

Amateur Brewer Communications



amateur brewer no. 10

winter 1983-4

Amateur Brewer Communications No. 10 1983-4 Editor Fred Eckhardt Telephone (503) 289-7596

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Amateur Brewer Communications for the Serious Home Brewer is published quarterly by the Amateur Brewer Information Service, Box 546, Portland, OR 97207. Subscription \$10 annual, Canadians add \$17.75, other countries add \$6.

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"We glory in the title AMATEUR," G.K. Chesterton.

TALK to your BEER

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OF COURSE WE'RE LATE! Initial advertising arrangements were more complicated than I had supposed, and we switched on you one more time--we're a quarterly again, and I hope to pick up the lost time and have <u>ABC-11</u> in the mail by April 30, (hope is the key word here). If advertising revenues work out we should be able to enlarge the publication, and that means I need your input: ideas, suggestions, articles and stuff like that there. We're looking forward to a great year.

HANSBERG AND DOVER VINYARDS CLEAN

The December issue of the prestigeous British <u>Homebrew Supplier</u> (publ: <u>Amateur Winemaker</u>) had a page one story that was hard to resist. "Malt Extract Bombshell, John Bull in Disguise!" That, in bold 22-point type, featuring an announcement by <u>Paines</u> Director Lance Middleton, declaring that "Hansberg German Malt Extract (beer kits were) in fact John Bull kits...de-labelled and then re-labelled with Hansberg German Malt Extract labels. We have checked codes, boxes, yeasts, caps and cans (and we are) convinced...that the (continued on the inside back cover)

Cover Photo: Fermenting tanks at the Pilot Brewery, Swiss Brewing society, Zurich. Each tank holds 130-liters (34-USgals).

SWISS BEER YOU CAN BREW IT AT HOME

William Petrij, Forestville, CA © 1984, all rights reserved

The Swiss Brewing Industry, which follows the Reinheitsgebot Purity Laws, has long been noted for the high quality of its product. When I visited Switzerland last year I had an opportunity to examine Swiss beer and Swiss brewing methods carefully and thoroughly. I had been brewing with all-grain mashes at home for over four years and using my own malted barley (Amateur Brewer #8, 1981). I had tried all the usual published mashing sequences from various sources (Table I). I had, in fact, completed some seventy of these complicated and time consuming brews. It wasn't until I visited the Swiss breweries Lowenbrau Zurich, Fisherstuben Basel and the Versuchsstation Schweizerischer Brauereien Zurich, (Pilot Brewery, Swiss Brewing Society), that I was finally able to grasp the problem of using home-malted barley to produce good beer. Swiss methods will enable you to make good beer using either home malted barley or the commercial variety available at supply shops.

For some time I had thought that my problems lay in my malting methods (using soft spring water and variable sprouting and roasting temperatures), my hops (usually dead and often a year old), commercial yeast (dry packets from the local brew supply store), and an underlying belief that those less-flavorful compounds in the chlorine rinse of my fermentor were somehow OK. However, after a year of research and experimentation, I have come to the conclusion (again) that I don't like the flavor of *Cascade* hops, but that *Fuggles* and *Bullions*, even one year old, are all right. Now, I'm convinced that you must rid your fermentor of the chlorine residue with a final rinse of tap water. I also concluded that, for me at least, yeast isn't really a problem, and that my malt, some of it over six months old, erratically sprouted and roasted (even just sun or air dried, performs well even if my yield is a bit on the low side. My last

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Table I. Published Time/Temperature mashing sequences. Times above the lines in minutes. Temperatures below the lines in °C.

dozen batches of beer were all mashed using time and temperature sequences given me by Swiss brewmasters, and I feel that is the real key to brewing decent all-grain beer.

These days I brew fine *Hell* (light), *Dunkle* (dark), and *Weizen* (German style wheat beer), all in the Swiss style. The quality of my beer was attested to by the son of a friend of mine in his condescending response to tasting a glass: "Uh . . . tastes like beer." He was clearly puzzled about why his father and I were so excited about such a mundane product.

