

# ZYMURGY

FOR THE HOMEBREWER AND BEER LOVER

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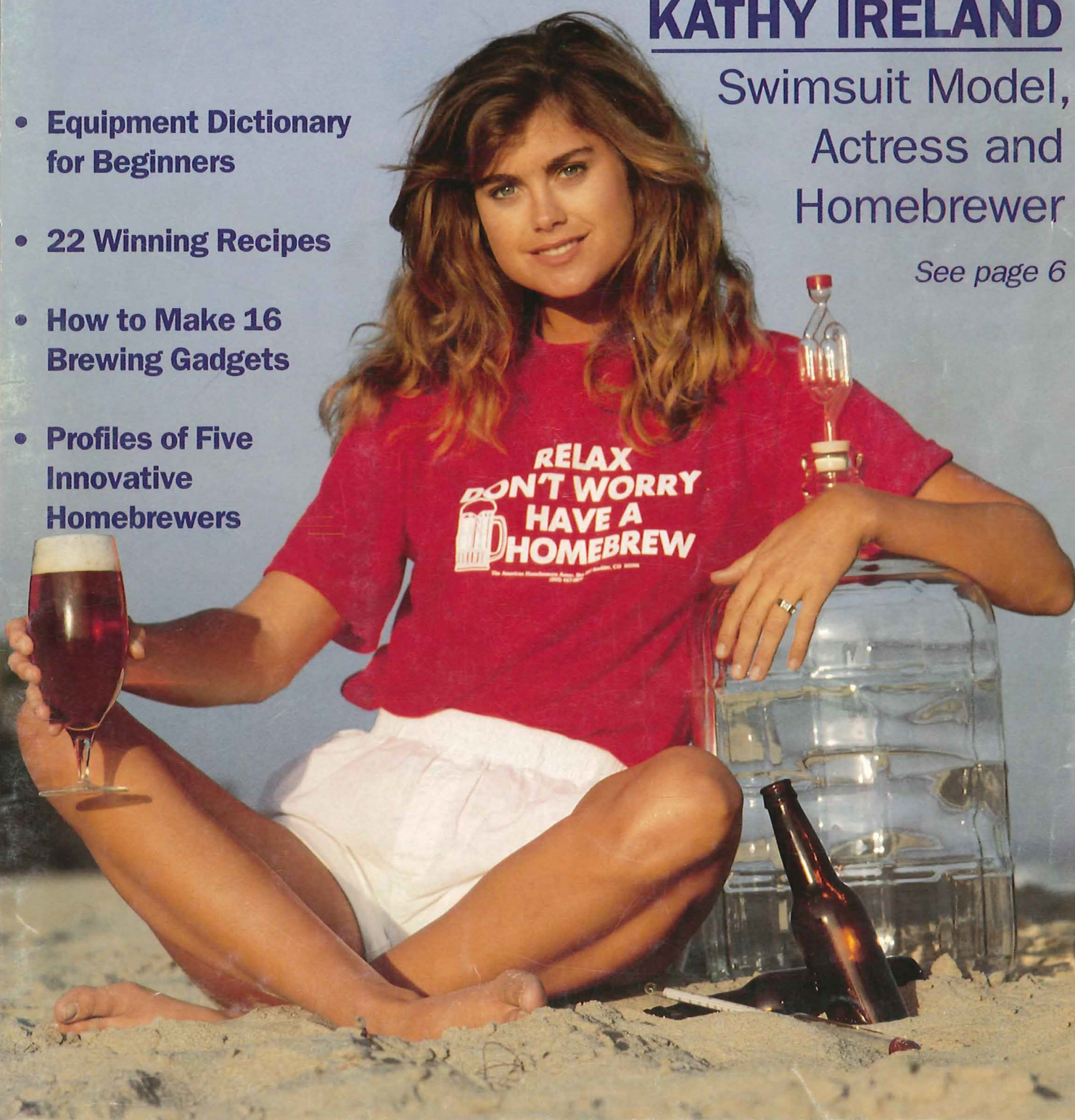
Special Issue 1988

## KATHY IRELAND

Swimsuit Model,  
Actress and  
Homebrewer

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- Equipment Dictionary  
for Beginners
- 22 Winning Recipes
- How to Make 16  
Brewing Gadgets
- Profiles of Five  
Innovative  
Homebrewers



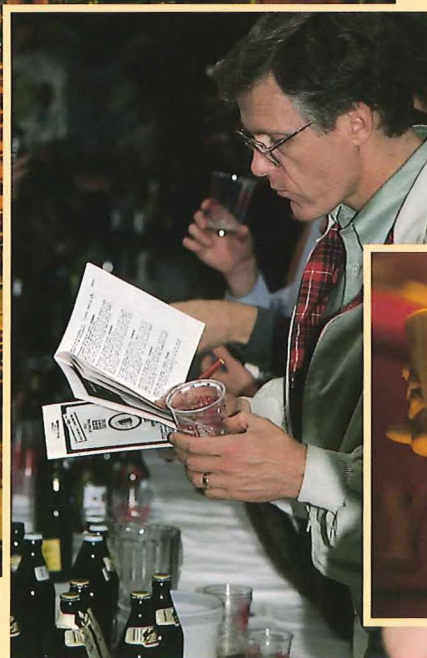


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*For more information see pages 13, 17 and 25.*





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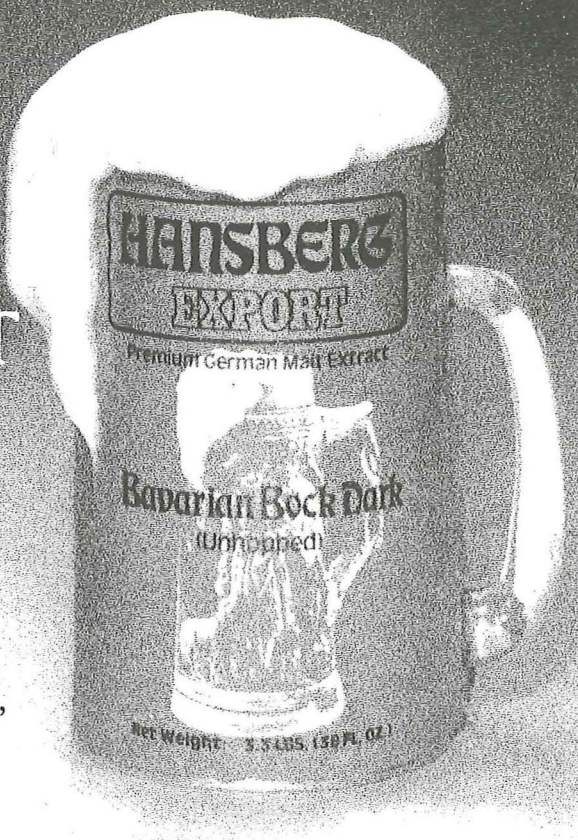


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### THE AMERICAN HOMEBREWERS ASSOCIATION MISSION STATEMENT

*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.*



# Homebrewing à la America

**H**ere, try this," a hand reaches out with a glass of beer, the bottle nowhere to be seen. It's great. It's homebrew. Another hand creeps around from in back of me; a bottle of beer appears, the cap quickly comes off, "Here, try this." It's delicious. It's homebrew.

When I taste someone's homebrew, I don't conjure visions of the homebrewery from which it came. To my way of drinking homebrew, I look at the brewer and then I taste the beer. It's always an afterthought when I get around to asking how the beer was made. The quality of the beer does not seem necessarily to have any bearing on how sophisticated the homebrewery is.

The more I travel and visit homebrewers throughout the United States and Canada, the more confidence I have when I say "Anyone can make quality homebrew, easily." What is fascinating to me is discovering *how* people make quality beer. So much of it is fermented under the kitchen table. Some homebrewers have become super enthusiasts to the extent of literally building their own sophisticated homebrewery. But no matter the degree to which brewing expertise has developed, there seems to be an amazing variety of equipment, gadgets and procedures fashioned by all kinds of homebrewers.

It's clear to me that the creativity that homebrewing inspires begins with the very first batch of beer. Whether it's a simple contraption that expedites siphoning or an elaborate temperature-controlled and programmed environment for fermenting beer, it seems to be the nature of homebrewers everywhere to create a system of their own that suits their lifestyle.

Homebrew equipment is an extension of our mind. As our very own hands are, our equipment is a tool to fashion and help formulate ideas. Many tools are available to us. Manufactured by equipment companies, quite a few are ready-made and able to suit most of our basic needs. Others, not mass-produced, are the creations of individuals with a special need for a particular tool.

Heaven forbid the notion that there is one way, one tool or one process best suited for homebrewing. This endeavor called homebrewing is much too enjoyable to repress creativity.

What a wonderful endeavor homebrewing is; I can't think of many other hobbies or pastimes that are as flexible and rewarding. There are no lifestyles (barring religious taboos) that exclude the time and opportunity to brew one's own, just as there is no one person who can all-knowingly say they don't like the taste of beer. There is a beer and a way to brew for everyone.

This 1988 Special Issue of *zymurgy* magazine is a snapshot and a slice of homebrewing à la America. The personalities, the lifestyles, the equipment, the gadgets, the recipes and the beers. This issue is designed to entice, encourage, inform and inspire you. It is for you to get to know one another beyond the usual presentation of recipes and opinions.

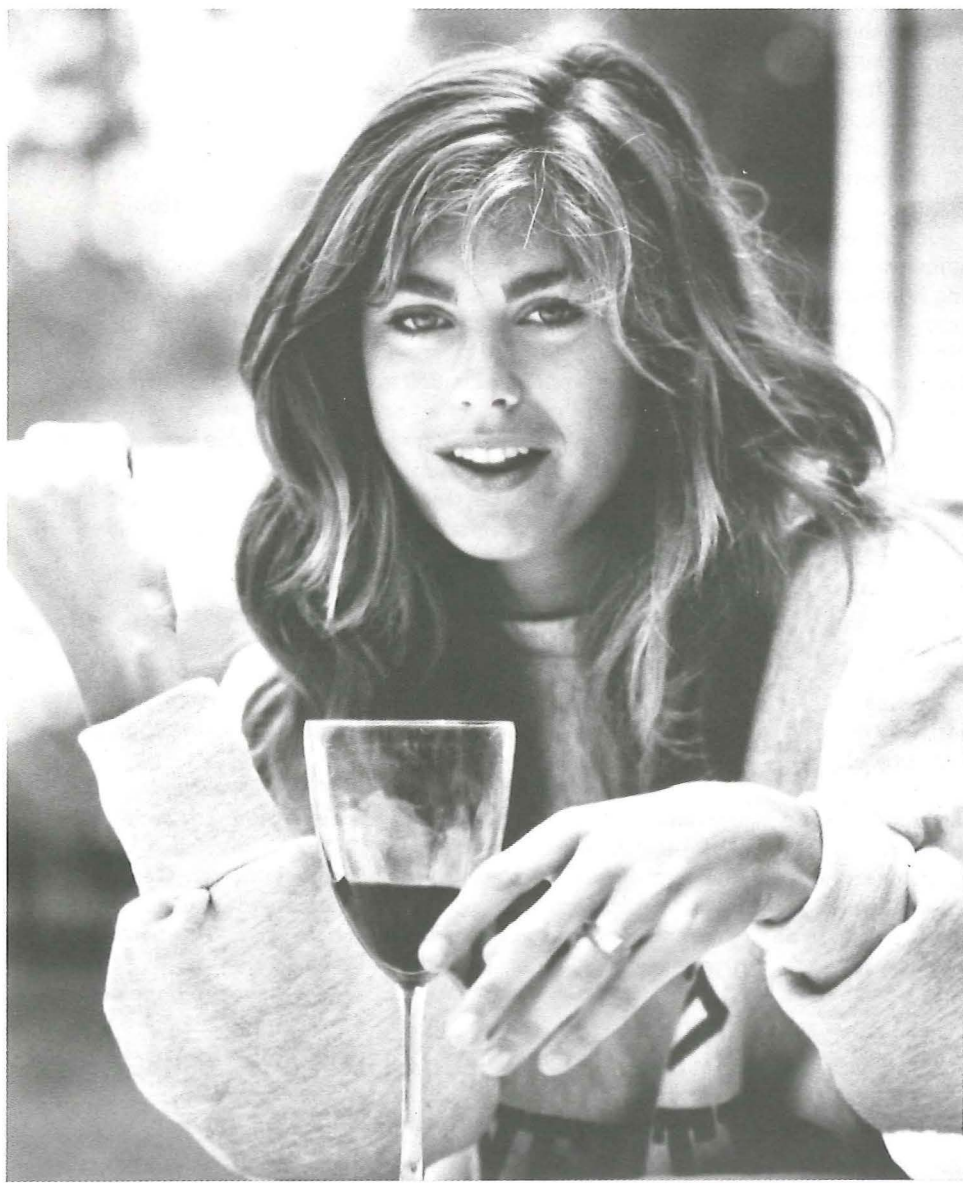
You're not so unusual in your endeavors as you might think. No matter what your experience or technique, your own ideas and gadgets would have been just as appropriate to grace these pages of *zymurgy*. Get your equipment together and keep on brewing. And if the mood strikes you, we'd love to hear from you about your ideas, gadgets, lifestyle and techniques.

— Charlie Papazian



# Kathy Ireland

She's a beer enthusiast with the same fantasies that inspire most brewers.



After making my first batch of [homebrewed] beer I told my mom I was going to start a brewery. She said, 'Oh no. I know you will, too. Every time you say you're going to do something you do it. Why can't my daughter be a teacher or a nurse? Why do you have to be a brewmaster?'"

To millions of Americans, Kathy Ireland is just a cover girl, a photograph and a model recognized throughout the world, who for years has graced the pages of the *Sports Illustrated* swimsuit edition and calendars. To a small but growing number, she is a beer enthusiast and homebrewer with the same fantasies and fabrications that inspire most brewers.

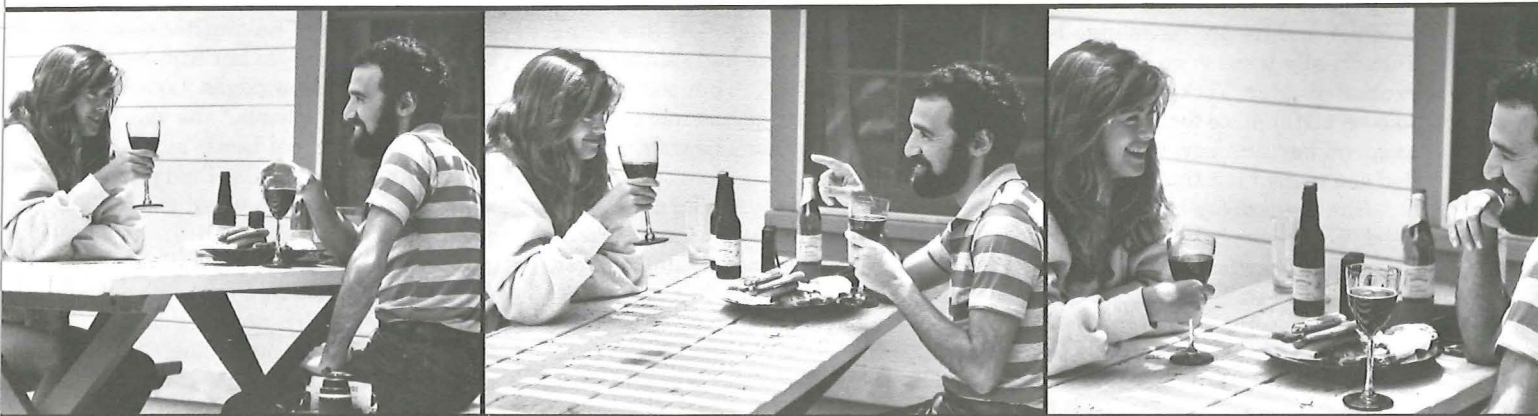
Traveling from her Santa Barbara, Calif., home to locations around the world virtually every other week, Kathy's modeling career is filled with jet planes and long trips, lights, cameras, designers, movie sets, big cities and desert islands. *Vogue*, *Mademoiselle*, *Bazaar*, *Stern*, *Italian Vogue*, and *French Vogue* are a few of the magazines she's appeared in besides *Sports Illustrated*.

She's recently finished playing the lead role in the movie "Alien from L.A." "It's a kid's movie, kind of like 'Journey to the Center of the Earth,'" she explained while unroll-

PHOTOS BY MICHAEL LICHTER

CHARLIE PAPAIZIAN





ing a large movie poster: "Kathy Ireland is 'The Alien from L.A.' " She smiled then laughed as she rolled the poster back up, more interested in talking about the dark beer she had while filming on location. She described a delicious German-style beer on tap brewed by a microbrewery in the town of Swakopmund, Namibia, located on the southwestern coast of Africa.

As the interview progressed I thought to myself, "This was hardly the lifestyle that typifies your American homebrewer." But I should know better than to entertain such thoughts. All of these years of traveling and meeting homebrewers throughout the world has taught me by now there is no lifestyle that typifies the American homebrewer. A look through this issue of **zymurgy** and others of years past would illustrate the point.

There is something that does typify the homebrewer: It is the unabashed enthusiasm for beer appreciation and the art of brewing. Kathy is no exception. Fiji, Tahiti, the Seychelles, Namibia, Australia, Thailand, France, Curaçao, Italy, New Zealand are but a very few of the locations she's had the pleasure of working . . . and drinking the local beer. "Every place I've been has its own beer and whenever I travel I always try to find the local beer. I'd like to visit the breweries there but when I'm working on location, there's just not enough time."

She was quick to add, "My preference is for the stronger, more bitter beers. With my homebrewing I

usually brew dark ales and bitters." Her enthusiasm for beer was no less than that of the brewer I met three weeks earlier two thousand miles away who had a sophisticated all-grain brewery set up in his garage.

As any beer enthusiast does, Kathy has adapted her homebrewing interests to her lifestyle, mostly brewing with kits. "The batch I liked the best I didn't use sugar," she added with confidence, though she has recently been experimenting with plain malt extracts and hops.

Underneath her kitchen table there are two batches of beer bubbling and fermenting, one in a carboy, the other in a closed plastic fermenter. A small box in the corner of another room stored her bottle brush, siphon tubes, thermometer, wooden spoon, hydrometer and bottle capper.

An admitted beer enthusiast for years, Kathy's friends knew of her interest in trying her own hand at brewing. Not knowing where to go to get started, a friend obliged her by handing her a copy of the book, *The Complete Joy of Home Brewing*, found at a local bookstore. Soon she had her first batch going with the assistance of Rafael Maldonado, owner of the Homebrew Supply Shop in Isla Vista.

I curiously listened to Kathy's account of how she became involved with beer and brewing. As the story unraveled I could see a similarity to the development of her modeling career. There seemed to be a style to her pursuits. "When I was 17 years old and in my junior year in

*"Relax. Don't worry. It's not that difficult. You'll have fun and once you see the finished product and you're happy with it, it'll give you more encouragement."*



high school a [talent] scout wanted me to go to New York for the summer and try out modeling. I didn't really want to go," she explained. New York City seemed like an awful place for a 17-year-old to spend her summer, but she finally decided to give it a try.

She remembers her similarly aged roommates being somewhat more enthusiastic: "I love NY" posters decorated their room. Now she laughs as she recalls the poster her sympathetic California schoolmates sent her: "NY Sucks."

She persisted and survived the summer, returning to California to finish high school. At 18 she pursued her interest in modeling and was off at 6 a.m. the morning after high school graduation to work on location in Rome, Paris and Milan. As a young woman, she soon found herself on a plane every week, traveling back and forth to Europe, "all the time wondering whether I wanted to do modeling . . . but soon it began to take more and more of my time."

Now 25 years old, Kathy has been brewing for two years, modeling for seven and talking of wanting to stop modeling someday. "When I settle down and don't travel so much, then I can try brewing with

grains and using different kinds of ingredients. I like to experiment a lot and invent things." At this point I recalled what she had said a few minutes earlier, "... but soon it began to take more and more of my time." Where have I heard that before?

"I'm not really a good cook and I didn't know anyone who made their own beer. I was intimidated at first, but when I made my first batch I was really surprised how easy it was. It seemed complicated at first with all the different steps and using strange equipment I'd never heard of before. But the instructions were simple and afterwards I thought that it was pretty easy to make . . . and it was fun.

"I got really excited when I first tasted it. I think I liked it better than anyone else did. My dad told me it was much better than his used to be."

One glass of homebrew and Kathy was quickly thinking, "I did some research and found out how much it cost to make: 16 cents a glass to make and then you could sell it for \$2 a glass. I began figuring out the profits on that and thought, 'If I can put Budweiser out of business . . .'" Her story trailed off into a knowing smile as she realized

it takes a lot more research to become a brewmaster.

Her pursuit of having her own brewpub led her from her first batch of beer to the yellow pages. Looking under "brewing schools," she was led to Professor Michael Lewis at the University of California, Davis, and soon thereafter to the world of microbrewers.

Being a career model with a desire to start her own brewpub brought quite a few propositions, including one from an Italian businessman who had her brewing career all figured out: "He had this idea of putting me in a bathing suit on the label of an already established beer," Kathy dryly explained. "It didn't really work out with him. We had altogether different views on beer and brewing."

Her pursuit led her to a small group of investors in the soon-to-open San Luis Obispo Brewing Co. When her modeling career winds down she plans to spend as much time at the brewery as she can, learning the art and science of brewing. For now she muses, "I realized how much work was involved with a brewpub and feel lucky to be involved the way I am [as an investor]." Her goal is to someday open her own brewpub as time, experience and education permit.

For now, she'll be content with brewing her own homebrew. Her friends think that maybe her pursuits are a little unusual, but she is quick to admit that they like to drink her beer.

For anyone contemplating trying their first batch of beer she had these words of encouragement: "Relax. Don't worry. It's not that difficult. You'll have fun and once you see the finished product and you're happy with it, it'll give you more encouragement. You'll want to make more and want to make it better.

"Most people like my beer. I've had a batch or two that could have used a little improvement, but you know, you learn and you keep brewing."

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Homebrewers of the Year Nancy Vineyard (1983) and Byron Burch (1986) at the AHA National Homebrew Conference.



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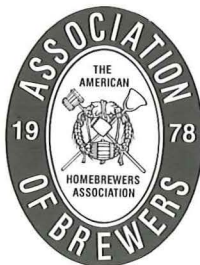
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# Eric Furry

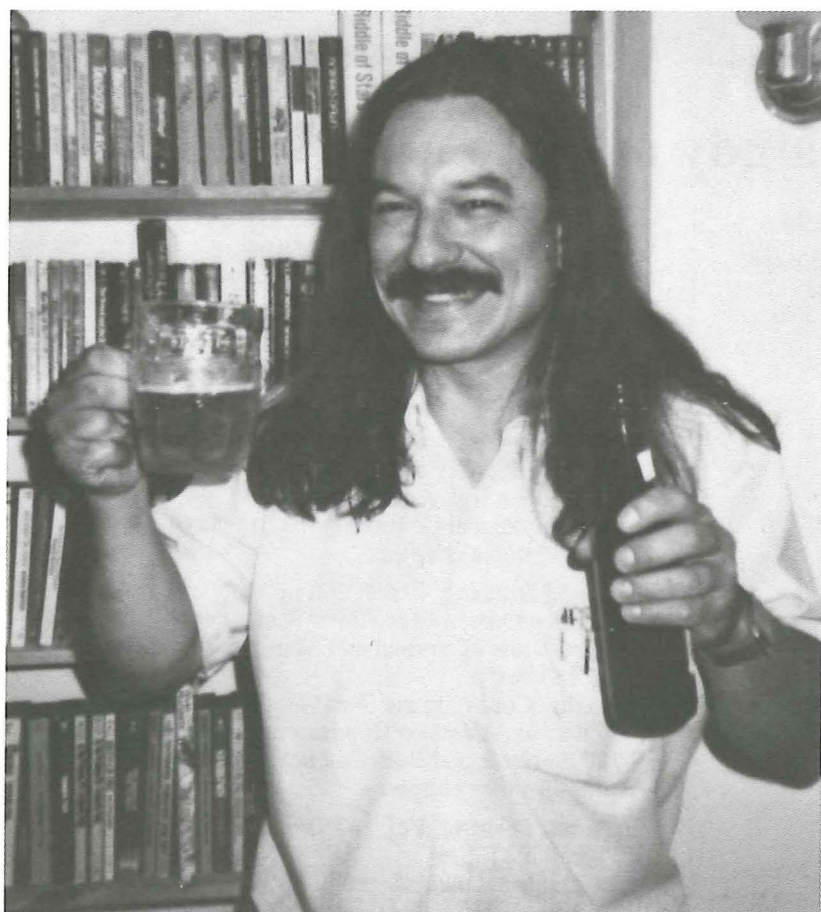


PHOTO BY MARY McLEROY

He's a logger, a backwoods guide, an intellectual and a veteran homebrewer.

Naturally, all of us in the Maine North Country had heard about the legendary Eric Furry — part man, part bear, part intellectual, part upcountry backwoods survivalist, part gentleman-humanist, part demon from beyond the grave. I might add part political independent (with a Democratic nod) and part homebrewer (from some angles, looking for all the world like a beer keg).

When the call came something told me before the first ring had finished that the one tapped to trek up and find Furry would, of course, be me.

Well, actually the one tapped was Bill Eberhardt, but when he took the phone and listened a moment, he bit his bridge-work in half and inhaled part of it. So I was the next choice. After Meg Meara, I mean, who felt in need of a cheering bracer before heading out, reached for a bottle of my stout but grabbed photo developer by mistake. So, that left me.

It was a long, lonely drive toward Bangor in my old VW van, in a cold spring rain and slashing wind, even with Devonsquare hot on the tape deck. My gut was all atwist. What if I couldn't find Furry? What if I found him and he wouldn't talk . . . about brewing or anything else? What if he didn't like the light ale or amber Pils I brought with me as placation? What if he lived up to the darker side of his infamous reputation and tore me into tiny pieces which he then sprinkled (like yeast) unceremoniously into the chilly waters of Little Pushaw Pond? What if I drove off the road into a highway department salt and sand storage dome? — (which I very nearly did twice.)

I was a little distracted, all right.

I mean, think about it: me, a city-slicker and relatively novice homebrewer "from away" (not a native Mainer),

BART GARVEY





PHOTO BY BART GARVEY

*"I thought, 'This is too good to be brewed on a hot plate. Fer the luva Fuggles — he's pullin' my siphon.'"*

interviewing the larger-than-life Eric "Smile-When-You-Say-That" Furry (rhymes with furry), a real mossback upcountry backwoods, logger, sugarbusher, guide, bookstore owner, veteran homebrewer (17 or 18 years, back when it wasn't even *legal*, and true sprucegum-veined "to home" Mainiac, raised in a little town between Dayton and Columbus. (All right, that's Ohio; but he's been in Maine a darn long time now and is next-best-thing to being a native).

I eased the Bartmobile into Bangor along ramshackle Hammond Street and pulled into a side street to get my bearings. Spotted what might be a bookstore, might be an underground newspaper, might be a tattoo parlor across a supermarket parking lot. Thought I'd take a chance on it.

Well, there it was, beside the aching wilderness of Third Street: Furry's lair, the Pro Libris Bookstore. With great trepidation I knocked softly and entered. The Amnesty International sticker on the door cheered me a little, though I knew this guy could easily eat me for breakfast and not even slow down for the bones.

As I looked around the empty confines of the tiny store — book-stacks making a mazy labyrinth of it — I wondered about that name, Pro Libris. As everybody knows, it is Latin for People Who Weigh Things Professionally — maybe for

wrestling or boxing matches. But I didn't have time to wonder long; here came this apparently amiable creature toward me, smiling, with his hand out in welcome. It could only be Eric Furry.

After our "you-must-be's" (I wore my old Maine Guides baseball hat so he'd know me) we got down to the business at hand: moving a large homemade two-by-four and plank bed for his friend way out in the backwoods. We carried that massive thing in the rain down a winding woodsy path, through swollen rivulets, around gnarly stumps, through white-pine thickets. *Then* we got down to the business at hand: finding our way back.

Later, back at the bookstore after we'd gotten to know each other a little via this bed adventure (perhaps I could have phrased that better), Eric and I sat down to do some beer tasting, some high-level literary exegesis (he was particularly lucid on Carolyn Chute) and some desultory interviewing. He offered to brew up a batch right before my beady eyes. I looked around the tiny store where he lives, and said, "Brew? Like, *where*?" I took another draft of his lovely brown ale. He's got an office of about 6 by 8 feet, a sleeping cubby about the same size, a short hallwaylike pantry with an old refrigerator at one end, then a steep, narrow stairway down to an unfin-

ished cellar full of dark corners and cobwebby junk where the only running water is a single lavatory-type sink (and in a little rough-planked cubicle, a toilet).

He grinned, sleeked back the tails of his magnificent moustache, and said, "Right here. I brew on a hot plate."

Airlocks and bubblers! On a *hot plate*! This I gotta see. On my third of his brews now — a malty sweet stout (after the smooth brown ale and a zingy bitter), I thought, "This is too good to be brewed on a hot plate. Fer the luva Fuggles — he's pullin' my siphon."

What then unfolded before my mousy-browns was a masterful



PHOTO BY BART GARVEY



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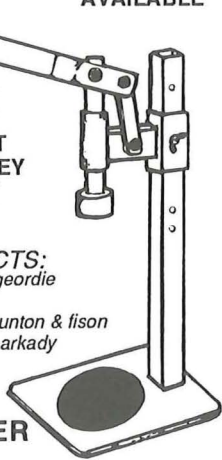
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adaptation of brewing to fit a tiny space *and* the unusual circumstance of brewing in one's place of business.

Furry fetched water in a battered and blackened two-gallon kettle — to do so he had to affix a rubber hose (an old bathtub spray with the shower head removed) to the lavatory's little spigot. This kettle (in which he says he's brewed *over a campfire*) he carried up and through the pantry maze to his hot plate in the little office at the back of the bookstore. This is a Cadillac of hot plates: 1,500 watts, fully adjustable and gets as hot (he says) as the burners of an electric stove. But even if it doesn't, Eric never boils his wort; he cooks at around 200 degrees F.

