

BEER IN GRECO-ROMAN ANTIQUITY

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ABSTRACT:

This thesis is an attempt to collect all the evidence for beer found in ancient Greek and Latin authors, from 700 B.C. to A.D. 900, and to provide analysis of and commentary on this material. The thesis is divided into three parts, one on the philology of beer, dealing with the various words and expressions for the beverage in Greek and Latin, one on the technology of beer, dealing with the methods of beer production in antiquity and the characteristics of the final product, and finally, one on the ideology of beer, dealing with Greek and Roman views concerning the drink and their subsequent influence on others.

107 words

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I would like to dedicate this dissertation to my father, professor emeritus Ralph Nelson, who has always proved to be a kind, generous, humble, moderate, and extremely wise teacher. I wish through this thesis to toast him with a pint of our foamy friend.

Parts of this thesis have been presented at various scholarly conferences. At the joint annual meeting of the Classical Association of the Canadian West and Classical Association of the Pacific Northwest, on March 10, 2000, organized by the University of Victoria, I presented a paper entitled "Did the Greeks and the Romans have a General Distaste for Beer?" At the annual meeting of the Classical Association of Canada on May 27, 2000 at the University of Winnipeg I presented "Posidonius on Beer." At the *Imagining Home(s): Exploring Culture, Language, Nation* conference on February 1, 2001 at the University of British Columbia I presented a paper entitled "The Rise and Fall of Beer in the West." On March 3, 2001 at the annual meeting of the Classical Association of the Canadian West Annual Meeting, organized by the University of Alberta, I presented "Environmentally-Induced Barbarity: The Case of Beer Drinking." Finally, on March 17, 2001 at the *Imperium Sine Fine* conference at the University of Michigan I presented "Beer on the Frontier." Finally, see also my website, www.ancientbeer.com.

CHAPTER 1

INTRODUCTION

The roots of this dissertation lie in the striking fact that practically all known ancient cereal-growing peoples drank beer though the classical Greeks and Romans usually did not. While it may be impossible to explain why this was so, the results of this preference are worth investigating. A study of the history of beer in Greco-Roman antiquity can be further justified for three reasons. First, no complete compilation and analysis of all the Greek and Latin evidence has ever been undertaken, and there is a substantial amount of sources: over 70 surviving authors from our manuscript tradition alone mention the beverage between 700 B.C. and A.D. 700, including such major figures as Aeschylus (and twice at that), Herodotus, Sophocles, Aristotle, Vergil, and Tacitus, and there exist also about 20 inscriptions and over 300 papyri which refer to beer. Second, the secondary literature on the history of beer is full of mistakes and spurious references.¹ Third, and perhaps most importantly, the Greek and Roman perceptions of the beverage have had a great impact and still influence us today.

I will begin by defining what I mean precisely by (1.1) "alcoholic beverage" and (1.2) "beer," then provide (1.3) a cursory history of beer. I will then outline (1.4) my basic aim, my methodology, and the scope of my research, and then note (1.5) the nature of our ancient sources on beer and (1.6) the existing modern scholarship related to it.

1.1 Alcoholic Beverages:

Alcohol, or more precisely, ethyl alcohol or ethanol, is a result of the conversion of sugars through the action of yeasts.² As Sherratt has pointed out, there were four principle

¹ See Appendix III for spurious references. Wilson rightly notes (1975: 639): "Beer is a popular subject, and the literature abounds in unsupported statements, misleading or inaccurate quotations and inadequate references." In general, I will not attempt to point out and correct all of the misinformation in popular works on the history beer (such as Bickerdyke 1889, King 1950, Hoffman 1956, Watney 1974, Porter 1975, Gocar 1987, Butcher 1989, Finch 1989, Smith 1995, and Glover 1997), though I will examine scholarly misconceptions.

² This will be discussed in more detail in sections 3.1 and 3.6 below.

sugars in antiquity which could be turned into alcohol: fructose, glucose, lactose, and maltose.³ Fructose was found mainly in fruits, which could be fermented to produce wine.⁴ In Greco-Roman antiquity, as today, grapes were the fruit of choice.⁵ However, there is also evidence for the fermentation of apples, apple-quinces, quinces, pomegranates, pears, myrtleberries, mulberries, rowanberries, dates, figs, plums, and lotuses (or jujubes).⁶ Glucose, also present in

³ Sherratt 1987: 91 and 1995: 24. Sucrose (or cane sugar) was not very well known in Greco-Roman antiquity; see, for instance, Strabo, 15.1.20 (694) and Pliny, *Hist. nat.* 12.17.32, both of whom consider it a type of honey found in a plant. For the great variety of intoxicants in antiquity, see, for instance, Heichelheim 1958: 77-78.

⁴ This definition of wine is of course modern. The ancients did use οἶνος/*vinum* of various fermented fruit drinks, but also of other intoxicants, even beer (as will be seen in section 2.1.2.2 below).

⁵ The literature on (grape) wine in Greco-Roman antiquity is naturally enormous, and cannot detain me here. For general treatments of wine in antiquity, see Billiard 1913 and Seltman 1957, and see also the general summary by Paterson 1996. For wine in Roman Italy, see Tchernia 1986. For recent archaeobotanical work, see McGovern, Fleming, and Katz 1996 (with the large bibliography at 339-402). Teodorsson (1989: 318) rightly points out that the "use of intoxicants other than wine was rather rare among Greeks and Romans." Purcell (1985: 2) claims that "the fermented grape was by far the commonest source of alcohol in the ancient world" and that "wine was the only widely available intoxicant" but these statements are certainly highly debatable.

⁶ A list of various fermented fruit beverages is given in Pliny, *Hist. nat.* 14.19.102-104 and Diosc., *Mat. med.* 5.20-75 Wellmann (= 5.28-83 Sprengel) (copied partly by Orib., *Coll. med.* 5.25). In what follows I provide a selection of sources only.

Apple wine or cider (οἶνος διὰ μήλων / *pomatium/vinum e melis*): Pliny, *Hist. nat.* 14.19.103; Pallad., *Agr.* 3.25.19; Jerome, *Epist.* 52.11 (266) (= T99); Carol. Magn., *Capit. de vill. imp.* 45 (= T179); *Geopon.* 8.17.

Apple-quince wine (μελίμηλον): Antyll. in Orib., *Coll. med.* 5.29.8.

Quince wine (κυδωνίτης οἶνος / *cydoneum*): Diosc., *Mat. med.* 5.20 Wellmann (= 5.28 Sprengel) (with Orib., *Coll. med.* 5.25.15-18); Ulpian in Just., *Dig.* 33.6.9 (= T84); Pallad., *Agr.* 3.25.19; Aët. Amid., *Libr. medic.* 5.139; *Geopon.* 8.27.

Pomegranate wine (ῥοϊτης οἶνος / *vinum de malis granatis/vinum e Punicis, rhoites*): Pliny, *Hist. nat.* 14.9.103; Diosc., *Mat. med.* 5.26 Wellmann (= 5.34 Sprengel) (with Orib., *Coll. med.* 5.25.22-24); Pallad., *Agr.* 4.10.10; Galen, *In Hippocr. de victu acut. comm.* 3.43 (= T70); *Geopon.*, 7.35.2. It is famously found also in *Cant. cant.* 8.2.

Pear wine or perry (ἀπίτης, ἀπίτης οἶνος / *piracium/piraticum/piratum/vinum de piris, e piris, piri*): Pliny, *Hist. nat.* 14.19.103; Diosc., *Mat. med.* 5.24 Wellmann (= 5.32 Sprengel); Pallad., *Agr.* 2.15.5, 3.25.11, 3.25.19; Jerom., *Jov.* 2.5; Carol. Magn., *Capit. de vill. imp.* 45 (= T179); *Geopon.* 8.5.

Myrtleberry wine or murrey (μυρτίτης, μυρσινίτης οἶνος/οἶνος ὁ μύρτινος / *myrtidatum/vinum myrtites, e bacis myrtae, e myrto*): Colum., *De re rust.* 12.38.1-4, 7-8; Cels., *De med.* 4.26.6; Pliny, *Hist. nat.* 14.19.104 and 23.81.161; Diosc., *Mat. med.* 5.28-29 Wellmann (= 5.36-37 Sprengel) (with Orib., *Coll. med.* 5.25.28-30, and see 5.31.12 [= T93]); Pallad., *Agr.* 2.18, 3.27, 31, and 13.2; Galen, *In Hippocr. de victu acut. comm.* 3.43 (= T70); *Geopon.* 7.35.1.

Mulberry wine (αἶμα μόρων [?] / *vinum e moris siccis/moratium*): *I Macc.* 6:34 (LXX) (?); Pliny, *Hist. nat.* 14.19.103; Carol. Magn., *Capit. de vill. imp.* 34 (= T178).

Rowanberry wine (οἶνος ἐκ οὔων / *vinum e sorbis, sorvis*): Verg., *Georg.* 3.379-380 (= T34); Pliny, *Hist. nat.* 14.19.103; Diosc., *Mat. med.* 5.24 Wellmann (= 5.32 Sprengel); Pallad., *Agr.* 2.15.5.

Date wine (φοινικίτης οἶνος/οἶνος ἐκ φοινίκων / *vinum e palmis*): Hdt., 1.193.4 (in Athen., *Deipn.* 14.651c); Xen., *Anab.* 1.5.10, 2.3.14 (partly in Athen., *Deipn.* 14.651b); Strabo, 16.1.14 (742) and 4.25 (783); Pliny, *Hist. nat.* 13.9.40, 14.19.102, and 23.26.52; Diosc., *Mat. med.* 5.31 Wellmann (= 5.40 Sprengel) (with Orib., *Coll. med.*

fruits, is the main type of sugar in honey, which, once diluted in water, could be fermented to produce mead.⁷ Other sources of glucose were occasionally also used, such as the sap of the palm tree.⁸ Lactose, the sugar found in milk, is presently fermented to produce koumish (or kumis, koumiss, or kumiz).⁹ Though milk was readily available, there is no certain evidence for the use of lactose alcohol in antiquity.¹⁰ Finally, maltose was produced from converting the

5.31.12); Athen., *Deipn.* 1.29c-d; Man. Phil., *Brev. exp. de eleph.* 148 (= T238). See Forbes 1965: 64, Stol 1994: 157-158, and Dalby 2000b: 404, n. 8.

Fig wine (συκίτης, τροχίτης οἶνος/οἶνος ἐκ σύκων, συκομόρων / *pharnuprium/sycites/trochis*): Pliny, *Hist. nat.* 14.19.102; Diosc., *Mat. med.* 5.32.1 and 33 Wellmann (= 5.41 and 42 Sprengel) (with Orib., *Coll. med.* 5.31.12); Jul. Afric., *Cesti* 1.19.26-33 Vieillefond.

Plum wine (*vinum e myxis*): Pliny, *Hist. nat.* 13.10.51. See Forbes 1965: 64.

Lotus or jujube wine (οἶνος ἐκ λωτού / *vinum e loto*): Thphr., *Hist. pl.* 4.3.1; Plb., 12.2.7-8 (in Athen., *Deipn.* 14.651e); Nepos, fr. 29 Marshall (in Pliny, *Hist. nat.* 13.30.106); Pliny, *Hist. nat.* 14.19.101; Man. Phil., *Brev. exp. de eleph.* 148 (= T238).

⁷ Mead was usually known as ὕδρόμελι / *hydromel* ("water-honey") or *aqua mulsa* ("honied water") in classical authors, though these terms could also be used for non-intoxicating drinks: see, for instance, Ps.-Arist., *Mir.* 22 (832a7-13); Colum., *De re rust.* 12.11-12; Cels., *De med.* 3.6.10; Pliny, *Hist. nat.* 14.20.113, 22.51-52.110-112, 26.30.48, and 31.36.69; Diosc., *Mat. med.* 5.9 Wellmann (= 5.17 Sprengel) (copied by Orib., *Coll. med.* 5.16); Pallad., *Agr.* 8.7; Galen, *De sanit. tuenda* 4.6.12 (= 6.274 Kühn = CMG V.4.2, 121.12-15); Ulpian, *Sabin.* (= T84); Ath. Med. in Orib., *Inc.* 23.3; Isid., *Etym.* 20.3.11; Carol. Magn., *Capit. de vill. imp.* 34 (= T178) and 62 (= T188); Rihcolf., *Epist. Ad Egin.* (= T191); *Conc. Mongont.* 11 (= T212); *Addit. Ad cap. reg. Franc. orient.* 55a, 56, 56a, 58, and 58a (= T216); and *Geopon.* 8.28.3 (= T220). Another term for it is μελίτειον: Plut., *Quaest. conv.* 4.6 (= *Mor.* 672b), 3.5 (= *Mor.* 653a), and see 3.2 (= *Mor.* 648e) (= T60), and *Vit. Coriol.* 3.4. A weaker form was known as μελίκρατον/μελίκρητον: Hippocr., *De vict. Acut.* 15 (= 2.336-348 Littré); Ps.-Hippocr., *De vict. acut.* append. 8 (= 2.424 + 428 Littré) and 9 (= 2.438 Littré); and Diosc., *Mat. med.* 5.9 Wellmann (= 5.17 Sprengel). In later sources the terms μέδος / *medus/medonis/met* are found: see, for instance, Priscus, fr. 11.2 (= T109); Fortun., *Vit. sanct. Radeg.* 1.15 (= T116); Anthim., *De observ. Cib.* 15 (= T118); Isid., *Etym.* 20.3.13; and Ps.-Bede, *Didasc.* (= T167-168). For the term μέθυ meaning "mead," see section 2.1.2.1 below. See further the evidence for mead presented in section 4.2.1.1 below.

⁸ Palm wine is mentioned in Hdt., 2.86.4; Diod. Sic., *Hist.* 1.91.5; and Pliny, *Hist. nat.* 24.102.163 and 164. See Forbes 1965: 64, and for this type of drink in more modern times, Buhner 1998: 128-134.

⁹ Keller, McCormick, and Efron 1982: 156. This beverage tends to be fairly low in alcohol.

¹⁰ Scythians are often called "milk-drinkers" (γαλακτοφάγοι) (for instance, Ephor., *Hist.* 4 [= *FGrH* 70F42] in Str., 7.3.8-9 [302-303] and Str., 7.3.7 [300] and 12.3.26 [553] [quoting Hom., *Il.* 13.6]) and Herodotus (4.23.3) speaks of Scythians making a drink from the fruit of the Pontic tree, a type of cherry, and milk, but he does not specify whether or not it is intoxicating; some scholars, however, assume that ancient Scythians had fermented milk (for instance, Rudenko 1970: 35 and Rolle 1989: 93). William of Rubruck made a report to King Louis IX of his visit to the court of Mangu Khan at Karakorum in A.D. 1253-1255 in which he said (4) that the Mongols drank *comos*, fermented mare's milk which tasted nice, produced an agreeable sensation, and was a diuretic (see also 2.9, 9.3, 10.5, 28.15, and 30.2; and see Sherratt 1995: 24). For other medieval references to fermented milk, see Bately 1980: 198 and Jackson and Morgan 1990: 81, n. 81.

starches in cereal into sugar, producing beer.¹¹

It must be realized that for the most part there did not exist the rigid categories of alcoholic beverages so familiar to us today since drinks were often produced from various combinations of fermentable products. Thus we know from Greco-Roman sources of fermented drinks combining different types of fruits,¹² cereals and honey (known in Middle English as “bragget”),¹³ grapes and honey (known in Middle English as “piment”),¹⁴ honey with other fruits,¹⁵ and even cereals and fruits,¹⁶ and archaeological finds also tend to show that some ancient peoples combined cereals, honey, and fruits.¹⁷ Further, numerous types of plants, spices, and other substances (such as narcotic drugs) could be added to the beverage before or after fermentation.¹⁸ The distinction between those substances which are meant to ferment and those

¹¹ Beer is thus unique among all the ancient forms of alcoholic beverages in beginning with a product which does not contain sugar (or at least not enough for a properly fermented beverage). See further section 3.3 below.