SWISS BEER STYLES

From what I was told no Swiss beer is pasteurized and that probably accounts for the variability one finds when tasting around in Switzerland. Naturally, the cleanest flavored beer is found at the brewery. Next is *vom fasse* (on tap) and poorest is that which you'd buy from either the tavern or grocery store in bottles. In all *vom fass* beer I tasted, one could easily notice the hop/malt components and their balance. Bottled beer ranged from good to downright skunky and, although usually stored in a small refrigerator on the premises, it was occasionally sold warm, in dusty bottles, direct from the counter.

Hell or blonde (pale) is the most common beer, followed by dunkel (dark) which comprises only about 1% of the overall production. *Starkbier* (strong and dark) contains about 10% more malt, and *Diat Bier* (low carbohydrate) and *Alkoholfrei Bier* are also available. A new American-style very pale beer is being introduced and sometimes one can find the German-style *Weizen*. In Switzerland all beverage commodities, such as soft drinks, are produced by the major breweries in addition to beer.

INGREDIENTS

The Swiss import all of their malt and they prefer Summer barley, which matures in August, for malting stock. Availability and price are the final arbiters as to whether the malt comes from France, Germany, Denmark, or wherever. Such a range of malt quality means that this is a major variable for the brewer in his calculations to insure uniformity and quality control in the final product.

Hopping is normally done using hop extracts with price and availability again determining the source and even Yakima hops are sometimes used.

Yeast is cultured by each brewery and at **Lowenbrau Zurich** it is repitched up to four times before being replaced with a fresh culture.

The water is normally soft.

Most Swiss brewers have the Brewing Society's Experimental Pilot Brewery to call on for materials and help with problems they encounter. I called ahead of my visit and was treated to a complete, pleasant, and personal tour of the semi-industrial pilot brewery. The Versuchsstation is located at Engimattstrass 11 in Zurich.

STANDARD BREW OF THE VERSUCHSSTATION PILOT BREWERY

Twenty kg (44 lbs) of dry pale malted barley is mixed with 45-liter (12-USgal) water and steeped at 45°C (113°F) for 20 minutes. The wet malt is then crushed between two meshed rollers about 15-cm (6") wide and 15-cm in diameter with a separation of 0.45mm (0.018-in — U.S. Standard #18 sieve) operated at about 500 rpm. (see Fig. 1). This operation takes an additional 15 minutes. The reason for the wet crush is that the hulls are left more or less intact, giving better matting in the lauter tub.

An additional 35-liters (9-USgal) of water is then added to the crushed malt to achieve mash-in. The mashing temperature/time sequence is shown in figure 2. The mash takes 2½ hours after which the wort is sparged at 76°C (168°F). The first runnings are recirculated for five to ten minutes until clear. Initial gravity is 1070-74 (17-18°B), and when it drops to 1006 (1.5°B) lautering is stopped. This yields about 130-liter (34-USgal) of wort. The lauter tub is stirred while sparging is in process with the stirrer at a minimum of 2-cm (0.8") above the slotted false bottom of the vessel.

The wort is then boiled for 90 minutes with hop extract being added (in lieu of hops as is Swiss practice) 15 minutes after the start of the boil to enable wort



Figure 1. Cross-sectional schematic of Wet-Crush mill rollers at the Versuchsstation Schweiz. Brauerein, Zurich, Switzerland.



Figure 2. Standard Temperature/time sequence of the Versuchsstation Schweiz. Brauerein, Zurich. Time in minutes on top, temperature, °C, below the line.

polyphenols to react before working on those of the hops. The boiled wort is then pumped into a whirlpool settling tank, a stationary cylindrical pot. The hot wort enters tangentially at the bottom. There is a 30-minute rest here to precipitate the trub. The original extract, after the wort boil, is about 12°B (1049).

THE FERMENT AND FINISH

Fermentation temperature/times are approximated in figure 3.

The finished product is about 2°B (1008), and is carbonated artificially to 4-5 gm CO₂/liter (bottles) and 2.8-gm CO₂/1 (kegs). This translates to 2.0-2.6 volumes CO₂ (bottled) and 1.4 volumes (kegs) and results in about 60-liters



Figure 3. Fermentation time/temperatures.

(16-USgal) of beer for each batch.