He dumped in a large can of Ireks-Arkady Munich amber extract — which had been sitting while the kettle heated on the large old radiator. Then he put in a pawful (one-half ounce plus or minus) of Cascade leaf hops and let the wort reheat to an almost-simmer.

"So, what're we making?" I queried conversationally (what *do* you say after someone tosses a fistful of papery green flowers into a steamy kettle of brown stuff?).

"Oh, I don't know," he grinned. "Sometimes I make it up as I go along. Sometimes I make whatever I've got on hand. This'll probably be an altbier; it's a Bavarian malt that will be fermented with an ale yeast. I can only lager in the winter when the cellar stays around 40 degrees." He drained the last of my light ale and declared it good, better than my Pils. I frowned but made no sudden moves.

I realized why he could brew only after store hours: the heady fragrance of malt and hops filled the mazy bookstore. Lovely to me — but likely too strong for most bookish patrons.

He held the wort to an almost-simmer for about 45 minutes. Then he turned off the heat and tossed in two cups of well-crushed crystal (he has a lovely old Corona grain mill) and a small pawful of Willamette leaf hops to finish, and covered the kettle for a couple of minutes. Furry filled his fermenter with

something more than a couple of gallons of cold water from the hose-spigot lavatory, carried it up and covered it with an elastic strainer like a shower cap. He poured the wort into the fermenter.

We worked all the liquid out of the strainer, around the gloppy hops and crystal mush. He didn't bother to sparge — his fermenter is only five gallons, his batches are usually just slightly over four gallons and he doesn't figure he loses much by not sparging. He dropped his thermometer (a stubby photography one on a long thread) and hydrometer into the bucket, covered it and we fell back into booktalk while the stuff cooled to his customary 90 to 95 degrees before pitching the yeast.

I asked what he did about bottles. He said that because the bookstore is a gathering place for backwoods readers, rough-edged intellectuals and other sorts of polyglot aesthetes and rowdies, and because many of these folks prefer cheap factory beer to good homebrew, he always has some cases of something cheap in bar bottles — which he buys or which folks bring to readings or browsings. He cleans these (lets them stand in the cobwebby cellar full of B-brite until bottling time, then rinses well) — and uses them only once. Recleaning in his limited facilities is too much work because he can't always rinse them after pouring, and mold grows quick and thick in the Bangor wilderness.

We talked long into the night, the bearish Furry having taken a shine to this scribbling ferret. And certainly I to him. At some point we checked the wort — 93 degrees, and the hydrometer — 1.040. He noted all this on a sheet to be logged with his hundreds of other brews. Then he sprinkled in the yeast, a generic ale yeast. After another 10 minutes he stirred it thoroughly, set the lid on tight, and inserted the bubbler into an orifice he'd fashioned himself. He had simply cut a round hole in the plastic lid and glued into this hole the cut-off top (about 1 1/2 inches) of a plastic water jug into which a No. 6 stopper fits nicely.

He also can screw on the jug's original cap instead of the bubbler,



if for some reason he needs to do that (while waiting for the wort to cool). And before I rolled out my sleeping bag — between Mystery and Adult/Sex Fiction — the first cheery gurgles emanated from the fermenter set on a low filing cabinet between his “stove” (a bookcase where he set his single-burner hot plate and a grungy toaster oven) and a zebra-striped chair that belonged to his large and well-read cat. The latter seemed to enjoy the bubbling as much as I, for we both slept well and dreamily.

Next morning, with the beer bubbling a merry jig, I rumaged through my bag to find the guidelines for writing this piece, so I could fill in any unasked questions before heading home. I learned that Eric buys all his supplies from a mail-order house. He brews about once a month, buying supplies for about six months at a time. He bottles using one of those long tubes with the spring-loaded valve at the bottom, buys generic crown caps and uses a hammer-type capper (affectionately called The Big Bopper).

Furry’s something of a student of beer, having traveled throughout much of Europe, and has read extensively about the many varieties and techniques. He started brewing — as I’ve said, nearly 20 years ago — in order to produce something as full-bodied and fresh as “real” beers he’d sampled around the world, as opposed to watery American factory swill (I’m politely paraphrasing). His goals are (roughly in this order): to read and sell books, to question authority and to make the best beer in Bangor. And lots of it.

Before I put away my notepad we headed out into the bush to bag some bagels for breakfast. I asked, “Got any final pearls of wisdom for the **zymurgy** folks?”

He grinned, scratched his chin and spoke (and I leave it to you to decide whether he was talking about brewing or something else): “Keep it clean. Nothing’s written in stone. Have fun.”

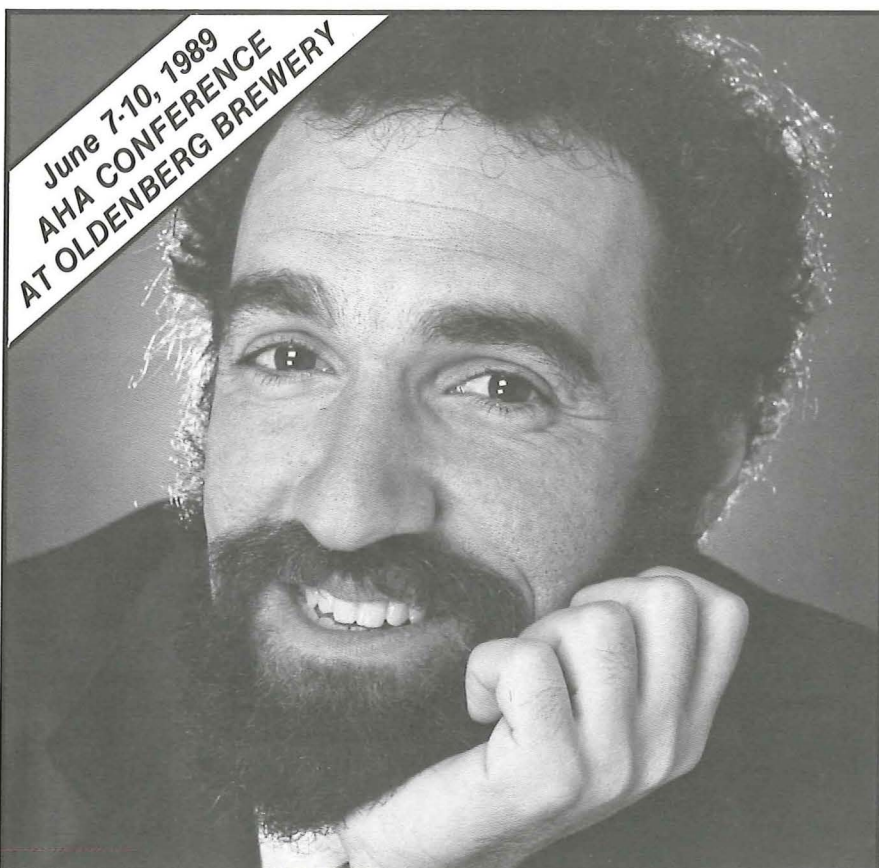
I left the legendary Eric Furry feeling edified about beer (and with a couple of novels slipped into my sleeping bag). As I headed the

Bartmobile toward that bright hole at the end of the tunnel of forest, I realized that if you’ve a mind to brew, you can do it *anywhere*. Because, what with his cramped quarters, books, bookcases, desks, filing cabinets, memorabilia and few domestic doodads, Eric doesn’t have room enough to swing a ferret. And I oughta know.

“Keep it clean. Nothing’s written in stone. Have fun.”

**Bart Garvey is a semiretired**

**part-time wick-dipper (a trade he learned in Colonial Williamsburg). He has been homebrewing for three or four years. He most likes heavy, dark southern German lagers, though any well-made all-malt brew makes him happy. His hobbies include guitar tuning and splitting firewood. He lives in Lewiston, Maine, with a wife and two children. Garvey’s resemblance to a ferret is indeed uncanny.**

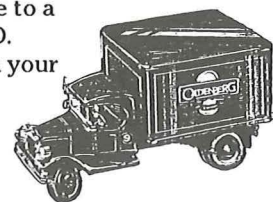


Charlie Papazian, AHA President

## “Let’s have a beer together.”

I’ll be at Oldenberg Brewery in Fort Mitchell, Kentucky (across the river from Cincinnati), June 7-10, for the AHA’s **11th Annual National Conference on Quality Beer and Brewing**. And I’d like to have a beer with you. Maybe it’ll be a homebrew from the National Competition, or a

Premium Verum fresh from Oldenberg’s brewhouse, or one of the beers at our International beer tasting. Or perhaps we’ll grab a table at Oldenberg’s Great Hall or retire to a corner at J.D. Brew’s. Plan your trip now.

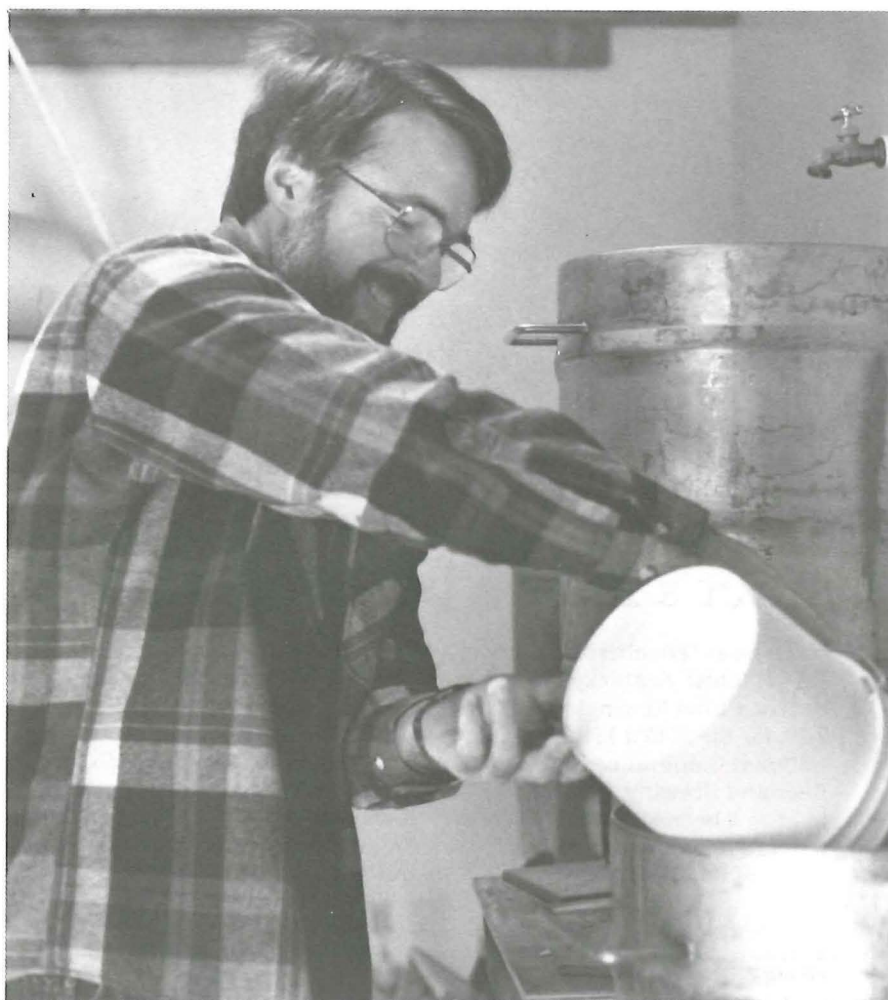


For more information about the Conference and how you can participate, write or call the American Homebrewers Association, PO Box 287, Boulder, CO 80306, (303) 447-0816.



# Mark Hillestad

This painting contractor's shop building houses paint, equipment and a 500-square-foot brewery.



PHOTOS BY BYRON BURCH

**M**ark Hillestad is a painting contractor from my town, Santa Rosa, Calif., who impresses one at first as quiet, serious, perhaps scholarly. As you get to know him you become aware of a wry sense of humor, the sort of humor a longtime Giant and 49er fan often finds useful. We've become good friends and occasional brewing partners.

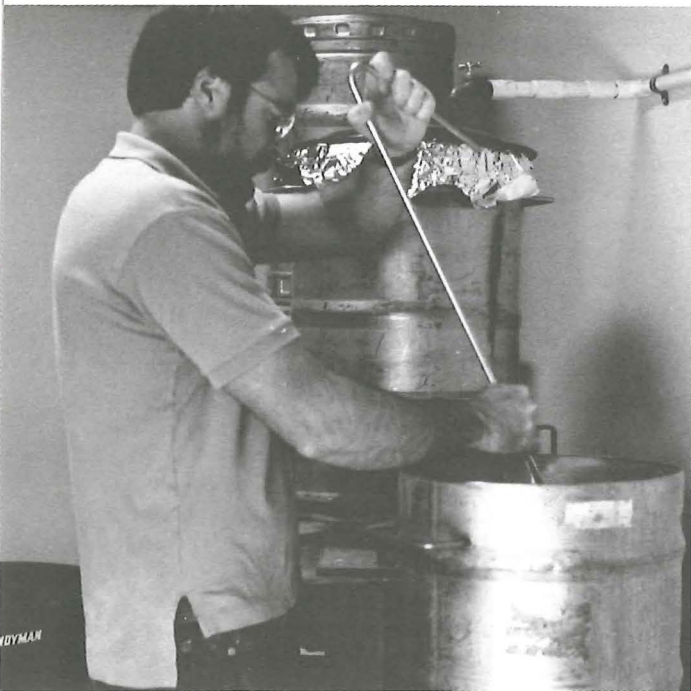
Mark, his wife, Lois, and their two children live at the end of the road in a small hidden valley on the outskirts of town. The setting is semirural, and, in fact, Mark's brewing water comes from his own well via a complex water softener and filter arrangement that makes it drinkable. With the idea firmly in mind that conducting this interview would give us a reason to get together and consume a respectable number of our recent brews, we met at Mark's house in early May.

**BB:** Since we're focusing on equipment, why don't you start by telling us about your brewhouse.

---

BYRON BURCH





**MH:** Well, a couple of years ago I decided to build a shop building for my paint and equipment, so I could store them 20 feet from my house rather than on the other side of town. It seemed only natural to wall off about 500 square feet at one end of the new building for a "brewery," so I did. I ran gas and water lines to it, and put in a sink for cleaning up, as well as a workbench and cupboard. I have most of my refrigeration out there except for the dispensing fridge, which is in the garage right next to the kitchen door. I poured a concrete pad between the house and the brewery where I clean large containers.

**BB:** Back in the old days, whenever you were kegging, or bottling, or something like that, you had stuff spread all over the garage, like at my house.

Your brewhouse makes things a lot better organized, which helps make brewing easier. Homebrewers who come here and see this setup are probably going to be shocked to learn that you really haven't been brewing all that long. When, in fact, did you start?

**MH:** It was the beginning of 1983.

**BB:** What got you interested?

**MH:** I got started because Danny Camacho, a good friend of

mine from high school, started brewing.

**BB:** You were in one of the junior college classes, weren't you?

**MH:** Right! I made five or six extract batches, and then in the fall we took the class. That really got us going. Nancy Vineyard

taught it, and she was really on top then, having just won "Homebrewer of the Year."

**BB:** You guys really took the all-grain session to heart, as I recall, and immediately started developing some of the equipment you're still using here in your brewery.

**MH:** Yes, Dan works for a stainless-steel company that builds a lot of equipment for the wine industry. It was nice that he not only knew how to work with the materials, but is also interested in the design aspect of things. The two of us got together and came up with the basic design of the equipment we each still use in our brewing, which is like the setup you and Nancy have.

**BB:** Could you describe the equipment?

**MH:** Start with three 15-gallon kegs with the tops cut off, handles welded on, with drains put in each container with shut-off valves on each. They are set in a gravity flow position, one above the other above the other. The top one holds the hot water for sparging. The vessel in the middle is the combination mash/lauter-tun, which really is the simplest way of doing it.

**BB:** This is really the key to the whole system.

**MH:** Right, and it has found its

way into commercial turnkey operations as well. The bottom container is the boiler. All three vessels having separate, gas-fired burners makes the system tremendously versatile. You can do just about any kind of brewing. You can not only do the traditional English, one-step infusion mash but the American upward infusion mashes, multitemperature mashes and decoction mashes as well. It's probably that versatility that led me into brewing lagers rather than ales.

**BB:** It's certainly a lot easier to raise the temperature to 165 at the end of the sugar rest with this kind of system than with an ice chest. With an ice chest, you just about have to do a decoction step to get there.

**MH:** Right, and that's a lot more time-consuming.

**BB:** Just to give people an idea, let's say you're doing a basic one-step infusion mash going in at 150 to 155 degrees F. How long does it take you from the time you mash in 'til the wort is pitched at the end?

**MH:** Well, it's not a very time-consuming operation. I'd say four hours, sometimes a half-hour longer.

**BB:** And how many gallons do you brew at a time?

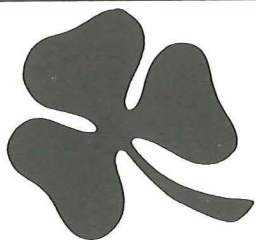
**MH:** My maximum is 14.

**BB:** So that's a pretty good ratio of time spent per gallon of beer produced.

**MH:** Yes, though obviously for decoction beers the time spent is a lot longer.

**BB:** We were talking about how the flexibility of this equipment led you into the intricacies of lager brewing. You do make some ales, but you are definitely known for lagers. In fact, some of our fellow Beerocrats were almost in shock when you won a ribbon for a pale ale not too long ago.





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**MH:** Yes. I do enjoy pale ales and porters, and so on, but I'm really a lager person. I've often said, "I never met a lager I didn't like."

**BB:** I suspect it's only natural that the most serious student of lager brewing I know is one of Greg Noonan's most devoted disciples.

**MH:** Yes, *Brewing Lager Beer* has been a great influence. It has been a real handbook for me. For a lager brewer, Noonan's book opened up whole new avenues. I had never done decoction brewing 'til I read that book.

**BB:** I know that's been one area you've been doing research in for the last year or so. We did our double together last spring, but how many have you done besides that?

**MH:** Six or seven.

**BB:** Any observations?

**MH:** Well, here again, the equipment makes it feasible. As I recall, that double decoction only took six or seven hours.

**BB:** There's one thing more I just have to ask you. How much money have you spent in putting your system together?

**MH:** Probably close to \$1,000. If my friend hadn't done the work, it might have been twice that. Those figures will probably stun some people, but you have to remember that this is my hobby. Lots of people spend easily that much, frequently more, on other hobbies, like model railroads or photography, and don't think twice about it. I happen to be lucky because winter, which is the best brewing season in our area, also happens to be the rainy season when a painting contractor has a bit of extra time off. I like to spend quite a bit of it out here in the brewhouse.

**BB:** You do brew a lot, especially in the wintertime. What is it you specifically enjoy about brewing?

**MH:** I think it's changed.

When I first started, I think I was mostly interested in making something cheaper than I could buy. I think most people do that.

**BB:** Looking around your brewhouse, that statement has something of an ironic twist.

**MH:** Well, as I got involved, I got hooked on the equipment end of it, fabricating the equipment that would allow us to do the things we

wanted to do. More recently, things have shifted again, and I've gotten interested in beer styles and in the techniques of brewing.

**BB:** I think there's a constantly growing interest among homebrewers in exploring specific beer styles.

**MH:** I think that's where brewing is going. Once you've reached a certain plateau and become technically proficient at what you do, then it becomes a matter of exploring the styles of beer, finding out what styles are and formulating your recipes to fit them.

**BB:** Getting back to the irony of having started your homebrewing career with an economic motivation, I have to observe that you're known for your lagers in a number of styles. However, you've had particular success with American lights, which is probably the hardest category of all to make.

I recall that you spent six solid months specifically trying to duplicate Coors and Budweiser. That seems like an awfully intense concentration on a style of beer you could go out and buy for about \$3 a six-pack. Would you care to explain?

**MH:** I suspect there are a number of reasons. First, there's tradition. I like that style of beer better than a lot of homebrewers I know do. The first beers I tasted were in that style, and I still drink a lot of them, especially in the summertime. It gets up to 110 degrees here sometimes.

**BB:** Right, I've often said that on those days I'm more likely to be found sitting under a tree with a Coors than a Guinness.

**MH:** Exactly! Then, there's the independence factor. There's a predominance of homebrewers brewing ales and stouts. I suspect I wanted, down deep, to do something different.

Then, I suppose I'd have to admit I like the challenge of brewing the most difficult style of beer there is for small-scale, low-tech brewers. I'm also a subscriber to the "chicken stock" theory of brewing. That just means you have to learn the basics, how to make an excellent chicken stock or white sauce, and then you can go on and get fancy and become a chef. Maybe that's just another



way of talking about the ultimate challenge.

**BB:** I'll never forget the statewide competition at the Harvest Fair just after you'd spent those six months working out American lights. That was the time a professional brewmaster on the judging panel asked to have the bottle brought out so he could see the yeast. Afterward, he said he thought someone had slipped a Budweiser in as a ringer. They awarded you best of show, practically by acclamation. One of your American lights also won best of show at the 1987 Home Wine and Beer Trade Association Competition in Massachusetts. I'm guessing that one of those moments has to be the highlight of your homebrewing career to this point. Which is it?

**MH:** That's a tough one, but I'd have to say the HWBTA.

**BB:** What are your brewing goals at this time?

**MH:** Well, competitively, it would be nice if I timed my best brews and won something at the AHA National. Dan won a ribbon there a few years back, but I never have, and that is the biggest of them all. By the way, I happen to be a person who likes the idea of competitions. The Beerocrats, our local club, has been really successful, winning the last two national titles. It'd be nice to keep that going, but three times may be too much to ask. We'll know before this interview gets printed.

The real thing about competitions is that when you're really concentrating on making the best possible beers, the ones that might win, your beers tend to get significantly better. There's an inspiration factor. I've seen it happen with our club. I know our members make great beer, so if someone does beat us — that means they have as good a beer to drink at their meetings as we do. Somehow I think we all win.

**BB:** How about non-competitive goals?

**MH:** I continue to be interested in exploring the Pils style. This year, however, I've gotten tremendously interested in Dortmunder Export style beers. As for the future, who knows? In the back of

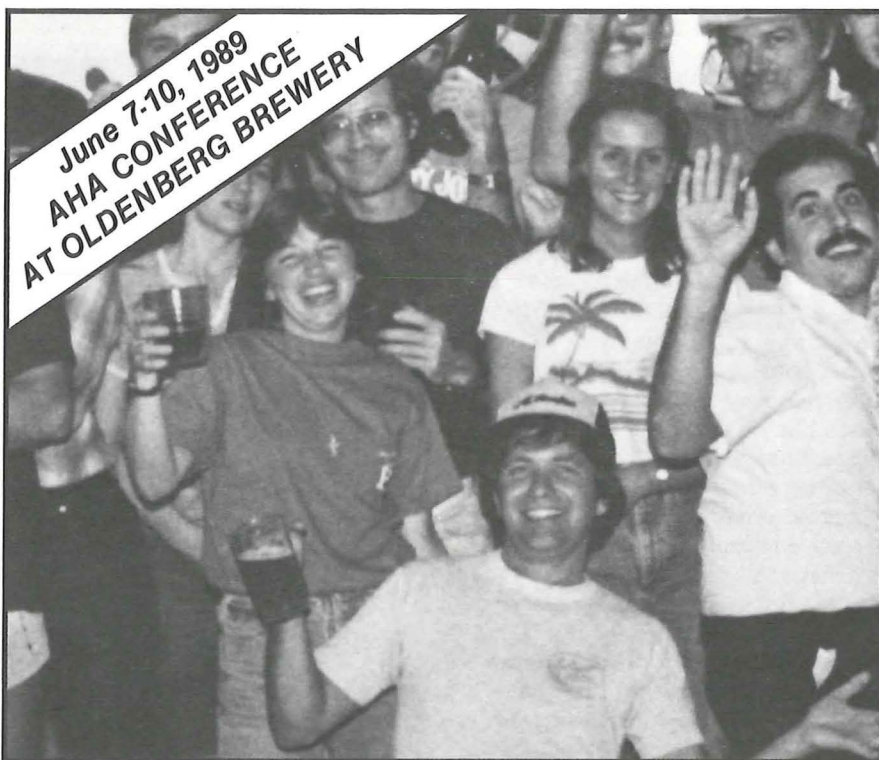
my mind I keep thinking some year I'm going to really work on bocks. That's a style I haven't really done much with.

**BB:** We should at least mention your most recent piece of equipment, the cold box.

**MH:** Yes, I built myself a cold box for lagering and beer storage. It normally stays at about 32 degrees and holds a lot of beer. Here, try this. This is that double-decoction Vienna we made last March. It actually needs to be warmer so we

can really taste it. Let's go stick it in the microwave.

**Byron Burch has been brewing beer since 1970. He is the author of *Brewing Quality Beers*, the widely acclaimed and best-selling book for beginning through intermediate homebrewers. He is owner of Great Fermentations of Santa Rosa, Calif. He was AHA Homebrewer of the Year in 1986, as was his wife, Nancy Vineyard, in 1983.**



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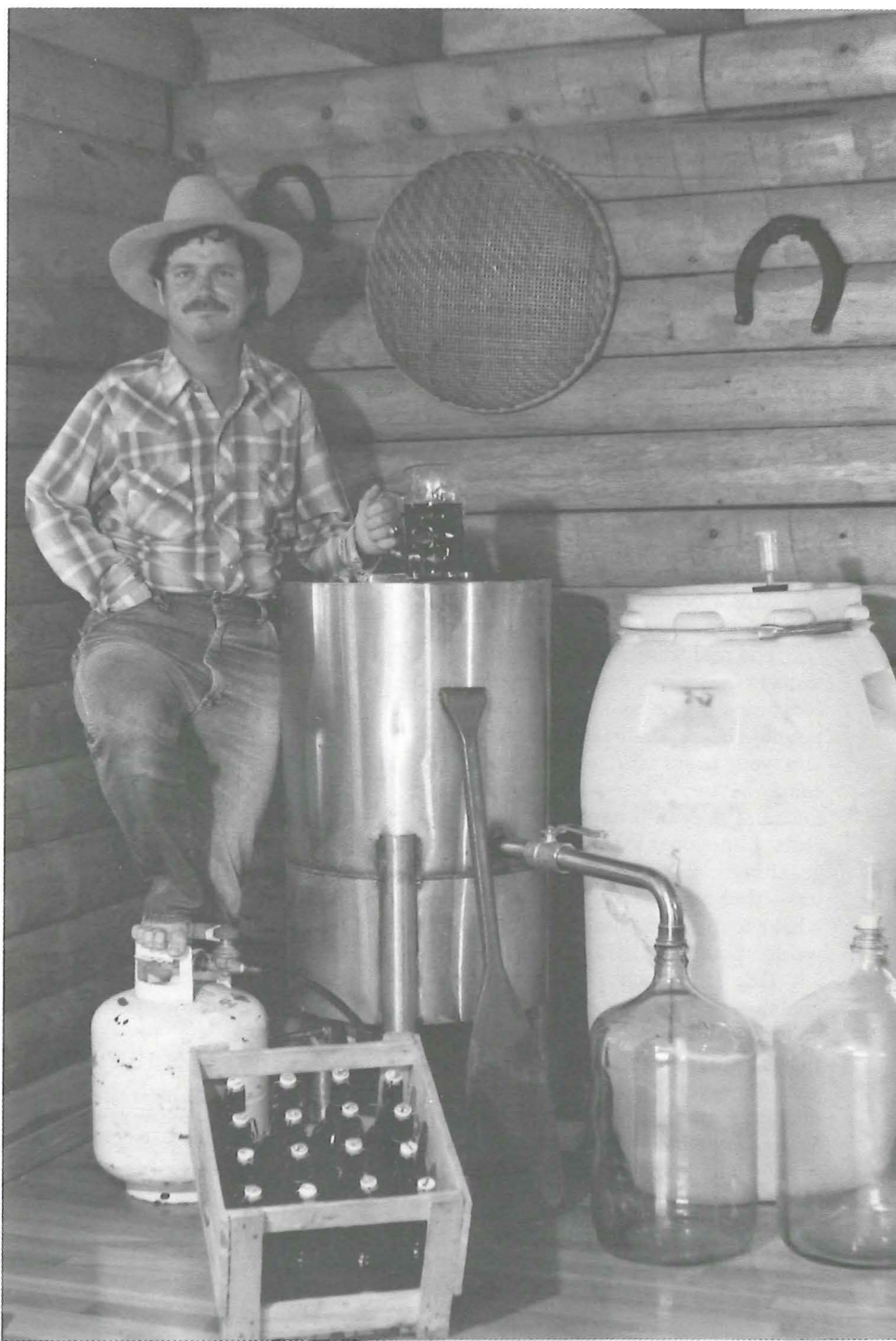
# Michael Bosold

**M**ichael Bosold would just as soon take you step by step through his whole-batch brewing process while floating the river in a raft or sampling a homebrew. But you don't have to visit him in his rural Victor, Mont., house tucked under the sheer Bitterroot mountains. You can watch him on your TV. In fact, Michael has two contributions to better homebrewing: a way for homebrewers to use the whole-batch process developed in Europe, and an instructional video to teach it to you.

A commercial photographer who produces videos, Michael says, "I look at brewing as a very animated pictorial not only from the standpoint of the beer and discussions of herding yeasts through dark places but also from the types of people you meet if you're involved in it."

He has been a homebrewer for almost 20 years. "In 1970 I was in a rural area of Newfoundland," he recalls, "and I lived for a year on \$300, one pair of boots, a pea coat, a pair of wool pants and a rain suit, because I was cod fishing. Because you had to have work papers, I worked for barter instead of cash, so homebrewing was economical.

"And I discovered that many of the old people had been brewing their own for years, and made some



JAMES MCGRATH



righteous beers. Really, really. They introduced me to the idea of using cattle-feed molasses, which created a kind of a bitter flavor in the beer, but it was interesting."

Nowadays, he is a dedicated all-grain brewer and quite a serious one. Says he: "If you have access to whole-grain malted barley from a malt house and you can ascertain what the protein content of that grain is, you can start controlling a little more closely what the grain input factor is in your beer. If you're buying extract, you really don't know the protein analysis, which does have an effect on the head of the beer."

