heights, Metairie, LA 70001; (504) 833-6140.

MAINE

Belfast Area Brewers: The BAB March newsletter featured a great article by Kathy Rybarz on how to grow hops. Contact: Bruce Gillett, RR 3, Box 789, Belfast, ME 04915.

Seacoast Homebrewers: Contact: Seacoast Homebrewers Club, RD 3 Box 149, Kennebunkport, ME 04046.

MASSACHUSETTS

Boston Wort Processors: Congratulations to Steve Stroud, winner of the AHA's first Hail to the Ale contest with his Beechwood Biscuit India Pale Ale, an extract-based homebrew aged with beechwood chips. Apparently it was this extra effort for authenticity that set Steve's beer apart from the other finalists.

Fifteen Worts and friends enjoyed a weekend in Portland, Maine, that included a tour of the D.L. Geary Brewing Co. Geary himself joined them later that evening for a Best Bitter at the new brewpub, Gritty McDuff's. Annual dues are \$10. Contact: Tom Ayres, 65 Langdon St., Apt. 6, Cambridge, MA 02138; (617) 354-4326.

Valley Fermenters: The February meeting featured a tasting of a wide variety of Belgian beers. Winners at the New England Regional include Charlie Olchowski, one first, two seconds and two third-place awards; John Korpita, one first and four thirds, and John Krauss and Keith Wilbourn with one second each. In club totals, the Fermenters just barely beat out the Boston Wort Processors for second place. In the 1988 New England Homebrewer of the Year contest John Korpita and Charlie Olchowski shared third place. Congratulations! Annual dues are \$10. Contact: Steven G. Budd, 482 W. Mountain Road, Bernardston, MA 01337.

MICHIGAN

Ann Arbor Brewers Guild: The March meeting featured a presentation on water chemistry given by a chemist from the Ann Arbor water treatment plant. AABG planned an excursion in April to Frankenmuth to tour the new Frankenmuth Brewery. Dues are \$5. Contact: Rolf Wuchurer, 1404 White, Ann Arbor, MI 48104; (313) 663-8196.

Brewers of Zymotic Omnivorous Suds (BOZOS): Contact: Ann Tarr, 41 Holmdene N.E., Grand Rapids, MI 49503.

MINNESOTA

Northern Ale Stars Homebrewers Guild: The January meeting was at the home of Mike Undis. Mike brewed his first beer at the meeting. In February several members attended the third annual Bock Beer Festival at the August Schell Brewing Co. in New Ulm, and toured Schell's new Museum of Minnesota Brewing.

The February newsletter includes a new feature, "Twin Cities Beer Column" by Kelly Kuehl and an article on sanitation. Annual dues

are \$10. Contact: Don Hoag, 5320 Beartrap Road, Saginaw, MN 55779; (218) 729-6302.

Bosco Brewing Company: see listing under *New Clubs*.

MISSOURI

Missouri Winemaking Society: Contact: Bob Bubenik, 7314 Manchester, Maplewood, MO 63143.

St. Louis Brews: Belgian Trappist ales, strong ales and barley wines were tasted at the February meeting. The March newsletter included a copy of the Missouri laws concerning microbreweries. Coming beers of the month are July—wheat, August—Pilsener and September—Munich (light and dark). Dues are \$10 per year. Contact: John Standeven, 7314 Manchester, St. Louis, MO 63143.

MONTANA

Zoo City Zymurgists: New officers are president, Jim Leuders and vice president, Jeff Kenney. Contact: Jim Leuders, PO Box 2515, Missoula, MT 59806; (406) 721-1919.

NEVADA

Washoe Zephyr Zymurgists: The annual WZZ awards were presented at the January meeting. Rob Bates won the homebrew of the year and Ari Sitts was honored as Brewer of the Year. Contact: Bill and Sue Marble, 11670 Fir, Reno, NV 89506; (702) 972-7438.

NEW JERSEY

Mid-Atlantic Sudsers and Hoppers (MASH): Contact: Mark Bernick, PO Box 105, Flagtown, NJ 08821; (201) 534-9119.

NEW MEXICO

Dukes of Ale: The club meets at least once a month to discuss brewing techniques and produce and sample new brews. Contact: Guy Ruth, 11524 Manitoba N.E., Albuquerque, NM 87111; (505) 848-5366 (work) or (505) 294-0302 (home).