The *Starkbier* uses 23-kg (50-lbs) of a 60% pale and 40% dark malt mix, plus 0.5-kg (1.1-lb) *farbmalz* (black patent) to intensify the color and flavor. They also suggested 5-10% caramel malt for a fuller taste. They collect 125-130 liter (32-34-USgals) wort prior to start of boil. This amounts to aobut 12% more malt and 8% less collected volume.

IN THE BREWING INDUSTRY

The above procedures, from the Versuchsstation, describe the Brewing Society's Industry Standard. In the Swiss Brewing Industry the procedures and methods may vary. **Lowenbrau Zurich**, whose fine beers are widely distributed in this country, uses 5,000-kg (11,000-lbs) of malt with soft water to make 195-hl (5100-USgal) of mash liquor. They also use the wet crush, and

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mash their *hell bier* as shown in figure 4, a sequence similar to that of UC Davis (**Table I**).



Figure 4. Lowenbrau Zurich, Hell, time/temperature sequence.

Lautering is with constant agitation and with blades about 1 meter (40inches) deep at 78°C (172°F). The feeling was that any decrease in temperature at that time would increase the dextrins and interfere with clearing the final product.

Primary ferment is in open tanks. Original gravity is 1044-46 (11-1.5°B) for the *Hell, Dunkle* and *Export,* and 1048-50 (12-12.5°B) for *Special* and up to 1074 (18°) for their *Starkbier*. Final lagering is at -1° C (30°F) with 1% residual sugar at ½-kg/cm² (7-lb/in²) pressure for 3-4 months.



The brewmaster was very friendly and he offered the following helpful over-the-mug advice: "Mash-in at 35°C (92°C), which will lower the mash pH, and use soft water that has no chlorine! Clean your equipment and air dry. You can avoid excess chlorine in cleaning by using a 2% formaldehyde solution followed by a rinse. You can also use steam or boiling water to sterilize and then soda ash (Sodium carbonate or washing soda) for cleaning."

About 40% of the brewery's production goes into kegs, with the remainder being bottled. **Lowenbrau Zurich** is located at Limmastrasse 264 in Zurich.

FISCHERSTUBE

As far as I know the smallest commercial brewery in Switzerland is at Rheingasse 45 in Basel (Klein Basel). The **Fischerstube** markets its own beer under the name *Ueli Bier* with full regards to Til Eulenspiegel. Off premises sales are in 10- 20-liter (2½- 5-USgals) *Eichenfassli* (oak keglets) for about \$15 and \$30 each, respectively.



At **Fischerstube** 100- 105-kg (220- 230-lb) batches of dry malt are ground and mixed with 400-liters (105-USgals) of a mixture of distilled and tap water: 20% tap for *hell* and 25-30% tap for *Dunkle*. Just enough tap water for a good salt balance. The ratio of malt to water is varied to adjust pH in the mash. One kg of malt per 3- 4-liters of water is the norm (1-lb malt per 1½-2qts water). The adjustment is made with a shift towards 4-liters to lower pH or towards 3-liters to raise the pH. Herr Welti, the brewmaster, told me that **Ueli-Dunkle** contains 95% dark malt (Munich-style) and 5% pale malt. Mashing sequences are shown in fig. 5. Since that brewery has only a boiler and a wooden lauter



Figure 5. Fischerstuben Basel, Time/temperature sequences.

tub (without agitator), mashing is done in the boiler and the wort is then pumped into the lauter tub for sparging. The mash is pumped in, allowed to rest for 25 minutes and then sparged off without additional water. An initial flow at 1061-65 (15-16°B) is preferred rather than one of 18°B. After the first run-off additional water at 79°C (174°F) is added and the mash stirred thoroughly and then allowed to rest for 25 minutes longer before the second running is begun.

The wort is now boiled for an hour and then allowed to cool two hours in a covered cabinet (cooling tank) outside, until the desired temperature is reached. This is about 40°C (104°F) in winter, 50°C (122°F) in spring and fall, and about 50-60° (122-140°F) in the summer. From there the warm wort is cooled further and transferred to open tiled vats behind glass, visible to the patrons in the restaurant. The usual yield is about 600-liter (160-USgals). The beer is fermented with a lager yeast and has a 5-6 week final lagering period at -1° C (30°F) under about 0.5-kg/cm² (7-lb/in²). A few tips on sanitation included admonitions to "keep your operation clean, keep oxygen out of the ferment, and once in a while use acid to clean the equipment in order to remove the white "Bierstein" scale.