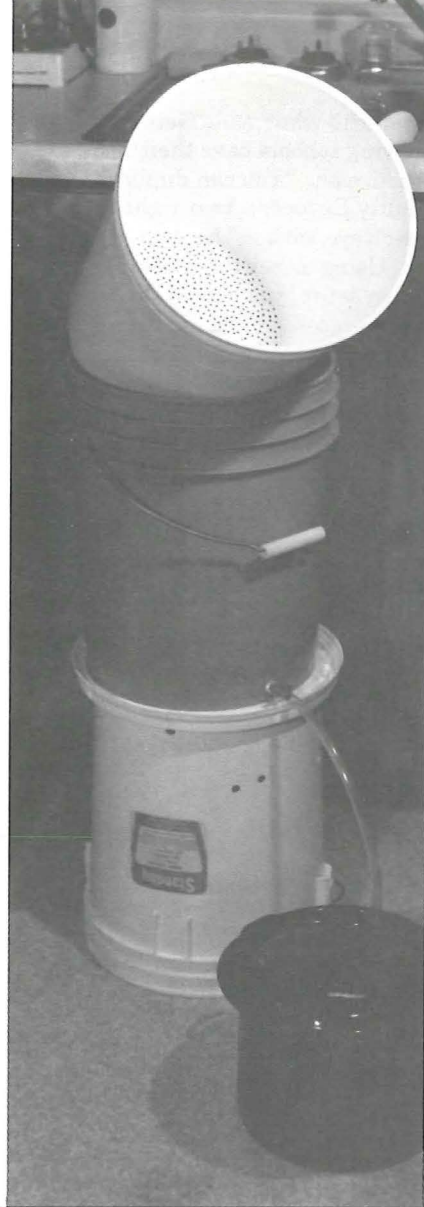
He also refuses to add sugar at any stage on the process, even bottling. He prefers to bottle when the brew is 70 percent done and use the European-type swing ceramic tops with rubber gaskets.

"There's a break point in homebrewing where people use extracts, boil them in one gallon of water and add them to cold water, or they use what's called the whole-batch method where everything is boiled together in the entire five gallons," said Michael.

He learned his whole-batch process from a German master-brewer who taught him the techniques of traditional German commercial brewing.

He met this brewer in Montana and went through the process with him. Following the Bavarian beer purity laws, the German brewer never allowed any adjuncts to the whole-grain process.

"Something stressed heavily to



me was the sanitizing. The boiling takes care of sanitizing the wort, but any time you use a tube, a lauter kettle, anything, those things should all be sanitized. Basically, this takes care of any stray yeast that might be around. The one thing I

heard was, 'If you ever allow a stray yeast culture for lack of sanitation to enter your equipment and you're a commercial brewer, you might as well just leave.'"

The overall advantages of the ancient whole-batch process is what Michael really wants to share. "What they teach in European brewing schools is actually what I'm doing, only their machinery costs around \$50,000, and I'm giving homebrewers access to that process by showing them how a large wort kettle can be manufactured and used for the whole-batch method."

The traditional process, as Michael recounts it, begins with a large brick-lined vat. The bricks are used to maintain a constant temperature while boiling the mash and the wort. The mash is cooked in the insulated vat to make the extract and then pumped into the lauter-tun

to remove the grains. The lauter-tun is rinsed clean and that water is checked for specific gravity and returned to the wort vat. There it is boiled until starch conversion takes place. It is tested for starch using iodine and for specific gravity and pH. When ready, it goes through a wort chiller into a primary fermenter and yeast is added. Some brewers also use a secondary fermenter and lager the beer.

Instead of using giant brick-lined vats, Michael has constructed a 25-gallon stainless-steel wort kettle insulated with brick. His German teacher, however, thought that might be too difficult for homebrewers (besides costing a few thousand bucks). So

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**You don't have to visit him in Montana to learn about his whole batch brewing process. You can watch him on TV.**

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Michael also has worked up a smaller setup for the homebrewer using a five-gallon enamel canning kettle (the enamel does the insulating work of the bricks). His method also uses five-gallon food-grade buckets for sparging and a wort chiller made of copper tubing. All for considerably less than \$50,000.

The 25-gallon steel kettle system Michael has designed, he found out from the masterbrewer, is

similar to what some German brewing schools have their students practice on. "You can duplicate a quality European beer right to the gnat's eye with it," he says.

Using either the five or 25-gallon setup, you can do the whole-batch process. First, add the ground malt barley and begin making the mash with the whole volume of water in either kettle. When you pump the wort out, you'll need a

large enough plastic or steel vessel to hold it. For the 25-gallon kettle you'll need about 15 to 20 gallons, because the grain accounts for some of the volume. You can use a five-gallon plastic bucket as you sparge and return that water to the wort kettle. Then you cook the wort and send it through the chiller to the fermenter. You do not need to add water.

Michael has put together a 30-minute video demonstrating this process, including how to make the equipment, right down to drilling the holes in the plastic sparging bucket and bending the copper tubing for the wort chiller.

"This would be good, too, for a homebrewing club," says Michael. "If they have new members who don't know much about brewing, they could watch this or take it home and make the kit."

Michael's 25-gallon setup is a worthwhile demonstration for the serious microbrewer. "What I'm hoping to do is revolutionize the microbrewing process to the point where a restaurant can afford to put out a high-quality small batch beer. My system can push out 250 bottles a batch. I'm planning to market this system for serious brewers — people who want to spend \$5,000 to \$6,000 on equipment and then want to generate small repetitive batches, not too big but enough to stock your cellar if you wanted to have your own label."

In fact, he is setting up a tour to a German town with 11 breweries, taking his masterbrewer friend as a guide. He pictures guesthouses or bed-and-breakfast places in Germany being interested in his system.

Michael's system makes the advantages of German brewing techniques available to homebrewers or serious microbrewers alike.

For those interested in Michael Bosold's process or his informative video, write to him at Box 20149, Missoula, MT 59801.

**James G. McGrath is a freelance writer in Missoula, Mont. He has been homebrewing for a year, and his favorite batch was a porter. He is also growing his own hops.**

## Gathering the Hoppe



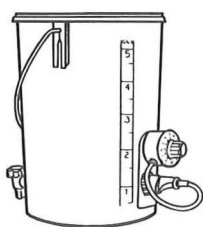
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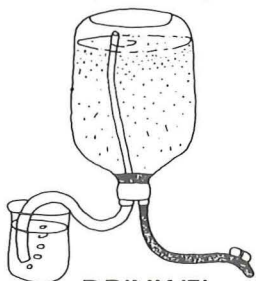


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# Rodney Morris

The inventor of the unique Recirculating Infusion Mash System explains why he developed it and how it works.

Faithful readers of *zymurgy* may recall a photo of the first high-point club trophy awarded at the 1985 AHA National Homebrew and Mead Competition (Vol. 8, No. 3). Immediately dubbed "Jabba the Hosehead" by the winning Malthoppers of Bryan and College Station, Texas, it bore a more than passing resemblance to one of our more distinguished colleagues who is the subject of this article.

Rodney Morris of College Station, known affectionately as "Jabba the Yeastmonger," has been brewing for more than 15 years. A Malthopper since the club was formed five years ago and a former Maltose Falcon, he is a graduate student at Texas A&M where he is studying for a Ph.D. in microbiology. Between his long homebrewing experience and his chosen discipline, he has been the club's main source of expertise, unstintingly sharing his knowledge with anyone who asks.

Not that he's just another "expert" with an opinion but no drinkable samples of his own. Rodney has collected his share of awards in regional and national competition and has repeatedly demonstrated his brewing acumen and originality in the quest for excellent beer.

He explains why he took up brewing.

---

GEORGE F. ASHLEY

PHOTOS BY JOHN MONTGOMERY



ture. I thought that if I could recirculate the wort through some kind of heater, it would be easy to monitor temperature as it flowed back into the insulated mash-tun. I found a magnetically coupled centrifugal pump in the Edmund Scientific catalog for about \$25 that seemed like it would work. That avoids problems with shaft seal leakage and the clearance between the impeller and housing is large enough to pass any stray husks that might get past the false bottom.

Actually, I don't exactly have just a false bottom. A fellow Malthopper, Alan Lee, is a welder by trade. He built a stainless-steel box with a screen on the bottom that just fits inside my 36-quart camp cooler. In the prototype, Alan built a spiral of 3/8-inch copper tubing which we placed over a burner to heat the mash liquid.

The mash liquid was pumped from the bottom of the cooler, through the heating coil and back to the top of the mash. That worked pretty well, but you had to be careful about adjusting the burner. The present system gets around that by using electronically controlled

"American lagers are probably better than no beer at all, but I developed a taste for European styles in the Army. That can get to be an expensive taste with the quantities my mooching friends and I put away. And the quality varies tremendously because you never know how imports have been transported and stored on the way to the store shelves — not to mention aging under fluorescents in the display case. Obviously, the only way I could get the quality and quantity I wanted at a reasonable cost was to brew it myself.

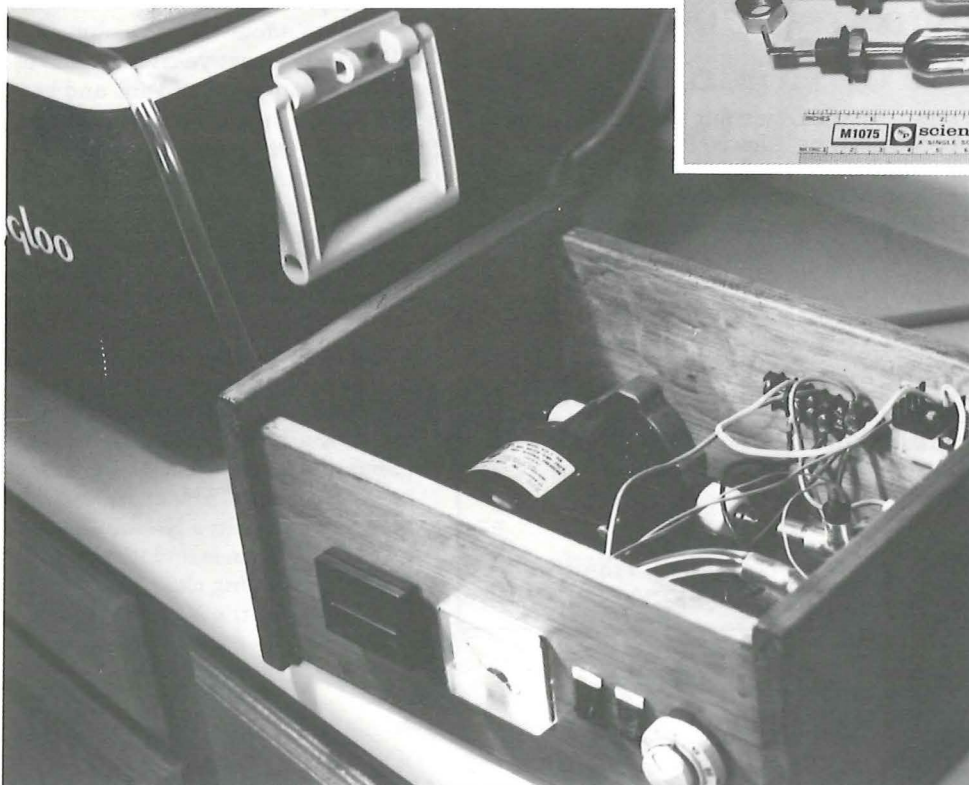
"I wasn't satisfied with single-infusion mashes for lager beers but I had a lot of problems with step-mashing techniques. The time-temperature sequences are almost impossible to follow with any degree of accuracy," he said. This prompted him to design and build a Recirculating Infusion Mash System (RIMS).

"When I

started doing step mashes, I found it hard to get consistent results. You know how it goes. If the temperature rise isn't fast enough, you turn up the fire and stir like mad. Next, you find that you're overshooting and starting to scorch the bottom of the kettle. So you throw in cold water, check the temperature again and now you're too low and the mash is thinned out. Then you have to turn up the burner to correct that and the whole sequence goes to hell. I don't know anyone who can maintain really accurate control of time and temperature with that method. This is why I built RIMS."

Following, in Rodney's words, is his explanation of RIMS:

"I wanted a system that I could set up and walk away from until it was time to step up the tempera-



**Figure 1 (left)**  
**"RIMS" setup for mashing.**  
Pump recirculates mash liquid from cooler through heater back to top of mash. On front panel from left to right: Digital temperature display, power meter, power switches and temperature control knob.



**Figure 2 (above)**  
**Disassembled view of copper flow-through heater.**



heating elements in the line.

Looking through various surplus catalogs, I found a pair of one-kilowatt copper flash immersion heaters for \$1.75 that seemed to fill the bill. These are regulated by an RCA CA3059 integrated circuit temperature controller connected to a thermistor temperature sensor and a silicon control rectifier that controls current to the heaters. A digital temperature display that can be switched to Fahrenheit or Celsius

that also has a time function, and a power meter and 10-turn potentiometer for setting the temperature complete the package.

Even though the pump moves the wort through at a high rate, I was concerned that a simple on-off type of control might scorch the wort, so I built a proportional type controller. That is, the heating elements can be continuously varied between zero and one kilowatt. The pump runs at a constant speed

and the temperature rise between inlet and outlet is only 3 or 4 degrees F, avoiding any heat destruction of mash enzymes. This system produces a rise of 1.5 degrees F per minute during a heating step in a typical mash for five gallons of beer. The controller can maintain temperature to within 2 degrees plus or minus.

Because most brewers have to use the kitchen as the brewery, this is a great setup. You don't have to use the stove and turn the kitchen into a Turkish bath until time to heat sparge water and, of course, during the boil. The rest of the time the kitchen stays cool. Another nice thing about this rig is that recirculation clarifies the wort during the mash. After mash-off, just run the outlet line into the boiler and start sparging. In between steps, you can go off and do whatever pleases you until the next temperature rise."

Another of Rodney's brewing tools is a filter unit. It's an ordinary undersink sediment filter like the ones available in hardware stores. Rodney suggests that buying through a mail-order industrial supply house cuts the price from around \$80 to about \$25. The filter is hooked up to the outlet of a five-gallon pressure keg filled with beer which is pressurized to 10 psi with a CO<sub>2</sub> tank. The filtered beer is then run into a second five-gallon pressure keg under five psi of CO<sub>2</sub> counterpressure.

"With a four-micron sediment filter, you can get yeast and most of the fine grunge out of wine and beer. For filtering out colloidal hazes and bacteria, I have a 0.4 micron filter that was thrown away in the lab at school. That's a pretty expensive filter if you buy one new, but you can use the coarser filter and get the same effect by coating it with a slurry of diatomaceous earth. There are several brands on the market, but be sure to get a polypropylene filter. Costing \$2 to \$3 each, they're reusable almost indefinitely, while paper or fiberglass-epoxy are only one-shot deals. To clean it, just backflush, soak in a lye solution, give it a good rinse and it's ready to produce sparkling clear beer."

Rodney is the Malthopper's

## Beer and wine hobby

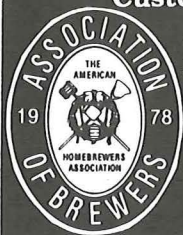


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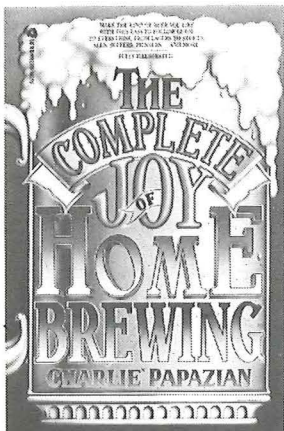
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primary source of technical information about the care and feeding of yeasts and practical advice on what to do about unwanted microbeasties. Last year he gave a workshop for the club on yeast culturing and isolation. He maintains a yeast-bank gleaned from bottle-conditioned microbrewery and imported beers. If you're trying to make a Chimay taste-alike, give him a call. And he has yeasts from the late, lamented New Albion, plus Sierra Nevada, Boulder, Carlsberg, Whitbread, Tuborg and others.

"Along with all the other controllable variables involved in brewing, selecting a particular strain of yeast is one of the more important choices in determining flavor. Most people just go with a packaged dry yeast, and this will usually give a pretty good beer. But yeast from a pure culture, made up into a vigorous starter, makes it a little more certain that you'll get off to a good start.

"Sure, I have the use of a complete microbiology lab at the university and the knowledge to operate all the fancy equipment. But for simple culturing and isolation, anyone can do it in the kitchen. Some Petri dishes, culture tubes, streaking loop, bacteriological-grade agar and malt extract is all you need.

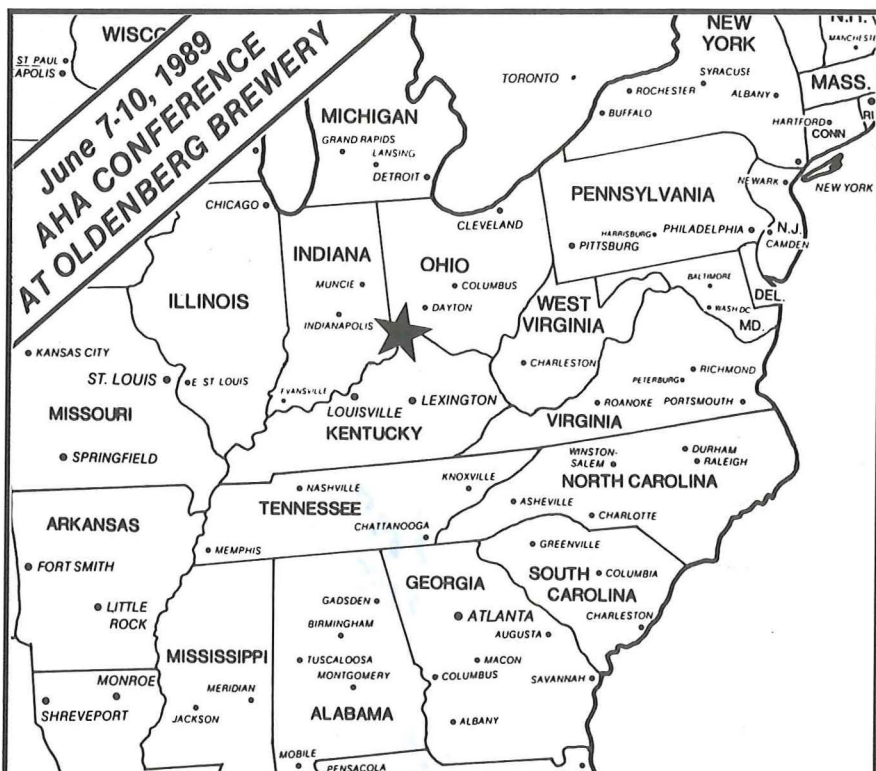
"In the case of look-alikes, yeast from the original product is the best choice if you can get it. My parents went to Czechoslovakia a while back and tried to get some Pilsner Urquell yeast for me. You'd have thought they were asking for state defense secrets from the way the brewery guide acted. So that's one type I don't have yet. On the other hand, when a member of the Maltose Falcons visited the Carlsberg brewery in Denmark, he easily obtained a jar of their lager yeast, which was packed in ice and hand-carried home for me to clone out a pure culture.

"My real job — the one for my dissertation — involves doing nucleoprotein sequencing on primitive eukaryotes (organisms composed of one or more cells with visibly evident nuclei). But I'd rather be making beer. Once I have

my degree in hand and get a job that pays more than a research assistantship, I'll be able to afford to put more time and energy into brewing. For any devoted homebrewer, the real goal is to make the very best beer you can, regardless of style."

**George F. Ashley is a Malt-hopper of about four years standing and has been brewing since 1978. He is a member of the "Tall Person's Provisional Progressive Revolutionary**

**Liberation Brewing Front," a splinter group within the Malt-hoppers limited to people over 6'1" (except for honorary members selected on the basis of similar low tastes). George writes for the club newsletter, inventing clever facts where real data are unavailable or boring. Disguised as a straight-arrow psychology instructor, George ekes out a meager living at Blinn College in Bryan/ College Station, Texas.**



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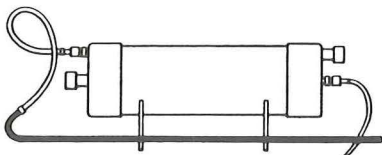
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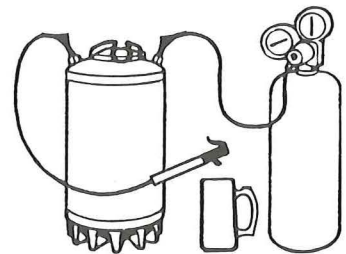
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# Brewing Gadgets

There's always more than one way to do anything. Brewing beer is certainly no exception. The editors of **zymurgy** thought that, in addition to the wide variety of commercially available brewing equipment, homebrewers had invented contraptions, gadgets, systems and methods, made to suit their particular needs or preferences. The Brewing Gadgets section includes many of our readers' response to the question, How do you brew? Many thanks to Patrick Pickett of Kettering, Ohio, for his help in editing this section.

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# Avoiding the Blow-off Danger

Brad Hornick  
Weston, West Virginia

I remember a discussion in **zymurgy** about the danger of using a small diameter blowoff tube that could be plugged by hop particles, particularly leaf hops. The writer was concerned that if this plugging occurred, the resulting CO<sub>2</sub> buildup could burst the glass carboy.

There are at least two ways around this. First, and most widely used, is the one-inch inside diameter plastic tubing that is just the right outside diameter to fit snugly inside the carboy neck for a gas-tight seal. It's all but impossible to plug such a large opening. However, it is a little hard to get the tube in and out of the carboy neck, and it leaves a small groove between the glass and the plas-

tic where dust and crud may collect, possibly falling into the beer as the tube is removed.

The Universal Carboy Cap is easier to install and remove, and covers the carboy neck completely. However, the center stem on the cap was not designed for a blowoff tube. It was meant to hold a rigid racking tube and/or airlock, which is why the hole is so small.

What I propose is to take the carboy cap and completely cut off the center stem (step 1, Figure 1). Then, with a sharp knife, make a crosscut or four center cuts in the radius of the hole (step 2). This will enlarge the hole for the next step, which is to take a five- to six-foot section of 1/2-inch inside diameter plastic food-grade tubing and push it through the enlarged hole about one to 1 1/2 inches (step 3). If you can't push the tubing through, then you need to make your cuts a little larger. *Important note:* Be careful here not to take the cuts out too far as it could weaken the cap. Once the tubing is in place, take a tube of clear silicone rubber and liberally apply where the tubing meets the cap. This will cure to a strong, gas-tight seal.

When using, simply attach and set up as you would for the normal

blow-off method. When foam and byproducts cease to be emitted through the tube, the whole device may be removed and replaced with an unmodified cap and airlock or drilled stopper with airlock, your choice.

I have had no problems at all with this setup, even with high-gravity brews! The large diameter tubing permits using the blowoff method without fear of clogging and pressure buildup, giving peace of mind to the brewer. One might be able to go as high as 3/4-inch inside diameter on the tubing, but I have not tried this. I imagine if you went to a larger inside diameter than this, it would weaken the cap.

After use, clean out and re-sanitize with a bleach solution.

## Some Gadgets and Ideas

Rolf Franzke  
Fountain Valley,  
California

Sometimes it's the little things that count! Here is a collection of ideas and hardware that will make your brewery more efficient.

**Wort cooler:** Need a wort cooler? This basic idea has been around a long time — I just did it a little differently (Figure 2). First, I used a lot more tubing than most chillers: 60 feet of 3/8-inch outside diame-

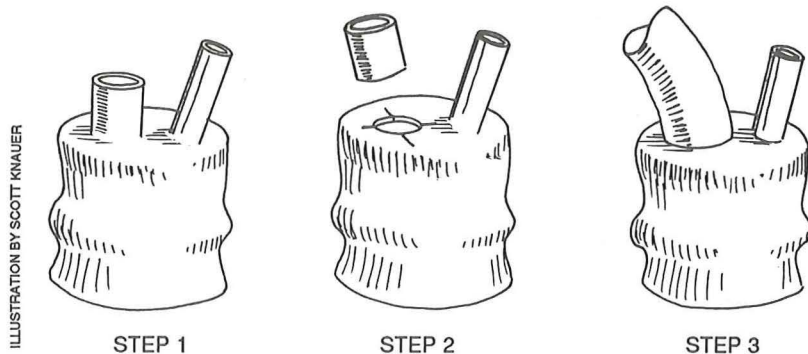
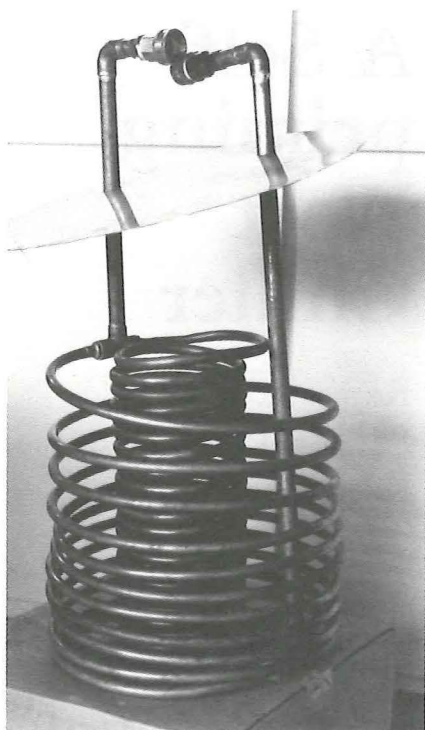


Figure 1



- Avoiding the blow-off danger
- Quick wort cooler
- Thermometer well
- Level indicator
- Airlocks for yeast culturing



**Figure 2**

ter soft copper. Second, instead of running cold water through the single copper coil immersed in the hot wort, I made two coils, one inside the other, and fed them in parallel through a tee at the inlet and another tee at the outlet. The main copper inlet and outlet tubes pass through holes in a stainless disk that serves as a cover for the brewpot while the wort is cooling. This arrangement seems to cool much more quickly than other chillers. Would you believe from boiling to 80 degrees F in 12 minutes? It's self-sterilizing, too! Just boil it the last 10 minutes or so.

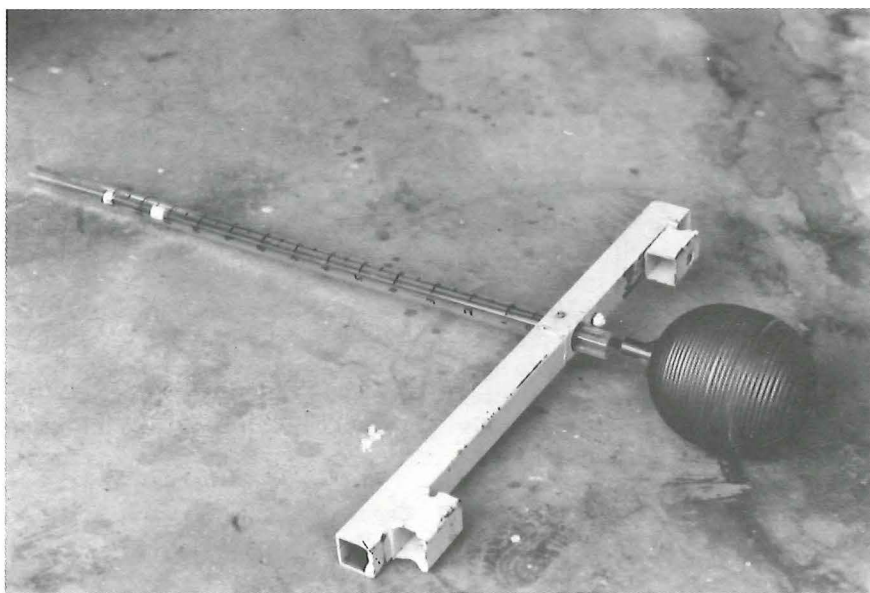
**Thermometer well:** The same shelf-mounted boiler caused me to come up with a way to read the water temperature without climbing a lad-

der and peering at a floating thermometer. All you need is a piece of stainless-steel tubing (1/4-inch outside diameter is about right). Have one end welded shut, drill a hole through the side of your boiler and have the other end of the tube welded to the hole. (Be sure that the welder uses an inert gas welding technique such as Heli-arc, T.I.G. or M.I.G.) Obtain the longest stem dial thermometer you can find (try a local restaurant supply house or a national industrial supply house) and insert into the thermometer well. The temperature obtained is accurate, but it doesn't respond as fast as it would if actually immersed. So beware of the lag time.

**Level indicator:** Because I use two boilers, one to boil the wort and one to heat sparge water (with the latter mounted high on a shelf), it's handy to know the water level in the

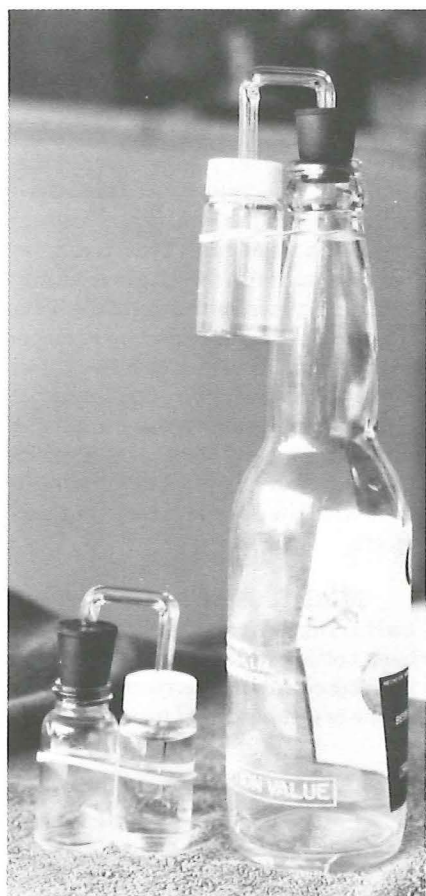
upper boiler without having to climb a ladder. An external sight tube would require drilling and welding, but my level indicator fits over the top of the brewpot with no welding required. It consists of a clear plastic (Lucite) tube marked off in gallons and fractions of gallons with an indelible laundry marker, a toilet-tank float, a rod, two Teflon spacers and a simple mounting bar that fits across the top of the boiler (Figure 3). It can either be attached with a clamp screw or just held down with weights hanging outside the pot. Calibration in gallons is accomplished by adding a quart of water at a time to your brewpot and marking the Lucite tube with the laundry marker at each quart.