¹² Polyaeus (*Strat.* 4.3.32) says that Cyrus wrote that in Babylon and Susa “one supplies a wine half from dates and half vines [i.e. grapes]” (τὸν μὲν ἡμίσεα ἐκ τῶν φοινίκων οἶνον παρέχει, τὸν ἡμίσεα ἀμπέλινον).

¹³ See the discussion in section 3.5.1 below on honey beer.

¹⁴ Honeyed wine was known as οἶνόμελι / *oenomeli* or *mulsum* or μελιτίτης οἶνος / *melitites*: see, for instance, Eubul., fr. 129 Kassel-Austin; Cels., *De med.* 2.18.11 (= T36); Diod. Sic., *Hist.* 5.34.2; Pliny, *Hist. nat.* 14.6.53, 9.75, 11.80 and 85 and 22.53-54.113-115; Colum., *De re rust.* 12.39-41; Diosc., *Mat. med.* 5.7-8 Wellmann (= 5.15-16 Sprengel) (copied by Orib., *Coll. med.* 5.25.6-14); Plut., *Quaest. conv.* 4.6 (= *Mor.* 672b); Meleager, *Epigr.* 80 Gow and Page (in *Anth. Pal.* 12.164); Macr., *Saturn.* 3.11.9 and 16.16; Galen, *De sanit. tuenda* 5.8.12-13 (= 6.352-353 Kühn = *CMG* V.4.2, 152.9-20); Ulpian, *Sabin.* (= T84); Isid., *Etym.* 20.3.11; and *Geopon.* 8.25-26, 10.44, and 13.4.4. A drink of sour grapes and honey was known as ὀμφακόμελι or ὀμφακομελίτης οἶνος: Diosc., *Mat. med.* 5.23 Wellmann (= 5.31 Sprengel). Honey could also simply be added to wine at the drinking (rather than the fermentation) stage; see Diosc., *Mat. med.* 5.7-8 Wellmann (= 5.15-16 Sprengel); and see further Baudrillart 1907: 606 and Chapot 1919: 920-921. Theophrastus (*De odor.* 51) mentions the addition of honied dough to wine. For “piment,” see *OED*² 11:844, s.v. (honey wine with spices). Honeyed wine is known archaeochemically from Crete: Tzedakis and Martlew 1999: 168.

¹⁵ For instance, honey quince wine (Diosc., *Mat. med.* 5.21-22 Wellmann [= 5.29-30 Sprengel], with Orib., *Coll. med.* 5.25.19-21) or honey myrtle wine (Colum., *De re rust.* 12.38.5-6), for which, see Balandier 1993: 104.

¹⁶ See the discussion in sections 3.5.2 (date beer), 3.5.3 (grape beer), and 3.5.4 (berry beer) below.

¹⁷ See sections 3.5.1, 3.5.3, and 3.5.4 below.

¹⁸ For beer additives, see section 3.5 below. Here again I cite only a selection of texts. Wine with plants or spices: Theophr., *De odor.* 11; Colum., *De re rust.* 12.20.5; Pliny, *Hist. nat.* 14.8.68, 15.92-93, 19.101 and 105-112; Diosc., *Mat. med.* 5.18, 25, and 27 Wellmann (= 5.26, 33, and 35 Sprengel); Orib., *Coll. med.* 5.33.8-9; *Geopon.* 8.31. This is known from Crete (Tzedakis and Martlew 1999: 163-164) and was very

simply added to, or macerated in, a fermented beverage for flavour, is rarely maintained in our ancient sources. Thus there is frequent confusion between wine which was made from fermented honey and grapes, and grape wine with added honey. Similarly, modern scholars often take Posidonius (T27) as referring to honey added to wheat beer, rather than fermented with wheat to produce the beer (see further section 3.5.1 below).

Distillation (which with beer, produces whiskey) was known to the ancients, but was never used to produce liquors, as far as our evidence shows, until the Middle Ages.¹⁹

1.2 Beer:

I define “beer” as a drink made at least mainly of fermented maltose or fermented converted cereals (most commonly barley, wheat, and millet, in that order, but others as well, as will be seen in section 3.2 below). This implies the use of only three basic ingredients: cereal, water, and yeast. The use of the term “beer” in this sense is entirely modern. The etymology of the word is uncertain: a derivation from the Latin *bibere* (“to drink”) or *biber* (“a drink”), which is sometimes proposed, seems unlikely (as Dietz has recently argued) as is a

popular in medieval times (see Scully 1995: 147-151).

Wine with drugs: Hom., *Od.* 4.220-239, with Diod. Sic., 1.97.7 and Pliny, *Hist. nat.* 24.102.164 (unidentified); Diosc., *Mat. med.* 4.127 Wellmann (= 4.128 Sprengel), Pliny, *Hist. nat.* 25.40.81, and Plut., *Quaest. conv.* 1.1 (= *Mor.* 614b) (bugloss); Pliny, *Hist. nat.* 20.76.198-199 (opium); and Pliny, *Hist. nat.* 24.102.164 (the laughing plant).

Wine with pitch or resin (as preservative and for flavour; akin to modern *retsina*): Cato, *De re rust.* 110 and 113; Colum., *De re rust.* 12.20.3 and 6; Strabo, 4.6.2 (202); Pliny, *Hist. nat.* 14.6.57, 25.122-130, and 16.22.53-55; Diosc., *Mat. med.* 5.6.4 and 5.34 and 38 Wellmann (= 5.9, 44, and 48 Sprengel); Plut., *Quaest. conv.* 5.3 (= *Mor.* 676a-b). This is also known archaeologically, as seen in Knapp 1991: 28; Hostetter, Beck, and Stewart 1994; McGovern, Glusker, Exner, and Voigt 1996; McGovern *et al.* 1999; Tzedakis and Martlew 1999: 142-149, 156-157, 164, 187-189, and 206-208; and Dalby 2000b: 402.

Honey wine with rue: Pliny, *Hist. nat.* 19.45.156.

Mead with plants or spices: Plut., *Quaest. conv.* 4.6 (= *Mor.* 672b); Anth., *De observ. cib.* 15 (= T118); Rihcolf., *Epist. ad Egin.* (= T191); *CLG* III, 608.19.

Drinks (including wine?) with cummin: Posidon., *Hist.* 23, fr. 170 Theiler (= fr. 67 Edelstein-Kidd).

¹⁹ The process of distillation is first noted by Aristotle (*Meteor.* 2.3 [358b16-17], and see Alex. Aphrod., *In Aristot. Meteor.* 86.20-24 Hayduck) and is primarily found in Greek alchemical works (see Forbes 1948: 13-28 and the full treatment in Mertens 1995: cxvi-cxxx). Forbes (1948: 57-58 and 1956: 141, and see Derry and Williams 1960: 262 and Scully 1995: 158-165) dates the first alcohol distillation to the twelfth century in Italy (perhaps Salerno). For the possibility of alcoholic distillation already in Minoan Crete, see Tzedakis and Martlew 1999: 178-179.

connection to the hypothetical root **beura-* meaning “barley.”²⁰ Words related to modern English “beer” and German “bier” are first found in Teutonic languages in the ninth and tenth centuries A.D.²¹ There is no evidence that Old English *beor* (related to modern “beer”) was a cereal-based drink, and in fact it has been convincingly argued that it denoted a honey-based drink while *ealu* (related to modern “ale”), a distinct beverage, denoted a cereal-based intoxicant. In fact *beor* was used to translate Latin *ydromellum* and *mulsum* while *ealu* was used to translate Latin *celea* and *cervisa* (and variants).²² However, Old English poets did not carefully distinguish words for alcohol, and used them interchangeably because of requirements of alliteration and variation.²³ On the other hand, in Old High German *bior* was used specifically to designate a cereal-based intoxicant since a cognate for “ale” was by then already out of use.²⁴ In the fourteenth century “beer” came to designate hopped beers (which, at this time, were introduced, at least in large quantities, to England from Flanders and other northern

²⁰ From *bibere*, see *OED* 1989: 2:58, s.v. beer; Hehn 1911: 152; Schrader and Nehring 1917: 1:143; Spiller 1955: 89; Forbes 1965: 132; Fell 1975: 77, with n. 7; Moulin 1984: 18; Kramer 1997: 211; Dayagi-Mendels 1999: 113; and Dietz 2000. From **beura-*, see Fell 1975: 77, with n. 6.

²¹ Dietz 2000. Bammesberger (2000) suggests that the origins of Old High German *bior* and English *beor* are the Germanic **beuz-a*.

²² Fell 1975, with 77, 84, and 89 for the translations from Latin (for which, see also section 2.2.2 below). This was already argued by Kylastra (1974: 8-10), who further showed that *siceram* could be equivalent to *bior* (n. 5). In Old Norse *bjórr* was also a honey-based drink, and was used to translate Latin *mulsum* while *öl* (and *mungát*) was a cereal-based drink (Fell 1975: 87-89; see also Kylastra 1974: 12-13, who remains agnostic about the Old Norse terminology). Cognates of English “ale” are found in numerous other languages (such as the Scandinavian languages and Lithuanian and Estonian).

²³ Fell 1975: 82-83 and Whallon 1983 (with an analysis of the terms in *Beowulf*). For instance, in *Beowulf* the Danes drink *beor* (117, 480, and 531) at the Heorot mead-hall (*medo-aern*) (69), but also have *ealo* (495) and *medo* (604) at the same place, which is also called a *beor-sele* (483 and 492).

²⁴ Fell 1975: 89-90. The only evidence for a Germanic “ale” cognate is from the ninth century A.D. (Kylastra 1974: 11).

European countries) and “ale,” non-hopped beers.²⁵ Presently “beer” is used generically²⁶ and “ale” is used to designate only a type in contradistinction to “lager,” based primarily on differences in yeast (see section 3.6.2 below). In all cases “beer” is assumed to be made with hops, but I will nevertheless use the term in its widest sense, as a maltose-based alcoholic beverage.²⁷

1.3 The History of Beer:

The history of beer can be conveniently divided into several broad periods: from its beginnings to the first inclusion of hops (which is first certainly found in A.D. 822 [= T204], though hops became widely popular much later),²⁸ from the inclusion of hops to their extensive use in the eighteenth century,²⁹ and to the advances in yeast analysis, pasteurization, and refrigeration, with the resulting widespread development of lagers, in the nineteenth century, which have become the standard types of beer today.

²⁵ Kylstra 1974: 10 and Fell 1975: 88-89 and 91. The information about ale in the *OED* is incorrect. In the sixteenth century, Andrew Boorde wrote: “Ale is made of malte and water. ... Bere is made of malte, of hoppes, and water” (cited in Scully 1995: 153). Moulin (1984) contrasts “beer” as the hopped beverage with “cervesia” and other terms for unhopped beverages in the Middle Ages; though true to some extent, he exaggerates the total exclusiveness of the two words (while also unconvincingly stressing the Flemish origins of “beer”).

²⁶ The same process of a species term becoming a genus term occurred in Greek and Latin, as will be seen in section 2.1.3 below.

²⁷ In this respect I follow in the footsteps of the self-titled “cerevisiologist” (a word not found in the *OED*) John P. Arnold (1911: 41-42). In contrast the *OED* (1989: 2:58, s.v.) defines “beer” as a fermented beverage with malt and hops, and, for instance, Monckton (1969: 11) insists on speaking about ancient ale rather than beer. The problem of defining “beer” so strictly is exemplified in Robert and Rey (1985: 1:979, s.v. *bière*), in which the word “*bière*” is defined as a fermented drink made from malted barley and hops, shortly after which the Gauls are said to have called “*bière*” *cervisia*. Not only was the Gallic beverage made without hops, but it may well have been made with wheat, not barley, as I will attempt to show in section 2.2.5 below. The notion of the primacy of barley, just as much as that of the necessary use of hops, are both misguided.

²⁸ Arnold rightly notes (1911: 226): “With the utilization of hops in brewing begins a new era in the history of beer.”

²⁹ The invention of porter in the early eighteenth century is usually considered an important innovation, since it produced a cheaper, more commercially viable beer (see Derry and Williams 1960: 61, and especially Macdonagh 1964).

The origins of beer (as of alcohol in general) are necessarily nebulous. It is probable that different peoples independently discovered the fermentation of wild cereals.³⁰ The cultivation of cereal, which first began about 10,000 years ago in the Near East, may have been spurred on by a desire to have readily available cereals for beer-making, though it is just as possible that bread-making was the goal.³¹ The oldest positive proof for beer and wine dates to the second half of the fourth millennium B.C. In Godin Tepe in ancient Lower Mesopotamia (presently western Iran), a pale yellowish residue found in the grooves of a sherd (see Figure 1 to the right) from a vessel of a type linked with beer in the pictographic record, and dating from between 3500 and 2900 B.C. (when complex urban life was first beginning), was found to contain oxalate ion (probably calcium oxalate) in relatively large amounts within grooves on its inner surface, which is consistent with beer. Also, carbonised six-row barley was found at the site. At the same site, and dating from the same time, there was found residue of what was probably wine.³² Similarly, a place for the production of beer as well as beer residue, dating to around 3500-3400 B.C., has recently been discovered at Hieraconpolis in Upper Egypt.³³



Figure 1:
The Godin Tepe Sherd

³⁰ Spiller writes (1955: 86) of beer: "The discovery was made independently at different periods in various places." He assumes, however, that beer was only discovered after cereals were cultivated. Heath (1976b: 40-41) and Sournia (1986: 13) convincingly propose that the first alcoholic beverages were presumably made before the beginnings of agriculture.

³¹ Scholars on the whole tend to dismiss the theory that cultivation grew out of a thirst for beer: see Braidwood 1952, 1960; and Braidwood *et al.* 1953. However, this is sometimes taken for granted: see for instance, Katz and Voigt 1986, S. 1993: 28, and Smith 1995: 5-7 (citing Katz), and see Joffe 1998: 297. Sherratt (1987: 91-92 and 1995: 24-26) suggests that the production of alcohol did not begin in the Neolithic (as is usually thought), but later, and first in the Mediterranean basin. Lambert (1997: 135) places the origins of beer in the Near East as early as 6000 B.C. Since wine is easier to produce than beer (since the cereal does not have to be converted [see section 3.3 below]) it may have been made first; see Forni 1975: 74-75 and Singleton 1996: 72 (however, the opposite is argued unconvincingly by Ritchie 1981: 31).

³² Michel, McGovern, and Badler 1992 and 1993: esp. 412A-413A on beer.

³³ Finds: Geller 1993. Archaeochemical analysis: Maksoud, El Hadidi, and Amer 1994 (with Samuel 1996).

There have been numerous studies of beer in ancient Mesopotamia³⁴ and Pharaonic Egypt,³⁵ the results of which are far beyond the scope of this thesis to explore. However, the history of beer in other ancient civilizations has received much less attention. Only recently have there been treatments of beer among the Phrygians, Hittites, Syrians, and Israelites and Philistines.³⁶ There has been no full collection of the highly neglected European evidence.

1.4 Aim, Methodology, and Scope:

The aim of this thesis is twofold. First, I plan to collect all the ancient Greek and Latin information surviving on beer, supplemented by archaeological evidence.³⁷ My time limits will

³⁴ There is an excellent collection of essays on beer in ancient Mesopotamia in Milano 1994a, especially those of Michalowski, Milano (= 1994b), Neumann, Powell, and Stol. The standard monograph remains Röllig 1970. See also, especially, Hrozný 1910; Lutz 1922; Huber 1926b and 1938; Stuhl 1928; Hartman and Oppenheim 1950; Kramer 1963: 110-111; Civil 1964; Bottéro 1971: 303-304 and 1995: 53-54, 86, 91, 93, 99, 101, 105, and 218; Salonen 1970; Stol 1971 and 1995: 497; Röllig 1972; Corran 1975: 18-20; Mandelbaum 1979: 21-22; Jakob-Rost 1985; Katz and Maytag 1991; Stone 1991; Hallo 1993: 28-29; Renfrew 1995: 197-199; Damerow 1996: 153-157; Kahn 1996: 90; Neumann 1997; Joffe 1998: 303-305; Wartke 1998; Bober 1999: 62-65; and Dayagi-Mendels 1999: 113-117. Interestingly, Stol (1989: 325, and see Powell 1994: 91-92) argued that in Babylonian sources what is usually interpreted as beer is actually kvass, which is made from lactic acid bacteria (see already Neuburger 1930: 101 and 103). The only classical author to mention Mesopotamian beer explicitly is Julius Africanus in passing (T83).