WHEAT BEER

Well, now that we've gone over the normal beer procedure, we can get on to the House Specialty, the fine summer wheat beer served with a slice of lemon. That, of course, is the **Ueli-Weizen**. I have only tasted two wheat beers, the **Ueli** and a German *Hefe-weizen* (*Hefe* means with yeast, a bottle conditioned beer) from Ganter in Freiburg. The *Ueli* had a more pronounced maltiness.

The brewmaster, Herr Welti, told me: "Use 40% wheat malt (pale or dark) and 60% pale barley malt. Use relatively soft water in the ratio of 4-liters water to the kilo of malt (21/2-lbs malt/USgal). The mash should be thin. Mash-in at 42°C (108°F) for 30 minutes to allow proper amino acid build-up for yeast nutrition. Increase the temperature at a rate of about 1°C per minute, (9°F over a 5-minute period), until you reach 68°C (154°F). Hold this temperature until there is starch conversion (about 30-min.). Again raise the temperature at the same rate to 74°C (165°C) and hold there until the mash reaches starch conversion again (about 20-min). When done transfer the mash to the lauter tun and let rest for 20 to 30 minutes. Lautering should be done at 78°C (172°F). Let the wort run until nearly out and stop. Now refill the mash tun with water, stir well, and stand an additional 20-30 minutes and run out again (this in lieu of sparging). The early or first run-off should be in the neighborhood of 18°B (1074) and you should end up with about 12-12.5°B (1048-50) after an hour of boiling. Add your hops at a rate of 100-gm/liter (3.8-gm/USgal) at the start of the wort boil. Cool the wort and pitch with an ale yeast at 16-20°C (61-68°F)



Figure 6. Fischerstuben Basel, Time/temperature sequences Ueli-Weizen mashing sequence.

(continued on page 14)



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(continued from page 9)

and ferment at that temperature range. Ferment out and krausen with 4% unfermented wort and lager yeast. (That's about 26-oz 1050 wort for 5-USgals). The lager yeast helps clear the beer (it is rather cloudy anyway)."

A tall, pilsner style, half-liter glass of **Ueli-Weizen**, served with a half-slice of lemon sells for 2.50 swill francs (about \$1.40) and it's worth every rappen.

Bill Petry is a Forestville, Calif. homebrewer who resents paying the high price of malted barley. All of his beers are made using his own home-malted barley. His trip to Switzerland last year was a rousing success and the innovations and information he includes in this article should come as a break-through in many areas for all-grain brewers.



Fermenting tanks at the pilot brewery, Swiss Brewing Society.





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NEW YEAST STRAINS MAY SOON JOIN THE CAMPAIGN FOR REAL ALE.

by Donald G. Crenshaw Minneapolis, Minnesota

All homebrewers know that the job of yeast is to turn the sugar in the wort into alcohol in the finished beer. In the near future yeast will perform more functions as researchers find ways to alter yeast so that they can fight infections, ferment the "unfermentable" carbohydrates and eliminate chill haze. Breweries will be able to rely on yeast rather than additives to produce commercially successful beer.

In England, where they take seriously the idea that good yeast make good beer, three research groups are attempting to produce new strains of yeast to do more than just their traditional job. The *Brewing Research Foundation* in Surrey, a group at the University of Birmingham and another working for *Guinness*, have announced the production of a hybrid yeast which combines the usual ability to ferment with the ability to kill wild yeasts which may contaminate the brew.

There is a strain of yeast which is capable of poisoning wild yeasts with a protein known as zymocin. Unfortunately these zymocin-producing yeast do not ferment very well. Scientists have recently found ways of mating these "killer yeast" with standard brewers yeast to produce a hybrid yeast that has all the properties of good brewers yeast as well as the ability to produce zymocin.

By using these yeast the brewer will no longer need to add preservatives to the beer. Keg conditioned beers will be easier to produce and spoilage will be greatly reduced. Breweries will be able to reduce costs and increase profits. Those who prefer additive free "real ale" will be able to get more of it.