**Miniature airlocks for yeast culturing:** To culture my yeast, I use beer bottles full of sterile wort fitted with bored rubber stoppers which also fit the test tubes that I use to store and



**Figure 3**





**Figure 4**

start my yeast culture (Figure 4). The rubber stoppers are fitted with tiny airlocks made of 3/16-inch outside diameter glass tubing that I bend into a U shape by heating with a propane torch. You need Pyrex tubing to take the heat (any other glass will shatter at torch temperatures), but it's readily available at any high school science lab. The tubing is cut to length by scoring it with the edge of a file then snapping it at the score with leather-gloved hands. Then heat the sharp-edged ends with the torch until they give off a bright yellow light and the

sharp edge slumps into a smooth rounded shoulder. (This is called "fire polishing.") Let it cool naturally, then insert it into the cork carefully (again with leather-gloved hands! Don't say I didn't warn you if you're sitting in the emergency room getting stitches after you tried it bare-handed and the tube broke!)

I culture in three steps: from test tube to 12-ounce bottle (clear so I can see what's going on inside) and then to a 1 1/2-liter wine bottle. All require a small diameter cork which in turn requires my miniature airlock. Yeast culturing requires a sterilizing step usually done in a pressure cooker. The Pyrex glass tolerates the high temperatures involved quite readily.

**Plastic hose cleanup:** Now to your plastic hoses. Do they look milky and white inside? If you cut off a small piece and slice it open, you'll find a coating that resists bleach solution but scrapes off easily. Strip a piece of No. 12 or No. 14 solid copper electric wire. Form one end into a long flat loop (like the eye of a giant sewing needle) and solder the loop closed. Feed it clear through the dirty tube. Put strips of a soft cotton fabric (T-shirt material is ideal) through the soldered loop and dip the fabric in hydrogen peroxide. Secure the other end of the wire to something solid, then pull the tube off the wire, twisting the tube as you pull. You might need a smaller or larger piece of cloth depending on how tight it feels. Repeat until the tube is sparkling clean.

**Centrifuge lauter tun:** This one isn't finished, but I'm going to try it. Maybe next year I can tell you how I converted a washing machine so I could use its spin-dry cycle to sparge my grain. I'm serious, it can be done!

## A Self-priming Wort Chiller

Reported by  
Patrick Pickett  
Kettering, Ohio

Let me make it clear that I didn't invent or even construct this gadget; I bought it. It was designed and built by a fascinating jack-of-all-trades and ex-homebrewer, George Latzy, currently of Gassville, Ark. (George had



**Figure 5**



• Airlocks for yeast culturing

• Plastic hose cleaner

• Self-priming wort chiller

• Copper siphon

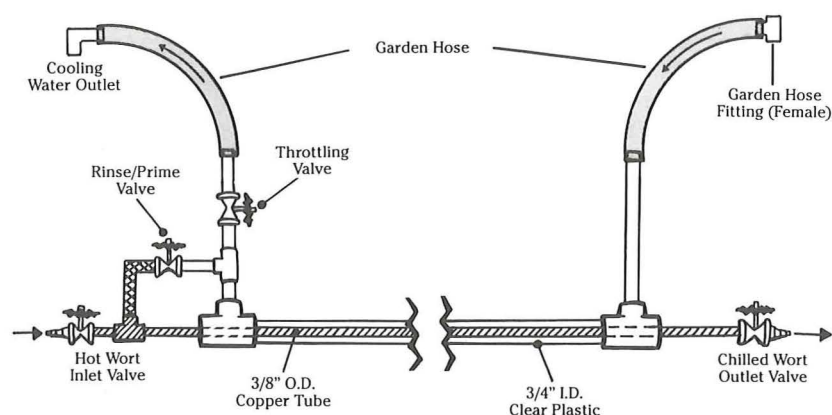


Figure 6

ILLUSTRATION BY MARK HILL

## Copper Siphon

Pierre Rajotte  
Montreal, Quebec,  
Canada

The siphon is probably the most used equipment in homebrewing and the one that is most taken for granted. Making sure it is as clean and as sanitized as possible has always been my main concern, but accomplishing it always is a problem.

All siphons sold in homebrewing stores are made of plastic. They work fine, but how are we sure we clean and sanitize them properly? You rinse them after use and that's it. I went one step farther, siphoning household bleach (sodium hypochlorite solution) through before use. Then I rinsed by siphoning cooled water that had been previously boiled.

One day I was getting ready to transfer beer to a secondary fermenter and going through my sanitizing routine when I realized that I had no cooled preboiled water. I decided to do a quick siphoning with hot water. Within 30 seconds I had a crooked, bent, useless piece of plastic tube.

With no homebrew store close by and beer that had to be transferred, I just went to my next-door hardware

high standards; he quit brewing because he couldn't get his all-grain beer to taste enough like Coors!

I was so intrigued by its novel design that I bought it from him just to see if it worked as well as it looked.

What sets it apart from other counter-current coolers is the addition of two valves and some extra piping that allows the user to flush it out before and after use, and to fill the inner tube with water so it becomes a self-starting siphon. (Figure 5.)

**Operation:** With the throttling valve wide open, there won't be enough pressure to force much water through the rinse-prime valve into the wort tube. So, with the rinse-prime valve open and one or both wort tube valves open, start closing the throttling valve until there is a brisk flow coming out of whichever end of the wort tube you feel like rinsing. You control which way it flows with the valves on the ends of the wort tube.

With the wort tube full and flowing out of both ends (to make sure there are no air pockets), close both wort tube valves simultaneously, then close the rinse-prime valve. Water is now trapped in the wort tube. If your

siphon hose is then attached to the wort tube, and the inlet and outlet valves on the wort tube are opened, gravity will cause the water to flow out of the wort tube outlet, which is sufficient to start most siphons.

During cooling, throttling the cooling water outlet valve allows you to regulate wort temperature.

After use, the sticky wort can be rinsed out forcefully with hot water.

**The problem:** All this is very nice, but with one possibly fatal flaw.

Notice that the rinse water had to traverse 10 feet of garden hose plus the space between the two counter-current tubes. This space never does dry out, and I can't find any easy way to sterilize it. So the rinse water is contaminating the wort tube!

Worse yet, during normal cooling, the small volume between the rinse-prime valve and the wort inlet tee (cross-hatched in Figure 6) is a dead end filled with questionable water. Even if you've run sterilant through the wort passage, that pocket of dead volume won't mix with it.

One fix might be to reposition the rinse-prime valve as close as possible to the tee, reducing the dead space to



store to see what they had to rig up until I could buy a new siphon. There it was: copper tubing in all sizes. I selected the size that made a good connection with my plastic line, bought three feet and rushed home.

Within five minutes I had cut it to the proper length. I slowly bent it so the bottom end would not pick up too much yeast and the top end curved over the edge of my primary fermenter. To clean it before use I made a mixture of automatic dishwasher detergent and siphoned it really hot. Then I sanitized it and rinsed with boiling water and it was ready.

Within a short while many new uses came up. All of a sudden I could rinse all my equipment with boiling water, actually using very little, because of a companion that I call the Hi Rise boiling water container. This is a vessel approximately five or six inches in diameter and nine or ten inches tall, preferably made of stainless steel.

Restaurant equipment dealers usually have these as steam-table sauce vessels in various heights and diameters. The reason I recommend stainless steel is that the vessel must be heavy enough to be stable when almost empty but still contains boiling water. With a Hi Rise vessel you need only a small amount of boiled water, (one full kettle is sufficient) and when rinsing you just recycle the same boiled water.

I am quite sure homebrewers have also experienced the "curled siphon hose syndrome." You are trying to siphon gently so as not to splash beer around, but you just can't keep the end of the plastic hose in the beer. It curls up. Cure this forever with the addition of a six-inch piece of straight copper tubing at the end. Siphon boiling water through. This gets your hose soft and pliable. Then siphon

your beer through. The copper weighs the end down and you have cured your problem forever.

Also with the Hi Rise vessel you can actually sanitize your siphon and plastic line outside and inside by immersing the plastic in the boiled water and running the hot water through the copper siphon, heating the outside of the tube to 210 degrees F. You can also prime your siphon with boiling water, allowing it to mix with the beer you are siphoning. This way the tube that came in contact with your mouth gets sanitized with boiling water. If you are kegging beer in soda-type kegs you can easily wash and sanitize your liquid line by connecting it to the other end of the copper siphon.

But I must give a word of caution. *Boiling water can burn you.* If you like to transfer or bottle beer in shorts and sandals you might hurt yourself. Be careful when handling the hot siphon. You will find out quickly that copper is a good heat conductor. But it puts my mind at ease to know that what goes in the siphon before the beer flows through is just boiling water and not some sanitizing chemical that I might have mixed carelessly or improperly.

## Trub Bag and Friends

Pierre Rajotte

Brewing with grains requires quite a bit more time than just using

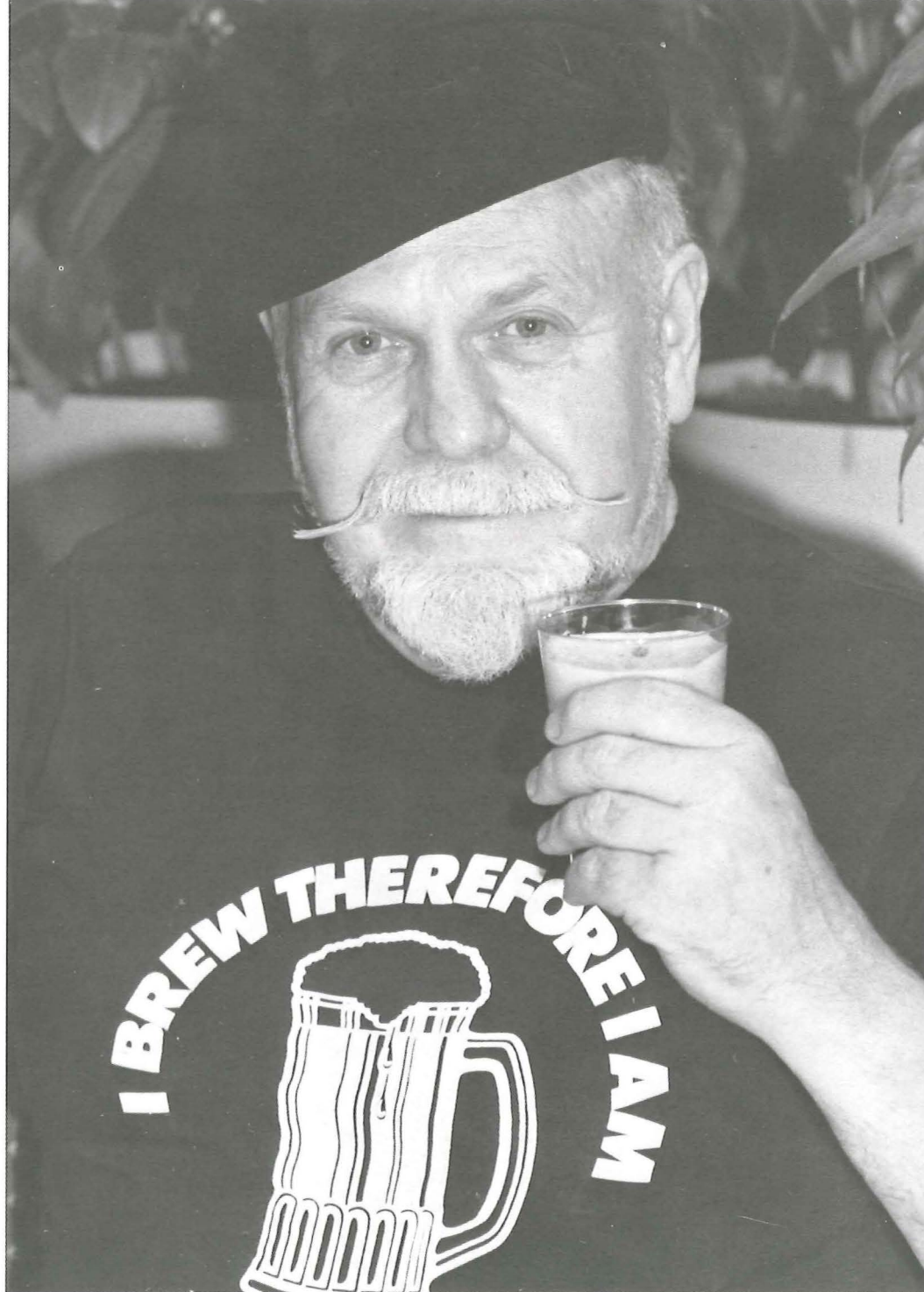
malt extracts. So it has always been my concern to use every bit of wort that is made. When boiling the wort and using fresh hops, separating the hops from the wort was always messy, long and tedious. I used to scoop it through a sieve in various vessels and let it rest a few minutes while sanitizing and setting up the wort chiller. Then, using my copper siphon, I would siphon it through the chiller, being careful not to pick up the hot break that had deposited.

When I finished cooling there were always a few pints of wort-trub mixture left over. I tried on various occasions to filter this through a reusable nylon coffee filter. But again it clogged up easily and sanitizing the filter was a problem. A soak in a household bleach (sodium hypochlorite solution) would ruin them. But I noticed that the filtered wort was really clear and that it could be used as wort in kraeusening the beer at bottling.

The only problem was in finding a suitable filtering material. Someone suggested using cotton. I went to a dry-goods store, got a yard of the finest tightly woven cotton they had and set about trying to find someone to sew me a bag. In exchange for some homebrewed beer I got a good deal. I was shown how to use a sewing machine and made my first trub bag. I could filter the trub quite rapidly, easily sanitize the bag in bleach, rinse it and soak it in boiling water.

Then I got another idea. If I could make a long bag to go over my copper siphon maybe I could siphon the wort directly from the brew kettle to the chiller without removing the hops. Back to the sewing machine for another bag-sewing session. It worked wonderfully for five minutes, and then everything got stuck. My cotton was





Fred Eckhardt: "Still Crazy After All These Beers!"

A s s o c i a t i o n   o f   B r e w e r s

# BEER-LOVERS' STORE

VOL. 3 NO. 2

WINTER 1988

\$1.00



# BEER-LOVERS' STORE

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Fred Eckhardt, left, receiving his AHA Recognition Award from Charlie Papazian at the National Conference on Beer and Brewing. Fred is a tireless champion for the appreciation of fine beer and the author of the new brewing textbook, *The Essentials of Beer Style* on page 3.

## Beer-Lovers' Store

While some folks rue winter's coming, homebrewers look forward to the cold-weather joy of brewing specialty batches of beer—of sitting by a fire with a beer in one hand and a book on brewing in the other. And what better occasion than the holidays for giving yourself the brewing items you want?

We are able to offer you several new items in this catalog:

- The Essentials of Beer Style by Fred Eckhardt, our cover model,
- Michael Jackson's revised New World Guide to Beer,
- Great Cooking with Beer, just in time for the holidays,
- Anchor Brewing Company sweat shirt, perfect for chilly days,
- a new t-shirt from Oldenberg for your collection,
- an always-appropriate, always-welcome gift certificate for your favorite brewer,
- and for your holiday celebrations, "Hoppy New Beer" greeting cards and "Relax" coasters.

So enjoy! And from the staff here at the Association of Brewers, have a beery merry winter!

## Catalog Staff

Design and Photography .....	David Bjorkman
Copywriting .....	Virginia Thomas
Circulation .....	Paul Echternacht

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## NEW BOOKS FROM THE MASTERS

Masters in the world of beer, Fred Eckhardt and Michael Jackson have produced two brand, new books just in time for holiday gift-giving and cold-weather reading and brewing.

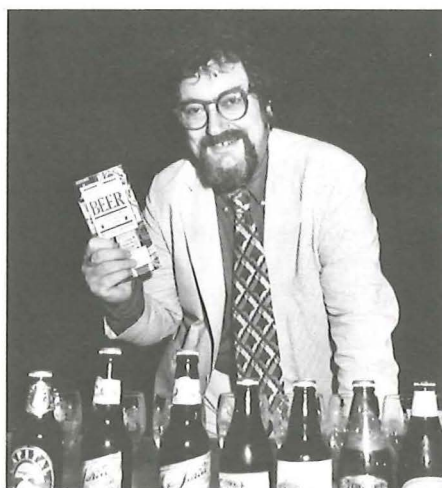
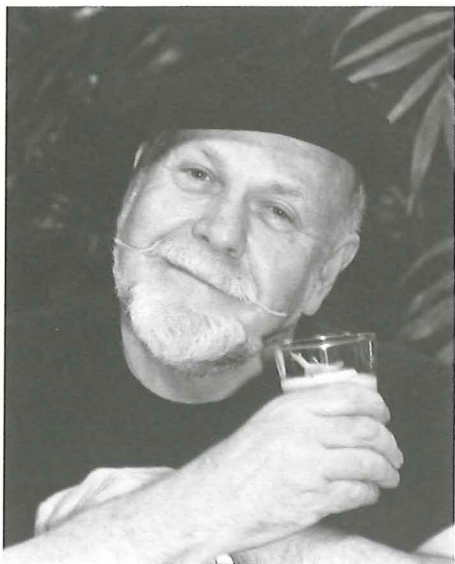
### *A Classic-in-the-Making*

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Author Fred Eckhardt has given this long-awaited reference the subtitle "A Catalog of Classic Beer Styles for Brewers and Beer Enthusiasts," which is a modest, but accurate description of this valuable book.

Fred has covered just about everything in determining beer style: color, strength, method of ferment, maturation and aging, malt and hop character, style definitions, and much more. Serious brewers will appreciate the formulas he has included. Beginners will profit from the style descriptions. Numerous styles of beer are also listed, along with their data. Don't miss this great book. It is bound to be referred to in future brewing conferences. 4x7½, 128 p., softcover.

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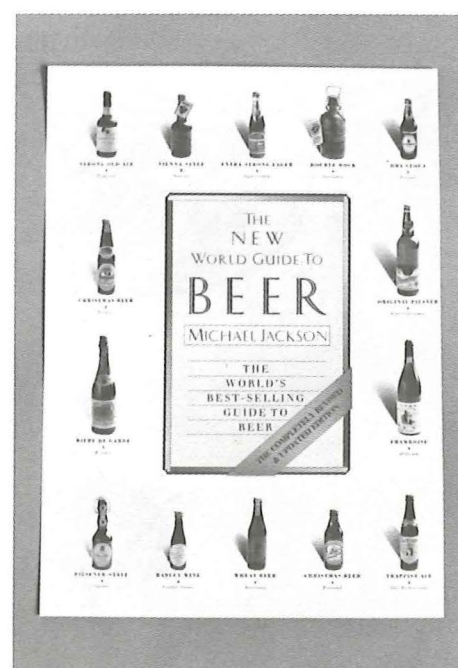
#### **The New World Guide To Beer**

This completely new book replaces Michael Jackson's classic book of the same title written nearly a decade ago.

Michael is recognized as a foremost authority on beer styles, his advice being sought by the world's largest and smallest brewers. In this new text, with updated maps and more than 100 new photos, he places in context beers great and small the world over.

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**NEW**

## BREWERIES OF AMERICA T-SHIRTS

Is there any better gift than a t-shirt? Other than giving the gift of good homebrew, we don't think t-shirts can be topped—except perhaps by a sweat shirt. To match your desire for quality beer, we've scoured the nation's breweries to bring you these quality t-shirts commemorating micros and brewpubs from coast to coast. Here is some of the finest, wearable art available today! So whether you're giving these t-shirts to a friend or receiving one yourself, we know you'll be delighted.



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### LIBERTY ALE

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### OLDENBERG PREMIUM VERUM

Oldenberg Brewery, Ft. Mitchell, Ky. This is where the 1989 Homebrewers Conference on Quality Beer and Brewing will be held. Get your Oldenberg t-shirt now, and maybe the good beer-fairy will make certain you get to the Conference! Design is tasteful green, red and gold on gray shirt. Size: M, L, XL  
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Independent Ale Brewery, Seattle, Wash. 1930ish-style brewer in black with white letters on light blue shirt. Size: M, L, XL  
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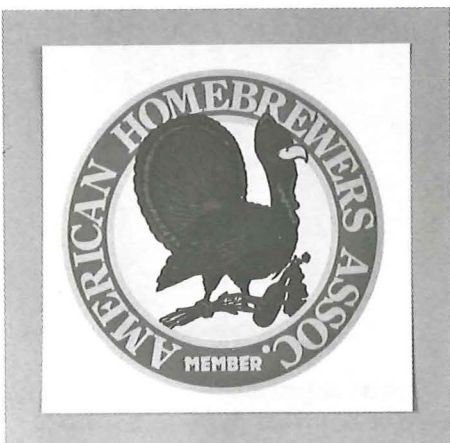
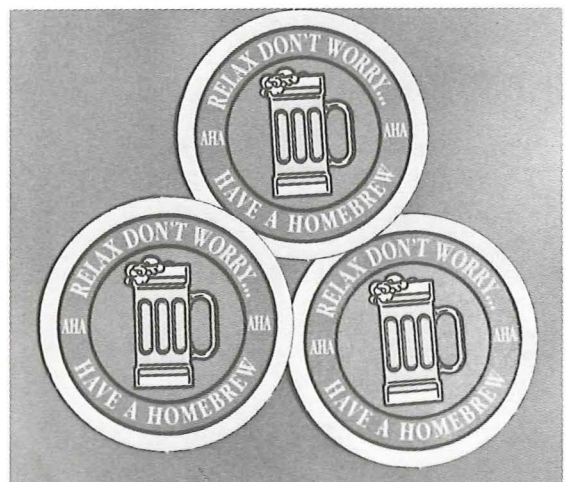
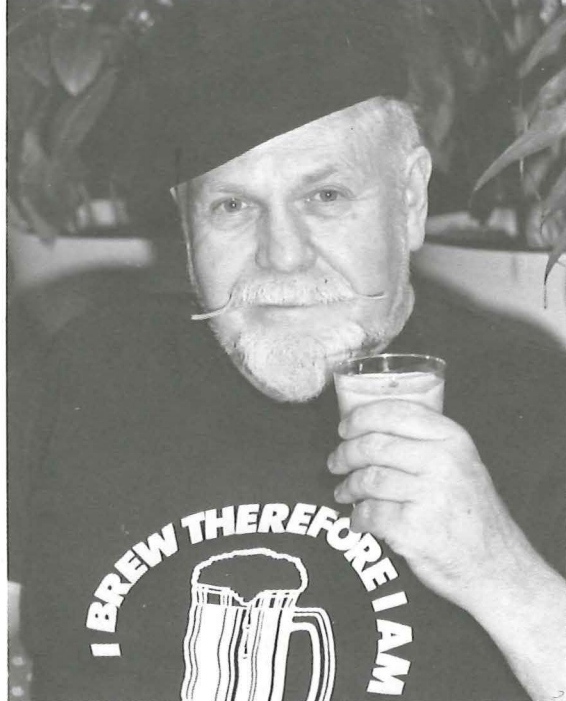
Sierra Nevada Brewing Co., Chico, Calif. Brilliant yellow, orange, green, blue logo of mountain scene on ecru shirt. Size: M, L, XL  
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DON'T WORRY, BE HAPPY "Relax" has become the password of homebrewers worldwide. Now you can give yourself and guests this message with colorful but tasteful beer coasters. Strong, attractive, and reuseable time after time.

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- Equipment Systems for the Brewpub,
- BATF Regulations, and much more.

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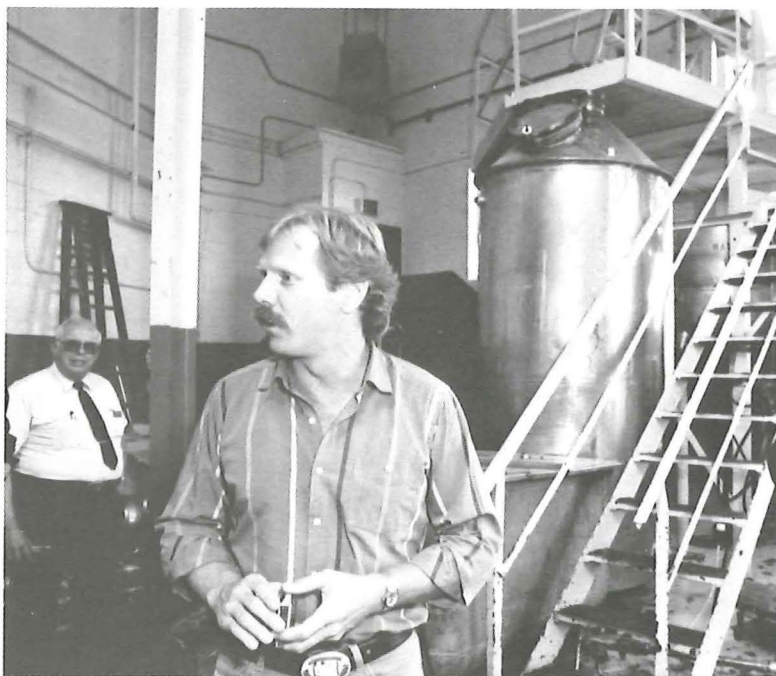
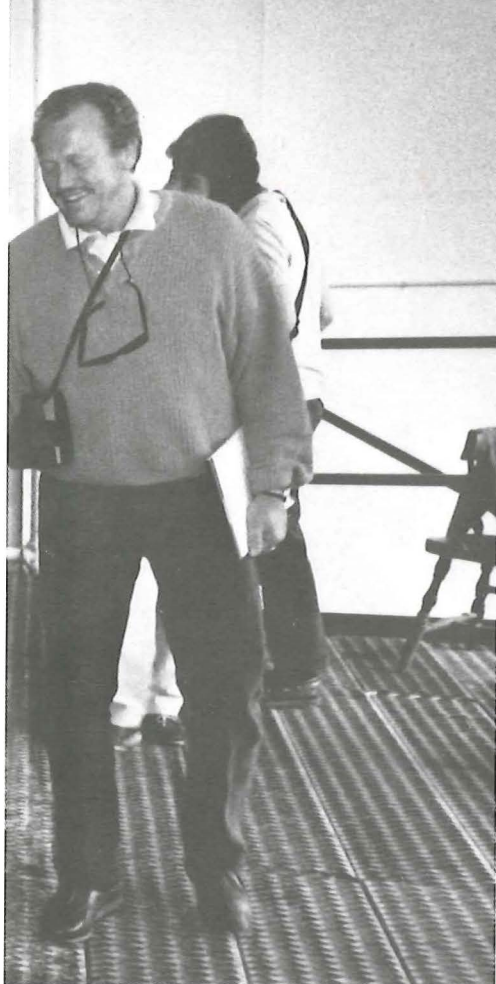
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# MICROBREWERY INFORMATION

Luckily for us beer-lovers, microbreweries and brewpubs are springing up throughout the U.S. and Canada in numbers no one would have predicted 10 years ago. Now Brewers Publications has several books with specialized information for small brewers—information valuable to both breweries and homebrewers.



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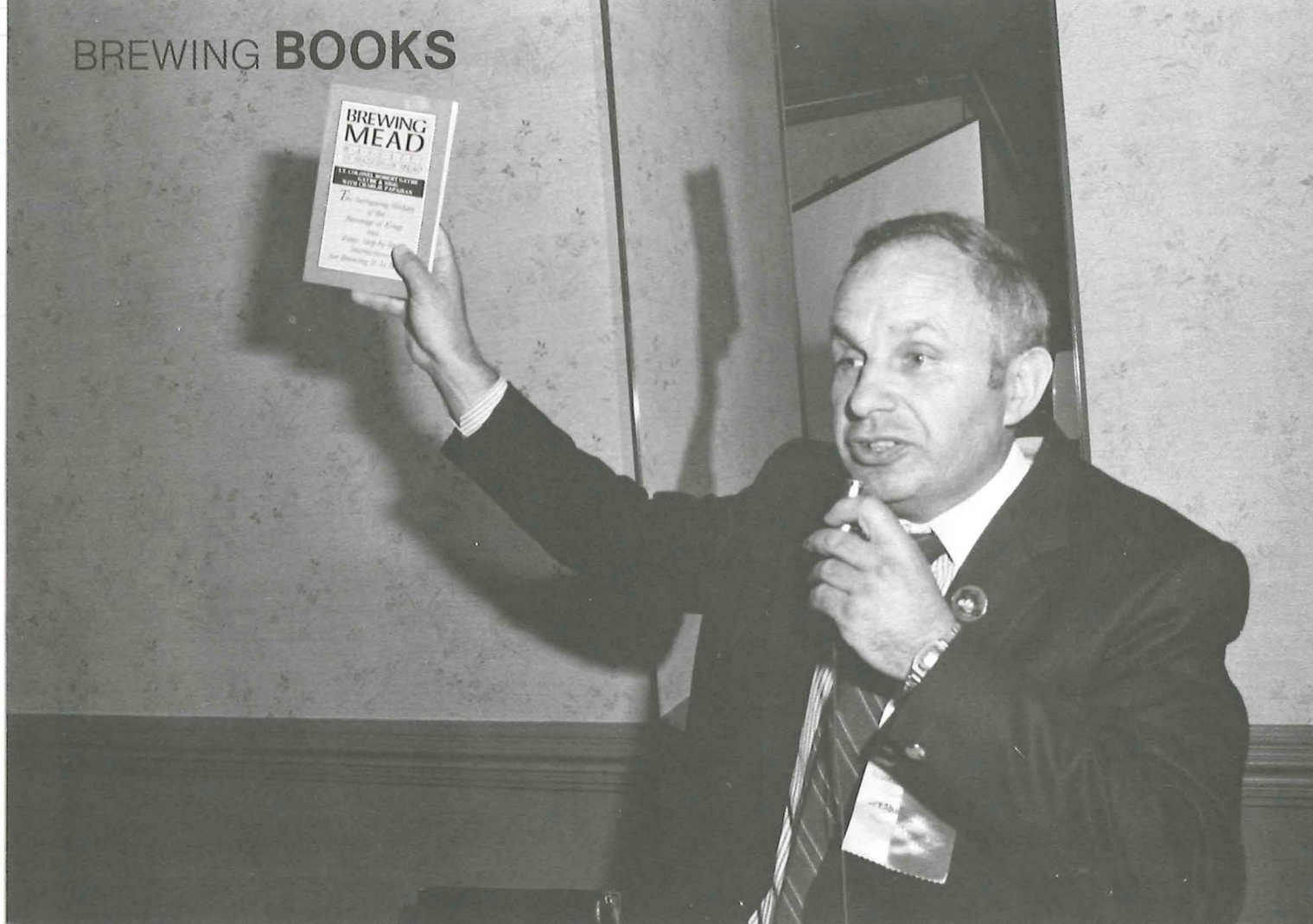
- Wort Production,
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Photos show scenes from three Wisconsin breweries on the Association of Brewers tour prior to the 1988 National Microbrewers Conference. Top left, Ken Allen watches employees at Capital Brewing, Middleton. Above Randy Sprecher, Sprecher Brewing, Milwaukee. Left, Lakefront Brewery in Milwaukee, a homebrewers dream-come-true; (clockwise from front) James Klisch, Russell Klisch, Charlie Papazian and Carson Paefke.