³⁵ The most recent overview, with very full bibliography is Samuel 2000. The standard monograph is Helck 1971 (and see the review by Westendorf 1973). See also, especially, Hrozný 1910; Lutz 1922; Lucas 1928: 1-3; Huber 1926a; Kees 1933: passim; Helck and Otto 1956; Lucas and Harris 1962: 10-16; Wild 1966; Salonen 1970: 186-206; Corran 1975: 20-22; Helck 1975; Darby, Ghalioungi, and Grivetti 1977: 529-550; Mandelbaum 1979: 22; Pomeroy 1984: 163; Wilson 1988: 11-19; Watterson 1991: 130-131; Geller 1992, 1993, and 1998; Haslauer 1992; Samuel 1993, 1994, 1995, 1996a, 1996b, 1999; Ikram 1994; Merrington 1994; Sist 1994; Tyldesley 1994: 112-113; Kahn 1996: 90; Williams 1996; Joffe 1998: 299-300; Siebert 1998: 111-118; Bober 1999: 41-42; Bresciani 1999: 40; and Dayagi-Mendels 1999: 118-121.

³⁶ Phrygians: Sams 1977 and 1995: 1153; and McGovern *et al.* 1999. Hittites: Steiner 1971: 307 and Del Monte 1995, and see Hoffner 1974: 37 and 144. Syrians: Fronzaroli 1994: 124-127, and see Mazzoni 1994. Israelites and Philistines: Kellermann 1977 and Dayagi-Mendels 1999: 120 and 122-125, and see Yellin, Dothan, and Gould 1986 and Maeir and Garfinkel 1992. For Phoenician beer, see Giammellaro 1999: 58. For beer at Çatal Hüyük, see Mellaart 1967: 224.

³⁷ Though I think it highly unlikely that I have overlooked any classical literary reference to beer, it is virtually certain that I have not been able to collect all late antique and early medieval references, nor all relevant papyrological sources (which are published very disparately), though I have tried my best to do so. I have benefited from numerous computer-searchable collections of texts, including the *Thesaurus Linguae Graecae* CD-ROM, the *Packard's Humanities Institute* CD-ROM, and the *Patrologia Latina* CD-ROM. The absence of full indexes or a computer-searchable database for the *Patrologia Graeca* may mean that I have not been able to find all the references to beer in ancient and early medieval Greek Christian authors.

be set by the first Greek archaeological and literary evidence (Minoan and Mycenaean sites and the seventh century B.C. poet Archilochus, respectively) to the ninth century A.D., when hops are first found added to beer (the evidence in Egypt is conveniently cut off around A.D. 641 with the Arabic conquest); later sources are used when they illuminate the ancient material. All ancient Greek and Latin literary sources which mention beer are presented chronologically in Appendix I (and are numbered T1, T2, etc.). The epigraphic evidence is found in Appendix II (numbered E1, E2, etc.). The papyrological material (which includes not only papyri, but also ostraca and tablets), because of its sheer bulk, will simply be dealt with in the main text.³⁸ Second, I plan to extrapolate from this unified database or corpus of evidence, and analyse clinically, all that can be known about the beverage. This analysis will be structured around three main areas: philology (Chapter 2), technology (Chapter 3), and ideology (Chapter 4). The chapter on philology will include a diachronic linguistic examination of the ancient Greek and Latin terminology for beer, an essential primary step to determine how Greeks and Romans referred to the beverage before any meaningful further analysis can be made. I plan to show that (2.1.1) there was no Greek or Latin *vox propria* for beer, and instead (2.1.2) periphrases and (2.1.3) synecdoches were employed to refer generically to the beverage. I will then examine (2.2) each specific word for types of beer in Greek and Latin and finally (2.3) propose some general conclusions about the ultimate origins and meanings of the various terms by connecting them both with the location where the beer was found and with the cereals used for its production. The chapter on technology will include (3.1) a general discussion on the ancient beer production process, which, because of the relative paucity of evidence, must be done synchronically. I will then examine in detail the step by step production of beer, that is (3.2) the cereals used, (3.3) the conversion of the starches and insoluble sugars in the cereals into soluble sugars, (3.4) the baking or brewing stage, (3.5) the use of additives, (3.6) the fermentation of the cereal sugars and the use of yeast, (3.7) filtration, (3.8) storage and transportation, and (3.9) aging. I will conclude with a discussion of (3.10) ancient beer-drinking vessels and then with

³⁸ There has never been an attempt at compiling all papyrological references to beer. However, in preparation is the Italian *Corpus Papyrorum Graecarum* in which Greek papyri treating of the same subject are to be published together.

a look at (3.11) the evidence for ancient breweries and (3.12) the characteristics of the finished product. Finally, in the chapter on ideology I hope to show, by referring to recent cultural anthropological studies, how (4.1) the drinking of alcohol is a socially-constructed activity and how (4.2) it can act as a marker of identity and alterity. In the central portion of this thesis I plan to demonstrate how the Greeks and Romans, believing in the primacy of wine, perceived beer as a marker of barbarity and other unenviable states. This, I will argue, explains why beer continued to be excluded from the Greek and Roman diet, became marginalised in the spheres of medicine and war, and finally (4.3) remained long after in the West a product considered inferior to wine.

Hanson and Heath have argued that the discipline of classics is presently in decline mainly because of classicists themselves, who tend to be either overly reactionary, living in an ivory tower divorced from scholarly advances, or else overly trendy and opportunistic, following the newest theoretical fad (which, one could add, is often highly politicized and even more often thoroughly obfuscatory) for the sake of employment.³⁹ I aspire to work in a position between these two extremes. It has been very fashionable of late to declare that induction from facts is impossible since there is no “meta-narrative” in history, that is, that there is no absolute truth independent of individual perspectives (which are dominated by language, ideology, and culture). Needless to say I follow the conservative view that there are indeed historical facts and that it is possible to gain access to them. In so doing we must certainly be aware of the difficulties of the selectivity and objectivity of both our sources and ourselves,⁴⁰ but these need not fundamentally hinder our enterprise. Windschuttle, who has carefully attacked the anti-realist and relativistic theories recently appropriated by “historians,” has shown that history can only be properly studied if one adopts a scientific and empirical methodology of induction from

³⁹ Hanson and Heath 1998: esp. 81-160.

⁴⁰ I personally consider unsophisticated both the typical Greco-Roman approach of excluding at all costs a beverage (such as beer) and the typical barbaric habit of uncritically accepting any beverage (as outlined in Chapter 4).

the facts rather than deduction from theories.⁴¹ Correspondingly, in this thesis I attempt to approach my evidence with no general theoretical agenda, but benefit from scientific techniques, such as philology, archaeology (including archaeobotany and archaeochemistry), and cultural anthropology. My only agenda, apart from a constant quest for the pleasurable and ludic, is my wish to call attention to the unfair treatment of beer by Greeks and Romans (and their corresponding “vinocentrism”), and to explore its causes and its legacy, just as many classicists have shown how (and also, though less often, why) women, slaves, the disabled, foreigners, etc. were unfairly marginalised by Greeks and Romans. My main goal remains to present simply a comprehensive sourcebook along with synthesis and rudimentary analysis as a reference tool and propaedeutic for further study along more specialized lines.

1.5 Sources:

The Greek and Latin sources on beer can be divided into (1.5.1) the literary (or manuscriptural) evidence, (1.5.2) the epigraphic evidence, and (1.5.3) the papyrological evidence (which includes papyri, ostraca, and tablets). I have also supplemented these where possible with (1.5.4) archaeological evidence.

1.5.1 Literary Sources:

The earliest western reference to beer is a somewhat infelicitous one in Archilochus (T1), who probably knew the Thracian product at first hand.⁴² Historians, ethnographers, and geographers, beginning with Hecataeus (T2-3), Herodotus (T7), and Hellanicus (T9), mentioned

⁴¹ Windschuttle 1997: esp. 19. For the necessity of classicists to be generally wary of theory-based approaches, see also Fowler 1982, with Westra 1982.

⁴² For a discussion of how knowledge of beer spread among Greeks, see section 4.2.1.1 below.

the beverage in accounts of the mores of foreign peoples,⁴³ and references in popular fifth century poets (Aeschylus [T4 and 6] and Sophocles [T10] in tragedy and Cratinus [T8] and Antiphanes [T12] in comedy) show that knowledge of the beverage was fairly widespread.

Aristotle, spurred on by his indefatigable curiosity, was the first to discuss the differences between beer and wine, in his *Symposium* (T14), the topic of which was intoxication (see further section 2.2.8 below).⁴⁴ Indeed, following Plato, there was a long tradition of sympotic dialogues.⁴⁵ Plutarch, in his own sympotic dialogue (in which he mentions beer in passing [T60, and see 59 and 61], also contrasting it to wine), notes that such works were written by Plato, Xenophon, Aristotle, Speusippus, Epicurus, Prytanis, Hieronymus of Rhodes, and Dio the Academic.⁴⁶ Of all these authors, Xenophon mentions beer in his *Anabasis* (T13) but not in his *Symposium*, and Dio the Academic, probably in his *Symposium* (since Athenaeus mentions it in connection with Aristotle's *Symposium*), mentions Egyptian wine and barley beer (T24).⁴⁷ Theophrastus, it should be noted, also wrote a work on intoxication,⁴⁸ and did in fact mention beer in his works on plants (T16-17). It is most unfortunate that from Plato and Xenophon down to Plutarch, the numerous works on banquets and intoxication have been lost, and with them

⁴³ See further Ctesias (?) (T11) Xenophon (T13), Pytheas (T15), Megasthenes (?) (T18), Agatharchides (?) (T20), Dionysius Scytobrachion (?) (T21), Polybius (T22), Posidonius (T25-28), Diodorus Siculus (T29-33), Dionysius of Halicarnassus (T37), Strabo (T39-45), Pliny (T46-52), Tacitus (T58), Florus (T74), Cassius Dio (T75), Ammianus Marcellinus (T96), Priscus Panites (T109), and Paulus Orosius (T112).

⁴⁴ Other peripatetics also wrote works on intoxication, but none of the surviving fragments deal with beer; see Chamaeleon, frs. 9-13 Wehrli and Hieronymus Rhodius, frs. 25-28 Wehrli. For Theophrastus's work on the topic, see below.

⁴⁵ For the history of sympotic literature in antiquity, see Martin 1931 and, most recently, Laurenti 1987: 2:598-599, n. 3. For the symposium itself, see section 4.1.2.1 below.

⁴⁶ Plut., *Quaest. conv.* 1 (= *Mor.* 612d-e); see the commentary in Teodorsson 1989: 1:35-36.

⁴⁷ There is no evidence that Epicurus mentioned beer and Bignone (1936: 1:154) shows that Epicurus did not deal in his *Symposium* with the sorts of physiological questions that Aristotle did.

⁴⁸ This work is found in Diogenes Laertius's list (5.44), where it is said to have consisted simply of one book (he also lists a work by Theophrastus on wine and oil [5.45]). Otherwise, only Athenaeus quotes from it, and only mentions passages dealing with wine (*Deipn.* 10.423f [= fr. 574 Fortenbaugh *et al.*], 424e [= fr. 576], 427d [= fr. 570], 11.463c [= fr. 569], 465b [= fr. 573], 497e [= fr. 575], and 15.693c [= fr. 572]). See the commentary on these passages by Fortenbaugh 1984: 324-330.

probably a number of references to beer. Athenaeus, in his own sympotic dialogue, is the single most important extant source on beer from antiquity (T77-82): he cites references to beer in ten authors (Archilochus [T1], Hecataeus [T2-3], Aeschylus [T6], Hellanicus [T8], Sophocles [T10], Antiphanes [T12], Aristotle [T14], Polybius [T22], Dio the Academic [T24], and Posidonius [T27]) which have not survived in any other source. Indeed, almost all of the earliest references to beer, up to the end of the fifth century B.C., are based solely on Athenaeus; the only exceptions are one passage in Aeschylus (T4), one passage in Herodotus (T7), and a comic fragment of Cratinus preserved in Hesychius (T9/T102).⁴⁹

Beer seems to be absent from the Hippocratic writings,⁵⁰ but from the first century A.D. on it is often found in medical authors (see further section 4.2.1.3 below), including Celsus (T36), Dioscorides (T54-56), Aelius Aretaeus (T62), Antyllus (T66), Philumenus (T67), Galen (T69-72, and see 73), Plinius Secundus (T90), Oribasius (T92-95), Marcellus (T110-111), Cassius Felix (T114), Anthimus (T118), Aëtius of Amidena (T121-127), and Paulus of Aegina (T132).

References to beer are rarely found outside of the sorts of literary sources mentioned above. There is a single surviving Greek recipe (T89), there are verse (Vergil [T34], with section 2.1.2.1 below, and Columella [T53]) and prose (Julius Africanus [T83] and Leontinus T220/T222) works on agriculture in which beer is mentioned in passing, and the beverage is also found in Aelian's work on zoology (T76), in legal sources (Sabinus [T38], Ulpian [T84], and Justinian [T121]; see section 2.1.2.2 below), and in two other poems (Dio Chrysostom [T57] and Julian [T91]). Beer is found once in the *Septuagint* in Isaiah (T19), and in commentaries upon this passage (Eusebius [T87, and see 86], Cyril [T97], Theodoret [T98], and Jerome [T100, and see 99]). Finally, information on beer, and particularly the Greek and Latin terminology for it,

⁴⁹ It is interesting that Athenaeus does not cite these references, nor, for instance, the mentions of beer in Xenophon (T13) and Theophrastus (T16-17).

⁵⁰ Bickerdyke (1889: 27) mistakenly says that Hippocrates spoke about beer. However, beer is mentioned in Erotianus's glossary to Hippocrates (T35) and in commentaries of Hippocrates by Galen (T70-72).

can be gleaned from commentators, scholiasts, and lexicographers (T5, 23, 35, 63-65, 68, 88, 101-108, 160, 182-186, 210-211, 221, 224-235, and 239).

Whereas previously beer had always been mentioned in Greek and Latin texts as a foreign drink or medicine, beginning in the fifth century A. D. the beverage starts to be mentioned as a regular item of diet as the authors of our sources in the West become beer-drinkers themselves, and, after the seventh century A.D., authors usually no longer feel compelled to define what beer is (see further section 4.3.3 below). More than half of the literary sources which I discuss are actually post-classical (that is, they date to after A.D. 476). I have decided to include these passages for four reasons: first, as with the ancient evidence, this evidence has never been fully collected or discussed, and much of the material is obscure; second, much of it has remained untranslated and is here translated into English for the first time; third, these passages include the first extant references to brewing (see section 3.4.2 below) and to the addition of hops (see section 3.5.9 below), and provide important evidence for malting (see section 3.2.2.4 below); and fourth, and finally, these passages demonstrate how the Greek and Latin view of beer continued to exercise an influence even once beer was commonly drunk.

1.5.2 Epigraphic Sources:

Not surprisingly, there is not a great deal of Greek and Latin epigraphic evidence for beer. Much of it comes from Gallic territories, including a spindle whorl (E1), inscribed beer vessels (E5, 6 [?], 7, 8, and 15 [?], and see 14 [from Mainz]), inscriptions on stone mentioning beer-makers or -sellers (E9-13), the mention of an individual who seems to be nicknamed "Cervesa" (E2), and an inscription recording the gift of beer to the populace (E4). One inscription from Britain may refer to an aspect of Mars as beer god (E3; see section 3.3.2.4 below). A number of inscriptions preserve the sections of the Emperor Diocletian's A.D. 301 price edict in which wine and beer are mentioned (E16). Finally, two Greek inscriptions on stone from Egypt parallel the material on papyrus (E17-18) while two other inscriptions from

Axum, Nubia, provide unique evidence about King Aeizanas capturing beer when he subjugated the Bougaeittoi peoples in the fourth or the fifth century A.D. (E19).