NEW YORK

Amateur Brewers of Central New York: Planned for May 8 was a Gourmet Beer Dinner featuring special guest speaker Charlie Papazian. Dues are \$15. Contact: Dick Goyer, 301 Wellington Road, Dewitt, NY 13214.

Broome County Fermenters Association: The January contest was for brown beers (brown ales, continental darks and bocks); and in February, black beers (porters, sweet stouts and dry stouts). No meetings will be held in June, July or August. Dues are \$10. Contact: Brice Feal, 2601 Grandview Place, Endicott, NY 13760; (607) 724-5417.

Long Island Brewers Association (LI-BATION): Meetings are the second Tuesday of the month. Contact: W. Paul Markiewicz, PO Box 955, Sound Beach, NY 11789.

New York City Homebrewers Guild: Annual dues of \$10 per year include the magazine *The Written Wort*. Meetings are every second Tuesday. Contact: NYC Homebrewers Guild, Madison Square Station, PO Box 559, New York, NY 10159.

Sultans of Swig: Contact: Tim Herzog, 412 Lamarck Drive, Cheektowaga, NY 14225; (716) 837-7658.

Troy Homebrewers Club: Contact: Jay Hersh, PO Box 352, Troy, NY 12180; (518) 276-8047, days; or (518) 273-8559, evenings.

Upstate New York Homebrewers Association: Members were gearing up for the April 8 competition sponsored by UNYHA at the Hof Brau Haus in Rochester.

Contact: Gary Bouchard, PO Box 23541, Rochester, NY 14692.

NORTH CAROLINA

Alternative Brewers: Contact: Isaac Fleming,

114 Freeland Lane, Suite O, Charlotte, NC 28217; (704) 527-2337.

Triangle Unabashed Home Brewers (TRUB) (formerly Triangle Homebrewers League): Meetings are now being held at the Weeping Radish Restaurant and Brewery in Durham. Last month Brewmaster Dave Hull toured members through the brewery and provided lots of fresh beer. Rick discussed "tchook," a native brew he learned about on his trip to Togo. An experiment was planned for March in which six brewers were to brew an identical recipe and the results tasted in April. 1989 officers are president, Rick Rinehart; vice president, Scott Oglesby; and treasurer, Steve Levison.

Annual dues are \$15. Meetings are on the second Wednesday of each month. Contact: Rick Rinehart, 1904 Elmstead Road, Durham, NC 27704; (919) 383-9221.

OHIO

Dayton Regional Amateur Fermentation Technologists (DRAFT): The January meeting was at the not-yet-open Growler's Brewpub amid just-finished woodwork and newly arrived (the day before) brewtanks. Contact: Patrick Pickett, 109 Oakview Drive, Kettering, OH 45429, (513) 293-3019.

OKLAHOMA

Fellowship of Oklahoma Ale Makers (FOAM): The fifth annual FOAM Okie-Irish Homebrew Competition was planned in conjunction with National Homebrew Day May 6.

Summer beers of the month are July—wheat beer, August—Pilsener, September—steam beer. Contact: Bruce Lemmon, 2627 E. 14th St., Tulsa, OK 74104.

OREGON

Cascade Brewers Society: The January meeting found CBS members at Eugene's recently opened High St. Brewery and Café. Annual dues are \$10 and meetings are the second Monday of each month. Contact: Jim Stockton, 3120 Start St., Eugene, OR 97404.

Heart of the Valley Homebrewers were busy during the winter months preparing for the seventh annual Homebrew Festival and Competition in April in Corvallis. Contact: Pat McMullen, 341 S.W. Second, Corvallis, OR 97330.

Hopheads: Contact: Charlie Hawks, 1757 S.E. Kane, Roseburg, OR 97470.

Oregon Brew Crew: Annual dues are \$12. Contact: Jeff Frane, 3652 S.E. Yamhill, Portland, OR 97214; (503) 231-7620 (evenings) or (503) 238-4894 (days).

Society for Upgrading Drinkable Spirits (SUDS): see listing under *New Clubs*.

