

# Brewers' Guild Newsletter



Paying Taxes to the Crown (15th Century France),  
a True and Historic Brewing Tradition!

March Crown, A. S. XXX



## Brewers' Guild Ranking System

### DEFINITIONS:

Style - beer, wine, mead, cordial, or non-alcoholic beverage.

Public Service Work - teaching a workshop, submitting articles or art to newsletters, holding a contest or tasting, etc.

Proficiency - competency in a style, as judged by fellow brewers from a sampling of at least four different brewings.

### RANKINGS:

Apprentice - Anyone who wants to play and participate in the Brewers' Guild activities. (Is entitled to wear the Guild badge on a green field.)

Journeyman - Someone who is proficient in at least one style of brewing and has performed at least one public service work. (Is entitled to wear the Guild badge on a blue field.)

Craftsman - Someone who is proficient in at least two styles of brewing, and had performed at least three public service works. (Is entitled to wear the Guild badge on a red field.)

Master Brewer - To achieve this rank you must have attained the previous rank of Craftsman, be nominated by your fellow Craftsmen, and be approved by the other Master Brewers. (Is entitled to wear the Guild badge on a purple field.)

All members of the Guild are encouraged to donate bottles of their beverages to the Guild for use as "taxes" given to the reigning Royalty during court presentations.

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The Kingdom Brewer's Guild newsletter is an unofficial publication and is printed and published through donations and unofficial subscriptions. It is published at no cost to the Brewers' Guild or the SCA. Members who would like to have a newsletters mailed to their home (vice hoping to pick up a spare copy during Kingdom events) are welcome to donate \$ 5.00 per year to the Guild Chronicler. Both stamps and suitable coins of the realm will be gleefully accepted!

Welcome to the March Crown AS XXX edition of the Kingdom Brewer's Guild newsletter! Our wonderful lady, Lydia, handed over the newsletter to me at Twelfth Night and I look forward to the opportunity and challenge of publishing it. Comments, critiques, and articles / recipes for publication are encouraged!

We have many exciting things happening this tourney season, including competitions, classes in brewing techniques, and (most importantly) paying "taxes" to the Crown and various Royal Highnesses. Competitions and upcoming brewing events during this year include:

March Crown	Lager or cold-fermented beer.
Mists Coronet	Any brewed beverage from a documented period recipe
Cynagua Coronet	Stouts, Schwartzbeir, or other dark beer
Beltane	Wine. (Pay your taxes to the Crown!)
Cynagua Investiture	Anything brewed with honey.
Mists Investiture	Infusions, macerations, and extractions (any documented period beverage using these techniques, incl. teas or liqueurs)
June Crown	Root beers.
Purgatorio	(Pay your taxes to the Crown!)
October Crown	(TBA)
Mists Fall Coronet	(TBA)
Cynagua Fall Coronet	Wheat Beer.
Mists Fall Investiture	(TBA)
Cynagua Investiture	Lager or cold fermented beer.
Twelfth Night	(TBA) (Pay your taxes to the Crown!)
Twelfth Night (Lochac)	Brewing with honey competition.

While I shall endeavor to keep this list as current and accurate as possible, please contact our Kingdom Guildmaster and/or Principality representatives if you have any questions regarding these events. (Names and addresses are listed on the back page of this newsletter.)

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**Who fed you on the food of the god?  
Who gave you beer to drink, fit for kings...  
Let sweet beer flow through thy straw,  
Their bodies swell as they drink...**  
*Epic of Gilgamesh*

The ancient Sumerians may have been the first civilization to develop a sophisticated system for the mass production of quality beers. The oldest known recipe for barley beer is written in their "Hymn to Ninkasi", the Sumerian goddess of brewing:

**Miguel Civil's translation of the Sumerian "Hymn to Ninkasi".  
(Transcribed by Rick Myers)**

Borne of the flowing water (...), Tenderly cared for by the Ninjursag,  
Borne of the flowing water (...), Tenderly cared for by the Ninjursag,

Having founded your town by the sacred lake, She finished its great walls for you,  
Ninkasi, having founded your town by the sacred lake, She finished its great walls for you,

Your father is Enki, Lord Nidimmud, Your mother is Ninti, the queen of the sacred lake,  
Ninkasi, your father is Enki, Lord Nidimmud, Your mother is Ninti, the queen of the sacred lake.

You are the one who handles the dough [and] with a big shovel,  
Mixing in a pit, the bappir with sweet aromatics,  
Ninkasi, you are the one who handles the dough [and] with a big shovel,  
Mixing in a pit, the bappir with [date]-honey,

You are the one who bakes the bappir in the big oven, Puts in order the piles of hulled grains,  
Ninkasi, you are the one who bakes the bappir in the big oven, Puts in order the piles of hulled grains,

You are the one who waters the malt set on the ground, The noble dogs keep away even the potentates,  
Ninkasi, you are the one who waters the malt set on the ground, The noble dogs keep away even the potentates,

You are the one who soaks the malt in a jar, The waves rise, the waves fall.  
Ninkasi, you are the one who soaks the malt in a jar, The waves rise, the waves fall.