Old brewer's truth: you can never have too many books on beer making and beer appreciation.

Because we believe in that saying, plus the theory of relativity (the quality of a brewer's beer is relative to his body of knowledge), we constantly offer books to expand your information.

## Brewing Lager Beer

This book sells so fast that it is now in its third printing—which is a revised edition! In fact, people frequently describe it as the definitive source for info on decoction mashing.

This classic reference book is a must for serious brewers interested in all-grain brewing and recipes. First, author Greg Noonan describes the brewing process and ingredients in plain English. Then he guides you through planning and brewing seven classic lager beers—including recipes. A bonus: tables of brewing info are excellent. 5½x8½, 320 p, index, illus, softcover

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Leon Havill, a master, commercial mead-maker from Rangiora, New Zealand. Leon gave a rousing talk at the 1988 Conference on Quality Beer and Brewing in favor of the taste and aphrodisiac qualities of mead. His presentation is one chapter in the just-published *Beer and Brewing Vol. 8*.

## Brewing Mead

Get ready to take advantage of next season's bumper crops of fresh berries, fruit and fresh honey with this unique recipe and history book. Mead is a wonderful, winelike beer, easily made at home with ordinary homebrew ingredients and equipment. It's a beer women love to drink—and so do men.

Charlie Papazian gives step-by-step recipes and instructions for making this honey-based brew, reportedly a powerful aphrodisiac. Lt. Col. Robert Gayre, of Scotland, gives its history. Now is the time to discover the secrets of mead.

5½x8½, 208 p, softcover

#418

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## Beer and Brewing, Vol. 6

### 1986 Conference on Beer and Brewing Transcript

This book is a practical collection of brewing material worthy of all brewers—professional and hobbyist. The 20 chapters contained in Beer and Brewing were authored by some of the most knowledgeable brewing experts in the U.S.

Topics include:

- Training to Perceive Flavor,
- Origins of Normal and Abnormal Flavors,
- Brewing Light Lager,
- Brewing Porters and Stouts,
- Cultivation and Use of Hops,
- Quality Control in Small Scale Brewing,
- The Magic of Malt,
- Brewing Water: Its Effect on Flavor,
- Yeast Usage,
- Closed Fermentation Systems,
- and 10 more.

5½x8½, 260 p, illus, softcover

#420

Members \$18.95

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## Best of Beer and Brewing

### Vol. 1-5

#### Transcript of the 1982-85 Conference on Beer and Brewing

This volume is the result of many, many requests for information from our previous transcripts. Rather than reprint them all—a very costly endeavor—we chose the very best 18 talks from previous years, asked the authors to update and correct them, and compiled them in one valuable, affordable volume.

Best of Beer and Brewing includes talks from Dr. Michael Lewis, Dr. Terry Foster, Byron Burch, Charlie Papazian, Fred Eckhardt and Nancy Vineyard, to name a few. Topics are Mashing Theory, Yeast Culturing, All-Grain Brewing, Hop Utilization, Microbiological Controls, Beer Styles, and more. 5½x8½, 260 p, illus, softcover

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## Beer Judge Study Guide

Compiled by the American Homebrewers Association, this handy reference book includes all relevant information you need to become a competent, confident beer judge.

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#412

\$12.95

## Beer and Brewing, Vol. 7

### 1987 Conference on Beer and Brewing Transcript

This Conference was so valuable to brewers—and word-of-mouth praise so good—that this book has sold itself! In our opinion, this transcript of the National Homebrewers Conference offers readers the widest range of beer information ever published in a single volume.

Its 17 chapters include:

- Yeast Strain Traits, Dr. George Fix
- Perceiving Flavor, Jim 'Boston Beer' Koch
- Recipe Formulation, Byron Burch
- Brewing to Scale, Finn Knudsen
- Brewing in Your Environs, Geof Larson
- Origin of Beer Flavor, Charlie Papazian
- Innovations in Equipment, C. Olchowski
- Confessions of a Micro, Jon Bove
- Beer Folklore, Will Anderson
- Contemporary Brewing, Mark Carpenter
- Plus seven more.

5½x8½, 280 p., illus, softcover

#423

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Nonmembers \$20.95



## Association of Brewers Dictionary of Beer and Brewing

Once in a great while, a book comes along that makes an outstanding contribution to the nation's brewers, and we believe this is such a book! For the first time, English-speaking brewers have a point of reference—a common language.

Author Carl Forget has compiled 1,929 essential definitions used in beer-making.

They cover:

- brewing processes,
- ingredients,
- types and styles of beer,
- abbreviations,
- arcane terms,
- every brewing term you want to know.

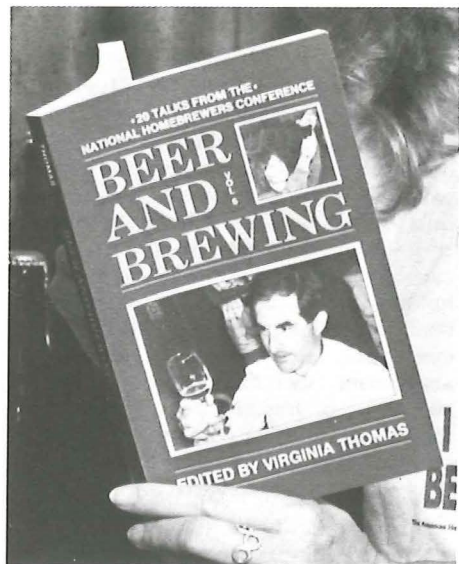
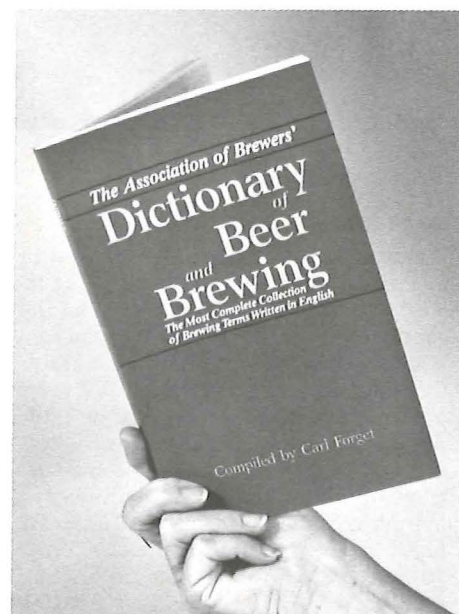
Also included: conversion tables for temperatures, alcohol percentages, and factors.

"This is an excellent dictionary. There is a real need for it," says Dr. George Fix, chemist and brewing expert. 6x9, 196 p, softcover

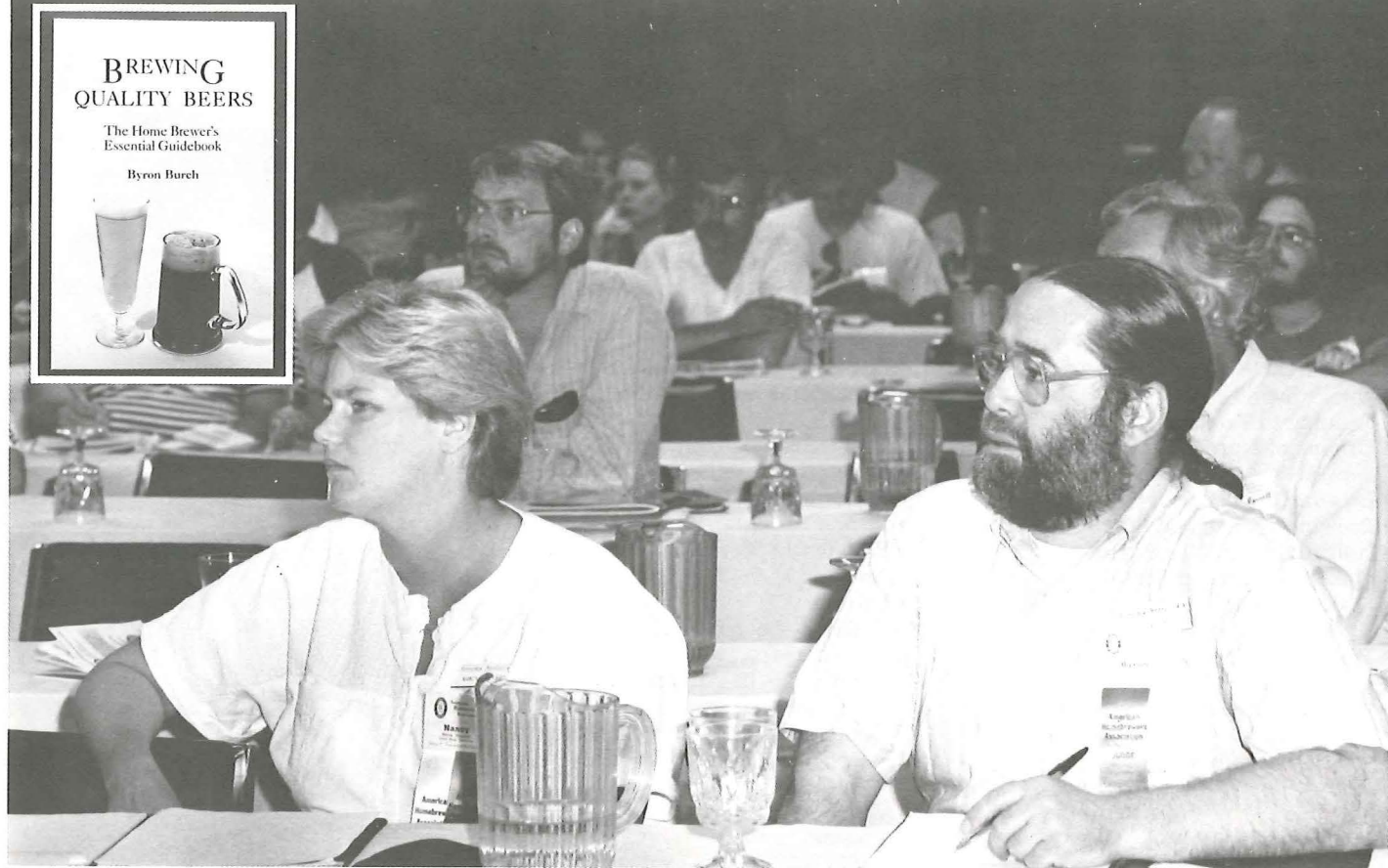
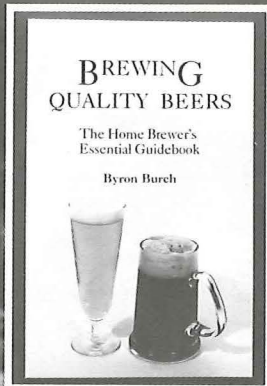
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Nonmembers \$19.95







## Beer USA

When a copy of *Beer USA* arrived in our office, we found it so intriguing that we had to put it out of sight in the file cabinet to get any work done that day. Beer aficionados will prize this attractive, photo-filled chronicle of 500 years of American beer history. Author Will Anderson compiled this labor of love for three years. The result is a treasure-trove of beer memorabilia with over 300 photos and 800 facts on American beers, breweries and beer lovers. 10½x9, 168 p, profuse illus, softcover #314 **\$19.95**

## From Beer to Eternity

Will Anderson subtitled this book "Everything You Always Wanted to Know about Beer," which is an apt description. The reader just has to wonder, "Where does he find this info?" Here are arcane facts about beer styles, recipes for beer soup and zucchini in beer; how to drink beer; holding a beer taste-off; U.S. breweries; beer and religion; in other words, everything you ever wanted to know about beer. Topics are short and accompanied by photos and period artwork—making it a perfect companion when you sit down with a beer. 8½x11, 162 p, illus, softcover #316 **\$14.95**

Byron Burch, 1986 Homebrewer of the Year, and author of *Brewing Quality Beers* (inset), with his wife Nancy Vineyard, 1983 Homebrewer of the Year, during a presentation at the 1988 Conference on Quality Beer and Brewing.

## Brewing Quality Beers

This book sets a standard for brewing excellent beer. In plain terms, Byron Burch, 1986 winner of the national homebrew competition, explains the techniques for successfully homebrewing a kaleidoscope of beer styles. Now in its sixth printing, this updated guide to brewing contains recipes, tables and charts. 5½x8½, 50 p, illus, softcover #301 **\$3.95**

## Complete Joy of Home Brewing

Charlie Papazian has sold more than 50,000 of this comprehensive how-to book for all homebrewers—that's how good it is! A noted expert, Papazian gives clear instructions for extract and grain brewing, plus tested recipes. Includes the history of beermaking, theory, practical how-to charts, tables and graphs. Over 80 illustrations. A classic beermaking guide. 5½x8½, 352 p, illus, softcover #306 **\$8.95**



## Hot Off the Press Great Cooking with Beer

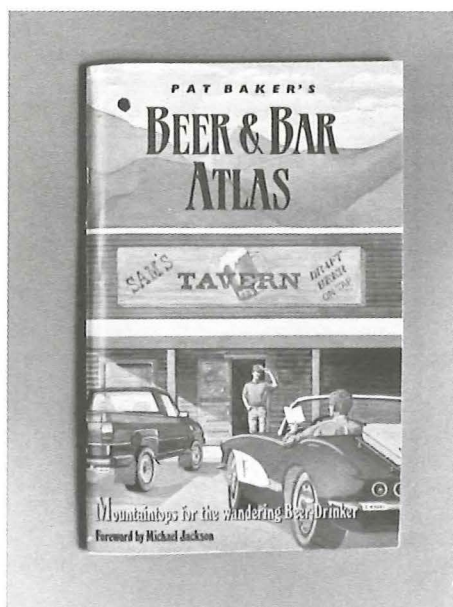
Now you can have your beer and eat it, too! This book is so new it isn't even in the bookstores yet! *Great Cooking with Beer* is bound to be a classic guide with wide appeal to both beer-lovers and good cooks.

Author Jack Erickson gives recipes from salads (and their dressings) to appetizers, seafood, poultry, game, breads, soups and desserts—all cooked with specialty beers. "Beer Cheese," "Spicy Shrimp," "Pancakes," "Mediterranean Chicken" are a few. Chapters include Planning Your Meals and Matching Beers with Food. Cooking with beer is a concept you can now bring to your dining table. 6x9, 160 p, illus., softcover #308 **\$10.95**

## Yeast Culturing for the Homebrewer

Ah, the mystery of yeast, and its role in beer-making. Roger Leistad explains how to culture and grow yeast at home in this concise, easy-to-follow booklet. A proven authority on the topic of yeast. 5½x8½, 40 p, softcover #310 **\$3.50**





### Beer and Bar Atlas

Here they are: the bars, the beers and the breweries on and off the beaten tracks of America. Have you dreamed of being able to taste your way through the Pacific Northwest or sip a route through the New England states?

Author Pat Baker highlights the bars you'd love to visit on a cross-continent tour, along with their beers. "Mountaintops for the Wandering Beer Drinker" is how Pat describes it. Hemingway would have loved it! 5½x8½, 71 p., illus., softcover

#317 \$4.50

### Also Available

**Making Beer**—History and philosophy of beermaking with six recipes. 178 p.  
#305 \$9.95

**Better Beer and How to Brew It**—Malt extract procedures and 19 beginner recipes. Excellent photos. 120 p.  
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**Sweet and Hard Cider**—How to make strong and nonalcoholic cider using homebrew equipment. Tables. 188 p.  
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**Making Mead**—Recipes and history of honey mead, methelins, cyser, melomel and pyments. 59 p.  
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**Wine and Beers of Old New England**—Recipes, history, odd facts and modern methods for recreating pioneer drinks. Birch, spruce, maple, ivy beers. Applejack, mead, Whistle-belly Revenge. 157 p.  
#300 \$5.95

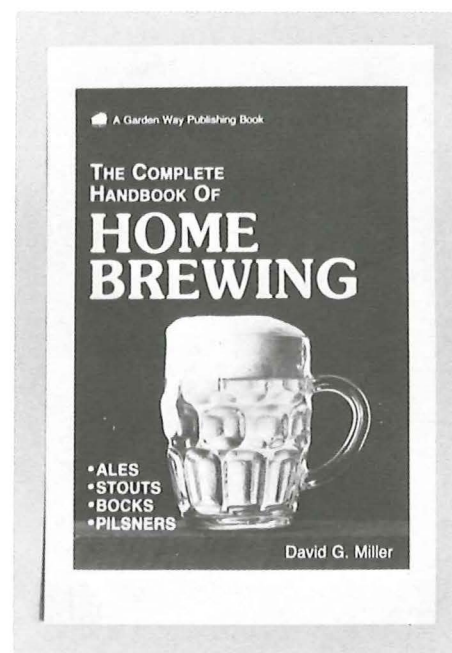
### Newly Published Complete Handbook of Home Brewing

This thorough book has been written for homebrewers of all abilities by a man who has been brewing for 11 years.

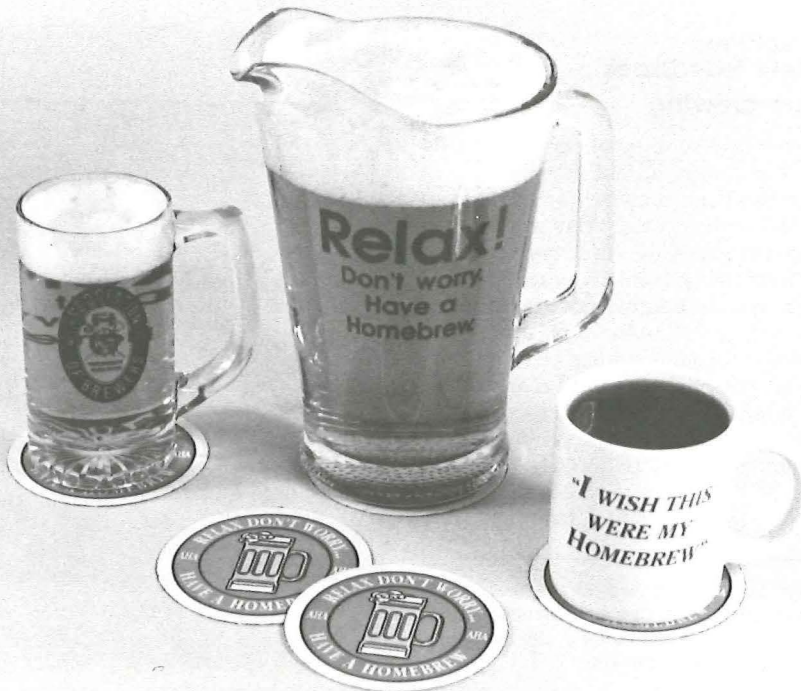
Dave Miller makes the "fine art" of homebrewing accessible to every brewer. Everything from brewing equipment and troubleshooting is covered, as well as bottling and numerous recipes. "The reward for your efforts can be a brew of unquestionable quality, one that was not complicated to concoct... and did not bankrupt you in the process," says Miller. 8x9, 240 p., illus.

#319 Softcover \$9.95  
#319H Hardcover \$19.95

Dave Miller, 1981 Homebrewer of the Year, and author of the new book *Complete Handbook of Home Brewing*, judges homebrew at the National Competition in Denver, Colorado.







## Homebrewers Coffee Mug

PROCLAIM YOUR PREFERENCE Let them drink beer! said one French queen. But for the occasions when you're drinking coffee or tea, assert your preference with this mug that declares "I wish this were my homebrew." Durable, unique, honest, and a generous cupful. Color: White with red letters.

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RELAX BEER PITCHER Draw up a pitcher of suds for friends using this heavy-duty, graceful glass pitcher. Molded spout makes for easy pouring, and quick, easy cleaning between beer styles. Perfect when used with its companion mugs (see above set). Printed in black with "Relax, Don't Worry, Have a Homebrew" and Association of Brewers logo opposite.

#218

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## Homebrew Video

SHOW AND TELL HOMEBREWING When pro filmmaker Mike Dilley focused on the art and science of homebrewing to make this video, he combined fun and learning. The Video Guide to Homebrewing is an easy-to-understand presentation on how to make good beer at home, while highlighting the social side of beermaking.

First, Wen Evans shows how easy it is to make good beer, and a tour of Portland Brewing shows the commercial brewing process. Next, Charlie Papazian describes brewing ingredients and their role in beermaking. Then, Terry Dennis demonstrates a homebrew draft system. Finally, Michael Jackson makes your mouth water for a good, full-bodied homebrew.

#901

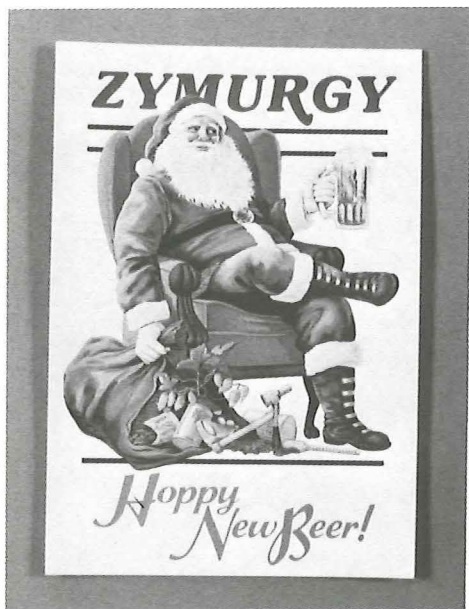
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## Door-Length Beer Poster

99 BOTTLES OF BEER ON THE WALL We are impressed with the deep rich look of this full-color poster depicting some beers of the world. Printed in Holland, it is much longer than the usual poster, and in fact, is the perfect length for hanging on a door. Get this poster, and "Open the door to the wonderful world of beers."

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## Holiday Greeting Cards

SAY IT WITH A BEER Holiday time is a time of good cheer and serious obligations. Combine both by remembering your friends and acquaintances with a greeting card fit for a homebrewer to send. "Hoppy New Beer" is the message of these colorful postcards and folding cards with envelopes. Give the gift of beer!

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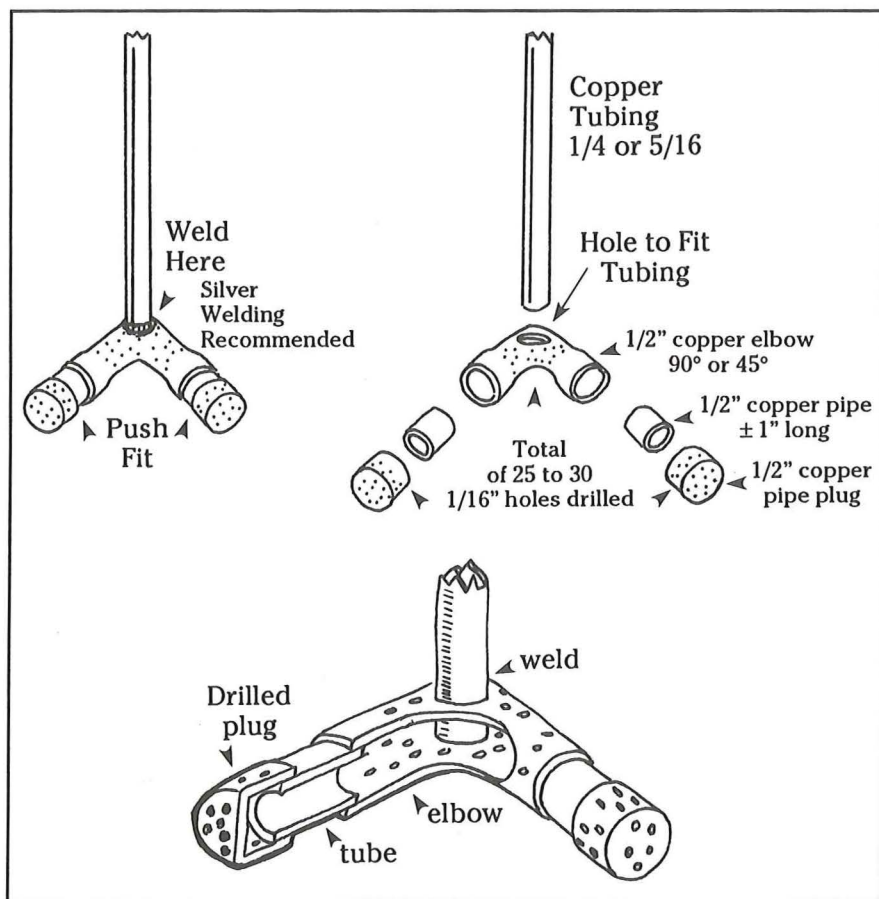
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## • Copper siphon

### • Trub bag and friends



**Figure 7**

ILLUSTRATION BY SCOTT KNAUER

too fine and kept getting plugged up. Back to the dry-goods store for a nice loosely woven cotton. Back to the sewing machine. This time it worked just great.

In an hour I could siphon in one shot and chill 10 gallons of wort, leaving behind the spent hops, the hot break and a few pints of wort. Last year I visited breweries in Europe and saw spent hop squeezers squeeze the last bit of wort from the hops for use in the next brew.

So, after cooling the wort, I did it. I hand-squeezed the cooled hops and

recovered about two quarts of wort. I quickly reboiled it and let it cool in my Hi Rise vessel overnight in the refrigerator. The next day all the trub had deposited. So I just decant the clear portion of the wort. When I get to the trubby part, usually two to three cups, I put it through the trub bag. It filters out in just 10 to 15 minutes.

So here I am with a few quarts of really clear wort. I reboil it for 15 minutes to sterilize it and put it away in canning jars to be used as kraeusening beer or to top up the fermenter. I have kept wort this way for over a year

in the refrigerator and a sample analyzed with a microscope showed no harmful bacteria.

In order to get a good flow through the siphon I also modified the end. The first time I used the copper siphon was just to transfer beer, bottling or sanitizing and it worked just fine, but when I tried it with a dry-hopped beer I encountered problems. At first I just added a little plastic filter screen to the end that was intended as a gasoline filter on the gas tank cap of a lawn mower. The flow was terribly slow and it got plugged up with hop resin and leaves after five minutes.

Then I used a long filter bag. I got a fast flow rate but after a few minutes it got plugged up also. Then it dawned on me that if I made a lot of little holes over a large surface it wouldn't restrict the flow as much. So I made lots of little 1/16-inch holes in a 1/2-inch copper plumbing elbow and in two 1/2-inch end caps. I welded the elbow to a 5/16-inch copper tube and plugged the end of the elbow by putting the caps over one-inch pieces of 1/2-inch copper tubing that I just push into the elbow (Figure 7). This way it can all be taken apart for easy cleaning. I recommend that you silver solder the elbow to the siphon tube. It makes a stronger weld than tin solder and does not oxidize as much as regular plumbing solder.

I have always liked dry hopping beers in the secondary, but again, separating the beer from the hops had always been a problem. Various filtering systems were always clogging up or were too slow. As soon as I had my filter bag working with the hot wort, I dry hopped a beer. Using the siphon and filter bag, siphoning the beer for bottling was as fast as without hops. But one must be very careful to sanitize the bag thoroughly before proceeding.



## WE MUST BE TREATING THEM RIGHT!

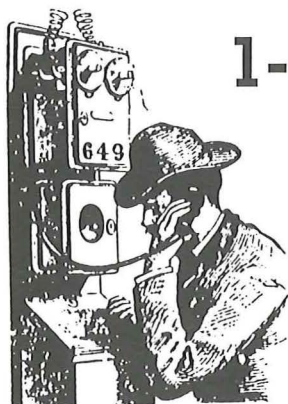


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## The Isenbrau Kegwasher

John and Karen  
Isenhour  
Gambier, Ohio

The Isenbrau Kegwasher allows you to create, from a used dishwasher, a system that will sanitize and rinse kegs up to 15.5 gallons. The system has saved me an incredible amount of labor, and is excellent for large-volume keg brewers.

- Select an old dishwasher with a bottom center jet that telescopes up into the washer compartment (you should be able to lift this up when the water isn't on). Remove internal racks.