1.5.3 Papyrological Sources:

Some of our most important Greek sources for beer are the many papyri discovered in Egypt. The evidence from Egypt is by far the most extensive for two main reasons: the large consumption of beer there, and the extensive survival of everyday type literary sources in the form of papyri. The papyri generally fall into one of two broad categories: official documents involving the Ptolemaic or Roman government monopoly and taxation of the production and selling of beer (for which, see sections 2.2.11 and 4.3.2 below) or passing references to beer or beer-makers in various types of texts (including one magical papyrus, for which see section 4.1.1.1 below). The official documents often involve discarded sherds (ostraca) or scraps of papyri (often found in groups) which include accounts or receipts written by government officials, beer-makers, or beer-sellers.⁵¹ An exception is the Zenon archive, consisting of letters of the third century B.C. Philadelphia official Zenon, on numerous matters, including, in a number of cases, beer production.⁵² Other texts include such varied matters as reports to the police (from the first and second centuries A.D.)⁵³ and beer supplies to the Roman army in the late Empire (see section 4.2.1.4.3 below).

Another significant source of information are the many writing tablets discovered in the

⁵¹ For instance, the set of ostraca from Tebtunis involving beer tax dating to Roman times: *O.Oslo* 12, *O.Stras.* 165, *O.Tebt.* 1-2, and *O.Tebt.Pad.* 28-32, 34, 36, 38-40, 42-48, 50-53.

⁵² The papyri from the Zenon archive in which beer is mentioned are: *P.Cair.Zen.* II.59176 (July, 255 B.C.), *P.Cair.Zen.* II.59189 (November 16, 255 B.C.), *P.Col.Zen.* III.42 (254 B.C.), *P.Cair.Zen.* II.59199 (= *SB* III.6738) (April 29, 254 B.C.), *P.Mich.Zen.* 36 (May 7, 254 B.C.), *P.Col.Zen.* III.34 (May 21, 254 B.C.), *P.Cair.Zen.* II.59202 (= *SB* III.6739) (May 23, 254 B.C.), *P.Lond.Zen.* 1976 (March 24-April 22, 253 B.C.), *P.Cair.Zen.* II.59297 (250 B.C. [?]), *P.Lond.Zen.* 2002 (c. 249 B.C.), and, of unknown date, *P.Cair.Zen.* III.59403, IV.59791, *P.Lond.Zen.* 2153, 2161, 2166, and 2170, and *P.Zen.Pestm.* 63 (= *SB* III.6803).

⁵³ *P.Ryl.* II.127, 145 (a break-in by a beer-maker) and *P.Tebt.* II.331 (a complaint about having been beaten and having had clothes, scissors, and beer, among other things, stolen [from a bibulous barber?]).

Roman fort of Vindolanda on Hadrian's wall and only published in the last twenty-five years or so (see section 4.2.1.4.2 below).

1.5.4 Archaeological Sources:

There have been some scattered archaeological finds relating to beer in Europe.⁵⁴ Breweries have been found in Belgium, Germany, and Britain (see section 3.11 below) and, through archaeochemical and archaeobotanical analysis, malted grain (see sections 3.3.2.2 and 3.3.2.3 below), beer additives (see section 3.5 below), and even beer residue, have been detected in Europe.⁵⁵

1.6 Modern Scholarship:

Classicists can rarely be trusted to provide a thoroughly accurate account of ancient beer, while experts on beer usually write about ancient history with disastrous results. The modern scholarship on ancient beer seems to have begun with Heinrich Meibom's (1638-1700) treatise of 1668 entitled *De cerevisiis et vino*. In 1814, Christian Gottfried Gruner (1744-1815) appended to his edition of an ancient recipe for beer preserved in the works of Zosimus of Panopolis (= T89) a brief history of beer in antiquity. Both of these studies apparently simply involved collections of some of the most important ancient Greek and Latin sources.

The first ambitious work on the history of beer was John P. Arnold's book of 1911,

⁵⁴ For the archaeological evidence, see Maps 2 and 3, along with, for instance, the discussions at 3.5.4, 3.5.6, 3.5.7, 3.5.8, 3.5.9, 3.8.1, 3.10, 3.11, and 4.2.1.1.

⁵⁵ Van Zeist (1991: 118-121) discusses the first two types of evidence. For beer additives, see also Behre 1984, 1992, 1998, and 1999. For beer (and wine) finds generally, see Kroll 1991. For beer finds in England and Scotland, see Dickson 1978: 111 and 112, Dineley 1996, and Dickson and Dickson 2000: 78-84 and 262; for Germany, see Stika 1996a, 1996b, 1998a, and 1998b and Rösch 1999; and for Spain, see P. 1999. For finds in Iran, Egypt, and Phrygia, see section 1.3 above. Forni (1975: esp. 68-70) argues that more important than the palaeobotanical evidence for alcohol in antiquity is the anthropological study of a culture's level of technology, assuming that at a certain level a culture will ferment available fruits; surely it is important to approach the evidence using both palaeobotany and anthropology. For a bibliography of organic residue analysis work relating to antiquity, see Tzedakis and Martlew 1999: 284-287.

which was meant to elucidate its origins (which it never really does), and which was prompted by an explicit agenda to praise beer as a “harmless, wholesome and natural beverage” at a time of serious concerns with temperance.⁵⁶ It is an amateur work filled with irrelevant historical digressions and egregious deviations from its main topic, not to mention all sorts of mistakes. Nevertheless, Arnold does collect some interesting information and now and again has some notable insights. He boasts of his use of comparative philology, which is marshalled to some degree of success with the ancient Celtic terminology for beer.⁵⁷

The fullest general account of beer in antiquity remains that of Schulze-Besse (1926-1928), which is outdated and not always very scholarly. Recently there have been German collections of essays on various general aspects of beer in antiquity,⁵⁸ but there remains no comprehensive account of beer in Europe or of beer from the Greco-Roman perspective.⁵⁹

⁵⁶ Arnold 1911: xii. Contrast Eddy 1887, a history of alcohol from the point of view of an adherent to the temperance movement.

⁵⁷ See Arnold 1911: x-xi and 142-154.

⁵⁸ Ruprechtsberger 1992 and Both 1998.

⁵⁹ For partial treatments of the Greek and Latin evidence, aside from works cited above, see: Wessely 1887; Olck 1899; Hehn 1911: 144-154; McKinlay 1948; Forbes 1951; Forbes 1954, 1956, and 1965; Schrot 1964; Krenkel 1965; Hopf 1976; André 1981: 177-178; Masonen 1991; Compton-Davey 1995; Gutsfeld 1997; Kramer 1997; Volke 1998; and Valiño 1999.

CHAPTER 2

THE PHILOLOGY OF BEER

In this chapter I will look first at (2.1) the general nature of the Greek and Latin terminology to denote beer, and then look at (2.2) the specific terms used in ancient Greek and Latin for various types of beer, and finally (2.3) propose some conclusions about the terminology as a whole.¹

2.1 The Nature of the Greek and Latin Terminology

I plan to explain, first, (2.1.1) that the Greeks and Romans had no *vox propria* for what I call “beer” (see section 1.2 above), and then I will show how they used (2.1.2) periphrases and (2.1.3) synecdoches to describe it.²

2.1.1 The Lack of a Greek or Latin *vox propria* for Beer:

My use of a generic term to denote beverages made from fermented maltose sugar, and my delineation of types of alcoholic drinks (as found in section 1.1 above) are strictly without ancient precedent, and are necessarily imposed on the Greek and Roman evidence. There was no single word in classical Greek or Latin equivalent to our term “beer,” though the generic category of alcoholic beverages made from fermented cereal was recognized at least by Roman Imperial times. Hecataeus (T3), Strabo (T44), and Cassius Dio (T75) grouped a barley beverage with one made from millet, while Hellanicus probably connected a beverage from rye with one from barley (T8), Theophrastus (T16), Tacitus (T58), and Ammianus Marcellinus (T96), among others, one from barley with one from wheat, and Strabo (T42) and Pliny (T50), one from rice

¹ I should note that when in this chapter I cite the reading of a text proposed by a scholar without citing a work from my bibliography I have taken the reference from the apparatus of the edition I use for the text in question (for the editions used, see section 1.1.2 of my bibliography).

² For the Greek and Latin terminology for malt, see section 3.3.2.4 below; for the possible terminology for beer in Linear B Greek, see section 4.2.1.1 below.

with one from barley. More importantly, in the first century A.D. Dioscorides (T55a) speaks of “such drinks” (τοιαῦτα πόματα) when speaking of barley and wheat beers while Celsus (T36) and Pliny (T48-49 and 51-52) explicitly speak of a genus of intoxicating drinks made from cereals. Julius Africanus too lists various beers together (T83).³

If, then, the genus “beer” was recognized, why was there no *vox propria* for the drink? The main reason may be that the Greeks and Romans simply did not feel the need for such a term since the product was considered so esoteric, and was probably not easily obtainable, especially when the popularity of wine accompanied the political expansions of the Greeks and Romans. In the places where beer-drinking was first and most commonly observed it seems that Greek terms may have been applied to the beverage: βρῦτος for Thracian beer and ζῦθος for Egyptian beer. These terms then came to be used more widely of other beers (as will be seen in sections 2.1.3.1 and 2.1.3.2 below, respectively, and see also section 3.4.3 below).

Another reason for the lack of a *vox propria* may have been that the genus “beer” was not popularly recognized, but was rather only a product of the erudition of a few upper class authors.⁴ That this was the case, or at least that the genus “beer” was no longer recognized by Byzantine times, is suggested by a unique classification by a certain Leontinus (whose exact date is unknown). The tenth century A.D. *Geoponica* (T220/T222) quotes him under the heading (signalling the quite evident fact) “That not only wine but also other things drunk cause intoxication” (ὅτι οὐ μόνον ὁ οἶνος, ἀλλὰ καὶ ἕτερα τινὰ μεθύειν ποιεῖ τοὺς πίνοντας). Leontinus lists as intoxicants: 1) wine (οἶνος), 2) water (ὕδωρ) (according to some paradoxographical accounts),⁵ 3) wheat and barley drinks (τὰ ἀπὸ τοῦ σίτου καὶ τῶν κριθῶν

³ Occasionally a type of beer is found pell mell with other types of intoxicants, as in Plutarch (T60-61) and Ulpian (T84).

⁴ Conversely, it is possible that our elite sources distort our evidence, and that beer was commonly known and perhaps even drunk (as, for instance, by farmers), though no evidence for this has survived.

⁵ For intoxicating water, see the sources collected by Giannini 1965: 103 (on Antig., *Hist. mir. coll.* 164). Note Pliny’s comment that beer is intoxicated water (T48). Apparently, because wine was produced directly from the juice of grapes it was not considered watery like beer; note also the term “juice of cereals” to refer to beer (see section 2.1.2.4

γινόμενα πόματα), 4) rice and oat drinks (τὸ ἀπὸ τῶν ὀλυρῶν, καὶ τὸ ἀπὸ τοῦ βρόμου γινόμενον πόμα), and 5) drinks made from two types of millet (τὸ ἀπὸ τοῦ κέγχρου καὶ ἐλύμου). It is striking that Leontinus divides into different categories (his last three) what we would consider to be under the same genus “beer.” Also, it is strange that Leontinus does not mention the many intoxicants made from various fruits or from honey (listed in section 1.1 above), unless he considered them subsumed under the term οἶνος. He also mentions types of beer (oat beer and possibly Italian millet beer) which are found nowhere else in the extant ancient literature, as will be seen again in section 3.2 below. It is difficult to judge the exact import of this unique testimony. If it was written around the time of the *Geoponica* where it is quoted, that is, in the tenth century A.D., it could simply attest to a general ignorance of beer in the Greek East at a time when beer was quite popular in the West. However, this text may be much earlier in date, and could, along with the nature of the rest of our evidence, help to reinforce the conclusion that beer was never really comprehensively understood by Greeks and Romans.

Since there was no *vox propria* for beer, the ancients had to use (2.1.2) periphrases or (2.1.3) synecdoches to speak generically of fermented cereal beverages.

2.1.2 Periphrases for Beer:

There were four major periphrases for beer, found both in Greek and Latin: (2.1.2.1) an intoxicant (μέθυ / *fermentum*) made from cereals, (2.1.2.2) a wine (οἶνος / *vinum*) made from cereals, (2.1.2.3) a drink (πόμα/πόσις/ποτόν/πῶμα / *humor/liquor/potio/potus/tisana*) made from cereals, or (2.1.2.4) a juice (χυλός / *ius/succus/sucus*) made from cereals. All the collocations are shown in Table 1 on the following page.

below).

TABLE 1: GREEK AND LATIN PERIPHRASES FOR BEER			∞ = can be omitted
μέθυ	κατασκευαζόμεν- ∞	ἐκ ∞	cereal type (gen. sing. or plur.)
οἶνος	πεποιημέν- ∞ χορηγούμεν- (?) ∞		
πόμα / πόσις / ποτόν / πῶμα	γενόμεν-/γινόμεν- ∞		
χυλός	adjective from the cereal ending in -iv- (sometimes alone)		
<i>fermentum</i> (used alone)	[fact- ?] ∞	ex / e	cereal type (abl. sing. or plur.)
<i>vinum / vini genus</i>			
<i>humor / liquor / potio / potus</i> <i>/ tisana</i>			
<i>ius / succus / sucus</i>			
	cereal (gen. sing. or plur.)		

2.1.2.1 Intoxicant (μέθυ / *fermentum*):

Not only was there no *vox propria* for beer, but a *vox propria* for alcohol scarcely existed in Greek or Latin (as evidenced again by the Leontinus's periphrasis "things drunk which cause intoxication" [T220/222] as seen in section 2.1.1 above). The term μέθυ could be used generically for an intoxicant (as could οἶνος, as will be seen in section 2.1.2.2 below), but it seems that, though the ancients understood that many different types of beverages had the property of intoxicating the drinker, they did not identify in them a common substance, which we call "alcohol" (nor did they, for that matter, recognize the presence of fermentable sugars).⁶ Non-alcoholic substances, such as narcotic drugs, were also placed in the same category of

⁶ Fell says (1975: 89) that the word σίκερα / *sicera* "clearly had a meaning almost as general as 'alcohol.'" However, wine was usually excluded from this designation, and thus it was not normally used as a word equivalent for "alcohol;" see further section 2.1.3.4 below. Aristotle (T14) distinguished between the effects of wine and beer, clearly not understanding that both contained the same substance (see section 2.2.8 below). Furthermore, yeast was thought to be active in at least some types of beer but not, at least usually, in wine (see sections 3.4.3 and 3.6.3 below).

intoxicants.⁷ Originally, it seems, μέθυ meant simply mead, that is a drink of fermented honey. Not only is the English word “mead” related to μέθυ, but in Sanskrit, *madhu* means mead, leading back to a probable Indo-European root **médhu*.⁸ In time μέθυ came to be applied to wine: Homer already certainly uses μέθυ in this sense, since at least in one case he equates μέθυ and οἶνος.⁹ However, it is possible that in some cases Homer, as well as others, may have used μέθυ with its original meaning of mead.¹⁰ In any case, from μέθυ were formed the terms μεθύω (“I am intoxicated”), μεθύσκω¹¹ (“I make intoxicated”), μέθη (“intoxication”), μέθυσος¹² (“intoxicated”), μεθυστικός (“intoxicating”), μεθυμναῖος¹³ (“intoxicator”), as well as ἀμέθυστος (“not intoxicated,” applied to a plant and stone which were believed to prevent intoxication).

Now Aeschylus uses the commendable phrase μέθυ + ἐκ + the cereal to describe beer (T4). This is the most accurate periphrasis used for beer among ancient authors, a surprising fact for an author who in general is not conspicuous for his clarity.¹⁴

⁷ See, for instance, Herodotus’s reference to Armenians becoming intoxicated from inhaling narcotic incense (1.202.2): “They become intoxicated from the smell like the Greeks from wine” (μεθύσκεσθαι τῇ ὁσμῇ κατὰ περ Ἑλλήνας τῷ οἴνῳ). Also, Dio Chrysostom says (32.56): “Among some barbarians they say a mild intoxication is produced from the fumes of certain incenses” (παρὰ μὲν γὰρ ἐνίοις τῶν βαρβάρων μέθην φασὶ γίνεσθαι πραεῖαν δι’ ἀτμοῦ θυμιωμένων τινῶν).