PENNSYLVANIA

Happy Valley Homebrewers: At the January meeting Frank Keller demonstrated what happens when you use corn sugar and boil in an aluminum brew pot. The results were undesirable, members decided. When dry malt extract and an enamel brew kettle were substituted, the results were 100 percent better.

The February meeting featured local beekeeper Garth Benton as guest speaker. His talk included discussion of the different types of honey available in the area, color and taste differences and beekeeping in general.

Meetings are the third Sunday of the month. Annual dues are \$12. Contact Pat Hayes, 311 S. Allen St., Suite 117, State College, PA 16801; (814) 466-6774 after 9 p.m.

Homebrewers of Philadelphia and Suburbs (HOPS): Contact: Dave Mela, 909 Madison Ave., Prospect Park, PA 19076.

Three Rivers Alliance of Serious Homebrewers (TRASH): Contact: Greg Walz, 3327 Allendorf St., Pittsburgh, PA 15204; (412) 331-5645.

SOUTH CAROLINA

Hoppportunists: Contact: Tom King, PO Box 71, Clemson, SC 29633, (803) 638-6331.

TENNESSEE

East Tennessee Brewers Guild serves the amateur brewers of the Knoxville and Oak Ridge areas. Meetings are on the first Tuesday following the first Monday of each month. Four informal competitions are held each year. Upcoming events include a trip to the AHA conference in June, the traditional light and amber brew competition in June, and Oktoberfest in the fall. Contact: Steve Railsback, RRI, Box 60-A, Lenoir City, TN 37771; (615) 574-5607.

Hillbilly Hoppers Homebrew Club: Dues are \$12 per year. Contact: The Brewhaus, 4955 Ball Camp Pike, Knoxville, TN 37921, (615) 523-4615.

TEXAS

Amarillo Homebrewers: Contact Richard Deford, c/o North Texas Fermentables, 708 W. 16th, Amarillo, TX 79101; (806) 353 9461; or Jim Reese at (806) 359-3356 or 376-1861.

Arlington Homebrewers: Contact: Herschel Gibbs, 3201 W. Division, Arlington, TX 76012, (817) 860-8430.

Bock 'n' Ale-ians traditionally pull out all the stops in December. This year's celebration was no exception. They sampled stouts, wee heavies and strong ales. The stouts were dry and dark and some were imperial. The strong ales got stronger and no one went home hungry.

Meetings are the first Sunday of each month at Hill and Dales Ice House. Contact: Albert Hymer, 1932 W. Huisache, San Antonio, TX 78201; (512) 734-8723.

Brew Maxx Homebrew Club: Contact: Scott Brown, 6702 Susie Road, Amarillo, TX 79119; (806) 655-2330.

Cowtown Cappers: Contact: Rob Stenson, c/o the Winemaker Shop, 3132 W. Seventh St., Fort Worth, TX 76107; (817) 877-1277.

Foam Rangers are presently reformatting club structure to help individuals become better brewers. Newly railroaded Grand Wazoo Brad Kraus is setting up brew-ins throughout the year to get the experienced brewer together with the novice, at which time they will experiment with brewing parameters. Results will be consumed at subsequent brew-ins. Other enhancements may include homebrew judging at meetings to heighten a brewer's awareness of beer styles and what judges look for in a beer.

The Rangers hold full-fledged pub crawls (homebrew, T-shirts, buses) in May and minipub crawls in the winter. In addition, they invite everyone to have a blow-out at the annual Dixie Cup Competition in October.

Meetings are the third Friday of each month. Visitors are encouraged to stop in at meetings or events and check out all this brew-ha-ha. Contact: Don Wilson, c/o DeFalco's Home Wine and Beer Supplies, 5611 Morningside Drive, Houston, TX 77005; (713) 523-8154.

Malthoppers Beer Club: Contact: Lili Lyddon, Box 9560, College Station, TX 77840.

North Texas Homebrewers Association: In February, NTHA held the successful Bluebonnet Brew-Off. At press time they were looking forward to their fourth birthday party on May 6 (National Homebrew Day). NTHA is an extremely active club composed of 40 people interested in the art and science of brewing, consuming and comparing fine ales, lagers and meads. Annual dues are \$12 and include a monthly newsletter, *Living the Brews*. Club T-shirts, sweatshirts and Pilsener glasses are available with the logo. Meetings are the second

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BOOKS

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GRAND OPENING — Northeast Fermentations has just opened with a large selection of malts and hops. Low prices and case discounts. Send for free catalog, Northeast Fermentations, PO Box 215, Turners Falls, MA 01376.