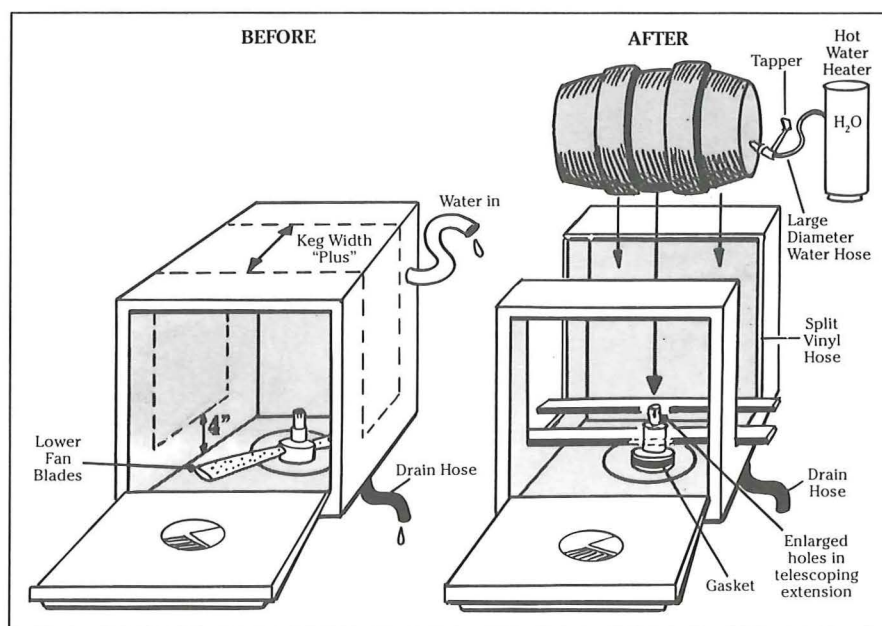
- Cut the keg hole. Measure width of keg. Mark out an area the width of your kegs on sides and top of dishwasher, centered over and stopping about four inches above the center jet level (Figure 8). Move the dishwasher outside, don eye protection and cut out marked area with steel-cutting blade on a circular saw. Slit some vinyl tubing and press it onto the exposed metal edge made by your cut.

- Adapt the spray mechanism. Open the dishwasher. On the bottom center is the lower jet. Unscrew the upper telescoping sprayer (it's a left-hand thread). Cut notches in the top of the extending piece so water will spray out in all directions. Pull the lower rack propeller off, then reattach



• **Keg washer**

• **Inexpensive lauter-tun**



**Figure 8**

ILLUSTRATION BY MARK HILL

the telescoping extension so it extends upwards into the bunghole of the keg. Use a neoprene strip (or other flexible plastic) and hose clamp as a gasket to close off the ring that used to supply water to the lower propellers. Relax! Don't worry if it leaks a little because the water pressure will force plenty of the water upwards.

- Adapt the fill and drain mechanisms. Disconnect and tape off the leads to the water valve (this is where water normally enters.) For filling, I use a large-diameter garden hose with the metal end cut off, the rubber end flared and a tapper attached to the hose. This will later attach to the keg and be used both for filling the kegwasher and cleaning the internal lines of the keg. (Occasionally it is wise to completely disassemble and check the internal keg lines, especially if you don't wash the keg right after you empty it.)

Next, disconnect the electric leads running to the drain valve (it's on the side of the main plastic housing and is a plunger-type mechanism). After the wash cycle you'll have to flip the valve manually (or attach a separate electric switch) to drain the kegwasher. If the drain hose leaks during the wash cycle, crimp the line and put a brick on it so the water stays in the washer during the wash and rinse cycles (a blown main water seal is how one obtains a free dishwasher!).

- Adapt the timing mechanism. I use a surplus laboratory timer, but an old neon sign timer or a device from your friendly neighborhood electronics shop will work. For best results, the washer should cycle on for 12 seconds and off for 12 seconds so the water is sprayed inside the keg and has time to drain before the pump comes on again. You can let it run constantly (if you must), but be sure

there is enough water so the pump doesn't run dry during the wash cycle.

- Run the keg washer. Lay two boards across the lowest part of the metal cut you made and place the keg, bunghole down between the boards. Make sure the telescoping extension will go in the bunghole when extended. Attach the garden hose/tapper to the keg and turn on the very hot (scalding) water. Water will run through the internal keg tubing into the bottom of the kegwasher. Fill to normal dishwasher depth (halfway up the drain float), add two jiggers bleach and turn it on. Run normal wash cycle, drain, refill with rinse water (I rinse twice) and you have an automatically cleaned keg.

## Build an Inexpensive Lauter-tun

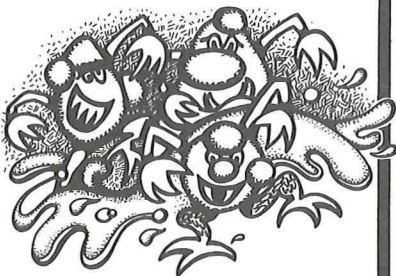
Nancy Vineyard  
Santa Rosa, California

An efficient and inexpensive straining system (lauter-tun) can make brewing with grain relatively easy, and quickly turn a novice into an expert grain brewer. I used such a system for years before investing in a permanent, 10-gallon stainless-steel setup, and I go back to using it whenever I teach newcomers.

You will need a five- to seven-gallon food-grade plastic bucket with a lid, a spigot and a straining bag



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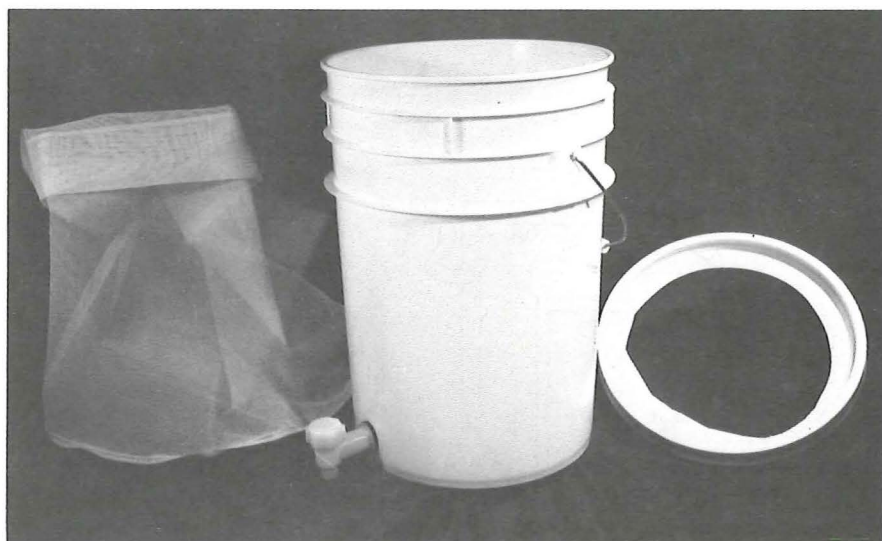
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**Figure 9**

(Figure 9). The instructions provided here will make an ordinary bucket into an insulated lauter-tun. The only tools needed are a ruler, a hole saw, an electric drill and a pocket knife.

Start by acquiring a heavy-duty nylon-plastic drum tap or other threaded spigot that can be attached through the wall by tightening a nut on the inside wall of the bucket. Measure the width of the threaded end. Using a hole saw attached to an electric drill, make the hole approximately one inch above the bottom of the bucket.

Next, you will need a large nylon straining bag that fits inside the bucket, its open end folded over the top of the bucket and its seamed end raised an inch or two off the bottom and held in place at the top by either an elastic cord or the bucket cover. If you are using the cover you will need to remove the plastic from the middle of the lid so that the sparge water can be added through the hole. A pocket knife can be used to make this cut. In

order to snap the cover over the bulk of the straining bag, you may also need to loosen the tension in the lip of the lid by cutting through the side lip in five or six places.

Now you have a lauter-tun that will make an efficient strainer for separating the sweet wort from the spent grain after mashing. The mash takes place in a 15- to 20-quart enameled or stainless-steel pot on your stovetop, where the temperature can be readily adjusted. A second pot (28 to 40 quarts) is used as a "hot liquor tank" to heat your sparge water.

When your mash is finished and the temperature of both mash and sparge water have been brought to 165 degrees F, add two to four quarts of boiling water to the lauter-tun (first making sure the spigot is closed) to act as a cushion in the space between the straining bag and the bottom of the bucket. Scoop the mash into the straining bag, clean out the mash pot and place it under the lauter-tun spigot to become a collector. In

PHOTO BY JAY REED PREVIOUSLY PUBLISHED IN BREWING QUALITY BEERS.  
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• Inexpensive lauter-tun

• Brew blanket

After the mash has been transferred, a gentle outflow is begun into this collector. While the lauter-tun is draining, add sparge water gently to the surface of the grain in the lauter-tun. Keep water an inch or two above the grain, adding water to maintain this level until all the sparge water has been added to the lauter-tun. Close the valve and pour the collected sweet wort into the now empty hot liquor tank. This larger pot is now moved into place as a collector. It will eventually become your boiling kettle.

One recent idea for improving this basic design came from a member of our local brewing club who has used it successfully for several years. He devised a way of insulating the bucket, and it works great. In our area we can sometimes get seven-gallon carboys, and often they come with thick styrofoam protective covers that are just the right diameter to fit outside my bucket.

You do need to remove a strip of styrofoam the width of your spigot so the bucket can fit inside the styrofoam when the spigot is attached. Insulation batting or even a water-heater blanket taped around the bucket would help maintain the proper 165 degree temperature needed during lautering.

If you haven't tried grain brewing because you thought expensive equipment or a lot of labor was required, think again. This system sure beats the labor of drilling a thousand holes (as in the old, two-bucket sparging method) or the price of a picnic cooler, so get a spigot and get brewing!

© 1988 Nancy Vineyard

Excerpted from *Great Fermentation News* with the author's permission.

## My Brew Blanket

Daniel Bradford  
Boulder, Colorado

Of all the equipment I own, the most dependable and indispensable is my brew blanket. It never malfunctions. It never gets misplaced. But most importantly, it preserves domestic tranquility.

My brew blanket is an old green wool army issue I picked up at an Army-Navy surplus store for a couple of bucks, if I remember accurately. I owned it for many years before I realized its hidden potential. Only after a couple of deadly sessions in the kitchen did I discover the true function of my old sleeping companion.

It began when I noticed the unfortunate effect on the floor when my heel contacted spilled grains. The blanket protected the linoleum from such spills and a quick flick of the wrist dispensed with all incriminating evidence at the end of the brewing session.



ILLUSTRATION BY MARK HILL



Next I noticed a particular affinity for knocking the siphon tube out of the carboy. Again, my brew blanket protected the floor, the cabinets and other miscellaneous kitchen items.

As you can probably guess, I have never been adept at bottling. It seems to require a sort of manual coordination that I never possessed. Filling a couple of cases of bottles, all to the right height, continually results in numerous overflows. My brew blanket comes to the rescue. Elevating the carboy about a foot and laying out two cases of bottles on the blanket covered all my problems.

Of course, the ultimate benefit is that all the mess of brewing can be popped into the washing machine and will soon be ready for the next session.

## Sanipump

Lat Stevens  
Falls Church, Virginia

From conversations with fellow homebrewers as well as from the many articles I have read in *zymurgy* and other publications, it is obvious that proper sanitation is one of the primary considerations of any modern homebrewer.

Described here is an inexpensive, yet highly efficient sanitation system that has worked well for me. I hope this system helps those who are as serious as I am about germ-free brewing. I call it the Sanipump.

The heart of the system is one of those hand drill-operated fluid pumps that can be found in any hardware store for about \$4 and an old electric



Figure 10

drill that I retired several years ago.

I mounted the electric drill and attached pump to a small board with a special kit my hardware store sells just for that purpose and then secured the pump body with a piece of metal strap to keep it from turning (Figure 10). If you can't find a mounting kit, an alternative would be to buy a super-large hose clamp. Pass it clear around the board and the drill and tighten securely. (The pump body would then be flush with the board and would not need to be secured against rotation.)

At your favorite garden supply or hardware store, ask for two Gilmour Mfg. Co. "female replacement hose couplings" that screw directly onto the inlet and outlet of the pump. I selected

1/2-inch inside diameter clear plastic tubing, because it fits over the hose couplings and is big enough to allow maximum flow. To adapt the outlet tube to my siphon for proper sanitation of its inside walls, I slipped a piece of 3/8-inch inside diameter tubing inside the 1/2-inch tube. (The 3/8-inch tubing is removable if desired.)

Before the fun part, here's a serious caution on electrical safety: Electricity and water can be a lethal combination! Use a ground fault interrupter receptacle and a three-prong grounded plug, and *never* touch the drill and *any* metal, or water or hose at the same time. This is about as safe as it gets.

Finally, before turning the unit on, be darn sure you have it far enough



• Brew blanket

• Sanipump sanitation system

• Keg beer cooler

away so that it cannot vibrate its way into the sink and light up your life!

Now, you're ready to scrub out your sink and fill it with two or three gallons of hot water and a squeeze of dishwasher detergent.

Drop the intake hose into the sink, switch on the drill and circulate the solution to clean out any oils left over from the manufacturing process as well as to check for leaks and get a feel for how it flows. Tighten up any leaks, rinse by circulating clear water and you're ready to mix up a couple of gallons of your favorite sanitizing solution. (Be sure to let the solution flow back into the sink from the articles being sanitized.)

You now have an endless steady flow of sanitizer for your bottles, carboys and plastic fermentors. Finally, flush clear water through the system after each use to avoid corrosion.

## Cold Beer From Your Keg

Jim Carroll  
Charlotte,  
North Carolina

I have been brewing my own beer for almost two years, and in a very short time my output reached nearly five gallons a month. I would have made more if I had additional bottles. Ah yes, the bottles. I don't know any-

one who likes to clean bottles; the process is tedious, time-consuming and I end up getting wetter than the bottles.

I always admired those lucky few who kegged their own beer and wanted to become one of them. After inspecting various systems, I decided that the Cornelius keg was the one I wanted to use.

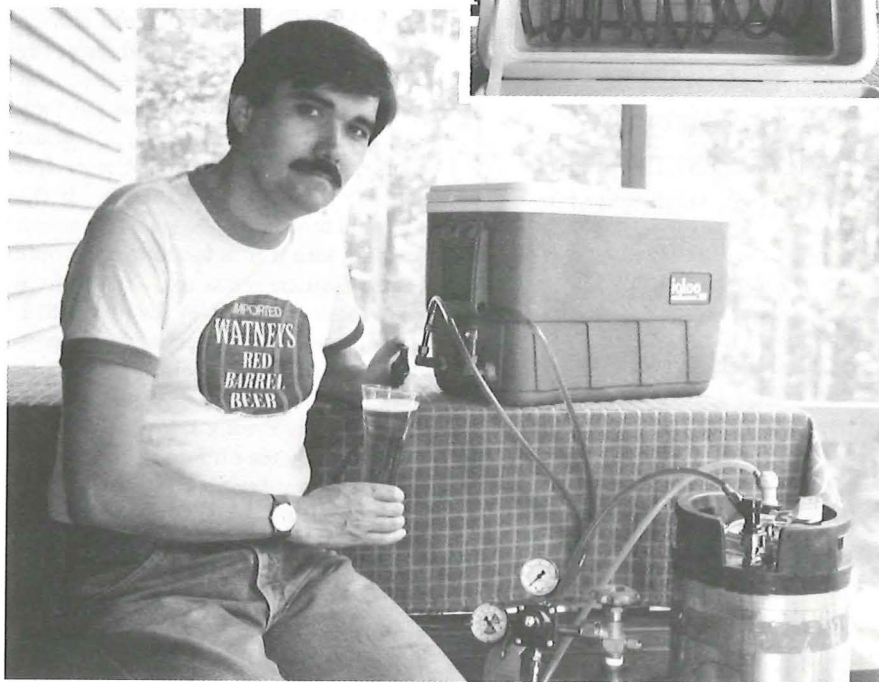
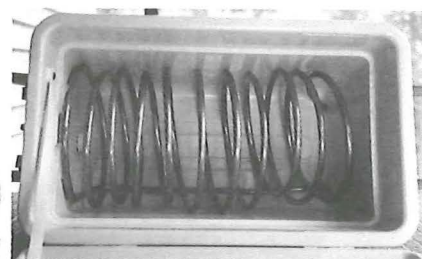
However, no matter which system I decided on, there was one obstacle that held me back: without another refrigerator dedicated to the kegs, how was I going to get a cold glass of beer? Even if I bought a used refrigerator (and managed to talk my wife into it) I just didn't have the room for another one. So, it looked like I was going to be stuck with bottles.

The perfect solution would be to cool the beer, not the keg. Now I don't

mean warm beer in a cool mug; that will give you a mug of cold foam. My method involves drawing the warm beer through a coil of copper tubing located in a cooler filled with ice (Figure 11).

The system really works great! In seconds you can get a cool mug of beer. The cooler filled with ice doesn't take up much room, and the system can be moved outdoors for parties. Best of all, it doesn't require any electricity, and you don't have to purchase a separate refrigeration system. So

Figure 11



Jim Carroll drawing a cool one.



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far, the only disadvantage is from the CO<sub>2</sub>. Because beer can absorb and hold more gas when it is cold, you will go through more CO<sub>2</sub> with a warm keg (see "Keg Psychology, *zymurgy*, Winter 1986, Vol. 9, No. 5, page 22). Also, my automatic ice-cube maker has been working overtime since I made the beer chiller.

Making the beer chiller is easy. The two main components are copper tubing and an ice chest.

A few months ago I purchased 50 feet of 3/8-inch outside diameter copper tubing and used 25 feet of it to make a wort chiller. The remaining 25 feet was used for the beer chiller. A smaller diameter tubing might work even better, because it could be bent into a tighter coil without kinking. A longer length of the smaller tubing could be used in the same size ice chest. The smaller diameter would force the beer to travel more slowly, and the longer length would make the beer even cooler before it reaches your glass. Also it would cost less per foot.

I bought a good-quality, 24-quart cooler, which seemed to be the perfect size for the 25 feet of tubing. If the cooler is too small, the ice will not last as long, and if it is too large, it would require much more ice. I bought a good foam-lined cooler for about \$12. Because you are not constantly opening and closing the cooler like for cans or bottles, the ice will last a long time. If I fill it on Friday night after work there will be ice on Sunday night.

Other materials are:

- Compression fittings for the diameter tubing you are using (optional).
- About eight feet of clear plastic tubing for the spigot and for the intake line from keg. Cut into two four-foot lengths.
- A couple of hose clamps.

- A spigot and quick-connect to fit your style of keg.

- A small tube of silicone rubber to seal around the holes drilled in the side of the cooler.

Miscellaneous tools and other requirements:

- Tubing cutter. This tool is necessary to neatly cut the tubing without squashing it. The cutter looks like a small C clamp with a roller on one end and a blade-type wheel on the other.

- Tubing bender. This tool is needed to bend the tubing evenly so it doesn't kink. It looks like a long spring. You slide it over the tubing, and as you bend the spring the tubing also bends. Both the tubing bender and cutter can be obtained at a plumbing supply or hardware store for a nominal fee.

- A drill bit to make the in and out lines in the side of the cooler. The size of the drill bit depends on the outside diameter of your tubing.

- Hand or electric drill to make the holes in the cooler.

- Assorted wrenches to tighten the compression fittings and a screwdriver for the hose clamps.

- Two homebrews to help deal with tools and materials.

Assembly: because I made my beer chiller using 3/8-inch outside diameter tubing, the instructions will coincide with this size. You can alter the directions to correspond to larger or smaller tubing.

The first step is to plan the layout of the tubing inside the cooler, keeping in mind where the beer input and output hoses will enter and exit. The output hose connects to the spigot and the input hose to your keg. One option you might want to consider would be to purchase a barroom-style tapper handle and mount it right on the side





- Keg beer cooler

- Stainless-steel fermenter

of your cooler, so that you would have only one hose. I chose to use two hoses.

Next, drill two 7/16-inch diameter holes in the side of the cooler opposite the drain for the copper tubing to exit and enter. Measure up one inch from the bottom of the cooler on the inside, and in one inch from each side.

When you purchase the 25 feet of copper tubing, it will come in a coil. Don't straighten it out! Most of the work is already done. The object is to create something that resembles a big spring. The diameter of this spring must be small enough to fit inside the cooler. To accomplish this, slip the tubing bender onto one end of the coil of tubing and work it around the diameter of the coil a little at a time bending it into a tighter coil. You must be very careful when you are bending the tubing so that you do not kink it. The end result should be that the whole coil of tubing will be smaller in diameter than the cooler and will fit easily inside.

You now have a coil of tubing with one end on each side of the cooler. The next step is to bend both ends of the tubing so that they will exit from the cooler on the same side through the two holes you drilled. On the end of the cooler closest to the holes, bend the tubing so that it will slip through one hole with about two inches protruding. *Warning!* Do not try to make too tight a turn when you bend the tubing, or you will put in a kink that you can't remove. If you do happen to kink the tubing, relax, and have one of the homebrews from the required materials list. Cut off the kinked portion of tubing with the tubing cutter and try again. Remember, this will be inside cooler, and no one said it had to look pretty, just functional. On the other end of the

coil, straighten out about a foot and a half of tubing and bend it to exit through the other hole.

In the next step we will attach the two hoses to the tubing. There are two options here: you can either push the plastic hose over the copper tubing and hold it in place with a small stainless-steel hose clamp, or you can use compression fittings on the copper tubing to attach the plastic hose. I used the latter method when assembling my beer chiller. The advantages are that your hoses can be removed easily for cleaning, and then stored inside when your beer chiller is not in use. (Not that this will happen often.)

The compression fittings can be purchased at a hardware store. The fittings do not require any special tools. As you tighten the fittings, they slightly compress the copper to grip the tubing. Ask the salesperson at the hardware store if you need any help.

In the last step, silicone rubber is applied to seal around the copper tubing where it comes out the side of the cooler. A good seal is needed on both the inside and outside of the cooler to keep the water inside the cooler as the ice melts. The tubing coils should be stretched apart as far as possible to allow ice cubes to fit between the coils.

At a few spots where the tubing touches the side of the cooler, a dab of silicon will keep it in place. If you have problems getting the silicon to stick to the inside of the cooler, rough the surface of the cooler with some coarse sandpaper. Allow the silicone rubber at least 12 hours to dry. Now, open your second bottle of homebrew. You are done!

After you use your beer chiller, you will want to clean it so it will be ready to use again. First, disassemble both the spigot and keg quick-discon-

nect. Then, attach one of the hoses to the kitchen faucet and run hot water through the copper coil for a few minutes. Next, remove the two hoses from the copper tubing and hang them to dry. With the hoses removed, tilt the cooler back and forth a few times until all water has drained from the copper coils. Leave the top of the cooler open to air dry and you are finished. Always store the chiller with the drain open to prevent mildew.

Should you choose to construct a beer chiller, feel free to change the design. The method described may not be the best, but it works just fine for me.

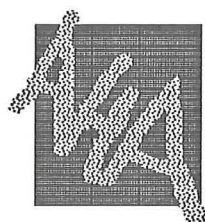
## Fermenting and Bottling in Stainless-Steel Kegs

Jim Homer  
Boulder, Colorado

Fermenting in a stainless-steel five-gallon soda-pop keg beats using a carboy or plastic fermenter because it's more compact, easier to carry and to clean. It provides a quick way to remove settled trub from the cooled wort after the cold break and an easy way to rack the fermented beer off the yeast into a second keg for bottling.



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There are no siphons to start, and because the containers are light-proof, they don't need to be covered to prevent light-induced flavor damage.

Explaining the exact procedure is complicated by the fact that there are two basic types of pop kegs available. To explain in detail how both work would confuse the issue and require more space than I have here, so I'll just describe the Cornelius keg with pin-type poppet valves. If you have the other style keg that uses the ball-type poppet valve, read along anyway. If you can't overcome the minor differences in hardware, a trip to your local soda-pop distributor for advice will get you going.

**Sterilization:** I assume you already know how and why to sterilize brewing equipment, so if you're a beginner, read up on that first. I'm assuming that you will sterilize every piece I describe.

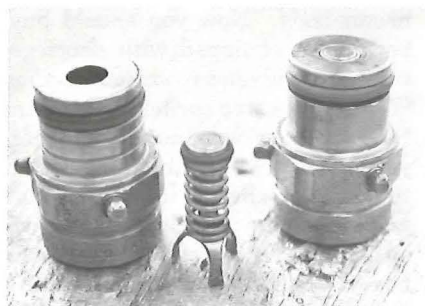
## Equipment List

You'll need the following:

- Two complete 5-gallon soda-pop kegs.
- Two extra connector bodies, valves removed (I'll explain how to remove them later).
- One extra stainless-steel gas tube.
- One extra stainless-steel liquid tube (cut this off to half length).
- One gas side quick-disconnect fitting with another four feet of hose sized to fit over the connector body.
- A gas source — CO<sub>2</sub> system or an air pump.
- One liquid side quick-disconnect fitting with another four feet of hose sized so the open end fits over the connector body. (Note: hereafter, I'll refer to the quick-disconnect fitting as a "QD".)



## • Stainless-steel fermenter



**Figure 12**

**Left: Connector body and disassembled valve. Right: assembled connector body.**

- Two brand new O-rings to fit the cover or hatch assembly (This is a must. I know one person who saved the price of an O-ring but had to dump the resulting batch of beer. It tasted like the soda pop that had last been in the keg.)

- Two hose clamps to secure the blowoff hoses to the connector bodies.

- One fermentation lock hose, four inches long and big enough to fit the connector body.

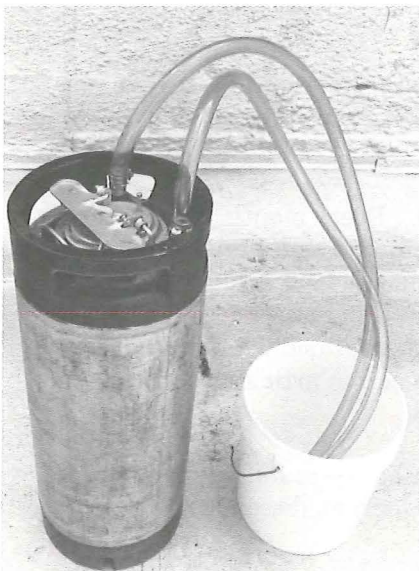
- Two more hoses for blow off, each four feet long, also to fit connector body.

- One standard fermentation lock.

- One cork drilled for the fermentation lock and sized to fit inside the fermentation lock hose.

Work with a local bottler or your local retail shop to get these specialized parts, or if you don't have one locally, I think some of **zymurgy's** advertisers sell keg parts.

**Initial preparation:** On the Cornelius keg the liquid side is marked "OUT" and the gas side is marked "IN." The connectors look nearly alike, but they are just different enough so the gas QD fitting only fits the gas connector, and the liquid



**Figure 13**

**Two blow-off hoses on quick-disconnect fitting, secured with hose clamps.**

QD only fits the liquid connector body. Mark them so you don't mix them up later. Remove both connector bodies with a wrench, put them thread-side down on a solid surface and carefully punch out the poppet valves with a pin punch or small nail and hammer (Figure 12). (Mine came out quite easily.) These two valveless connector bodies will be necessary during fermentation. It's possible to reuse the poppets, but it's much easier to buy two extra complete connector bodies for use where you need the poppet valves in place.

Below the connector bodies, you'll see the flared, gasketed ends of the gas and the liquid tubes. Remove these for sterilization. Disassemble and sterilize the second keg and its pieces, but don't remove its poppet valves. Now that everything is apart and clean, you're almost ready to brew!

**Trub removal and fermentation:** Before brewing, put about one gallon of boiled water into one keg and reassemble the keg with the standard length liquid tube and gas tube on the appropriate sides and seal the hatch. (You're going to use this water to rinse out a few hoses.) Now let's brew!

Prepare your wort as usual, strain into the empty keg (I refer to this as No. 1 hereafter) and seal the hatch. Install the long liquid tube and its valveless connector body on the liquid side. On the gas side, install a gas tube and its valveless connector body. Force-cool the wort by partially immersing the keg in cold water, being careful not to tip it and spill wort out the open connectors.

When cooled to pitching temperature, install the liquid QD on the liquid side, and use the gas QD to apply enough pressure to force out one or two cups of wort. This will remove most of the settled trub. Because there is now sediment and wort trapped in the QD fitting, connect it to the liquid side of the second keg (the one you put the water in earlier) and pressurize it enough to flush out the QD fitting and hose. (I'll refer to this keg as No. 2 from now on.)

If you want an initial gravity reading, replace the long liquid dip tube with the cutoff tube on No. 1 and force out enough wort for your gravity reading. Use of the short tube assures a sediment-free sample so as not to give a false initial gravity reading.

To pitch the yeast, remove the hatch, pour the yeast into the wort and replace and seal the hatch. Now all you have to do is set it up as a dual-hose blowoff system (see figure 13). To do so, remove the liquid side connector body and replace the stainless-steel liquid tube with a short stainless-steel gas tube. Reinstall the valveless con-





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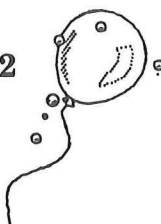
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connector body. Now you should have both sides equipped with short gas tubes and valveless connector bodies. (There was a step earlier back around "prepare your wort as usual" where you should have put the right stuff on the gas side - check it to be sure.) Now just slip a four-foot blowoff tube over each connector body and secure with a hose clamp; dunk the other ends in a container of weak sterilant and relax while the yeast does its thing.

After a day or so, or whenever the foam has stopped moving up the tubes, replace the blowoff tubes with an airlock. Just slip a four-inch piece of tube over either connector body and put a cork and airlock in the open end. Now if you replace the other valveless connector with one that still has its poppet valve, the only exit for CO<sub>2</sub> will be through the airlock.

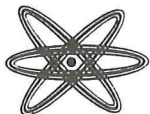
If you feel you must take periodic gravity readings, do so as explained earlier.

**Preparation for bottling:** There are two ways to go at this point. If you have a CO<sub>2</sub> system, you could just rack the beer into the No. 2 keg and carbonate it via the CO<sub>2</sub> system. If you prefer bottles for whatever reason, you can rack to the No. 2 keg and bottle from it.

To prepare the No. 2 keg for bottling, first dump any remaining water out of it. If No. 2 doesn't already have fittings with poppet valves, install them over normal liquid and gas tubes. Open the hatch and add the bottling sugar (boil sugar in one cup of water and add boiled solution) to the empty keg.

To rack the beer out of No. 1 keg, we first have to equip it with a standard "long" liquid tube and a liquid-type connector body. Then attach the liquid QD hose. Pressurize No. 1 keg and catch the yeast sediment that will

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• **Stainless-steel  
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run out of the QD hose at first. When the runoff clears, drop the open end of the QD hose through the hatch into No. 2 keg and gently fill it. The beer will mix with the bottling sugar as the keg fills.

**Bottling:** Just take the liquid QD off No. 1 and attach it to No. 2. Insert your bottling valve or whatever you use into the open end of the liquid QD hose, pressurize No. 2 to force the beer out, and bottle.