⁸ Pokorny 1994: 1:707. For the different languages with this root, see Curtius 1875: 1:322 and Chantraine 1968: 676, s.v.

⁹ Hom., *Il.* 7.467 (οἶνος) and 471 (μέθυ); also the word μέθυ is glossed as οἶνος in the *Suda* (μ437), where the latter line of Homer is cited. The two terms are also used synonymously by, for example, Plutarch (*Quaest. conv.* 4.6 [= *Mor.* 672b]).

¹⁰ Aristotle, for instance, couples the terms μέθυ and οἶνος (*Phys.* 1.2 [185b9]), as if retaining the sense of “mead” for the former; I owe this reference to Christopher Morrissey. Whallon (1983) argues that the term usually meant “mead;” see also Brown 1995: 139.

¹¹ This verb is noted by a scholiast on Aeschylus (T5) in relation to his citation of beer (T4).

¹² This term is sometimes said to be used only of women: Phrynic., *Ecl.* s.v. (= 151 Lobeck) and Athen., *Deipn.* 1.1e.

¹³ This is a title of Dionysus: Plut., *Quaest. conv.* 3.2 (= *Mor.* 648b) (= T60) and Athen., *Deipn.* 8.363b.

¹⁴ Sommerstein (1990-1993) even detects here a sexual *double entendre* in this expression; this will be discussed in section 4.2.3.2.2 below.

In Latin *fermentum* could be used both generically of intoxicants (“that which is fermented”) and to mean yeast (“that which ferments”).¹⁵ There is some slight evidence that *fermentum* could be used to denote beer. A glossary defines ζύθιον as *fermentum* (T186), while Hesychius defines ζύθιον as <ἐξ> ἀλφίτου πόσις (T105), clearly a type of beer (as will be seen in section 2.2.11.1 below).

It is sometimes thought that Vergil already used *fermentum* to denote beer. In his *Georgics* he wrote of the Scythians (T34):

*hic noctem ludo docunt, et pocula laeti
fermento atque acidis imitantur vitea sorbis.*

Here they pass the night in fun and joyfully copy
vine drinks with *fermentum* and sour rowanberries.

Vergil refers here no doubt to a fermented beverage made from the sour rowanberry or *Sorbus aucuparia* L (see the references to this type of wine in section 1.1 above), as Abbe has convincingly shown.¹⁶ However, the use of *fermentum* by Vergil makes the passage ambiguous: he could be referring to one drink made from “yeast” (i.e. “that which ferments”) and rowanberries, or to two drinks, an “inebriant” (i.e. “that which is fermented”) and a rowanberry wine. Both interpretations are found among modern scholars.¹⁷ The latter option is more troublesome, since it seems odd that Vergil would speak generically of an intoxicant while also providing a specific reference to rowanberry wine. At first sight then, the former option seems

¹⁵ See, for instance, the definition of *fermentum* as πόμα ἀπὸ ζύμης (“a drink [made] from yeast”) at *CGL* II, 413.22 and as ζύμη (“yeast”) at *CGL* II, 322.44 and elsewhere. The Latin *ebrietas* from the verb *ebrio* can, like Greek μέθυσ, refer to an intoxicant (see section 2.1.3.4 below).

¹⁶ Abbe 1965: 106-107.

¹⁷ One drink with yeast: see, for instance, Page 1951: 322 (“with barm (or ‘leaven’) and sour service-berries”); Martin 1966: 299 (“une sorte de liqueur fabriquée à partir de la *corme*”); Miles 1980: 211 (“with yeast and sour service berries”); Ross 1987: 176 (“from an acidic fermentation of service berries”); Mynors 1990: 237 (“The service-fruit must have been pressed, and the juice fermented with some kind of yeast”); Dalby 2000: 200 (“a brew made from the fruit of the *sorbus*”). Two drinks: see, for instance, Ruæus 1831: 129 (beer and cider); Conington 1881: 1:318; de Saint-Denis 1960: 51 (“une liqueur d’orge fermentée et de sorbes acides”); and Putnam 1979: 210 (“drinking beer and cider”). Marsili (1965: 494-495) points out that there are two options and prefers the first.

preferable, as is Martyn's suggestion that *fermento atque sorbis* be taken as a hendiadys for *sorbis fermentatis*.¹⁸

However, the matter is complicated by the fact that Servius clearly detected a reference to beer in this passage since he comments (T88): *potionis genus est, quod cervesia* [or *cervasia* or *cervisia*] *nominatur* ("This is a type of drink which is called *cervesia*"). I can think of three reasons why Servius may have thought this. First, Servius may have read the passage in the second manner proposed above and to have interpreted the "inebriant" as beer.¹⁹ However, as I will show (in section 2.1.3.3 below), *cervesia* in Servius's day was not used generically to denote beer, but probably referred specifically to wheat beer. Second, Servius may have thought that Vergil was speaking of a single drink made with yeast and rowanberries and, since yeast was associated with the production of beer but not with that of wine (see section 3.6.3 below), he thought of this beverage as analogous to (wheat) beer. Third, and in my opinion most likely, Servius may have read *frumento* for *fermento* in Vergil, and thought that Vergil was referring both to a wheat beer and a rowan wine.²⁰ Martyn long ago suggested reading *frumento* in Vergil, and *frumentoque* is even found in one manuscript (γ).²¹ Page objected that "'to imitate wine with grain' is too startling an expression."²² Yet, this very same expression is found in Greek

¹⁸ See Conington 1881: 1:318 and Thomas 1988: 2:112.

¹⁹ Some modern scholars have in any case interpreted *fermentum* as beer, such as Conington 1881: 1:318 ("Virg. evidently means beer"), who still allows for the possibility that *fermentum* means yeast. Page (1951: 322) wrongly denies that *fermentum* could refer to beer.

²⁰ If *frumento* is accepted, the text could also be read to refer to beer generically (*frumentum* simply meaning cereals, not wheat specifically) or even an alcoholic drink made from both wheat (or cereals generally) and rowan berries (see section 3.5.4 below on berry beer).

²¹ One similar example should suffice to demonstrate the plausibility of this reading. The *TLL* 6:1, 525, s.v. *fermentum* quotes, shortly after citing our passage, Jerome (T99) as: *sicera ... omnis potio nuncupatur, quae inebriare potest sive illa, quae fermento conficitur, sive pomorum succo*. The *PL* has *frumento* (22.536), which provides the proper contrast with cider (which is also made with yeast) and other intoxicating drinks which Jerome goes on to mention. Moreover, Isidore, who was evidently using Jerome, writes (T136): *sicera est omnis potio quae extra vinum inebriare potest ... quod ex succo frumenti vel pomorum conficitur*. Most manuscripts have *frumenti*, though B and T have *fermenti*. Here the use of *sucus* guarantees *frumenti*; see section 2.1.2.4 below on *sucus*.

²² Page 1951: 322.

in Julius Africanus, who says, before speaking of the beer of various places: ἐμιμήσαντο οἶνον ἑτέρων ἢ σπερμάτων ἢ ἀκροδρύων σκευασία ἢ ῥιζῶν συνθέσει (“they have imitated wine from other things, either from seeds [i.e. cereals?] or by a preparation from fruits or by a combination of roots”) (T81).

2.1.2.2 Wine (οἶνος / *vinum*):

The term οἶνος in Greek and *vinum* in Latin could clearly be used either specifically of an alcoholic drink made from fermented grapes, or, more generally, of any alcoholic drink.²³ The clearest statement of this linguistic practice is to be found in earlier jurists preserved in Justinian’s *Digest* of A.D. 533 (T120). In the early first century A.D., the jurist Masurius Sabinus declared (T38):

omnia vini appellatione contineri, quae vini numero pater familias habuit: igitur et acetum, quod vini numero pater familias habuit, et zythum et camum et cetera, quae pro hominum affectione atque usu vini numero habebuntur.

All [drinks] are included under the designation of wine, which the head of the household held in the category of wine: therefore also the vinegar which the head of the household held in the category of wine, and *zythum* and *camum* and others which are held to be in the category of wine by the reckoning and usage of men.

This passage clearly shows that at least some types of beer were popularly considered to be *vinum*. In the early third century A.D., the jurist Ulpian wrote a treatise entitled *Sabinus* addressing many of the eponymous jurist’s declarations, saying that if a man bequeaths *vinum* in his will, this should usually include “that originating from the vine which remains wine” (*quod ex vinea natum vinum permansit*) along with *oenomeli* (“honey wine”), *passum* (“raisin

²³ See generally *LSJ* 1996: 1207, s.v. I.2. On the other hand, the *OLD* (1996: 2068, s.v. 3) leaves *vinum* defined too narrowly as “[a]n analogous drink made from other fruits or vegetable products [i.e. other than grapes].” In modern English “barley wine” and “rice wine” similarly designate types of beer.

wine”), and *acinaticium* (“dried-grape wine”) but not usually *mulsum* (“mead”), *zythum*, *camum*, *cervesia* (types of beer, on which see sections 2.2.11, 2.2.4, and 2.2.5 below, respectively), *hydromeli* (“mead”), *conditum* (“spiced wine”), *defrutum* (“must”), *cydoneum* (“quince wine”), nor drinks made from other fruits, or *acetum* (“vinegar”) (which, however, causes a problem since is it not simply sour wine?). Shortly after, however, Diocletian (E16a) categorized *cervesia*, *camum*, and *zythum* (or *zythus*?), precisely the three types of beer excluded by Ulpian,²⁴ under the heading of *vinum* in his price edict. Justinian, however, in the end accepted Ulpian’s judgment (T122).

Beer was thus popularly known as *vinum* from the first century A.D. on. But there is evidence for this phenomenon as early as Herodotus (T7), who speaks of Egyptian beer as “barley wine” (see further section 4.2.2 below). At first sight, it would seem that Herodotus did not know the name for Egyptian beer, which from Theophrastus on is consistently called ζῦθος (see section 2.1.3.2 below). And in fact, lexicographers, beginning with Herodian in the second century A.D. (T63; see also Hesychius [T106], Photius [T210], and the *Suda* [T226]) equate ζῦθος precisely with “barley wine” (ὁ ἐκ κριθῆς οἶνος).²⁵ Nevertheless, numerous authors speak of barley beer as “barley wine” after Herodotus (Xenophon [T13, with T224, 228, and 231], Polybius [T22], Dio the Academic [T24], Athenaeus [T81], and Julian [T91]), and Theophrastus himself mentions “wine from barley and from wheat” (οἶνοι ἐκ τῶν κριθῶν καὶ τῶν πυρῶν) while considering Egyptian ζῦθος a separate drink from these (T16). Barley and wheat wine are also found in Oribasius (οἶνοι ... ἀπὸ τῶν ... πυρῶν καὶ κριθῆς [T93]).²⁶ Also, the expression

²⁴ It is interesting that, at least according to Ulpian’s quote, Sabinus used the terms *zythum* and *camum*, but not *cervesia* (the first occurrence of which is in Pliny [T51]).

²⁵ This has prompted some modern scholars to call Herodotus’s barley wine ζῦθος: see, for instance, Waddell 1939: 194. Masqueray (1954: 179) claims that Xenophon (T13) spoke of “barley beer” since there was yet to be special term for beer, and the word ζῦθος came into use later.

²⁶ See also *vini genus ex frumento* in a late glossary (T239b).

“rice wine” (οἶνος ... ἐξ ὀρύζης) was found for a beer made from rice.²⁷

A very peculiar use of the term οἶνος for beer is recorded by Eustathius in the twelfth century A.D. (T234). He says that ζῦθος is called “Dionysiac wine by peoples, among whom there is no wine” (Διονυσιακὸς οἶνος παρὰ ἔθνεσιν, οἷς οὐκ ἔστιν οἶνος), as if Dionysiac wine would not simply be a perfectly normal term for grape wine. As with other such statements, Eustathius was probably relying on some ancient authority, but one which, unfortunately, we can no longer identify. A knowledge of the original context might clear up this mysterious usage, but we are entitled to assume that Eustathius may have been mistaken.

Herodotus used the seemingly tautological periphrasis οἶνος ἀμπέλινος to distinguish grape wine from beer (“barley wine”) (see further section 4.2.2 below), and the same usage is found, among others, in Dionysius of Halicarnassus (T37) and Methodius (T85), while Eusebius speaks of ὁ ἐξ ἀμπέλου οἶνος, again to distinguish wine from beer (T87).

There are three collocations with οἶνος in Greek to refer to beer, and one in Latin with *vinum*.

First, beer can be described in Greek as οἶνος + ἐκ + the cereal out of which it is made in the genitive singular or plural, with or without the article. This is first found in Herodotus (T7) of Egyptian barley beer (οἶνος ἐκ κριθέων πεποιημένος), then in Theophrastus (οἶνοι ... ἐκ τῶν κριθῶν καὶ τῶν πυρῶν [T16]), Dio the Academic (οἶνος ἐκ τῶν κριθῶν γενόμενος [T24]), Herodian (ὁ ἐκ κριθῆς οἶνος [T63]), and Aelian (οἶνος ... ἐξ ὀρύζης [T76]). The similar Latin phrase *vini genus + ex + the cereal* is also found in a glossary (T159b). In both the Greek and Latin periphrases a word meaning “made” or “arising from” is clearly understood (see further

²⁷ Aelian (T76) and Manuel Philes (T238). Pliny mentions (T47) a wine made “from millet grain” (*e milii semine*), but it has been shown that the recipe he gives corresponds with one for betony wine in Dioscorides (*Mat. med.* 5.44 Wellmann [= 5.34 Sprengel]; interestingly this type of wine was also known to Pliny, *Hist. nat.* 25.46.84), and thus it has been convincingly argued that millet is mistakenly mentioned by Pliny or his source (see the full discussion by André 1958: 126-127).

2.1.2.3 below), and this is made explicit by Herodotus's use of *πεποιημένος* and Dio's *γενόμενος*.

Secondly, we find *οἶνος* + *ἀπὸ* + the cereal. The lemma to Julian's epigram on beer reads (T91): "On wine from barley" (*εἰς οἶνον ἀπὸ κριθῆς*). Photius (T210) defines *ζῦθος* as "wine from barley" (*οἶνος ἀπὸ κριθῆς*), and Hesychius (T106) and the *Suda* (T226) both express the missing participle in this construction, by defining *ζῦθος* as "wine arising from barley" (*οἶνος ἀπὸ κριθῆς γινόμενος*). Similarly, Oribasius (T93) speaks of "wines ... arising from honeycombs and wheat and barley" (*οἱ δ' οἶνοι ... ἀπὸ τῶν κηρίων καὶ πυρῶν καὶ κριθῆς γινόμενοι*).

Finally, there is also the term *οἶνος κρίθινος* ("barleyed wine"). It is first found in Xenophon (T13),²⁸ then in Polybius (T22). Finally Athenaeus (who knew it at least from Polybius [T77]) uses *κρίθινος οἶνος* as equivalent to *βρῦτος* (T81, copied by Eustathius [T234-235]).²⁹ Athenaeus even simply calls barley beer *ὁ κρίθινος* (T78 and 81),³⁰ in which case *οἶνος* is probably to be understood.

2.1.2.3 Drink or Beverage (*πόμα/πόσις/ποτόν/πῶμα* / *humor/liquor/potio/potus/tisana*):

The most common type of periphrasis for beer simply refers to it as a beverage made from cereal, without any indication as to whether or not it is intoxicating. Beer is simply a *πόμα* (T15), *ποτόν* (T2a and 44), or *πῶμα* (T2b, 13, and 210). Pliny (T50) uses *tisana*, clearly to mean

²⁸ The word *κρίθινος* is omitted in cod. F, and two of the *Suda* quotations from this passage also just mention *οἶνος* (T222 and 226, but see T229 for the full collocation). This tends to show the rarity of the expression, at least by Byzantine times.

²⁹ All three cases are cited by Lendle (1995: 244) in his commentary on Xenophon.