You are the one who spreads the cooked mash on large reed mats, Coolness overcomes,  
Ninkasi, you are the one who spreads the cooked mash on large reed mats, Coolness overcomes,

You are the one who holds with both hands the great sweet wort,  
Brewing [it] with honey [and] wine (You the sweet wort to the vessel)  
Ninkasi, (...) (You the sweet wort to the vessel)

The filtering vat, which makes a pleasant sound, You place appropriately on [top of] a large collector vat.

Ninkasi, the filtering vat, which makes a pleasant sound, You place appropriately on [top of] a large collector vat.

When you pour out the filtered beer of the collector vat, It is [like] the onrush of Tigris and Euphrates.

Ninkasi, you are the one who pours out the filtered beer of the collector vat,

It is [like] the onrush of Tigris and Euphrates. ♦



**The above recipe is very interesting, but even as translated from its ancient language into English still poses some riddles. However, several years ago a local brewing company (Anchor) decided to make the ancient beer and enlisted the help of brewers as well as historians to decipher the actual techniques used in making Sumerian beer. (The following interpretation of the recipe contained in the Hymn to Ninkasi is an excerpt from an excellent article by Don Sharp that is available in its entirety at the Stanford internet site.)**

### **Brewing an Ancient Beer**

"In combing the surviving Sumerian literature for a starting point, we examined the "Hymn to Ninkasi." This document, which dates to about 1800 B.C., sings the praises of the Sumerian goddess of brewing. The text, known from tablets found at Nippur, Suppar, and Larsa, had been translated by Miguel Civil of the Oriental Institute of the University of Chicago in 1964. Coded within the Hymn is an ancient recipe for beer. We would return to the Hymn time and again before attempting to brew the Ancient recipe. On several occasions we met with Civil to discuss parts of the text that were vague or ambiguous. In responding to our questions Civil was led to refine his translation of certain Sumerian words such as honey and wine. His revised translation of the hymn, presented here for the first time, allowed us to successfully re-create the Sumerian beer."

"When the "Hymn to Ninkasi" was written, beer was made using bread. But bappir, the Sumerian bread, could be kept for long periods of time without spoiling, and so it was a storable resource. We also know, from various annotations on bappir and beer in the Sumerian and Akkadian dictionaries, that bappir was eaten only during food shortages. In essence, making bread was a convenient way to store the raw materials for brewing beer."

"To make sense of the "Hymn to Ninkasi," we approached it on several levels. First, we had to determine if its sequence was linear. That is, did the ordering of the stanzas reflect the actual sequence of stages in a brewing process. Second, we had to examine the Hymn for metaphors and other literary devices that could give us clues to the meaning of the text. Third, we needed to decipher the specific steps that were suggested in each stage of brewing. Finally, we wanted to determine whether any of the stages of the brewing process had been left out. Our interpretation of the Hymn rested on a combination of the archaeological evidence - Sumerian texts, artistic representations of beer drinking, and artifacts once used in the consumption of beer, such as straws made of gold and lapis lazuli; a thorough knowledge of the stages involved in beer making, and an understanding of the biochemical and nutritional characteristics of barley and wheat-brewed beers."

"We soon learned that the Hymn was, in the broadest sense, a linear description of brewing - the preparation and heating of a mash in which enzymes convert the cereal starch into sugar, the boiling of the processed mash, or wort, the addition of flavoring and the fermenting of the wort using yeast to convert the sugar into alcohol and improve the nutritional content of the beer. By following the stanza-by-stanza instructions, we could duplicate the process used by the Sumerians."

"Stanza I refers to being "borne of flowing water." This conjured up images of the flowing of the Tigris and Euphrates rivers, which are known today for their high salt content. The dissolved mineral content of water can affect the quality of a brew. For example, calcium and bicarbonate have important effects on the acidity of beer.

Levels of calcium and magnesium are important in stabilizing enzymes and facilitating the fermentation process. The value and function of dissolved minerals in the waters of the Tigris and Euphrates, however, were probably not understood in antiquity. (Today, some of the best breweries are located over wells that flow through lime and dolomite deposits.)"