Yeast researchers and genetic engineers are working on several other ways of making yeast serve double duty. One way is to have the yeast produce one of the additives used in "light beer." Many "light beers" are brewed by adding the enzyme *amyloglucosidase* to the wort. this enzyme breaks the unfermentable dextrins into sugars which the yeast can ferment. The resulting beer is much lower in carbohydrates.

Amyloglucosidase is made by a variety of microbes which can also infect the beer, leaving it thin, fizzy and bad tasting (not a bad description of light beer). Yeast researchers hope to be able to transfer this ability to produce amyloglucosidase to brewers yeast, while leaving behind all the bad side effects. The result would be a brewers yeast capable of fermenting the "unfermentables."

Chill haze is another problem which the researchers are trying to solve with genetically altered yeast. Chill haze is caused by proteins in beer which coagulate at low temperatures. The tiny globs of coagulated proteins floating about give the beer a hazy, murky appearance. The standard solution is to add the enzyme *papain* to the beer. This enzyme, which is also a major component of most meat tenderizers, chops the coagulating proteins into tiny pieces,

thus breaking up the hazy globs. *Papain* is a rather expensive additive. If yeast could be genetically altered to make its own *papain* the brewing industry could produce haze proof beer more economically and with less reliance on additives.

Though none of these "super yeasts" are currently used commercially, research continues and one can expect that in the next few years the production of commercial beers will incorporate these advances. The changes will scarcely be noticed by the average beer drinker. Breweries will continue to make the same beer they always made. The "super yeast" will make it cheaper and easier to produce the same effect.

The homebrewer stands to greatly benefit from these yeasts if they become available. Though few homebrewers brew "light beer" all homebrewers face problems of infected worts. Anything which reduces the chance of infection increases the chance of producing good beer. Chill haze is a particular problem for those who brew from grain. Poor control of mashing temperatures leads to excess protein in the beer. Yeast which could break up these proteins would be very useful to a stove top masher. In general, the more work yeast does, the less work the brewer does which leaves more time for enjoying the fruits of your (and the yeast's) labor.

Donald Crenshaw is a Minneapolis schoolteacher who has been brewing beer at home for over eight years. He has been especially interested in yeast and hops. He was editor of the now defunct Minneapolis Home Brew club, Twin Cities Home Foam League, Newsletter.



OH, THOSE FOXY HOPS by Jack Riehl

Walla Walla, Washington

The inscrutable hop plant — whose magical relationship with hot wort and seething yeast eluded even the most curious of bipeds, man, for over seven centuries — has recently been cajoled into revealing more and more of her secrets.

Scientific research has developed a string of new hop varieties recently, all of which promise improvements over their predecessors. *Eroica*, *Galena*, the new *Nugget* and the newer-still *Olympic*, all bear testimony to this. More are coming down the research pipe. And, pleasantly enough for homebrewers, the new varieties are working their way to our end of the trade with much more rapidity than usual.

But the foxy lady — active hop-ingredient lupulin is derived from the Latin for "wolf" — may be retreating once again behind her mysterious shroud as a wind shift in United States Department of Agriculture policy may terminate research programs in the top hop-producing states.

The USDA is leaning away from basic commodity support programs and instead is jumping in to high-tech, high-risk, or long-term kinds of research projects. Funding for less-glamorous hop research will be cut back over the



next year. Unless growers and brewers combine to pick up the tab, there will be a pause in the introduction of new varieties.

In the meantime, brewers of every stripe will enjoy experimentation with the new hop personalities presently placed at our disposal.

Eroica and *Galena*, for example, were developed under the direction of R. Robert Romanko at the University of Idaho. They are basically *Brewer's Gold*, itself a developed strain, bred with some sophisticated but anonymous male hops. Like their mother, they have a high alpha-acid content. But with a pleasant, amost aromatic, quality to them as well.

Newcomer *Nugget*, developed by the USDA at the Oregon State University research station in Corvallis, is in a similar mode. With 9.6%-13.0% alphaacid, *Nugget*'s aroma is reminiscent of a very mild *Hallertau*. All three, plus the just-introduced *Olympic*, from the USDA at Prosser, Washington, are expected, by virtue of their high alpha-acid conents, to find good use in hop extract formulations. To homebrewers, they will be economical boiling hops with an aroma that's, well, not-so-bad at the very least to pretty-darn-good at best.