³⁰ In the first case (T76), Athenaeus attributes the word to Aristotle (see T14a), in the second case (T79) he quotes Aristotle as using simply the word *πῖνον*, introducing the passage by saying that *πῖνον* is a name for *ὁ κρίθινος*. In the first passage Aristotle is not quoted verbatim (at least in the surviving epitome of Athenaeus), and Gigon excludes this passage from his collection of fragments of Aristotle, though other editors (Rose and Laurenti) keep both. It is possible then that *ὁ κρίθινος* was not in fact used by Aristotle (see further section 2.2.8 below).

beverage generally, in relation to beer (T50),³¹ while Anthimus (T118) distinguishes between *cervisa* and *tisana* in terms of being made different ways, and in this case Grant (whom I follow) translates *tisana* as “barley soup.”³²

In Greek the same three collocations as used with οἶνος are also used with these words.

First, in Greek there occurs the periphrasis πόμα (or, much less often, ποτόν or πόσις) + ἐκ + the cereal (occasionally the preposition ἐκ is omitted). Herodian has τὸ ἐκ κριθῆς πόμα (T63) and πόμα ἐκ κριθῆς (T64). Hesychius has ἐκ κριθῶν πόμα (T101), τὸ ἐκ κριθῆς ποτόν (T103), πόμα ἐκ κριθῆς (T104), and ἡ ἐξ ἀλφίτου πόσις (T105). In a glossary πόματος ἐκ πυρῶν is found (T184); another entry reads πόματος κριθῶν (T183) which is probably a mistake for πόματος ἐκ κριθῶν (Boucherie logically suggested πόμα τὸ ἐκ κριθῶν), rather than a unique instance of a genitive of material. Xenophon is paraphrased in the *Suda* as referring to τὸ πόμα τὸ ἐκ κριθῶν (T230). There are two instances in which the underlying understood verb is expressed. First, Diodorus Siculus consistently includes κατασκευαζόμενον (T29-33, copied by Eusebius [T86]); this is probably his own usage, though Jacoby unwittingly attributed the word to three different authors (T30 = Agatharchides [T20a]; T31 = Dionysius Scytobrachion [T21a]; T33 = Posidonius [T26]). Athenaeus also uses the verb κατασκευάζω for beer-making (T81), though usually the verb σκευάζω is found (Posidonius [T27], Dioscorides [T54 and 55a], Strabo [T45]).³³ Second, Priscus (T109) mentions “the drink supplied from barley” (τὸ ἐκ κριθῶν χορηγούμενον πόμα). This use of the verb is not otherwise attested. In the previous sentence, Priscus had said: “At the villages victuals were supplied for us” (ἐχορηγοῦντο δὲ ἡμῖν κατὰ κώμας τροφαί). Either Priscus has continued his thought with the same term, or a later scribe wrote χορηγούμενον from the influence of its recent appearance, replacing σκευαζόμενον or πεποιημένον (found in Herodotus [T7]) or something similar.

³¹ However, Pliny’s *tisana ex hordeo* (*Hist. nat.* 18.15.74-75) does not seem to refer to beer.

³² Grant 1996: 57.

³³ Galen (T71) explains that barley can be prepared (σκευάζειν) in a number of different ways, including to make ζύθος.

In Latin there occurs the similar periphrasis *liquor* or *potio* or *potus* or *humor* + *ex* + the cereal out of which it is made in the ablative singular, or more often with a general word for cereal (to denote the genus of fermented cereal drinks). Celsus mentions *potio ex frumento* (“drink [made] from cereal”) as a strong type of drink (T36); as can be seen from the context, this surely refers to an alcoholic beverage. Pliny often speaks of a generic category of fermented cereal beverages, as we have seen, and uses as a general category *potus e fruge* (or *frugibus*) (“drink [made] from fruits [i.e. cereal]”) (T48) and *potus frugum* (“drink of fruits [i.e. cereal]”) (T52). Later, Isidore (T136) also speaks of beer as *potio ex seminibus frumenti* (“drink [made] from the seeds of grain [or wheat?]”). More specifically, Orosius (T112, copied by Isidore [T136] and Paul the Deacon [T173]) spoke of a *potio (ex) suco tritici* (for the addition of *sucus* see section 2.1.2.4 below). Tacitus has *humor ex hordeo aut frumento* (T58) and Ammianus has *potus ex hordeo vel frumento* as well as simply *liquor* (T96), while Jonas speaks of *cervisia* as *ex frumenti vel hordei succo excoquitur* (T146). In all of these cases *frumentum*, usually used generally to mean cereal, is used here to mean wheat (see further in section 3.2.2 below on the terms of wheat).

Second, the collocation πόμα + ἀπὸ + the cereal is found once in Aretaeus (T62); the difficulty in interpreting this troublesome passage, which seems to refer to a grape beer will be discussed in section 3.5.3 below. Leontinus also has τὰ ἀπὸ τοῦ σίτου καὶ τῶν κριθῶν γινόμενα πόματα and τὸ ἀπὸ τῶν ὀλυρῶν, καὶ τὸ ἀπὸ τοῦ βρόμου γινόμενον πόμα and τὸ ἀπὸ τοῦ κέγχρου καὶ ἐλύμου (T220/T222).

And finally, beer is expressed by πόμα with an adjective for the type of beer: κριθίνον in Posidonius (?) (T28), Plutarch (T60-61), and the *Suda* (T227a), and note the ζύθος πύρινον in Posidonius (T27), which I will discuss in full in section 3.5.1 below. Galen also speaks of τὸ κρίθινον, with ποτόν understood (T70), and this may possibly refer to beer since a wheat drink which seems to be fermented is listed shortly after. Notice that in Pseudo-Galen ζύθου ... πόσις (“a drink of *zūthos*”) is found (T73). The first instance of an equivalent construction in Latin

seems to date to the tenth century A.D., when *cerealis potus* is found.³⁴

2.1.2.4 Juice (χυλός / *ius/succus/sucus*):

The word χυλός is used of beer generally by Theophrastus (T16) and Dionysius of Halicarnassus (T37). It seems, however, that χυλός + the genitive of a cereal does not necessarily refer to beer, but often denotes simply a liquid extract. Pseudo-Dioscorides, for instance speaks of “juice of rice or of groats or of hulled emmer³⁵ or of peeled barley or of mallow or of fenugreek or of linseed” (χυλὸς ὀρύζης ἢ χόνδρου ἢ τράγου ἢ πτισάνης ἢ μολόχης ἢ τήλεως ἢ λινοσπέρμου).³⁶ A number of these types of “juice” are found elsewhere in the medical literature (as is also, for instance, “juice of oats” [χυλὸς τῶν βρόμων]³⁷), with no evidence that these are intoxicants.³⁸ However, Manuel Philes (from the thirteenth and fourteenth centuries A.D.), probably following a lost ancient author (perhaps Ctesias [= T11] or Megasthenes [= T18]), speaks of beer as κριθῆς χυλός (T233).

The Latin use of *sucus* or *succus* (and the synonymous *ius*) for beer is much more certain. Pliny notes of elephants that (T45): “When captured, they are quickly tamed by the juice of barley” (*capti celerrime mitificantur hordei suco*). There is little doubt that Pliny here refers to beer, as Jennison long ago pointed out,³⁹ and he may well have been indebted to the same source as Manuel Philes (see T11 and 18). In a later passage, Pliny, speaking of beer-drinkers, says (T49) that “they drink such juices pure” (*meros quippe hauriunt tales sucos* [*sucus* cod.

³⁴ Adso, *Vit. sanct. Berchar.* 1.10 (= ASS 55.1012D).

³⁵ For this translation, see section 3.3.2 below.

³⁶ Ps.-Diosc., *De simpl. medic.* 2.44.1 (not in CMG).

³⁷ Aët. Amid., *Iatr. lib.* 12.37.

³⁸ Jones (1923: 61) speaks of the difficulty of translating χυλός in Hippocrates. For Galen’s treatise on good and bad χυλοί (in which beer is not mentioned), see CMG V.4.2, 389-429 (= 6.749-815 Kühn).

³⁹ Jennison 1937: 143, n. 1 (I owe this reference to Christopher Epplert). Scullard translates this section of Pliny, but leaves it uninterpreted (1974: 213-214).

M]). In other passages, beer is rather said to come from *sucus*. Thus Paulus Orosius relates (T112) that the beer in Numantia known as *caelia* was “skilfully made with the juice of wheat” (*suco tritici per artem confecto*).⁴⁰ Similarly, in the seventh century A.D., Jonas (T146) defines *cervisia* as being “boiled from the juice of wheat or barley” (*ex frumenti vel hordei succo excoquitur*). Also, in the life of the abbess Sadalberga (T155), *cervesa* is defined by Jonas (?) as “juice of wheat or barley” (*ius tritici vel ordeï*); this is the only instance, as far as I am aware, in which a material genitive is used to denote the cereal out of which the beer is made. In the late Latin translation of Dioscorides, τοιαῦτα πόματα (“such drinks [i.e. beers]” [T55a]) is rendered *suci tales* (“such juices [T55b]).⁴¹

Thus, just as wines are made from the juice of fruits,⁴² beer was said to be made from the “juice” of cereals, or was even simply said to be the “juice” of cereals. This may refer to the malting process, as will be discussed in section 3.3.2 below.

2.1.3 Synecdoches for Beer:

Terms for specific types of beer could also be used to denote beer generically (by synecdoche). This is the case with, in chronological order, (2.1.3.1) βρῦτος/βρῦτον, (2.1.3.2) ζῦθος/ζῦτος/ζύθος / *zythum*, (2.1.3.3) κηρβήσια / *cervesia*, and (2.1.3.4) σίκερα / *sicera*. The origins of these words, their orthographic variants, and their use to denote specific types of beer will be examined in full in the next section of this chapter (2.2); here I will simply summarize each word’s meaning, and show how each came to be used generically.

⁴⁰ Following, Orosius, Isidore defines (T136) *caelia* as “a drink skilfully made from the juice of wheat” (*potio ex suco [sucas cod. B¹] tritici per artem confecta*); Orosius’s passage was also copied by Paul the Deacon (T173). Similarly in a Latin glossary (T221) perhaps relying on Orosius, *celia* is defined as “a drink [made] from the juice of wheat” (*potio de suco frumenti*). Florus (T74) says simply that this type of beer is made *ex frumento*.

⁴¹ Similar collocations are found in later authors. For instance, in the twelfth century A.D., Petrus Venerabilis (*De mirac.* 2.24 [= PL 189.636C]) said that *cervisia* was made “from the juice of fruits [i.e. cereal]” (*ex ... frugum succo*).

⁴² For cider, see Jerome (T99): “that made from the juice of apples” (*conficitur ... pomorum succo*).

2.1.3.1 βρῦτος/βρῦτον:

The term βρῦτος seems to have been a word for Thracian beer (see T1, 6, and 8) which was adopted by the Greeks to describe more than simply the fermented cereal drink of these people, but also of the Paeonians (T3), and even generally (T17, and note its use in comic contexts [T9 and 12] which implies a popular knowledge of the word).⁴³ This is the only word for beer found in Greek up to the late fourth century B.C. and after this it became totally obsolete, and was never adopted into Latin. It is first found again in Herodian, who explains its meaning in his work on obscure words (T63-64), and later in Hesychius (T101-104), and if it were not for Athenaeus's diligence (T81, and see T234-235) we would know practically nothing of the earlier uses of this word. All this evidence tends to show that Greeks at least first learned of beer-drinking from their nearby Thracian neighbours to the North, or at least associated beer-drinking most closely with them; later the Egyptians became the model-drinkers and the term used to designate their beer (ζῦθος) came to prevail, as will be seen in section 2.1.3.2 below. This shift is strikingly demonstrated by the appearances of both words in Theophrastus, who lived just as Egypt came under Greek control. He speaks both of Egyptian beer generically as βρῦτος (or possibly βρῦτον) (T17) and says that it is called in Egypt ζῦθος (T16).

2.1.3.2 ζῦθος/ζῦτος/ζύθος / *zythum*:

The word ζῦθος seems to have first been a Greek word applied to Egyptian beer, which eventually came to denote beer generically or barley beer generally.⁴⁴ Theophrastus, the first surviving author to use the word, distinguishes it from simple barley beer or wheat beer, and takes it to mean "(a type of) Egyptian beer" (T16). There are also many other passages connecting this word to Egyptian beer (see T19, 23, 30, 50, 55, 72, 83, 89, 97, and 98, and the papyrological and epigraphic [E17 and 19] evidence), which was mainly made of barley.

⁴³ It is not known whom Sophocles refers to in using the word (T10).

⁴⁴ Valiño (1999: 60, n. 5) correctly notes that though it is properly Egyptian beer it is used of beer generically.

Apparently, the term came to mean beer generically, beginning with Posidonius. He uses it as a neuter noun, and denotes by it Lusitanian beer (T25) and Gallic beer which he says is specifically called κόρμα (T27).⁴⁵ Diodorus Siculus, who used Posidonius (T33/T26), clearly misunderstood this generic usage, since he mistakenly said that the Gauls called their barley beer ζῦθος.⁴⁶ Strabo, on the other hand, who was also indebted to Posidonius (T39/T25, and see T28/T40), similarly uses ζῦθος (neuter) generically (T45), while using it in the masculine specifically of Egyptian beer (T43). At first sight it seems that this usage was a Posidonian innovation; however, the use of the Latin *zythum* (neuter) generically in Sabinus (T38) and Ulpian (for barley, wheat, or millet beer [T84]) points to a more general trend, the origins of which may be impossible to pinpoint.⁴⁷ Further, in a lexicon ζῦτος (neuter) is used of Scythian millet beer (T68).

At the very same time as Strabo, an anonymous lexicographer and Ulpian use the term (and variants) in its most generic sense for an alcohol beverage made from any cereal, ζῦθος was defined elsewhere as barley beer (with no mention of its provenance). Dioscorides is the first known author to define it (in the masculine) in this way (T54), and in this case he may well have been the innovator as well. Be that as it may, it seems that through his influence, ζῦθος became the *vox propria* for barley beer among the Greek medical authors, first with Antyllus (T65) and Philumenus (T67), then Galen (T69, 71-72; and see 73), who was certainly indebted to Dioscorides, and then Oribasius (T92, and 94-95), Aëtius of Amidena (T121-127), and Paulus of Aegina (T132).⁴⁸ Similarly, the lexicographers do not mention it as an Egyptian beer, but

⁴⁵ Eustathius (T234), commenting on the passage of Posidonius in question, which he knew from Athenaeus, rightly noted that the word ζῦθος, usually used of barley beer, could be used of wheat beer.

⁴⁶ Diodorus otherwise says that the Egyptians call their beer ζῦθος (T30) and also that "some" call it ζῦθος (T32, copied by Eusebius [T86]).

⁴⁷ Pliny (T51) and Columella (T53 [where *zythus* could possibly be read]) use *zythum* simply of Egyptian beer; later Jerome, discussing the word from an Egyptian context, seems to take it as a generic term (T100).

⁴⁸ Plutarch mentions ζῦθος (neuter) in passing (T59) and elsewhere speaks of beer as "barley drink" (T60-61), as if he did not equate the two. Thus he may have thought of ζῦθος simply as beer in general. He may have been influenced by Dioscorides (T54), though Dioscorides uses ζῦθος in the masculine.

simply as a barley beer, beginning with Herodian (T63, and see T106, 210, and 226).

The word ζύθος came to mean beer in general in modern purist (*katharevousa*) Greek (the modern Greek demotic term is the loan word μύρα), while a beer-shop or tavern is known as a ζυθοπωλείον (or μυραρία). As a purely Greek word denoting beer, and because of its wide use as a generic term, it has the best claim to be called the ancient Greek *vox propria* for beer, though it never quite became that.⁴⁹

2.1.3.3 κερβησία / *cervesia*:

The meaning of the term *cervesia* (and variants) seems to have gradually evolved in three main steps: at first it was a Celtic word used to denote Gallic and British wheat beer, then it came to denote wheat beer generally in Latin, and finally it was used to denote any beer in late Latin and in some of the Romance languages. As far as I am aware, no one has proposed such an evolution, and it is to a certain extent based on circumstantial evidence.⁵⁰ Because of the paucity of evidence this theory cannot be claimed as certain, but only probable.