Admittedly, this method involves a lot of switching back and forth of fitting and hoses, but it sounds worse than it really is. It's actually kind of obvious after you've walked through it once.

# The Rubber Glove Method of Siphoning

Jim Homer

This method allows siphoning without risk of contaminating the beer. Here is the equipment needed:

- A surgical or inspection glove can be purchased from a drug store. Each glove is only good for one or two uses.
- A hard plastic siphon tube, long enough to extend six inches or so out of the carboy.
- A siphon hose that will attach to the siphon tube.

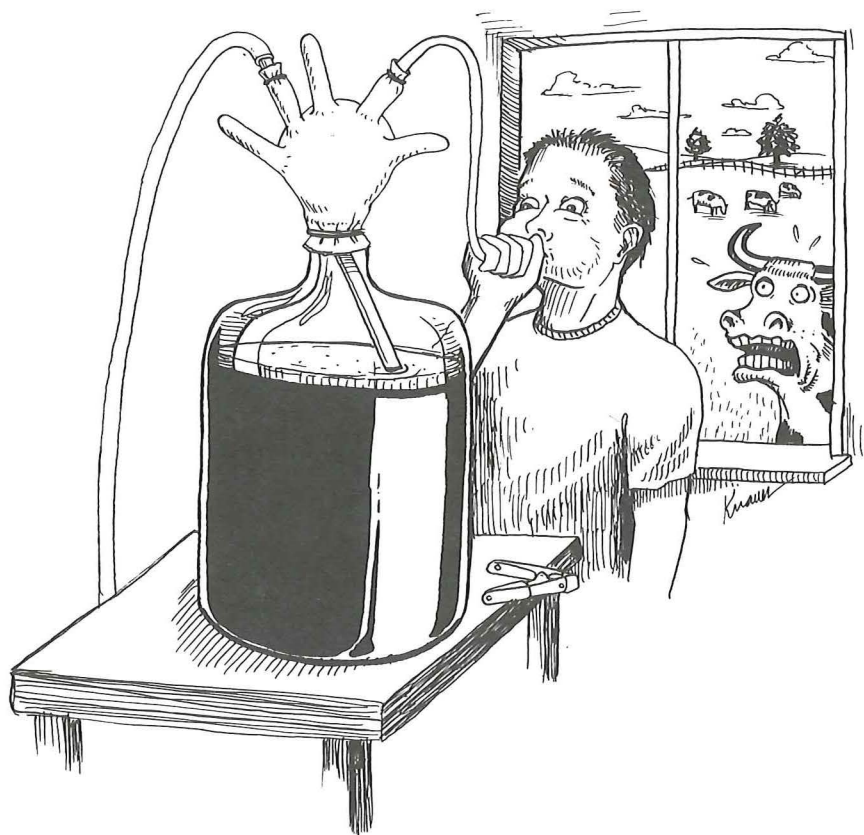


ILLUSTRATION BY SCOTT KNAUER

- An 18-inch plastic tube, about 1/4-inch inside diameter. This is the air tube.

- A clamp that will block the flow of air in the air tube.

The first step is to cut two fingers off the glove about half an inch from the tip. The wrist end of the glove is placed over the opening of the carboy. The siphon tube should be inserted into the carboy through one of the cut fingers, the air tube through the other finger. All three openings need to be made airtight by wrapping with a rubber band, string or securing with a clothespin.

It helps to have the siphon hose filled with water and attached to the

siphon tube, holding your finger over the end to avoid spilling. Blow into the air tube to pressurize the carboy. Close air clamp. Release your finger from the siphon tube and let gravity pull the water out of the tube. The combination of the air pressure in the carboy and the water flowing out of the siphon tube will cause the beer to begin siphoning.

Keep pressure in the carboy until a good siphon is flowing. The air clamp will allow you to breathe some at this time. When the siphon is going well, release the glove at the carboy opening and allow air to flow in freely. Be careful that the glove does not fall back and block the air flow.





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R. Bruce Prochal, N. Hollywood: Certified  
James Renfrew, Berkeley: Recognized  
Darryl Richman, Sepulveda: Recognized  
Philip Rogers, Calistoga: Certified  
David Sherfey, La Crescenta: Recognized

Clark Swisher, Sacramento: Certified  
Donald Thornton, Berkeley: Recognized  
Marty Velas, Van Nuys: Recognized  
Nancy Vineyard, Santa Rosa: Certified  
Sam Wammack, Fontana: Recognized

### COLORADO

Daniel Bradford, Boulder: Recognized  
David Brereton, Steamboat Springs: Certified  
Jeff Busch, Littleton: Recognized  
Stephen Carpenter, Boulder: Recognized  
Al Colby, Ft. Collins: Recognized  
Jan Detrich, Denver: Recognized  
Patrick Duffy, Louisville: Recognized  
Philip Fleming, Broomfield: Certified  
Glenn Hamburg, Boulder: Recognized  
Jonathan Katz, Denver: Recognized  
Greg Kelley, Colorado Springs: Recognized  
Barry Kelly, Denver: Recognized  
Jeffrey D. Lebesch, Fort Collins: Recognized  
Matthew Luhr, Silverthorne: Recognized  
Kevin Maylor, Colorado Springs: Recognized  
Mary Merrick, Denver: Recognized  
Bryan J. Miller, Englewood: Recognized  
Lloyd Mower, Denver: Recognized  
Loran Richardson, Longmont: Recognized  
Tim Russell, Fort Collins: Recognized  
Reid Schumacher, Denver: Recognized  
Barbara Shenfish, Littleton: Recognized  
Gary W. Shenfish, Littleton: Recognized  
Craig Smith, Denver: Recognized  
Michael Stackpool, Denver: Certified  
Wayne Waananen, Denver: Recognized  
David Welker, Boulder: Certified  
Jerry Williams, Denver: Recognized

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Judy Lawrence, Marion: Certified  
Phil Markowski, New Haven: Recognized  
Ron Page, Middletown: Recognized

### DELAWARE

Joseph Ullman, Newark: Recognized

### FLORIDA

Steve Fried, Pensacola: Recognized  
Christopher C. Kelley, Pensacola: Recognized  
David McCarty, Fort Lauderdale: Recognized

### GEORGIA

George Hruby, Atlanta: Recognized

### IOWA

Roger Leistad, Spencer: Recognized  
John Levere, Des Moines: Recognized  
Craig Olzenak, Grinnell: Recognized

### IDAHO

Patrick Allaire, Boise: Recognized  
Loren Carter, Boise: Recognized  
Byron Defenbach, Boise: Recognized  
Terry A. Dennis, Boise: Recognized  
Jim Fishwild, Boise: Recognized  
Bill Heinrich, Boise: Certified  
Edward R. Matjeka, Boise: Recognized  
Leroy Otterness, Boise: Recognized

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Dan Kasen, Chicago: Recognized  
Glen Mazur, Buffalo Grove: Recognized  
Randy Mosher, Chicago: Recognized  
Marty Nachel, Oaklawn: Recognized

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Thomas Stilabower, Indianapolis: Recognized

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Jackie Rager, Mission: Certified  
Richard Seaton, Eudora: Recognized

### KENTUCKY

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Steve Clark, Metairie: Recognized  
John Dauenhauer, Metairie: Recognized  
Harold Hochhalter, Kenner: Recognized  
Andy Thomas, Metairie: Recognized

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Alma Briggs, Greenfield: Recognized  
Steven Budd, Bernardston: Certified  
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Charles Cox, Cambridge: Certified  
Mike Fertsch, Woburn: Certified  
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Greg Noonan, Williamstown: Recognized  
Charlie Olchowski, Greenfield: Certified  
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James Singiser, Greenfield: Recognized  
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Steve Stroud, Medford: Recognized  
Cliff White, Ashfield: Certified  
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David Loxterkamp, Belfast: Recognized  
George O'Connor, Augusta: Recognized  
Stephen Ouellette, Waterville: Recognized  
Eugene Scalzo, Owls Head: Recognized  
Richard Smith, Litchfield: Recognized  
James Thomas, Owls Head: Recognized  
Evan Wallace, Orono: Recognized

### MICHIGAN

Thomas Badgerow, Ann Arbor: Recognized  
Ted Lupina, Kalamazoo: Recognized  
Randall Reichwage, Ann Arbor: Recognized

### MINNESOTA

Cliff Tanner, Cloquet: Recognized

### MISSOURI

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Bryan Conry, Kansas City: Recognized  
Tony Grillo, St. Louis: Certified  
James L. Howard, St. Louis: Certified  
Walt Mackin, Grain Valley: Certified  
Dave Miller, St. Louis: Recognized  
Phillip Schuchman, Kansas City: Recognized

### NORTH CAROLINA

Kinney Baughman, Linville: Recognized  
Andy Beloni, Charlotte: Recognized  
Roman Davis, Charlotte: Recognized  
Charles Elyea, Charlotte: Certified



# Certification Program



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Michael Waker, Charlotte: Certified

## NEBRASKA

Russel Albers, Omaha: Recognized  
Dean Dobmeier, Omaha: Recognized  
Annelle Eglehoff, Omaha: Recognized  
Karen Hoffman, Nebraska City: Recognized

## NEW HAMPSHIRE

Michael H. McCann, Lyme: Recognized

## NEW JERSEY

Edmund Busch, Somerville: Recognized  
Seth Glass, Cherry Hill: Recognized  
Dane Wells, Cape May: Recognized

## NEW MEXICO

Gordon Olson, Los Alamos: Recognized

## NEVADA

Rob Badley, Reno: Recognized  
Rob Bates, Reno: Recognized  
Don Langson, Carson City: Recognized  
Eric McClary, Carson City: Recognized  
Tom Young, Reno: Recognized

## NEW YORK

Fred Barker, Albany: Recognized  
Dan Hennessy, Troy: Recognized  
Jay S. Herish, Troy: Recognized  
Norman Soine, Plainville: Recognized  
Gary Spedding, Buffalo: Recognized

## OHIO

David Littman, Solon: Recognized

## OKLAHOMA

Jeff Cotton, Jenks: Recognized

## OREGON

John C. Davidshofer, Portland: Recognized  
Wen Evans, Eugene: Recognized  
Jeff Frane, Portland: Recognized  
Roger Hoffman, Mulino: Recognized  
Pete Jelinek, Portland: Recognized  
Jim Stockton, Eugene: Recognized  
Tom Thompson, Portland: Recognized

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Charles Brem, Ardsley: Recognized  
Kurt Denke, Philadelphia: Recognized  
David Mela, Prospect Park: Recognized  
Andy Ross, Philadelphia: Recognized  
John Scanlon, Conshohocken: Recognized  
Lou Vessels, Philadelphia: Recognized

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Jess Faucette, Clover: Certified

## SOUTH DAKOTA

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## TENNESSEE

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Ken Cox, Knoxville: Recognized  
Ron Downer, Knoxville: Certified  
Larry Weaver, Louisville: Recognized  
James Webster, Signal Mountain: Recognized

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Rod Cezeaux, Bryan: Recognized  
Ron Confer, San Antonio: Recognized  
Steve Daniel, League City: Certified  
Paul Farnsworth, San Antonio: Certified  
Allen Ford, Pipe Creek: Recognized  
W. Nicholas Glab, San Antonio: Recognized

Cary Jensen, Houston: Certified  
Brad Kraus, Houston: Certified  
Alan Lee, Bryan: Recognized  
Richard Malloy, Bryan: Certified  
John Montgomery, Bryan: Certified  
Rodney Morris, College Station: Recognized  
James T. Reese, Amarillo: Recognized  
Robert Reilly Jr, San Antonio: Recognized  
Steve Roberts, Alvin: Recognized  
Mike Seidensticker, Houston: Recognized  
David Zalewski, College Station: Recognized  
Robert Zharay, Bryan: Recognized

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Michael G. Martin, Salt Lake City: Certified

## VIRGINIA

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Patrick P. Garvin, Falls Church: Certified  
George Rivers, Vienna: Recognized

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Dennis H. Urfer, Port Angeles: Recognized

## WISCONSIN

Robert Drouth, Madison: Recognized  
Todd Hanson, Sheboygan: Recognized  
Michael Howe, Madison: Recognized  
Mark Kessenich, Madison: Recognized  
Steven Klafka, Madison: Recognized  
James Klisch, Milwaukee: Recognized  
John Laurence, Madison: Recognized  
Dennis Minikel, Kenosha: Recognized  
Brian North, Greenfield: Recognized  
Karl Smith, Madison: Recognized  
Arthur Steinhoff, Burlington: Recognized

## Beer Judge Certification Program

The National Beer Judge Certification Program, co-sponsored by the American Homebrewers Association (AHA) and the Home Wine and Beer Trade Association (HWBTA), is the result of many months of hard work on the parts of several dedicated beer lovers and enthusiasts. Since the first official examination was given in May of 1985, more than 200 homebrewers from all over the country and Canada have taken the exam.

The purpose of the Beer Judge Certification Program (BJCP) is to recognize homebrewers and beer connoisseurs who have a firm understanding of the brewing process, flavor components in beer and the historical development of the different world beer styles. Because homebrewers have learned their craft so well over the past years, the demand for qualified judges at competitions has increased tremendously.

In addition to being proficient in the topics listed above, an individual achieving recognition under the BJCP must also demonstrate a strong ability to give constructive feedback to the brewer whose product is being evaluated. Simple identification of a problem is not enough; suggestions for improvement must be offered in order for brewers to further develop their brewing skills.

### LEVELS OF JUDGES

Because there is a variety of skill and experience among homebrewers and judges, the BJCP is broken down into varying levels of recognition. An individual's level of certification is determined by two factors: exam score and experience points earned through sanctioned competitions. Different levels and the respective criteria are outlined below.

- **Honorary Master Judge** — represents a temporary designation as such by the BJCP committee, in recognition of a person whose judging skills are widely known. Directors and individuals on the BJCP Committee also bear this title for the duration of their time on the Committee.
- **Master Judge** — achieves a minimum score of 90 percent on the exam, and earns at least 40 experience points.
- **National Judge** — achieves a minimum score of 80 percent on the exam, and earns at least 20 experience points.
- **Certified Judge** — achieves a minimum score of 70 percent on the exam, and earns at least five experience points.
- **Recognized Judge** — achieves a minimum score of 60 percent on the exam. No experience points are necessary to attain this level.

For more information about the Beer Judge Certification Program write the American Homebrewers Association at PO Box 287, Boulder, Colorado 80306-0287 USA.

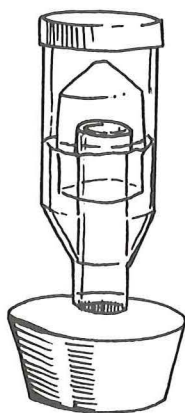


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# The AHA's Illustrated Dictionary of Homebrewing Equipment

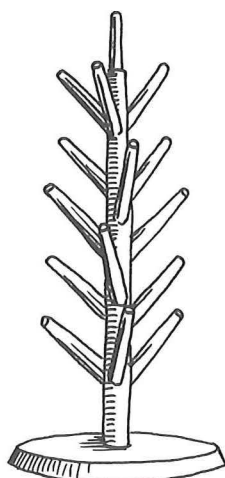
## Aa



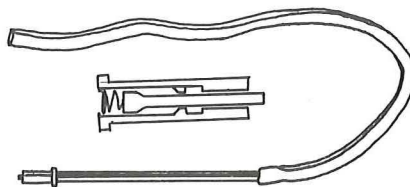
**Airlock:** A water-trap gadget that keeps air off beer to prevent oxidation, yet allows the CO<sub>2</sub> given off by fermentation to escape. They are available in several shapes, all of which work well.

## Bb

**Bottle brush:** A brush used to clean out bottles.



**Bottle drainer:** A treelike arrangement that holds beer bottles upside down for draining and/or storage.



**Bottle filler:** A rigid plastic tube with a depressable, spring-loaded valve on one end. When the other end is inserted into a siphon hose, this valve starts and stops the flow of beer when bottling.

**Bottle rinser:** A plastic bowl and

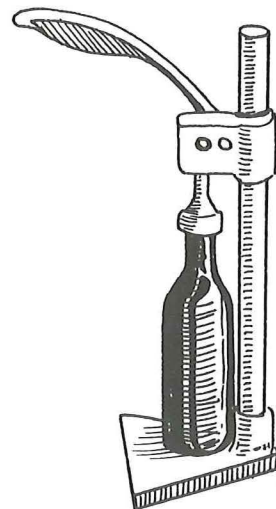
text by  
**DIANE KEAY**  
illustrations by  
**SCOTT KNAUER**

pump that fits on top of the bottle drainer or can be used alone. It injects sterilizing solution, or clear water for rinsing, into each bottle.

**Bottle washer:** Usually made of brass, this device attaches to a faucet. It cleans bottles and carboys by shooting a direct blast of water into the bottle.

**Brew pot:** Any large pot used for boiling wort.

## Cc



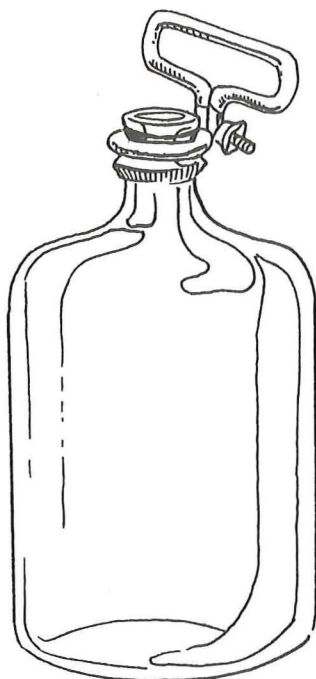
**Capper:** A device that crimps and seals the caps to bottles. Available



models include the hammer capper, which is hit with a hammer; the wing capper, which is a double-lever hand-held model; and the bench capper, which sits on a counter or table.

**Carboy:** A 5-gallon or 7-gallon glass bottle, such as the type bottled water comes in, used for fermenting beer. It can be used as a primary, secondary or a single-stage fermenter.

**Carboy brush:** A long, curved brush used to clean carboys.



**Carboy handle:** A plastic-coated steel handle. When attached to the neck of a carboy it makes lifting and carrying the carboy easier, especially when full.

## Ee

**Electric brewing kettle:** A food-grade plastic brewing bucket that has its own thermostatically controlled heating element and plugs directly into an outlet. Available in



110-volt or 220-volt. It can be used for mashing grains or boiling wort.

## Ff

**Fermentation lock:** Another name for airlock.

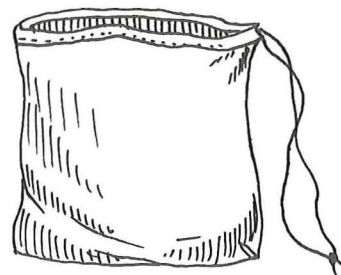
**Fermenting bucket:** A food-grade plastic container, usually 6 gallons or 7.5 gallons in size, with an airtight lid that has a hole for an airlock. Can be used as either a primary or a single-stage fermenter.

## Gg

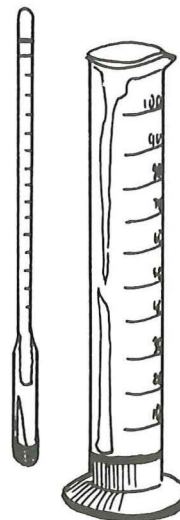


**Grain mill:** A device that cracks open the malted grains prior to brewing.

## Hh



**Hop bag:** 1. A small muslin bag to hold hops (or grains) during the boil so they don't have to be strained out. The used bag and hops are then discarded, like a tea bag. 2. A small nylon reusable sack with a drawstring closure to hold hops (or grains) during the boil so they don't have to be strained out.



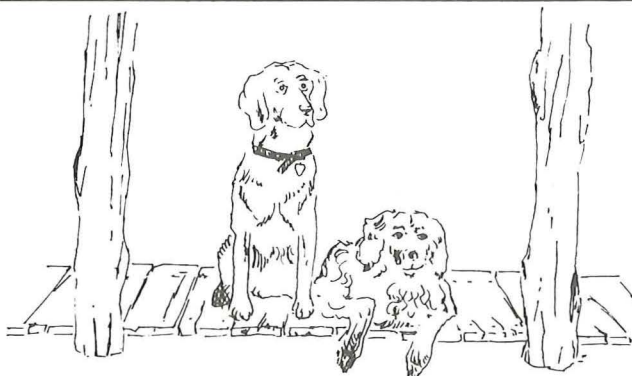
**Hydrometer:** Measures the amount of sugars present in wort or beer by measuring the specific gravity. Taking a reading before fermentation gives a rough indication of what the alcohol percentage will be in the finished beer. Later readings tell you when the beer is done fermenting and ready to bottle.

**Hydrometer test bar:** A tall, narrow cylinder that holds a sample of wort or beer to be tested with a hydrometer.

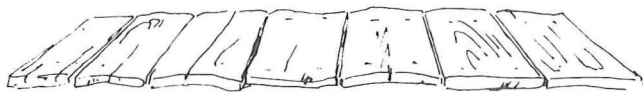


## Bock is Best is Back!

Watch for details on this club-only competition and others in the winter issue of *zymurgy*.



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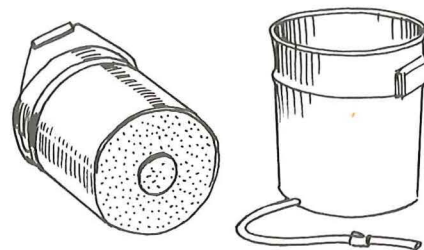


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# Kk

**Keg:** A container most often two-and-a-half gallons or more in volume used for bulk packaging of beer. Beer can be primed in a keg where it carbonates and ages, making draft beer.

# Ll



**Lauter-tun:** Any container in which the mash liquid is drawn off the grains and in which sparging (rinsing) takes place. It can be a bucket with a fine-mesh screen or colander used as a false bottom, or a double-bucket arrangement with holes punched in the bottom of the inner bucket.

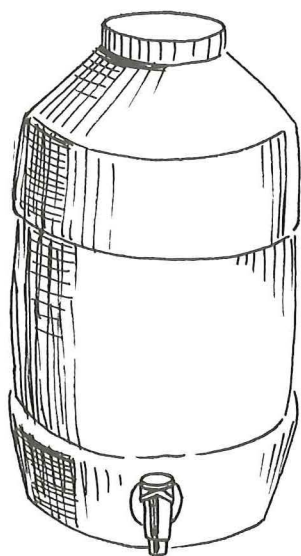
**Logbook:** Keeping track of your brewing procedures is a necessity. A record book or logbook will enable you to duplicate your good batches and learn from your mistakes.

# Mm

**Mash-tun:** Any container in which grains undergo the mashing process to produce sweet wort. It may be a pot on the stove, an electric brewing kettle or a picnic cooler.



# Pp



**Pressure barrel:** A vessel made of food-grade plastic used to bulk package beer. Instead of bottling, beer is primed in a pressure barrel where it carbonates and ages, making draft beer.

**Primary fermenter:** The container that holds beer during its initial, or primary, fermentation. It can be made of food-grade plastic, glass or stainless steel.

# Rr

**Racking tube:** A rigid plastic tube, one end of which is inserted with a siphon hose. The other end has a raised beer inlet opening that helps prevent siphoning sediment from the bottom of the fermenter. Because a siphon hose tends to curl, the tube is an advantage because it gives you something rigid to hold in place during siphoning.

# Ss

**Secondary fermenter:** The container holding beer during its slower, secondary fermentation.

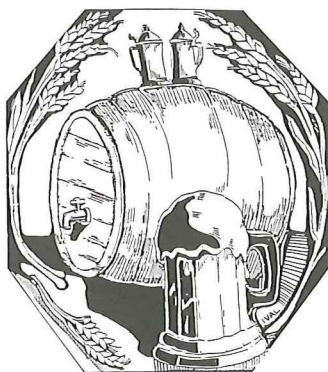
Usually a glass carboy with an airlock attached to prevent air from entering.

**Single-stage fermenter:** A container in which the beer undergoes both primary and secondary fermentations without racking. It can be made of food-grade plastic, glass or stainless steel. Air is prevented from entering by using an airlock and an airtight lid.

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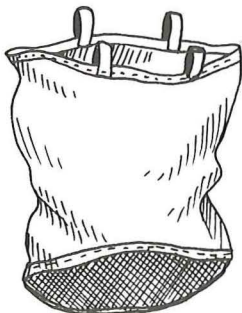
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**SPECIAL ISSUE 1988 ZYMURGY 51**





**Sparging bag:** A mesh bag to hold the grains during sparging and/or mashing.

**Stopper:** A "cork" made of white gum rubber. It may have a hole drilled in which to insert an airlock. Various sizes are available to fit an airlock into both primary and secondary fermenters.

**Strainer:** Used to strain out hops and grains from the wort; can be made of metal or plastic.

**Straining bag:** A mesh bag, often made of nylon, to strain out hops and grains from the wort. Same as sparging bag.

**Siphon hose:** Clear food-grade plastic hose to transfer beer from one fermenter to another. Also used to transfer the beer from the fermenter into bottles.

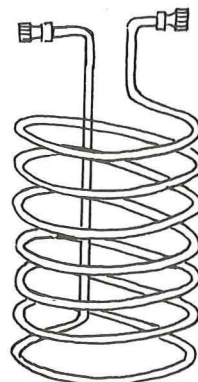
**Tt**

**Tapping system:** A system for dispensing kegged beer.

**Ww**

**Wine thief:** A device used to draw off a sample of wort or beer for testing

(or tasting). It can be a clean turkey-type baster or a glass pipette.



**Wort chiller:** A heat-exchanger made of coiled copper tubing. One type is immersed in hot wort while cold water flows through the tubing. Other types are immersed in cold water while hot wort flows through. The device cools the wort quickly, usually within minutes, and reduces the risk of contamination by allowing you to pitch the yeast soon after boiling the wort.



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## Best of the Best 1988

**H**ere are the top picks of the 1988 AHA National Homebrew Competition. In these 22 categories we have some of the best brewers in the nation. Old familiar names are here with some new ones. For some, this was their first competition and they took the big one. Others have been trying for years and finally made it. One thing they all have in common is a love for beer that cannot be satisfied at the local liquor store, so they made their own to their own tastes. Get those brewpots boiling, and hopefully next year your name will be seen on these pages.

---

### 1988 HOMEBREWER OF THE YEAR BARLEY WINE

---



**First Place**  
**John C. Maier**  
Juneau, Alaska

#### Oregon Special

##### Ingredients for 5 gallons

- 11 pounds Williams Australian dry malt extract
- 3 pounds Klages malt
- 5 ounces Nugget hops (45 minutes)
- 1 1/2 ounces Willamette hops (10 minutes)
- 8 ounces yeast starter of Sierra Nevada culture
- 3/4 cup dextrose to prime
- Original specific gravity: 1.075

- Terminal specific gravity: 1.025
- Age when judged (since bottling): 23 months

##### Brewer's Specifics

Mash grains at 120 degrees F for 30 minutes. Raise heat to 130 degrees F. Infuse boiling water, raise to 152 degrees for 15 minutes. Raise heat to 158 degrees F for 10 minutes. Raise to 170 degrees F. Sparge with 2 gallons 170 degree water.

##### Judges' Comments

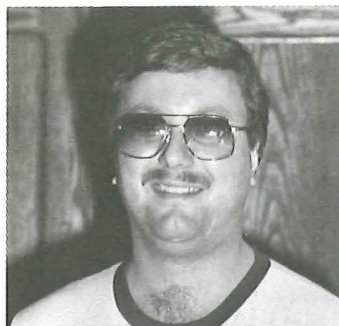
"Big, voluptuous malt with good hop bouquet for balance. Elegant and robust. Beautiful color, just a touch hazy, though not at all a problem. Just a bit underprimed. Head retention really wonderful. Old Foghornlike (Anchor barley wine). Enormously balanced and ruggedly elegant. Outside of a touch of chill haze and a definite undercarbonation (unless we're talking Thomas Hardy) — great effort!"

"Nice bouquet. Good powerful balance between malt and hops. Pretty red color. Nice tiny bubbles. Nice smooth finish. Try some extra finishing hops. On to best of show!"

---

### ALT

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**First place**  
**Steve Daniel**  
League City, Texas

#### League City Alt

##### Ingredients for 5 gallons

- 7.5 pounds Brewmaster light unhopped malt extract



- 2 ounces crystal malt
- 1 ounce Perle hops (60 minutes)
- 1 ounce Perle hops (10 minutes)
- 1/2 ounce Perle hops (end of boil)
- Home-cultured W-338 alt beer yeast
- Forced CO<sub>2</sub> to prime

- Original specific gravity: 1.050
- Terminal specific gravity: 1.016
- Age when judged (since bottling): 3 months

#### Judges' Comments

"Aroma very malty, caramel, no hop nose, no off-aromas. Nice amber color but a little light for style. Caramel sweetness, smooth, then bitter bite comes through. This has a little butter/diacetyl taste. You may have racked and cooled this too quickly, separating it from its yeast before it was ready. Overall this is a good beer, well made with plenty of drinkability. Add a few dark grains and your beer will be perfect in color."

"Very clean aroma. Good amber color. Good head retention and clarity. This is what an alt beer should taste like. Could drink this all day long."

---

## BELGIAN-STYLE SPECIALTY BEERS

---



**First Place**  
**Michael Matucheski**  
Antigo, Wisconsin

### Goudenband

#### Ingredients for 5.5 gallons

- 7 pounds wheat malt
- 3 pounds pale malt
- 2 pounds crystal malt
- 1 1/2 ounces Cascade hops (45 minutes)
- 1/2 ounce Tettnanger hops (15 minutes)
- Liefman's Goudenband yeast culture
- 1/2 gallon fresh wort (1.052) to prime

- Original specific gravity: 1.052
- Terminal specific gravity: 1.012
- Age when judged (since bottling): 2 months

#### Brewers' Specifics

All grains were home-grown and malted; all hops were home-grown. Mashed at 153 degrees F for three hours.

Sparged at 163 degrees F to collect 6 1/2 gallons. Boiled one hour with above hop additions. One-hour hot break in kettle, then run off. Cooled overnight at air temperature of 50 degrees F. Yeast pitched at 8 a.m. into oak rain barrel. Racked to paraffin-lined oak barrel after six days. Racked to glass after three months and back to oak three months later. Bottled four months after that with 1/2 gallon fresh wort to prime.