Not all the action is in America, of course. The savvy Germans have introduced *Perle*, a high-acid (7%) continental-style hop. The aroma of this is very good, though without the truly inspirational richness of the *Hallertau* or *Saaz*.

All of these hops are truly designed to be kettle, or boiling hops, and are very good for that. None are aromatic hops. But the second bit of news coming out of the hop research stations this year is that scientists are beginning to get a better understanding about the nature of hop flavor and hop aroma.

Until now, the sole aim of hop researchers has been directed to the development of high alpha-acid varieties. The new releases we see now are a result of that aim. All of them are redolent of the strains *Brewer's Gold* and *Bullions* — both developed in England during the 1920s — but without some of their more randy characteristics. They are economical for the brewer because of price and reduced storage-space requirements, and suitable to the grower interested in the extract trade. Hop extracts, of course, are easier to ship and store than even pellets and are therefore most easily exported.

But there is obviously more to brewing beer than the alpha-acid content of a hop. Hop aroma is crucially important to brewers, for example, but has thus far evaded the researchers. Breeding plants for alpha-acid has been pursued vigorously because it is important to the brewing process and because the test for it is simple, fast, and economical.

But new equipment has recently become available which allows an economical measurement of some of the other constituents of the enigmatic hop. Through the use of high-pressure liquid chromatography, researchers can now easily measure the three major constituents of alpha-acid: humulone, ad-humulone, and co-humulone.

The results are interesting. Co-humulone, especially, seems to have a

bearing on hop bitterness. As an extra bonus, co-humulone seems to be a contributor to foam and head stability. In both cases, the relationship is the obverse: the less co-humulone, the smoother the bitterness and the better the foam stability.

Following is a list of the co-humulone levels of several important hops. Note that the group highest in co-humulone is generally regarded as bittering hops while those in the lower portion are normally prized for their aromas:

Cluster	40%
Eroica	35%
Galena	35%
Bullion	33%
Cascade	33%
Styrians	30%
Olympic	30%
Hallertau	28%
Tettnang	27%
Fuggle	25%
Nugget	25%
Spalt	24%

But there is more to the story than the particular constituents of alpha-acid. According to Stephen Kenny, hop research associate at the Washington State University research station in Prosser, Washington, certain contituents of hop oil are now more easily identified and measured than before.

"There are generally two kinds of aromas," Kenny explains, "The first group is known as herbal or spicy. *Hallertau* is a good example of this. We've found that sesquiterpene oxides and their oxidation products — such as humulene epoxides — are associated with this aroma.

"The second kind (of aroma) is called floral, and *Cascade* is the prime example. It seems to be related to terpene alcohols, with tongue-testing names such as gerional, geranyl isobutyrate, and linalool.

"Because we can more easily test for these components now, current research is giving us a picture on how we can select for aroma. Breeding programs will now look for aroma types which also enjoy good yields. Aroma is something we couldn't predict by analysis before, and aroma hops are an area our domestic growers could capitalize on," says Kenny.

In any event, it will take time. Growers are conservative folk — not tuned for skittishness. Brewers are even less adventuresome. Besides, bringing a new variety on line takes time — ten years or more. *Galena* and *Eroica* were first evaluated in 1970, *Nugget* in 1971. With USDA cutbacks, even more time will be needed.

Homebrewers can greet both the latest research and development of hop varieties, as well as the cutback in funds, with either calm or alarm. We have plenty of varieties to choose from now, and at any rate the cost to us in actual dollars is relatively small.

But for the growers and brewers, with accountant-infested front offices and the pressures of capital to bear, the press for new varieties will be squared against the traditional reluctance to change anything. It's a re-run of the old insurmountable force against the debilitating resistance.

As this little drama unfolds, we homebrewers shall sit content — able to enjoy the fruits of the most recent research and at the same time, to relax and enjoy a homebrew, and watch as the forces of history struggle about us, undisturbed.

Jack Riehl is Sports Information Director for Walla Walla's Whitman College in Washington State. He spends a lot of time at the Washington State Hop Research Station at Prosser and has grown his own hop garden for four years now. His collection includes *Cluster*, *Cascade*, *Bullion*, *Styrian Hallertauer*, *Tettnang* and *Fuggles*, with the latter being his favorite.