Cervesia was certainly a Celtic word for beer (see Marcellus Empiricus of Bordeaux [T110-111, with T114] and a number of Gallic inscriptions [E2, 4-5, 6 (?), 7-14, and 15 (?)]) and Vindolanda tablets⁵¹). Pliny, the first extant author to use the word, says that *cervesia* is only one of the terms for beer among the Gauls (T51), though he does not explain what exactly it refers to, or what the other terms are. Also an early medieval glossary (T184) specifically says

⁴⁹ It is interesting that while Rives says that the Romans had no word for beer (1999: 213) he says (214): "The Greek word for beer was *zuthos*."

⁵⁰ It is quite possible, for instance, that *cervesia* was used generically to mean any type of beer at the same time as it was used to denote simply wheat beers, just as ζύθος could be used to mean any beer or simply barley beer in different contemporaneous authors (as seen in section 2.1.3.2 above).

⁵¹ *Tab. Vindol.* II, 182, col. ii, l. 14, 186, l. 11, 190, ll. 6, 9, 10, and 23 (= *Tab. Vindol.* I, 4, ll. 12, 15, 26, and 29), and 482, and *Tab. Vindol. Suppl.* 2, ll. 4, 6, and 17, and 3, l. 13.

that *cerbesia* (obviously the Latinization of the Greek κερβησία⁵²) is “a drink [made] from wheat” (πόματος ἐκ πυρῶν), though with no mention of its Celtic provenance.⁵³ In another glossary (T232) *cervisia* is said to be made from *braces*, and Pliny explains that *bracis* (or *brace*) is the Gallic word for a type of spelt (*far*) known in Latin as *scandala*, itself a variety of wheat.⁵⁴ It also seems that *cervesa* in Vindolanda was made from *bracis* (see section 3.3.2.4 below).

In some Latin texts, *cervisia* is vaguely said to be made from *frumentum*, which could either mean wheat or cereals more generally.⁵⁵ Thus one glossary (T159b) defines *cervisia* as “a type of wine [made] from *frumentum*” (*vini genus ex frumento*).⁵⁶ Also, Isidore (T136) vaguely defines *cervisia* as “a drink [made] in different ways from grains of *frumentum*” (*potio ex seminibus frumenti vario modo confecta*). Furthermore, Pliny says (T49) that the Gauls and Hispanians liquify *frumentum* into a drink (and see also T48 and 51 on this pair), which in the context, a discussion of different types of wheat, seems to indicate wheat specifically. Also Gallic wheat beer is known from elsewhere (T27). It is most likely that in the glossary and in Isidore “wheat” is meant since *cervisia* is not certainly found referring generically to beer until the late seventh century A.D. (as I will show below). Before then, *cervisia* is also found paired with other terms for beer, thus obviously implying that it refers simply to a type. Ulpian uses *cervisia* with *camum* (and then uses *zythum*, which as we have seen [in section 2.1.3.2 above] he certainly uses generically, with *camum*) without defining it (T84). It is again linked with

⁵² The word κερβησία is found in Julius Africanus, specifically of Celtic beer (T83), and in Diocletian (E16c-d).

⁵³ It is possible that πόμα τὸ ἐκ πυρῶν should be read, but πόματος ἐκ πυρῶν could be a lemma taken directly from a text. Olck takes *cervisia* as meaning wheat beer generally (1899: 462). André, on the other hand, states (1961: 180): “On ne sait avec quelle céréale ils préparaient la *cervisia*” (Bowman [1974: 371] shows that André is wrong); similarly Walde and Hofmann (1938: 207) and Billy (1993: 51-52) define it simply as “a type of beer” (“sorte de bière”).

⁵⁴ Pliny, *Hist. nat.* 18.11.62. There is no evidence that Pliny took *bracis* here to mean “malt” as suggested, for instance, by Billy (1993: 33) and Birkhan (1997: 1089).

⁵⁵ For *frumentum* as cereal generally or wheat specifically, see *TLL* 6:1, 1409-1422, s.v. I have argued (in section 2.1.2.1 above) that Vergil may have written *frumentum* rather than *fermentum* (T34) and that Servius took this to refer to wheat beer (T88).

⁵⁶ Note also the very vague: *cervisia genus potionis* (“*cervisia*: a type of drink”) (T159a).

camum (or κάμυν) by Diocletian (E16). The drink *cervesa* is contrasted with *curmi* in the Gallic physician Marcellus from the early fifth century A.D. (T110). As I will argue in sections 2.2.4 and 2.2.6 below, just as *cervesia* (and related terms) probably denoted Gallic wheat beer, *camum* (and related terms) and *curmi* (and related terms) probably denoted Gallic barley beer (at least these two terms are never found coupled).

By the fifth century A.D., the term is found alone to designate beer (T115-120, 128, 130-131, 156, 237, 133-155, 161-163, 165-168, 171-172, 175-181, 187-196, 197a-b, d, 200-201, 203-205, 207, and 212-219), but its exact meaning is not provided. The generic use is first explicitly found in Jonas's biography of St. Columban from the mid seventh century (T146); *cervisia* is said to be "boiled from the juice of wheat or barley" (*ex frumenti vel hordei succo excoquitur*) and it is said to be drunk especially by those who inhabit Ocean (see further section 4.2.2 below). Also, in the contemporaneous life of the abbess Sadalberga (T155) *cervisa* is defined as "the juice of wheat or barley" (*ius tritici vel ordeï*) which is drunk by numerous western peoples. This more generic use of *cervesia* seems to have been that borrowed into the Romance languages, as *cerveza* in Spanish, *cerveja* in Portuguese, *cervigia* in Italian, and *cervoise* in French. Moulin argues that the term was mainly used in contradistinction to hopped beers, which were known by the appellation "beer;" this may be true to some extent, but the terminology was never so strictly established.⁵⁷ In fact in some early German glossaries *cervisa* or *cervisia* is defined as *bier*.⁵⁸

2.1.3.4 σίκερα / *sicera*:

The term *sicera* was a word which was used for beer but also other intoxicating drinks in Akkadian and other Semitic languages, and it was recognized as a Babylonian word for beer

⁵⁷ Moulin 1984.

⁵⁸ Holder 1907: 1:1207.

by Julius Africanus (T83).⁵⁹ The first use of the word in explicit relation to beer in the Greco-Roman sources is found in Pseudo-Galen (T73), who seems to take σικέρας πόσις (“a drink of *sicera*”) as referring generically to any fermented drink, including both wine and beer. This does not seem to be the later usage found exclusively in Christian authors, who evidently borrowed the term from the Old Testament where it is often paired with wine (see further section 2.2.10 below). In the third or fourth century A.D., Methodius (T85) defined σίκερα as “everything which brings on drunkenness except for wine [made] from vines”(πάν τὸ μέθην φέρον μετὰ τὸν οἶνον τὸν ἐξ ἀμπέλων), which makes sense from its pairing with wine in the bible. Hesychius (T108) defined it similarly “as every drink which causes drunkenness neither prepared from nor composed of the vine” (πάν πόμα ἐμποιοῦν μέθην, μὴ ἐξ ἀμπέλου δέ, σκευαστόν, σύνθετον), but also as “wine mixed with sweeteners” (οἶνος συμμιγείς ἡδύσμασιν).⁶⁰ Jerome says that *sicera* is a Hebrew word which applies to “every drink ... which is able to intoxicate” (*omnis potio ... quae inebriare potest*), and he gives as examples, beer, cider, mead, and date wine, though not grape wine (T99).⁶¹ Isidore (T136), who was obviously copying Jerome, refines his definition slightly into “every beverage which is able to intoxicate apart from wine” (*omnis potio quae extra vinum inebriare potest*). The same definition is found in Zonaras (T236): “*Sicera* is everything except for wine which causes intoxication” (σίκερα ἐστὶ πᾶν τὸ ἄνευ οἶνου μέθην ἐμποιοῦν). Chrodegangus (T171), quoting Luke 1:15, said that John the Baptist “did not drink wine or *sicera* or anything which can intoxicate, which is an ‘intoxicant’” (*nec vinum, nec siceram, nec quid aliud quod potest inebriari bibit, quia ubi*

⁵⁹ The *Suda* (T229) notes that it is a Hebrew word, but also proposes a false Greek etymology, from συγκεκράσθαι (“mixed-with”).

⁶⁰ This last part is also found in the *Suda* (T229), which also gives the vague definition of σίκερα as “a prepared drink” (σκευαστόν πόμα) (also to be found in Photius [T211]).

⁶¹ Jerome also says (*Comm. Is.* 2.5 [= *PL* 24.81]) that *sicera* “means every drink which can intoxicate” (*omnem significat potionem, quae inebriare potest*) and (*Comm. Is.* 8.24 [= *PL* 24.280]) “every drink which changes one’s state of mind ... *sicera* as it is called in Hebrew, that is an ‘intoxicant’” (*omnis potio ... ut Hebraice dicitur, sicera, id est, ebrietas, quae statum mentis evertit*). Also elsewhere (*Lib. de nomin. hebr.* s.v. *sicera* [= *PL* 23.874]) he considers it the Hebrew word for *ebrietas*. Jerome also often repeats the biblical prohibition against drinking *vinum et sicera*. Augustine noted that Jerome himself had been a teetotaler for forty years, using the same expression (*De magnif. beat. Hier.* [= *PL* 22.282]): “for forty years in no way did he ever taste wine or *sicera*” (*quingenta annis ... vinum et siceram aliquantulum non gustavit*).

ebrietas fit). In late antique texts *sicera* is sometimes directly equated with *cervisa* or *cervisia* (T133 [with 192], 155, 164, 171, and 179); and *sicera* is also found as an alternate reading of *cervisa* in another text (T207). At some point the term seems to have been especially associated with cider, since the English word “cider” (along with cognates in other languages, such as French *cidre* and Italian *sidro*) derives from it.⁶²

2.2 Specific Terms for Various Types of Beer:

Specific terms for beer, as is logical from what I have said so far, seem to have been only species terms, which could, however, for want of a general term, refer to beer as a whole. I will first discuss all of the various Greco-Latin terms separately, and then show their possible interconnections. I will look, in alphabetical order, at (2.2.1) βρούτος/βρῦτον/βρύτος/βρῦτος/βρῦττον, (2.2.2) *caelia/celea(?)/celia/cerea/ceria(?)/cilicia(?)*, (2.2.3) *furta*, (2.2.4) κάμον / *camum*, (2.2.5) κερβησία / *cerbesia/cerevisa/cerevisia/cervesa/cervesia/cervisa/cervisia/cervissa*, (2.2.6) κόρμα/κούρμι / *corma/curmen/curmi*, (2.2.7) παραβίας/παραβίη, (2.2.8) πίνον, (2.2.9) *sabaia/sabaium*, (2.2.10) σικερα/σίκερα / *sicera*, and (2.2.11) ζύθον/ζύθος/ζύθος/ ζύτον/ζύτος/ζύτος / *zithum/zitos/zythum/zythus*.⁶³ I have included some of the following subcategories for each entry: occurrences, definition, etymology, variants, accentuation, gender, borrowings, and derivatives.

2.2.1 βρούτος/βρῦτον/βρύτος/βρῦτος/βρῦττον:

Occurrences:

The word βρύτος is the earliest word for beer found in ancient Greek and the term

⁶² Olck 1899: 459 and *OED* 3:214, s.v. cider.

⁶³ I leave out of this discussion two Greek words for beer only first found in late Byzantine texts: ούλοβίνα, from the Old Russian *olovina* (see Kazhdan 1984: 355; quoted in Karpozilos and Kazhdan 1991: 287); and φουκάς, from the Arabic *fokka* (see DuCange 1846: 1693 with Olck 1899: 461).

consistently used until the late fourth century B.C. The first use of the term is to be found in Archilochus of Paros (T1), who, as part of a simile, says: “a Thracian or Phrygian man sucked *brūtos* [or *brūton*] through a reed” (αὐλῶ βρῦτον ἢ Θρέϊξ ἀνήρ | ἢ Φρύξ ἔβρυζε) (see section 3.7 below for the straw and section 4.2.1.1 on the possible Mesopotamian source of Archilochus’s simile). Archilochus himself fought Thracians (from the Saian tribe) on the mainland before the middle of the seventh century B.C., at which point he notoriously dropped his shield.⁶⁴ He was certainly personally experienced with their culture, including their diet, and he also mentioned drinking wine from Ismarus in Thrace.⁶⁵

Aeschylus mentioned βρῦτος in his *Lycurgus* satyr-play (T6); again this seems to refer to a Thracian beer, since Lycurgus was the king of Thrace.⁶⁶ Hellanicus (T8) says specifically that Thracians make βρῦτον (or βρῦτος) from barley, and that another people (the name has dropped out) makes it from rye (for the cereal, see section 3.2.6 below). Jacoby suggested that the Paeonians were here meant, since Hecataeus mentioned them as drinkers of βρῦτος/βρῦτον (T3);⁶⁷ yet Hecataeus says specifically that their beer was made from barley. I would suggest then that Hellanicus was speaking of the Phrygians, who are in any case coupled already with Thracians in Archilochus as drinkers of this beer.⁶⁸

Definition:

Strangely, the lexica insist on saying that this word refers to barley beer specifically.

⁶⁴ Arch., fr. 5 West.

⁶⁵ Arch., fr. 2 West, and see fr. 4 West.

⁶⁶ See, for instance, Bacon 1961: 43.

⁶⁷ Jacoby 1957: 1a:454 (“die Paeonen?”). That Paeonians are involved was already assumed by Tomaschek (1894: 2.1:7).

⁶⁸ On the other hand, it is possible that Hellanicus simply was using βρῦτον as a generic term for beer (as Theophrastus [T17] certainly does later), in which case it would be impossible to restore the people of which he spoke, since rye beer is attested nowhere else in the Greco-Roman literary sources. Pliny (*Hist. nat.* 14.20.113) says that mead is very popular in Phrygia.

Herodian (T64) and Hesychius (T103) both rather vaguely defined βρῦτον⁶⁹ as "every drink made from barley" (πάν τὸ ἐκ κριθῆς πόμα/ποτόν)⁷⁰ while Hesychius also says (T101) that βροῦτος⁷¹ is "a drink made from barley" (ἐκ κριθῶν πόμα). Athenaeus (T81) says that some call "barley wine" (κρίθινος οἶνος) βρῦτος (or βρῦτον), such as (in order) Sophocles (T10), Archilochus (T1), Aeschylus (T6), Hellanicus (T8), and Hecataeus (T3). Of all of these, only Hecataeus says explicitly that it is made from barley (ἀπὸ τῶν κριθῶν), and then simply among the Paenonians; Archilochus, Sophocles, and Aeschylus do not mention the base cereal, while Hellanicus says that the Phrygians (as I have argued above) made it out of rye (ἐκ τῶν βριζῶν) (for this reading, see section 3.2.6 below), while the Thracians made it from barley (ἐκ τῶν κριθῶν). It may have normally been made from barley, as was the case with beer in general, but the lexicographical definitions may perhaps be explained otherwise. As I have already shown (in section 2.1.3.1), Theophrastus uses the word βρῦτος generically for beer (T17), when he speaks of placing a certain plant ἐν βρυτῷ τῷ ἀπὸ τῶν κριθῶν ("in *brūton/brūtos* made from barley"). This usage may have prompted lexicographers to consider the term a general one for any beer made of barley, though the very fact that Theophrastus and other authors must specify which cereal was used in βρῦτος proves that it was used much more generically. It must in the end be admitted that a definition such as "every drink made from barley" (πάν τὸ ἐκ κριθῆς πόμα/ποτόν), is not only wrong, but extremely misleading.

Modern lexicographers, rather than analysing the actual usages carefully, fall into the trap set by their ancient counterparts: thus Frisk gives as a definition "Gerstenbier," Chantraine

⁶⁹ The manuscript reading in Hesychius is actually βρυττόν, which was corrected by Meineke. It is interesting that a fragment of Euripides reads βρύττος μέγας (fr. 955b Snell), though Hesychius (*Lex.* s.v. [β1277]), following Aristotle (*Hist. anim.* 4.5 [530b5]), defines βρύττος as a type of sea urchin (on which, see Thompson 1947: 36).