"In Stanzas II and III water is referred to again. Perhaps the reference to a sacred lake and great walls calls attention to the use of a lake as a reservoir for the irrigation of crops such as barley from which the beer was made. The sacred lake also attests the importance of religious belief in the production of beer. Stanza III also introduces us to the gods and goddesses who made up Ninkasi's family. A minor goddess in the Sumerian pantheon, Ninkasi's name literally means "you who fill my mouth so full." "

"Stanza IV addresses the particulars of Mesopotamian beer production. The process begins with bappir, a sweet and possibly pungent bread made from barley dough. It is mixed with "sweet aromatics" using a "big shovel... in a pit" and then baked (Stanza V). Bappir seems to have served several purposes. In brewing it served as a source of both hydrolyzed or gelatinized starch for rapid and efficient sugar production, and of proteins and flavors for the mashing process."

"The fermentation processes depended on enzymes from malted, i.e. sprouted, barley seeds for the conversion of starches to sugar. It is not surprising that "the noble dogs keep away even the potentates" (Stanza VI) since sprouted barley was a very delicate and valuable resource. Sumerian bappir probably contained little, if any, malt, and truly was a barley bread. Flour from malted barley containing the necessary enzymes was probably added later in the process."

"Unfortunately, the meaning of "aromatic" has not been sufficiently understood to determine which aromatic was used. However, it is almost certain that dates or date juice provided flavoring. Dates have the aromatic flavor that the Hymn specifies, but we did not know if the flavor would survive the fermentation process. Other candidates for the aromatic were skirret weed, a licorice-flavored plant, and "Assyrian root" or radish, both of which were added to bouza, an Egyptian beer made for the past 5,000 years and consumed until a few years ago when stricter laws on sanitization and vending curtailed production."

"Stanza VII describes the malt being soaked in a jar in which "the waves rise, the waves fall." Presumably this motion refers to the mashing process during which the malt and the bappir are combined with additional barley, (possibly including hulled and crushed seeds that have been toasted or heated to make it easier for the enzymes to convert their starch into sugar. Although it is not mentioned in the Hymn, the mash probably would have been heated if the process were similar to modern brewing methods. How the Sumerians maintained control of the mash temperature remains a bit of a puzzle. The correct temperature and timing probably developed as a result of skill and practice. The production of high quality beer may have become a profession because of the need for such expertise."

"In Stanza VIII the "cooked mash" is spread on mats. This action could have served two purposes. Spreading out the mash would have been an ideal way to remove the spent grains from the mixture, and it would also allow the liquid to drain. Cleaning out the spent grains would have been beneficial to Sumerian drinkers who otherwise would have had to rely on straws to bypass the hulls. By the time the Hymn was inscribed, a "filter" had become the symbol of professional brewers. Once filtered, straws were not necessary, and the beer could be consumed directly from cups. The Hymn states that after the "cooked

mash" has been laid out, "coolness overcomes." It is therefore highly likely that the mash was heated."

"After cleaning, the mash, now referred to as "wort," is placed in containers for fermentation. Fermentation proceeds best if the wort is cool, since the high temperature of the mashing step would kill heat-sensitive yeast. Thus the references in Stanza VIII to "coolness overcomes" is a crucial step that preceded the addition of yeast for fermentation. "

"Stanza IX, which describes brewing the "great sweet wort" with honey and wine, was difficult to understand. We were struck by the use of honey. Was it really honey, or was it date juice? Thanks to a reinterpretation by Sumeriologist Miguel Civil, we believe that "honey" meant date juice. Gestin, translated as "wine" was another matter. In Sumerian gestin means grape, wine and raisin. At this point in the recipe, yeast needs to be added to start the fermentation. Yeast occurs naturally on the skins of grapes and raisins. While it will survive the drying process, yeast on grapes fermented into wine will not remain active. Thus we reasoned that wine could be eliminated as a candidate for gestin, and that the Hymn refers instead to grapes or raisins."

"Stanza X mentions the fermentation (collector) vat. Long, narrow-necked vessels would have been preferred over vessels with large, open mouths. The latter form would have allowed too much mixture of the ingredients with air. Exposure to air would have increased the risk of secondary contamination, as well as allowing the acidity to decrease too much, resulting in a lower production of alcohol and stimulation of the growth of yeast."

"The "pleasant sound" in Stanza X probably refers to the trickling of the beer through the filter and into the fermentation vat below. Finally, in Stanza XI, the finished beer is poured out of the fermentation vat, and into the drinking containers. The pouring of the finished product must have been spectacular, the Hymn describes it as rushing out like the "Tigris and Euphrates." These rivers were the source of life for the Ancient Mesopotamians, so the reference to these two great waterways must have been symbolically connected to the Sumerians' appreciation of this fine fermented beverage."♦

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### Calculating Hops International Bittering Units (IBU)

It is possible to calculate a fairly good estimate of how much hop bitterness you will get from any combination of malt, grains, and hops. While not fool-proof, the following technique will help you produce beers that are close to what you had in mind for overall bitterness. It is much better than the "by guess and by golly!" method whereas you wait for 2-3 weeks to see if your new beer recipe is drinkable or not.