-Seck coarse grinding roller mill. The distance apart of the rolls is adjusted by means of a calibrated micrometer screw.



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GUINNESS PALE ALE

Guinness Pale Ale? Isn't it true that *Guinness* doesn't make an ale? Well, that may be, but this is a recipe from Guinness for their ale out of 1955, when an American brewery was licensed briefly to make the beer. Only one batch of this beer was made (about 270 bbls — 8370-USgals) and it was never sold commercially, as I understand it, because of the difficulties between the American brewer and the Irish licenser.

VERY PALE ALE ALA GUINNESS IN AMERICA

The following is a malt extract and grain adaptation. In AB-11, we'll publish the all-grain formulae in full.

INGREDIENTS

5.5-lbs (2.5-kg) pale malt extract syrup (1-tin), and dried malt extract (balance).

29-oz flaked rice (820-gm)

8-oz (225-gm) pale malted barley (6-row), for enzyme power.

Hops: Half ounce (15-gm) Goldng type, 2/3-oz (20-gm) Saazer or Hallertauer type. If you use pellets, reduce the amount by 20%. If you want a more "traditional" beer — double the hops.

Water: About 8-gram Burton formula (AB-1) or 1-tspn salt, 1½-t gypsum, ¼-t epsom salts, this for soft water, otherwise adjust to 1700ppm hardness.

Sugar: About 2-cups dextrose, (12-oz — 340-gm), 1), adjust gravity to 1059 and 2) one cup for bottling. Also you need about 6-oz (170-gm) malto-dextrin (glucose polymer) to buffer the ferment and maintain pH.

PROCEDURE

In a kettle with just less than a gallon (120-oz - 355-cl) at 108°F(42°C) add the flaked rice and coarse ground malted barley with half the water adjustment salts. Hold the temperature at 105°F(40.5°C) for 45-minutes and then raise the temperature to boiling slowly over a 50-minute period (check for starch conversion at about 150°F, and add amylase enzyme [1/2-teaspoon] if that seems necessary to speed conversion). Boil for 15minutes and strain into your brew kettle. Add a gallon of boiling water to the spent grains, stir and allow to settle, and again strain into the brew kettle. Add water in the brew kettle to the maximum boiling volume for vour equipment (or 5-gallons), along with the balance of water adjustment, the malt extract, dry and syrup. Bring the kettle to boil, and add a teaspoon of the Goldings when the kettle starts to boil, and after the "break" add about half a cup of dextrose and the malto-dextrin. The boil is for two hours. Add a third of the Saazer or Hallertauer hops after 45-minutes, and the remainder 45-minutes before striking. The remaining Goldings are added 15-minutes before striking the boil.

Cool to 68°F(20°C) and add two (2) packets of good ale yeast or one ounce of cultured yeast. Ferment and finish in your usual manner (dry hop with ½-oz Saazer pellets if you like).

BOOK REVIEW

Leistad, Rog, Yeast Culturing for the Homebrewer, 1983, Spencer IA; Leistad Services, P.O. Box 5226, Spencer IA, 51301, U.S.A., 41pp, Illus. \$3.50 from the publisher, or A.B.I.S.

Rog Leistad, a longtime homebrewer finally became disenchanted with dried yeasts and switched to culturing his own. His experiences and procedures are explained in his book. Everything you need to know, but didn't know you needed to know, is explained fully and concisely; from equipping your kitchen laboratory to sanitary procedures that would please your doctor and his hospital. No detail is left unexplained, and possibly that is my only real criticism of this book. But — as you know — I take great delight in more-than-you-wanted-to-know-ing you, and for that reason I like this book. It belongs in your library.

One of the more practical things that Mr. Leistad did before publishing was to conduct a survey about the need for such a book. He sent 102 surveys out and 59 were returned (58%). Some of the conclusions: 71% of the retailers thought there was a growing interest in yeast culturing, and about 69% thought some of their customers were culturing their yeast, although most of those thought less than 10 of their customers were doing



it. As for the reason why customers did NOT culture their own yeasts, most thought it was because they [customers] were satisfied with the dry yeasts available, other possibilities were that there was too much hassle or that there wasn't enough information available on the subject. If you have any idea of "sometime" going into yeast culturing, you need this book.