#### Judges' comments

"Complex aroma characteristic of the style. Very clear, dark burgundy color. Multifaceted style. Appealing, very similar to a mead, wonderful characteristics."

"Bouquet is perfect! To style, just like Rodenbach. Great appearance. Outstanding complex balance of flavors; fruit, sour, sweet, low hops. Could even be more sour. Please send recipe!"

---

## BOCK

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#### First place

**Keith Wilbourn**  
Millers Falls, Massachusetts

### Tracey's First

#### Ingredients for 5 gallons

- 6 pounds Munton & Fison light dry malt extract
- 3.3 pounds John Bull amber unhoppled malt extract syrup
- 5/8 ounce Hallertauer hops (60 minutes)
- 5/8 ounce Hallertauer hops (30 minutes)
- 5/8 ounce Hallertauer hops (end of boil)
- 1 3/4 ounces Hallertauer hops (20 minutes steep after boil)
- 1 package Wyeast Brewers Choice liquid lager yeast (No. 2007)
- 2/3 cup cane sugar to prime
- Original specific gravity: unknown
- Terminal specific gravity: unknown
- Age when judged (since bottling): 2 1/2 months

#### Judges' Comments

"Alcoholic aroma but malt and hops are there. Perhaps a little hazy because of overcarbonation. Good malt sweetness, would have liked just a bit more hops in taste, but still good! Slightly thin due to fermentation going too far. Close to dopplebock."

"Aroma light, not quite enough malt for category. Appearance is somewhat cloudy. Nice color. A little overcarbonated. This beer has a good flavor, though it's a little light on malty sweetness."

*continued on page 56*



# John Maier

## 1988 Homebrewer of the Year



John Maier, currently of Juneau, Alaska, is 1988 AHA Homebrewer of the Year. Maier won the award with his Oregon Special Barley Wine, the same beer that earned him first place in the barley wine category at the 1987 National Competition.

Maier is a professional brewer now — he's brewmaster at Chinook

JOE ROSICA

Alaskan Brewing Co. — but he started brewing as many homebrewers did. Five years ago he was "turned on to better beer" (with a bottle of Anchor Steam) and took a class offered through a local shop. A now-defunct shop in Torrance, Calif., offered classes and organized a club, the Stout Bay Brewers, that Maier joined. The club also is gone, but Maier then joined the Maltose Falcons, of which he

remains a long-distance member.

After winning several awards, Maier began to consider the possibilities of becoming a professional brewer. He was growing tired of his job as senior electrical technician at Hughes Aircraft in Redondo Beach, Calif. He took a course on the technical aspects of brewing and moved to Alaska to take a job at Chinook.

Maier modestly insists that Oregon Special Barley Wine, as well as his other brews, were created with the same techniques and equipment that everybody else uses.

Propagating his own yeast culture probably is responsible for the biggest improvement in his homebrewing, he said. He never rushes when brewing. A normal 10-gallon batch routinely takes about eight hours. In Alaska, this requires a week or two of advanced planning to be sure all equipment and supplies are on hand. Maier usually can brew only on Sundays, when many shops are closed.

Maier usually boils his wort for 60 to 90 minutes and has a tendency to hop heavily. "I'm a hop fanatic. Unless the style I'm making precludes it, I use a lot of hops," said Maier.

He likes pellets and uses them almost exclusively. Better utilization in the kettle, easier storage, minimum oxidation and easy removal from the wort are reasons he cites for his

preference. By stirring the wort to form a whirlpool just prior to running it through the wort chiller, centripetal force centers the trub and little, if any, is transferred.

Because of the lack of natural gas in his area, Maier's equipment includes a portable propane burner and tank. It's easy to use at home and allows him to work in his garage, which is roomier than his kitchen.

The portability of the propane setup allows him to turn other people on to homebrewing. People tend to relax and worry less when brewing in their own home.

One advantage Maier has that isn't available to most other brewers is the water. Although not used in his award-winning Oregon Special, the water in Juneau is glacier runoff. He said it's very soft and similar in quality to the water used in Pilsner Urquell.

How does overseeing production of 4,000 barrels of beer annually affect Maier's interest in brewing? "I get such good quality and I give most of my homebrew away anyway. I never tire of brewing," he said. And I can make styles that just aren't available otherwise."

No other major changes are planned for now. He is happy in Juneau working and playing at something that he feels he was born to do. Although it's a lot of work, Maier says it's fun and brewing runs in his blood.



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## BROWN ALE

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### First Place

Bob Wood

Colorado Springs, Colorado

### Dun Rite Simpler

#### Ingredients for 6 1/2 gallons

- 11 pounds Klages malt
- 1 pound crystal malt
- 1 ounce Cascade hops (45 minutes)
- 3/4 ounce Bullion hops (45 minutes)
- 1/2 ounce Chinook hops (15 minutes)
- 1/2 ounce Cascade hops (in hop back)
- 2 teaspoons gypsum in sparge water
- M.eV ale yeast No. 13
- 1/4 teaspoon dextrose in each bottle to prime
- Original specific gravity: 1.068
- Terminal specific gravity: 1.018
- Age when judged (since bottling): 1 1/2 months

#### Brewer's Specifics

Step mash.

#### Judges' Comments

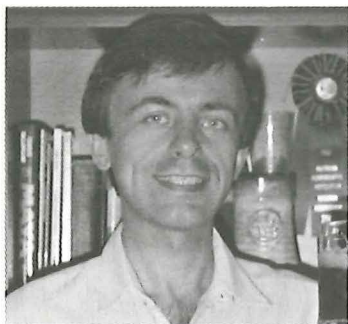
"Hop nose comes through well. Very clear, fine color for category. Flavor has a fine balance of hops to malt. Very drinkable, good ale."

"Well balanced hop and malt aroma. Very clear (brilliant), good color, well-balanced flavor. I really like it."

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## CONTINENTAL DARK

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**First Place**  
**Dennis Kinvig**  
Toronto, Ontario

### Interstellar Dark

#### Ingredients for 5 gallons

- 4 pounds Munton & Fison Continental Lager kit hopped malt extract syrup
- 3.3 pounds Bierkeller dark unhopped malt extract syrup
- 1 pound crystal malt

- 1/2 ounce Hallertauer hop pellets (40 minutes)
- 1 ounce Saaz hop pellets (25 minutes)
- 2/3 ounces Hallertauer leaf hops (2 minutes)
- 1/4 ounce Saaz hop pellets (2 minutes)
- 1/2 teaspoon gypsum
- 1/4 teaspoon non-iodized salt
- Great Fermentations German Lager liquid yeast
- 4 2/3 ounces dextrose to prime
- Original specific gravity: unknown
- Terminal specific gravity: unknown
- Age when judged (since bottling): 2 months

#### Brewer's Specifics

Crystal malt was coarsely ground in blender, put in separate pot with a little water (1 pint) and brought to a boil. Grains at that point were removed and liquid was added to wort. Half of volume of water was previously boiled the night before and chilled.

#### Judges' Comments

"Some maltiness, some spiciness come through in the nose. Nice red-brown color. Good lace and head. Good malt-hop balance. Some slight sourness-acidic flavor comes through. Very good beer (I loved the hoppiness)."

"Aroma very roasty with minimal hops. Very dark color, tan head, seems to be clear. Flavor too full bodied, very malty, slightly astringent."

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## CREAM ALE

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**First Place**  
**John G. Schmidt**  
Rohnert Park,  
California

### Pride of Waseca

#### Ingredients for 5 gallons

- 6 pounds Klages malt
- 1 pound light Munich malt
- 1/2 pound wheat malt
- 1/2 ounce Cascade hop pellets (60 minutes)
- 1/2 ounce Cascade hop pellets (30 minutes)
- 1 ounce Hallertauer hop pellets (30 minutes)
- 1/2 ounce Chinook hop pellets (dry hopped)
- 1 teaspoon gypsum
- 1 package Brewers Choice German Lager liquid yeast
- 3/4 cup dextrose to prime
- Original specific gravity: 1.042
- Terminal specific gravity: unknown
- Age when judged (since bottling): three months



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NS-001



### Judges' Comments

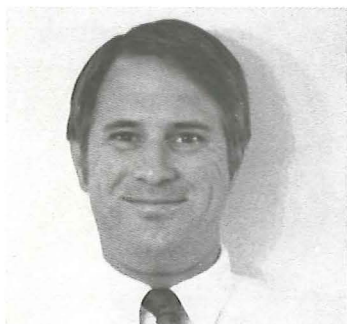
"Aroma very hoppy with a hint of malt. Nice golden color, clarity and carbonation. Flavor has an excellent hoppiness with a good malt background. Only drawback is the drop in intensity in the mid-mouth."

"Perfect 'green' hoppy nose, slightly light on the malt, but OK. Slight sulfury aroma. Beautifully clear. Nice head retention. Would be dark for a commercially brewed example. Flavor pretty clean, but slightly oxidized. Lingering astringent hop flavor. High carbonate water? Good effort at an extremely difficult style. I could drink a lot of this beer."

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## EXPORT

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**First Place**  
**Gary W. Schmidt**  
Warson Woods,  
Missouri

### Ehren Export

#### Ingredients for 5 gallons

- 4 pounds Alexanders light unhopped malt extract syrup
- 3 pounds Munton & Fison light unhopped dry malt extract
- 1/4 pound malted barley
- 1/8 pound crystal malt
- 1/8 pound wheat malt
- 1 ounce roasted barley
- 1 ounce Hallertauer hops (75 minutes)
- 1 ounce Cascade hops (60 minutes)
- 1/2 ounce Bullion hops (45 minutes)
- 1/2 ounce Hallertauer hops (30 minutes' steep after boil)
- 1/4 ounce Saaz hops (30 minutes' steep after boil)
- 1 teaspoon gypsum
- 1 package Burton water salts
- Liquid lager yeast starter
- 1 cup dextrose to prime
- Original specific gravity: 1.052
- Terminal specific gravity: 1.015
- Age when judged (since bottling): six months

#### Brewer's specifics

Add grains to water. Bring to a boil and remove grains. Add hops as above. Add extracts last 20 minutes of boil only. Ferment at 50 degrees F for 10 to 14 days then 40 to 45 degrees F for 45 to 60 days.

### Judges' comments

"Some light flowery hop aroma, but mostly malty. Clear but not brilliant, golden color, nice head with good retention, tiny bubbles. Thin watery body, a clean hoppy finish. No off-flavors. I would prefer a bit more hop bouquet and a bit more malt, carbonation OK, a good beer."

"Aroma inoffensive — not much comes through. Appearance appropriate for style, but at the darkest end. Malt comes through in the flavor. Not much hop to back up aftertaste, though phenolic aroma is slight."

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## FRUIT

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**First Place**  
**Pat O'Hara**  
Bedford, Ohio

### Red Ryder

#### Ingredients for 7 gallons

- 5 pounds Briess 6-row pale malted barley
- 3 pounds Munton & Fison malted wheat
- 1 pound Munich malt
- 1 pound Cara-pils malt
- 1 ounce Hallertauer whole hops (60 minutes)
- 1 ounce Hallertauer whole hops (1 minute then steep for 1 hour)
- 6 pounds red raspberries
- 2 teaspoons pectic enzyme
- 1 package Red Star lager yeast
- 1 cup dextrose to prime
- Original specific gravity: 1.080
- Terminal specific gravity: 1.020
- Age when judged (since bottling): nine months

#### Brewer's specifics

Add raspberries and pectic enzyme to one gallon of hot water and steep for three hours. Strain and add to cool wort.

#### Judges' Comments

Aroma is there and the color and clarity are nicely done but it lacks carbonation. Raspberry flavor is great, lacks body slightly. Very good.

"Berry, berry raspberry, just like sniffing a box of fruit. Very difficult to detect any hops or malt. Looks like a mead. Kinda reddish orange, little to no head, tiny bubbles, clear. A lot of the sourness of the raspberries was retained as well as some of the astringency, light body, winery. Remember to keep in mind that beers are to be balanced. I would cut back on the amount of raspberries, leaving everything else the same and you'll have an awesome beer."



## HERB BEER



**First Place**  
**Pamela Moore and**  
**Kurt Denke**  
**Philadelphia,**  
**Pennsylvania**

### Ring-tailed Lemur Lager

#### Ingredients for 5 gallons

- 3.3 pounds John Bull light hopped malt extract syrup
- 3 pounds clover honey
- 3 ounces diced ginger root
- 3 ounces Budweiser baking yeast
- 3/4 cup dextrose to prime
- Original specific gravity: 1.040
- Terminal specific gravity: 1.004
- Age when judged (since bottling): 2 1/2 months

#### Judges' Comments

"Delicate ginger aroma. Clean, clear, golden light lager. Ginger comes through up front and aftertaste. Distinct honey taste there, but surprisingly weak (not much used?). Very nice, drinkable, thirst-quenching beer."

"Nice ginger aroma that lingers. Clean and clear. Ginger and honey evident. Honey fermentation gives a nice, dry taste. Very nice effort. Pleasant drink. Nothing overpowers another ingredient."

## MUNICH



**First Place**  
**Byron Burch**  
**Santa Rosa,**  
**California**

### Sweetwater Lager

#### Ingredients for 10 gallons

- 16 pounds Klages malt
- 2 pounds Vienna malt
- 3/4 pound Munich malt

- 6 ounces caramel-90 malt
- 1 ounce Tettnanger hop pellets (60 minutes)
- 2 ounces Tettnanger hop pellets (30 minutes)
- 1 ounce Hallertauer hop pellets (dry hopped)
- 2 tablespoons Irish moss (unground flakes)
- 1/8 teaspoon calcium carbonate
- 30 ml. No. 308 liquid lager yeast

Forced CO<sub>2</sub> to carbonate

- Original specific gravity: 1.048
- Terminal specific gravity: unknown
- Age when judged (since bottling): two months

#### Judges' Comments

"Nice hop aroma, delicate. I pick up DMS (dimethyl sulfide), winelike. Boil longer. Cool more quickly. Nice pale color, very clear, good bubbles. Can taste DMS too. Very, very clean. Excellent. A bit hoppy. Could use more malt sweetness by cutting back on hops 10 to 15 percent, not a serious problem."

"Slight aroma of malt and hop, no off-aromas. Copper colored, clear, nice head, looks great. A lot of residual sweetness, no off-flavors, a little thin bodied. A very clean, well-made brew. Perhaps a bit sweet. I enjoyed it."

## PALE ALE



**First Place**  
**Ron Page**  
**Middletown,**  
**Connecticut**

### Fraternity House Ale

#### Ingredients for 25 gallons

- 6 30 pounds pale ale malt
- 1.1 5 1/2 pounds crystal malt
- 1.3 1 1/2 pounds Cara-pils malt
- 1.1 1/2 pound Munich malt
- 2.55 12 3/4 ounces Cascade hops (boil)
- 2.1 10 1/2 ounces Willamette hops (boil)
- 1.05 5 1/4 ounces Cascade hops (finish)
- 1.35 1 3/4 ounces Kent Goldings hops (dry hopped)
- 1.35 1 3/4 ounces Willamette hops (dry hopped)
- 1.05 5 1/4 ounces Cascade hops (dry hopped)
- 1.2 6 pounds honey to prime

- Original specific gravity: 1.070
- Terminal specific gravity: 1.024
- Age when judged (since bottling) unknown



### Brewer's Specifics

Mash all grains at 150 to 155 degrees F for 1 1/2 hours.

### Judges' Comments

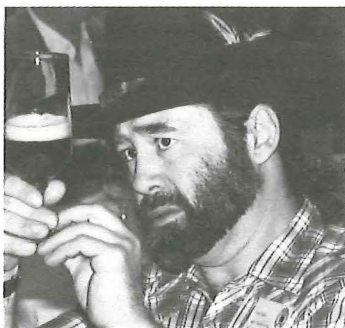
"Oh boy! Beautiful spicy hoppy aroma with lots of malt in background. Good clarity. Amber red tint. Good malt-hop balance although sweetness overpowers slightly."

"Very balanced, nice hop nose with malt background. Great Cascade. Very nice, clean appearance. Nice malty flavor with great hop balance. Nice dry hop finish, rich. Very delicious beer, you've got a winner here! Great IPA!"

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## PILSENER

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**First Place**  
**Byron Burch**  
**Santa Rosa,**  
**California**

### Pillowtalk Pilsener

#### Ingredients for 10 gallons

- 14 pounds Klages malt
- 1 1/2 pounds Munich malt
- 6 ounces crystal malt
- 2 ounces Tettnanger hop pellets (60 minutes)
- 2 ounces Tettnanger hop pellets (30 minutes)
- 2 ounces Hallertauer hop pellets (30 minutes)
- 4 ounces Hallertauer hop pellets (10 minutes)
- 1/4 teaspoon gypsum
- 1/4 teaspoon salt
- 2 tablespoons Irish moss
- 30 ml. No. 308 liquid lager yeast
- 1 1/2 cups corn sugar to prime
- Original specific gravity: 1.046
- Terminal specific gravity: unknown
- Age when judged (since bottling): 5 1/2 months

#### Brewer's specifics

Mash all grains at 150 degrees F for 1 hour. Sparge with 165 degree water.

#### Judges' Comments

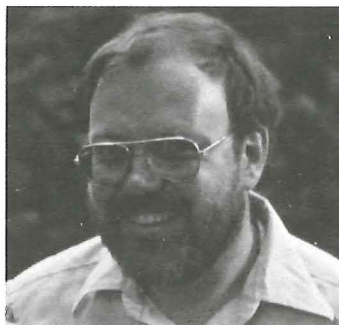
"Malty with good hop aroma. Great, dark yellow color. Almost too gushy, but head holds up. Light and balanced. Export type. Very good balance. Very fresh, clean finish. Great beer."

"Slight vegetable odor then hops come through. Slight haze. Good head retention. Nice balance struck here. I enjoy the finish. Samuel Adams Lager?"

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## PORTER

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**First Place**  
**Gary Brown**  
**Mendota Heights,**  
**Minnesota**

### Pat's Porter

#### Ingredients for 5 gallons

- 6 pounds John Bull light malt extract
- 1/2 pound crystal malt
- 1/4 pound black patent malt
- 1/4 pound malted wheat
- 1 1/2 ounces Wasatch Ale hops (60 minutes)
- 1/2 ounce East Kent Goldings hops (30 minutes)
- 1/2 ounce Hallertauer hops (15 minutes)
- 1/8 ounce Chinook hops (45 minutes' steep after boil)
- 1 teaspoon brewers salts
- 1 teaspoon Irish moss
- 2 packages Edme ale yeast
- 3/4 cup corn sugar to prime
- Original specific gravity: 1.045
- Terminal specific gravity: 1.015
- Age when judged (since bottling): 1 1/2 months

#### Judges' Comments

"Nice malt aroma. Try more roasted malt. Good appearance. The flavor has a nice balance but try more black patent or chocolate malt. I could drink a lot of this, however it needs more roasted malt flavor for category."

"Aroma is nicely balanced between hops and malt. Dark brown in appearance although a little light for the style. This beer lacks the roast grain flavor a porter should have but it is very clean. It is somewhat inappropriate for the style but overall a well-made beer. I liked it very much."

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## RAUCH

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**First Place**  
**Jason W. Held**  
**St. Charles, Missouri**



## Smoky II

### Ingredients for 6 1/2 gallons

- 9 pounds 2-row Klages malt
- 3 pounds 2-row Klages malt (smoked)
- 1 ounce Tettnanger hops (60 minutes)
- 1/2 ounce Cascade hops (30 minutes)
- 1/2 ounce Tettnanger hops (30 minutes)
- 1 ounce Hallertauer hops (after boil)
- 1/2 ounce Tettnanger hops (after boil)
- 10 drops lactic acid
- M.eV English Ale liquid yeast
- 7/8 cup corn sugar to prime
- Original specific gravity: 1.060
- Terminal specific gravity: 1.016
- Age when judged (since bottling): 1 1/2 months

### Brewer's Specifics

Mashed in 18 quarts 160 degree F water and held at 150 degrees F for two hours. Sparged with 170 degree F water. Collected 3 gallons wort.

### Judges' Comments

"Oooo-la-la. Smoke, smoke and more smoke. Spectacular, dazzling, brilliant gold color with a lovely head. The flavor is a bit heavy-handed, but clean and refreshing."

"Aroma very phenolic, yet the flavor was better balanced than expected. Beautifully clear amber color. The flavor is dominated by smoke, but the malt and hops are in balance. A little too smoky for ease of drinking. I do suspect a bit of bacterial contamination."

## SCOTCH ALE



**First Place**  
**Rod Romanak**  
**Kailua-Kona, Hawaii**

### Pacific Scotch Ale

### Ingredients for 5 gallons

- 8 pounds Munton & Fison amber malt extract syrup
- 1 pound crystal malt
- 1 ounce Chinook hops (45 minutes)
- 1/2 ounce Perle hops (10 minutes)
- 1 ounce Fuggles hops (after boil)
- 2 packages Muntana yeast
- 1/2 dextrose to prime
- Original specific gravity: 1.056
- Terminal specific gravity: 1.013
- Age when judged (since bottling): three months

### Judges' Comments:

"Nice clean malt aroma. Beautiful clear mahogany, great carbonation, very good head retention. Wonderful, warm, mouth-filling malt flavor. This is great, clean, gorgeous, malty."

"Nice aroma, clean. Beautiful color, lovely creamy head. The flavor is well balanced, though perhaps a bit oxidized. A well-made beer. A fine example of the class. Congratulations."

## SPECIALTY BEER



**First Place**  
**Ron Page**  
**Middletown,**  
**Connecticut**

### Vampire Ale

### Ingredients for 25 gallons

- 55 pounds ale malt
- 2 pounds Vienna malt
- 1 pound Cara-pils malt
- 16.5 pounds Laaglander light dry malt extract
- 5 ounces Cascade hops (boil)
- 2 1/2 ounces Hallertauer hops (boil)
- 2 1/2 ounces Tettnanger hops (boil)
- 2 1/2 ounces Hallertauer hops (finish)
- 2 1/2 ounces Tettnanger hops (finish)
- 15 pounds honey
- 1 3/4 ounces beechwood chips
- 8 3/4 ounces lactose
- 1.25 ounces orange rind
- 5 packages Edme yeast
- Original specific gravity: 1.080
- Terminal specific gravity: 1.023
- Age when judged (since bottling): unknown

### Brewer's Specifics

All grains mashed at 152 to 155 degrees F for 1 hour.

### Judges' Comments

"Elegant bouquet, wonderful! Beautiful appearance! Subtle expression of honey. All flavors were well represented. Very well balanced. Excellent use of these ingredients with a resulting brew that's very satisfying."

"Very pleasing, good balance of hops to malt with elegant orange aroma. Beautiful appearance! You could read a book through it, it sparkles. The flavor comes on. It makes you want to drink more. Outstanding example of style."



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## STEAM BEER

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**First Place**  
**Glen Mazur**  
**Buffalo Grove,**  
**Illinois**

### No. 39

#### Ingredients for 5 gallons

- 4 pounds 2-row pale ale malt
- 3 pounds light dry malt extract
- 1 pound crystal malt
- 1 1/2 ounces Eroica hops (boil)
- 1/2 ounce Cascade hops (finish)
- 1/4 ounce Cascade hops (dry hop)
- Wyeast U.S. Lager liquid yeast
- 3/4 cup dextrose to prime
- Original specific gravity: 1.046
- Terminal specific gravity: 1.010
- Age when judged (since bottling): four months

#### Brewer's Specifics

All grains mashed at 155 degrees F for 1 1/2 hours.

#### Judges' Comments

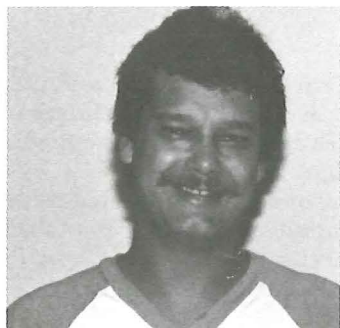
"Nice, clean, hoppy, appetizing aroma. Slight haze, but very nice color, carbonation and head. Clean flavor with a distinctive strong hop bitterness finish true to style. This is a very good representation of the steam category, a job well done."

"Distinctly hoppy aroma. Full rich bouquet. Clear amber brew. Good conditioning, fair head retention. Crisp initial taste balanced by a hoppy finish. A very good, appropriate example of this uniquely American beer."

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## STOUT

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**First Place**  
**David Zalewski**  
**College Station,**  
**Texas**

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## Christmas Stout

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#### Ingredients for 5 gallons

- 3.5 pounds Edme stout hopped malt extract syrup
- 3.5 pounds amber dry malt extract
- 3.3 pounds Munton & Fison dark malt extract syrup
- 1 pound chocolate malt
- 1 pound Munich malt
- 1 pound pale ale malt
- 1 pound pure cane syrup
- 1/2 pound brown sugar
- 1/4 pound roasted barley
- 1/4 pound light brown sugar
- 3 1/2 ounces Fuggles leaf hops (60 minutes)
- 1 ounce Northern Brewer hops (60 minutes)
- 1 ounce Hallertauer hop pellets (10 minutes)
- Edme ale yeast
- 3/4 cup dextrose and Red Star Champagne yeast to prime
- Original specific gravity: 1.100
- Terminal specific gravity: 1.026
- Age when judged (since bottling): 15 1/2 months

#### Judges' Comments

"Very slight medicinal aroma, very malty, alcoholic. Very black color, black head, probably clear, very minimal head, good head retention. Very full bodied, warming alcohol, typical roasted flavor, a bit sweet for hop balance. I expected more roasted and more hops for the apparent body. Alcoholic, like a barleywine, a bit undercarbonated."

"Very alcoholic nose, just a trace of hops. Very well balanced! Perhaps just a touch more roast malt and hops, but this will balance more as it ages."

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## VIENNA

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**First Place**  
**John C. Maier**  
**Juneau, Alaska**

### Humpback Lager

#### Ingredients for 5 gallons

- 6 pounds pale Klages malt
- 3 pounds Munich malt
- 3/4 pound Cara-pils malt
- 1/2 pound crystal malt (40 degrees Lovibond)
- 1 ounce Hallertauer hops (60 minutes)
- 1/2 ounce Hallertauer hops (10 minutes)
- 1/2 ounce Hallertauer hops (after boil)
- 1/4 teaspoon Yeastex



- 1 package Wyeast American Lager liquid yeast
- 3/4 cup dextrose to prime
- Original specific gravity: 1.052
- Terminal specific gravity: 1.012
- Age when judged (since bottling): 7 1/2 months

#### Brewer's specifics

Mash all grains at 120 degrees F for 30 minutes. Infuse boiling water to raise temperature to 153 degrees F for 15 minutes. Apply heat and raise temperature to 170 degrees F. Sparge with 170 degree F water. Collect 6 gallons sweet wort.

#### Judges' Comments

"Slightly malty aroma, fairly bland, no hop character. Nice orange-copper color. Very clear, good head. Nice malt start with a clean hop finish. A very well-balanced beer, but a little thin. Use more Vienna malt? No off-flavors."

"Subtle hop aroma comes through, could be a bit maltier in aroma. Bright, very clear, fine bead. Nice bitter aftertaste, just the right amount of hops, well balanced with malt. Could use just a bit more body. Add some crystal or Cara-pils. Could use more malt for style. Hops linger and this style should have more maltiness."

## GERMAN STYLE WHEAT BEER



**First Place**  
**Russel S. Schehrer**  
**Denver, Colorado**

### Wynkoop Wheat

#### Ingredients for 5 1/2 gallons

- 5 2/3 pounds British malted wheat
- 5 pounds 2-row Klages malted barley
- 5 pounds 6-row malted barley
- 2 ounces Cascade whole hops (60 minutes)
- 3/4 ounce Willamette whole hops (end of boil)
- 1 package Red Star lager yeast
- 1/2 cup dextrose to prime
- Original specific gravity: 1.042
- Terminal specific gravity: 1.006
- Age when judged (since bottling): 6 months

#### Brewer's specifics

Mashed all grains at 156 degrees F for 2.5 hours. Sparged with 17 quarts water at 170 degrees F.

#### Judges' Comments

"Spicy, clove, good wheat character. Clear, good head,

tiny bubbles. Rather too amber for traditional wheat beer. Well balanced. Malt almost completely hides hops. Wheat character is light, but very clean."

"Butterscotch, slightly sour, no clovelike character, somewhat fruity. Good color, clarity is acceptable. Nice head. Flavor somewhat astringent, somewhat sour, thin for category. This is a good beer but lacks in some expected wheatlike character. Refreshing, as it should be."

## MEAD



**First Place**  
**Ralph Bucca**  
**District Heights,**  
**Maryland**

### Morat

#### Ingredients for 1 gallon

- 3 pounds mulberries
- 1.5 pounds honey
- 1.5 pounds dextrose
- 1 teaspoon acid blend
- 1 package Red Star wine yeast
- 3 tablespoons honey to prime
- Original specific gravity: 1.085
- Terminal specific gravity: 1.010
- Age when judged (since bottling): 15 months

#### Brewer's specifics

The mulberries were crushed and added to 1 gallon hot water and stirred. Then the honey and corn sugar were added. When cool, the yeast and acid blend were added. After one week the must was strained off the fruit and racked to a secondary fermenter. The mead was racked three more times. When bottled, 3 tablespoons honey were added to one gallon for carbonation.

#### Judges' Comments

"Pleasant honey-berry aroma. Dark, brownish port coloring. Like an oxidized Chardonnay. Alcoholic. Interesting floral, estery bouquet. Very pleasant after-dinner drink. A bit oxidized but lacking in off-flavors and nicely balanced in sweetness, acidity, body and carbonation."

"Complex delightful aroma. Winelike appearance. Could use a tad more tannin. Gusher. Overcarbonated and somewhat sweet residual finish. Surprising pronounced vinous quality. Somewhat oxidized in color and taste, not unpleasant, like a well-aged wine. Could have done without the carbonation. Would make a lovely red-port style wine. A fine, remarkably wine like product. Makes me want to run out and find a mulberry tree!"



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