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MISCELLANEOUS

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Clubs

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Tuesday of each month at the Olla Podrida. Contact: Paul Seaward, 6008 Lovers Lane, Apt. 212, Dallas, TX 75206; (214) 369-1703.

UTAH

Zion Zymurgists Hops (ZZ HOPS) (formerly See No Evil Homebrewers Association): Goals include the enjoyment of handcrafted beverages, helping beginners get off to a good start and attempting to drag Utah into the 20th century with respect to homebrewing legislation. *The Hop Vine* newsletter subscription is free for active members or \$5 (eight issues) for anyone else. Contact: John Smolley, 2859 Glen Oaks Drive, Salt Lake City, UT 84109; (801) 486-4684.

VIRGINIA

Brewers United for Real Potables (BURP): The British Brewing Co. in Glen Burnie, Md., was host to the March meeting which included a tour of its brewing facilities.

The February/March newsletter contained an interesting essay on the history of brewing in the District of Columbia. 1989 officers are president, Tom McGonigle; vice presidents, Chuck Popenoe and Dick Roepke; editor, Andy Beaulieu; treasurer, Bill Ridgely; li-beer-ian, Jim Dorsch; and mem-beer-ship chairman, John Gardiner. Annual dues are \$12. Contact: John Gardiner, 7845 Heritage Dr., Annandale, VA 22003; (703) 256-5716.

Hampton Roads Brewing and Tasting Society: New 1989 officers are president, Tim Kobetz; vice president, Allen Young; and treasurer, Ron Young. Thanks to past president Lyle Brown for two very good years of leadership.

February's meeting was at the Virginia Brewing Co., Virginia Beach. The club meets the first Wednesday of each month. Dues are \$12 per year. Contact: Ron Young, 2301 Kingsman Lane, Virginia Beach, VA 23456; (804) 427-5695.

WASHINGTON

Brews Brothers: In February the Bros. tasted homebrewed IPAs along with Grant's IPA for a commercially brewed example.

From their March newsletter, "Detective Bro. Fawbush gets credit for discovering an opportunity for the club to buy a very high quality English malt from the Redhook Brewery's overstock. This malt was used in their delicious Winterhook. Burly Bros. Rudi, Dale and Carlson

did the hoisting and hauling and now there is a 55-pound bag reserved for each Brews Bro."

The bock tasting was delayed until April to allow for a judging closer to the AHA May judging. Contact: Craig Harris, 324 29th Ave. E., Seattle, WA 98112; (206) 329-2452.

Fidalgo Island Brewers: Dues are \$12 per year. Contact: Don Harper, 1218 27th Court, Anacortes, WA 98221; (206) 293-4278.

WEST VIRGINIA

Laggards: Contact: Tod Lewark, 1508 1/2 Buckhannon Pike, Nutter Fort, WV 26301.

West Virginia Maltaineers: A "religiously unorganized" club, the Maltaineers have no officers or dues, but they do meet monthly at the Foxfire Restaurant in Morgantown. Contact: Jim Piitt, Stone's Throw, 171 Walnut St., Morgantown, WV; (304) 296-1600.

WISCONSIN

Bidal Society of Kenosha: Meetings are the third Thursday of the month, rotating among members' homes. Dues are \$3 per month. Contact: Dennis Minikel, 5505 63rd St., Kenosha, WI 53142-3050; (414) 656-1871.

Brewtown Brewmasters: see listing under *New Clubs*.

Central Wisconsin Amateur Wine-makers' Club: Contact: Tom Bauer, 112 W. Fifth, Marshfield, WI 54449.

Madison Homebrewers and Tasters Guild went on a beer outing to Milwaukee, where they toured newly expanded facilities at both Sprecher Brewing Co. and Lakefront Brewing Co. MH&TG meets every Wednesday at 8 p.m. at Gino's Cellar Bar, and the public is welcome. Karl Smith is president. Annual dues are \$10. Contact: Steve Klafka, 141 N. Hancock, Madison, WI 53703; (608) 256-2107.