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*** CALENDAR OF EVENTS

Is there a home brew event coming soon near you? Perhaps one sponsored by your club or organization? Let us know, send all the details in time for us to publish them. There is no charge for this service. March 17, 1984, *Pac NW Advanced Home Brewing Seminar*. Portland State U., Portland, OR, Box 546, Portland, OR 97207. (503) 289-7596.

f.e.

March 30-HWBTA Beer Competition, Wyandette, MI. Entries must be submitted via local HWBTA (supplier), and be received by March 23, 1984. *Cork and Cap* 2960 — 1st St., Wyandette, MI 48192, (313) 281-1515.

April 2-6, 1984. Art and Science of Brewing, Graduate Professional Brewing Course. Center for Brewing Studies, 945 Union St., San Francisco, CA 94133, (415) 474-2337.

April 11-13, 1984, Home Wine & Beer Trade Association Conference, (HWBTA), Holiday Inn Marin, San Rafael, CA 1010 Northgate Drive, San Rafael, CA 94903 (209) 334-9112.

May 12, 1984, Oregon Homebrew Festival Competition, Old World Deli, 341 SW 2nd, Corvallis, OR, contact Shelley Curtis, (503) 745-5596.

May 29-June 1, 1984, National Homebrewers/ Microbrewers Conference. Fairmont Hotel, Denver, CO, AHA Box 287, Boulder, CO, (303) 447-0816.

June 1-2, 1984, Great American Beer Festival 1984, Denver, CO, (303) 447-0816.

(<u>Hansberg Clean</u>, continued from inside the front cover) Hansberg Malt Extract, beyond all measure of doubt is John Bull product." The announcement went on to say that <u>Dover Vinyards</u> (the U.S. Importer and labeller) "had no knowledge," but it was a little like declaring the hanged man innocent after the execution.

We immediately went in search for the <u>Hansberg</u> product to see for ourselves the truth of the <u>Paines</u> Company's accusations. The tins were the same size, the packaging similar, and the code markings on the tins nearly identical, so it seemed the <u>Paines</u> people had a good case.

German malt extracts in North America have always been scarce, and I know of only two other supplies, neither packaged in cans. As for price, the German product, if real, was certainly more costly than John Bull. I still wonder why any German brewer would bother to make malt syrup. Homebrewing in Germany is subject to so many regulations as to be impossible, and no German <u>Gasthaus</u> or <u>Privat</u> <u>Brauerei</u> would ever use malt extract to make beer, and anyway, why would any German citizen or resident make homebrew? Such a product entirely unnecessary in that beerdrinkers heaven. The only possible market is outside of Germany.

I contacted Kathy Goldman of <u>Dover Vinyards</u>, who told me that the tins in question had all been shipped to their retail destinations, and were not available for examination, but that she had examined the ones in their warehouse, and found them to be authentic. "If there is doubt in anyone's mind they should open a tin of each product (<u>John Bull</u> and <u>Hansberg</u>) and simply smell or tast--all doubt would be erased!"

Ms Goldman also sent me a copy of European Community <u>Certificate</u> of <u>Origin</u> No. B 0241371, testifying that the product in question originated in, and was manufactured in the "Bundesrepublik Deutchland" (W.Germany). She asked me not to reveal the manufacturer's name or address, since German Malt Extract producers are few and far between. They are indeed one of the best kept secrets in the retail and wholesale homebrew supply industry. The current <u>Hansberg</u> production is being packaged with different codes and tins to ensure that in the future there'll be no repetition of the problem.

The <u>American Homebrewer's Association</u> announced the formation of <u>The Institute for Fermentation and Brewing Studies</u> and a new publication <u>The New Brewer</u>, for microbrewers to be edited by Alan Dikty. For information write AHA, Box 287, Boulder CO 80306,(303)447-0816.

SUBSCRIPTION INFORMATION

over-the-Counter price, single issue \$2.50

Amateur Brewer Communications for the Serious Homebrewer is published quarterly. Annual subscription (4-issues) is \$10 (Canada \$11.75, other countries \$16).

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