**Alpha Acids:** Find out the “percent alpha acids” (% AA) for the hops you plan to use in your recipe. The % AA can vary widely from batch to batch, so you should ask the supplier what the hop’s % AA at the time you buy each new package. Most hop labels include the % AA, with average ranges from 3.5 % (for hops such as Hallentauer) through 5.0% (such as some Kent Goldings) to 12.0% or higher (such as Galena hops). In our example, we will be using Kent Goldings hops with 5.6% AA and Hallentauer hops with 3.2% AA.

**Quantity of Hops:** Determine the quantity of hops called for in your recipe, including how long they will remain in the boiling wort. Hops added early in the boil contribute bitterness but little hops aroma to the finished product. Hops added in the middle of the boil contribute some bitterness and some aroma, although a lot of the “nose value” is driven off by the prolonged boiling. Hops added late in the boil (e.g.: the last 2 - 10 minutes) contribute little bitterness but lots of aroma. Hops used in a “dry hopped” technique where the hops are added to fermented beer and steeped for weeks contribute an intense hops aroma. In our example, we will be using 1.5 ounces of Kent Goldings for the full 60 minutes, and 0.25 ounces of Hallentauer for the last 10 minutes.

**Density of Wort & Boil Time:** Estimate the original specific gravity (OG) of your wort and how long of a total boiling time the recipe calls for. The OG, which is the weight of the wort compared to the weight of an equal volume of water, greatly affects how efficiently the hop oils will be extracted during the boiling of the wort. The following table gives the “hops utilization factor” needed for our IBU calculations:

Approx OG		1.040	1.070	1.100	1.130	1.150
Pounds Malt / Gallon Water		1 lb/gal	2 lbs/gal	3 lbs/gal	4 lbs/gal	5 lbs/gal
Total Boil Time	15 min	8	7	6	6	5
	30 min	15	14	12	11	10
	45 min	27	24	21	19	18
	60 min	38	27	23	21	20

In our example, we are making a German-style Pilsner with 1 pound malt extract per gallon of water, so our factors will be 30 (for the Kent Goldings) and 8 (for the Hallentauer).

**Calculate IBUs:** Now for the fun part! Multiply the %AA times the quantity (in ounces) of hops times the utilization factor, then divide by 6.98. Do this for *each* individual hops type and addition you want to conduct:  $((\%AA) \times (\text{ounces}) \times (\text{factor})) \div 6.98$ .

In our example:

Kent Goldings  $5.6 \times 1.5 \times 30 \div 6.98 = 36 \text{ IBU}$   
 Hallentauer  $3.2 \times 0.25 \times 8 \div 6.98 = 0.9 \text{ IBU}$   
**TOTAL HOPS BITTERNESS**  $36 + 0.9 = 37 \text{ IBU}$

If we now look up the IBUs for an average German Pilsner, we will see that this style of beer has a usual range from 30 to 40 IBU, so our recipe should produce a hops bitterness that is right for this style of beer! However, if you prefer your Pilsners a little less bitter, then all you need to do is reduce either the quantity, type (%AA), or boil time of your hops. If the bitterness is just right for you, but you prefer a strong hoppy “nose”, then you can add some more hops at the very end of the boil (e.g.: the last 2 minutes) or as a dry-hop to increase the aroma without an increase in the overall bitterness. Have fun!

During October Crown A.S. XXVI, I had the pleasure of tasting the finest tea-based cordial I have ever sipped! I recently ran across the recipe and want to reprint it, especially since the Mists Spring Investiture competition includes cordials!



#### Russian Tea Cordial, by Wulfric of Creigull

“This is loosely based on an old (non-alcoholic) family recipe. Shortly after making cordials for the first time, I said “Hmmm, I wonder how this would taste in vodka?” So I tried it out. After decanting it I tasted a sip and thought “I don’t like it, but it could grow on you”. More sugar and, “This is good!” Feel free to experiment. I ask only two things: please credit me with the original recipe, and tell me about / let me sample your efforts.”

2 ea oranges cut into chunks with peel attached  
 2 ea lemons cut into chunks with peel attached  
 1 stick cinnamon  
 4 ea whole cloves  
 2 Tbs. generic-type tea  
 vodka (Ed.: amount not given)

“Let sit in fruit until grayish. You may wish to remove the cinnamon and cloves after a week or so. Strain very carefully and add sugar syrup to taste. Absurdly simple, isn’t it?” (Ed.: Yes, and delicious, too!)

## Brewers' Guild Leadership

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*No phone calls after 9 PM, please...*

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This newsletter is an unofficial publication prepared by and for the members of the Brewers' Guild of the Kingdom of the West. The articles, opinions, and recipes published herein are strictly the responsibility of their authors and not of the SCA or the Kingdom of the West. (Now that the lawyers are happy... relax and have a home brew!)