Wisconsin Vintners' Association: In February WVA held its annual Wine and Beer Judging Competition at Clifford's restaurant, with six categories for beer: light, amber, brown, black, strong and specialty. Contact: John Rauenbuehler, 6100 N. Kent, Whitefish Bay, WI 53217; (414) 964-2098.

CANADA

Amateur Winemakers of Ontario (AWO): Subscription rates are \$6 per year for members and \$9 for non-members. Contact: Paul Jean Jr., AWO News, 28 Otten Drive, Nepean, Ontario, Canada K2J 1J2.

Thunder Bay Home Brewers' Association, formed last September, now has 22 members and is growing. The local Renegade Brewery has been of great help to the club, and the monthly meetings are in the brewery's courtesy lounge. The club held its first competition in

January. Contact: Bruce Holm, RR 15, S. 9, C. 51, Thunder Bay, Ontario P7B 5N1, Canada.

AUSTRALIA

Amateur Brewers Association of Victoria: Meetings are the last Wednesday of each month. Annual subscriptions are \$10. Contact: Barry Hastings, 10 Aston Heath, Glen Waverly, Australia, 3150.

NEW ZEALAND

Auckland Guild of Winemakers and Brewers: 1989 officers are president, John Falvey; secretary, Hec Denniston; and treasurer, Howard Rees. The November meeting featured a talk on mead and another on "folly," a wine made from the pruning of grapevines.

A motion was passed effective January 1989 that kit beers may be entered in club competitions on the condition that entrants indicate on their label that the "main ingredient" is a kit.

Meetings are the fourth Wednesday of each month except December. Membership dues are \$14 for single, \$20 for double and \$20 for family. Contact: David Whitehead, 6 Eaton Road, Hillsborough, New Zealand.

Far North Region Amateur Brewers and Vintners Club: Contact: Donna Ward, c/o Post Office, Mangonui, New Zealand.

Hamilton Brewers and Winemakers: The club meets on the first Tuesday of each month at the Ruakura Research Centre in the Social Club Rooms. Contact: Barry Whiteley, 122 Fairview St., Hamilton, New Zealand.

Hibiscus Amateur Winemakers and Brewers Guild: Congratulations to Fred Vickers, who was awarded the trophy for 1988 Brewer of the Year. Jon Kruse won Brew of the Year and Steve Hanna won the Novice Brewer trophy. Steve also won Beer of the Month for February with his lager. Contact: Mrs. Jessie Evans, 111 Whangaparaoa Road, Orewa, Auckland, New Zealand; telephone: Hibiscus Coast 65314.

Manukau Winemakers and Apiarists Club: February's competition was for lager beer. Contact: Basil Dempsey, 18 Picton St., Papatoetoe, New Zealand; Auckland 2785453.

New Zealand Amateur Winemakers and Brewers Federation announces the seventh New Zealand National Competitions January 1990. AHA members who might be in New Zealand will be welcome to attend these competitions in Nelson. January is the peak of their summer vacation period, and Nelson, with its popular beaches, is a great holiday resort, as well as being New Zealand's largest hop growing area.

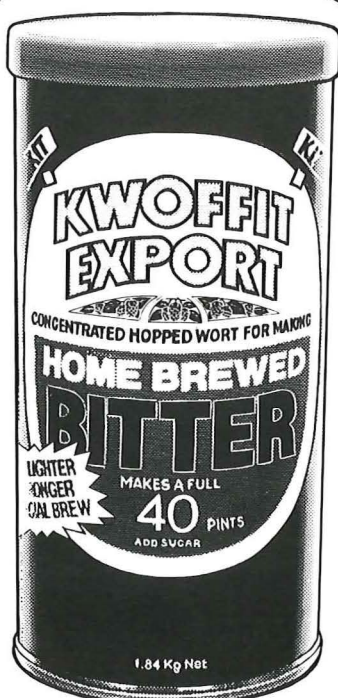
The National Competition will be Jan. 12-14. Write either Marie or Brian Stephens at 4 Churchill Ave., Richmond, New Zealand, or call the Nelson Boys College during the above dates.

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