⁷⁰ The manuscript reading is actually τρυφῆς ("softness/luxury") but the restoration κριθῆς is certain in comparison with Herodian; Meineke misguidedly suggested τρύγης ("of ripe fruit/crop").

⁷¹ The term βροῦτος is found nowhere else, and should perhaps be emended to βρῦτος (it is at least equated to βρῦτος in *LSJ* 1996: 332, s.v.). Tomaschek (1894: 2.1:7) calls βροῦτος the "barbarischen Nebenform."

“bière d’orge,” and Liddell, Scott, and Jones “fermented liquor made from barley.”⁷²

Etymology:

It is generally agreed that βρῦτος (and variants) stems from a Thracian word for beer, derived from a recognizable Indo-Germanic root.⁷³ Pokorny gives *bh(e)reu- or *bh(e)rǵ-, from which comes the English “brew,” as the Indo-Germanic root, and Georgiev gives *b^hrǣto- as the Thracian form.⁷⁴ Apparently, then, the word would have meant “that which is brewed” (with the added -t- denoting a substantive?). A number of cognates are regularly cited, such as *broð* (“stew”) in Old English, *prod* (“stew”) in Old High German, and *bruth* (“heat”) in Old Irish.⁷⁵ Also, the word is often connected with Greek βρύtea⁷⁶ / βρύτια and Latin *brisa* (“grape refuse after pressing”), which are thought to come from Thracian,⁷⁷ as well as Latin *defrutum* (that is *de-frūtum*) meaning “must.”⁷⁸ It is not clear, however, what grape residue or must has to do with beer.

⁷² Frisk 1954: 1:273, s.v.; Chantraine 1968: 199, s.v.; *LSJ* 1996: 332, s.v. Oddly Olck (1899: 458) defines βρῦτον as “Bier, Obstwein” (“Beer, Fruit-wine”); there is no evidence for its use as the latter.

⁷³ See, for instance, among classical scholars, Frisk 1954: 1:273, s.v. (“Thrakisches Wort”); Chantraine 1968: 199, s.v. (“le mot doit être thrace”); Kramer 1997: 202; and among Thracian scholars, Tomaschek 1894: 2.1:7; Russu 1959: 61 (with previous scholarship cited); Georgiev 1983: 1152. For the fanciful etymology from “Britannia,” see Bickerdyke 1889: 31-32, who rightly rejects it.

⁷⁴ Pokorny 1994: 143-145; Georgiev 1983: 1152. Tomaschek (1894: 2.1:7) gives *bhru-to- as the Thracian form, while Russu (1959: 61) suggests *bhru-t-.

⁷⁵ Interestingly, in the Old Irish *Crith Gabhlach* (probably from the seventh century A.D.) mention is made of “a vat in which a boiling is poured” (*dabach in ro immdeltar bruth*), which has been interpreted as referring to “a boiling of ale” (Richey 1879: 4:310-311). Wagner (1975: 12, n. 25 [and see 1972: 86]) takes *bruth* to mean “a measure of ale” and assumes, without evidence, that the term βρῦτος was “common to Celtic and Thracian.” Meyer (1906: 1.1:279, s.v.) does not equate *bruth* with beer, but Atkinson (1976: 1:217, s.v.) defines it as “a boiling, brewing (= measure of ale).”

⁷⁶ See the use of this word in connection with beer by Aretaeus (T64), discussed at section 3.5.3 below.

⁷⁷ See, after those scholars already cited, Pisani 1949: 51, and also Olck 1899: 458.

⁷⁸ See *OLD* 1996: 503, s.v.

A Greek source for the word has not been considered, though there is some good reason to suggest this. Archilochus (T1) wrote that the Thracian or Phrygian βρῦτον ... ἔβρυζε (“sucked *brūtos* [or *brūton*]”). Wilamowitz read ἔμυζε (found of beer-sucking in Xenophon [T13]) rather than the *hapax legomenon* ἔβρυζε. Yet Gerber has shown that this would destroy the onomatopoea, which itself might show that Archilochus considered these two terms etymologically related.⁷⁹ Furthermore, Pini has convincingly suggested that βρύζω is a form of the attested βρύω (from the same Indo-Germanic root mentioned above) which he takes to mean “making a drink gurgle.”⁸⁰ It is quite possible that βρῦτος was a Greek term, based on βρύω (in the sense “brew”?) used to describe (at least at first) a Thracian beer, just as ζῦθος (or ζῦτος) was a Greek term used to describe (at first) an Egyptian beer (on which, see section 2.2.11 below); see further section 3.4.3 below.

Whichever etymology is accepted, the Thracian or Greek, the circumstance in which the word came to be used in Greek was probably the first Greek encounter with the Thracians. Archilochus mentioned the earliest Greek settlement in Thrace, the colonization of Thasos by the Parians (from the middle of the seventh century B.C.), which is confirmed archaeologically.⁸¹ There can be little doubt, from their early exclusive use of the term βρῦτος, that the Greeks first connected beer with the Thracians whom they encountered in the seventh century B.C. It was only by the end of the fourth century B.C. that the Egyptians replaced the Thracians in Greek eyes as the beer-drinkers *par excellence* (see sections 2.1.3.1 and 2.1.3.2 above).

Accentuation:

The word is found in poetry in Archilochus (T1) and Aeschylus (T6), in which, as the

⁷⁹ Gerber 1976: 13-14.

⁸⁰ Pini 1972: 216-218, with Gerber 1976: 13-14, n. 18.

⁸¹ Isaac 1986: 79-80 and 279.

scansion attests, it must be spelled with a long *υ*. In the manuscripts of Athenaeus (T81), in which the Aeschylus citation is found, the word is spelled mistakenly with a short *υ*, as βρύτον. The word is spelled with a long *υ* by editors of Hecataeus (T3), Hellanicus (T8), and Sophocles (T10) (beginning in this case with Dindorf), even though again in Athenaeus it is short. The scansion in Cratinus (T9) also shows that βρυτίην has a long *υ*.

Gender:

There is some confusion as to whether the word is meant as the neuter βρῦτον or masculine βρῦτος in the fifth and fourth centuries B.C. This ambiguity arises from it being in the accusative in the passages of Archilochus (T1), Hecataeus (T3), Aeschylus (T6), Hellanicus (T8), and also in one place in Athenaeus (T81) and in one passage in Eustathius (T234), and in the dative in Theophrastus (T17). However, in Sophocles (T10) it is clearly masculine, as it is again much later in Psellus (who provides [T233] the uselessly vague description: ὁ δὲ βρῦτος πῶμά τι [*“brutos is a sort of drink”*]⁸²) and in one passage of Eustathius (T234). However, Athenaeus (T81) says that Hellanicus spoke of τὸ βρῦτον, though in the passage he quotes it is found in the ambiguous accusative.⁸³ Also βρῦτος is not found in Herodian and Hesychius, though they include a number of other forms of the word not known from elsewhere (see βροῦτος above and βρύττιον in section 2.2.1.1 below). Thus Athenaeus and the lexica are perhaps enough to show that there was a genuine neuter form of the word, and this is usually accepted.⁸⁴ Chantraine does not admit a neuter form though he cites βροῦτος and βρύττιον as genuine variants from Hesychius, without explaining why.⁸⁵ Chantraine would have had to

⁸² The manuscript has βρυτός.

⁸³ Athenaeus may have known from elsewhere in Hellanicus that he used the word as a neuter (and did not quote this text), or he may have assumed for some reason (unknowable to us) that Hellanicus used it, or, finally, he may have remembered the accusative as a nominative (which is very unlikely).

⁸⁴ See, for instance, Frisk 1954:1:273, s.v. and also *LSJ* 1996: 332, s.v. (with no citation from lexica), who still give primacy to βρῦτος.

⁸⁵ Chantraine 1968: 199, s.v.

argue that Athenaeus was mistaken in reading Hellanicus as using a neuter, and that the lexica either followed a similar misreading or that their βρύτον was a direct lemma of a text preserving the accusative (perhaps from Hecataeus [T3] since he speaks of it being made from barley, as the lexica say). It must be conceded that Athenaeus's collection of sources for the word, on which we must rely for the majority of our cases, cannot be taken as definitive or complete.

Derivatives:

One diminutive derived from the term is found only in lexica while two derivative adjectives are found in the fifth and fourth centuries B.C.: (2.2.1.1) βρύττιον, (2.2.1.2) βρύτινος, and (2.2.1.3) βρυτικός.

2.2.1.1 βρύττιον:

Both Herodian (T65) and Hesychius (T104) define βρύττιον as "a drink made from barley" (πόμα ἐκ κριθῆς), thus nearly identical to their definition of βρύτον (T64 and 103, respectively). Outside of these lexicons the word βρύττιον is not attested but it is difficult to explain it as a corruption of a form that does survive. Moreover, it parallels nicely the term ζύθιον beside ζύθος, perhaps showing that all of these words were originally Greek (see further section 2.2.11.1 below).

2.2.1.2 βρύτινος:

Hesychius (T102) says that in the *Softies* (Μαλθακοί), known to have been written by Cratinus, he jokingly referred to a "*brutinon* drink" (τὸ πόμα τὸ βρύτινον), playing on the fact that βρύτινον was the name for the thread (πήνισμα, the restoration of Musurus) of the βρύτον, a type of beetle. Cratinus wrote, in an iambic trimeter line (T8): "to spin some *brutinē* Amorgan fabric within" (ἄμοργιν ἔνδον βρυτίνην νήθειν τινά), meaning both the "beer-like" or

“silky fabric.”⁸⁶ Other sources show that there was a famous fine linen wear made in Amorgos,⁸⁷ but this does not explain Cratinus’s allusion to beer. Cratinus was infamously fond of wine,⁸⁸ and his personal predilection seems to have been central to his own brilliant Πυτίνη (*The Wine Flask*) of 423 B.C.⁸⁹ It is possible that with this fondness for wine came a disdain for beer, and he may have followed Aeschylus (T4) in considering the latter effeminate (i.e. μαλθακός), like silky fabrics (see further section 4.2.3.2.2 below).⁹⁰

2.2.1.3 βρυτικός:

The comic author Antiphanes from the fourth century B.C., according to Athenaeus, spoke of someone preparing medicine for a βρυτική woman (T12/T82), which would presumably mean “drunk on βρύτον.”⁹¹ Some scholars, however, have wished to emend the word: Meineke read Βρεττικήν (“from Brittania”) and Kock Βρυττικήν (“from the Bruttii”).

2.2.2 caelia/celea(?)/celia/cerea/ceria(?)/cilicia(?):

Occurrences and Definition:

Pliny speaks of a drink (or drinks ?) made from cereals called *caelia et cerea* in Hispania (T51). It is unfortunate that Pliny’s source on Hispanian beer is unknown, and what he says

⁸⁶ *LSJ* (1996: 332, s.v.) define the word as “of or for βρύτον” and it is said to be used here where βύσσιος would be expected, though this goes against what Hesychius says.

⁸⁷ See Kassel and Austin 1983: 4:173 (with sources cited).

⁸⁸ Ar., *Pax* 702-703 and *Eq.* 526-536, and Nicaeret. in *Anth. Pal.* 13.29 (also in Athen., *Deipn.* 1.39c (*epitome*) = Crat., test. 45 Kassel-Austin).

⁸⁹ Predilection: *Schol. in Ar. Eq.* 400a; *The Wine Flask*: Crat., frs. 193-217 Kassel-Austin. Sidwell (2000: 140-142) rather suggests that Cratinus’s target was not himself but Aristophanes, who, as Athenaeus (*Deipn.* 10.429a) claimed, wrote his plays drunk.

⁹⁰ For silk as a woman’s fabric, see Dalby 2000: 151-152 and 200.

⁹¹ See Chantraine 1968: 199, s.v.; *LSJ* 1996: 332, s.v.

otherwise about it is unattested elsewhere,⁹² except that it was made from *frumentum* (T49), for which see below. His mention of *cerea* as a name for beer is also problematic. First, the term is unattested elsewhere as a beer type, and a glossary also defines *cerea* as “flour of fenugreek” (*i fenograeci farina*).⁹³ Second, the word is suspiciously close to the Latin *cerealis* (“relating to cereal”). Without more evidence it is hard to assess whether the term *cerea* was a genuine one for beer or a mistake by Pliny, or a later interpolation or mistake in his text.⁹⁴ Such mistakes were evidently easy to make: *celea* (for *caelia* or *celia*) is found in some codices of Isidore (T136), who was quoting Orosius (T112), and, more importantly, the word *ceria* is found in one manuscript of Gregory (T129). In the latter case, the mistake seems to have come about because Gregory quoted Orosius as saying that the name of the beer originated *a coquendo* (“from being cooked”).⁹⁵ Orosius (T112) in fact said that *caelia* was named *a calefaciendo* (“from being heated”), and Gregory’s mistake probably led to scribal emendation to fit his false etymology.⁹⁶

If *cerea* and *ceria* are doubtful forms, the term *caelia* (or *celia*) is, on the other hand, attested elsewhere, though always, where the context exists, it is connected with the siege of Numantia of 133 B.C. in the classical sources (for later sources, see below). Florus says of *celia*, “thus they call a local drink [made] from wheat” (*sic vocant indigenam ex frumento potionem*) (T74). This tends to show that this was simply a local, Celtiberian name for beer. Orosius (T112), also concerning the Numantians, says that *caelia* is made from “the juice of wheat” (*sucus tritici*). He goes on to speak about how the beer is made (as will be seen in

⁹² Namely, that it was aged (T48) and that its barm was used as bread leaven (T49), in both cases in conjunction with Gallic beer.

⁹³ *CGL* III, 558.54.

⁹⁴ Loth (1924: 54) rightly doubts the word, though he does show how it could be connected to *cerevisia*. It is, however, usually accepted without question as an authentic Celtiberian term: see, for instance, Walde and Hofmann 1938: 203, s.v. (“wohl kelt”). Whatmough (1970: 447 and 451) considers *celia* a variant of **ceria* which he connects to *cervesia* and *curmi*. Binsfeld (1972: 258) tentatively restored it in an inscription (E11); see section 2.2.2.1 below.

⁹⁵ Some editors logically read *coctiam* in Gregory, which is possible. But since we can be confident about what Orosius wrote we must assume that Gregory (or his scribe) garbled the quotation.

⁹⁶ Orosius is also quoted verbatim on this beer by Paul the Deacon (T173).

section 3.4.2 below), and provides much more detail than Florus. Although Orosius is known to have made use of Florus, it is clear that in this case he had a more complete source. His source, and in fact perhaps the sole source for all our information on Hispanian *caelia/celia* may have originally been Livy or Polybius.⁹⁷ It is noteworthy that Orosius says that the beer is made from *triticum*, the specific term for wheat, while Pliny and Florus speak of *frumentum*.⁹⁸ Interestingly, a glossary defines *celia* as *potio de suco frumenti* or “a drink [made] from the juice of wheat”(T221), thus combining the mention of *sucus* from Orosius and the *frumentum* found in the earlier authors. This may mean that it is a lemma from the original source of all of these texts, perhaps Livy.

The word *cilicia* is once found in the addenda to the glossary of Henricus Stephanus (which is based on older glossaries) defined as ζῦθος (T239), and also as the unattested χίθος and as λίθος.⁹⁹ Holder argued that the last two entries are garbled versions of the first, and that *cilicia* is itself related to *caelia/celia*.¹⁰⁰ This is quite possible, but without more information it is impossible to say for sure.

Very oddly, the term *celia* reappears in our literary evidence in the eighth century A.D. In Chilienus’s verse life of St. Brigid (T164), it is said that God, through the will of the Saint, was present, “who transformed the cold fluids into waves of *caella*” (*qui latices gelidos caellae convertit in undas*). In other places it is said specifically that the water was turned into *cervisia* or *sicera*, thus *caella* must be a word for beer. It is quite possible that *celiae*, which fits metrically, should be read here; a scribe who did not know the word may have changed it into the recognizable, though in the context nonsensical, *cellae*, which became *caellae*. In Felix’s

⁹⁷ See *Epit.* 59.1 for what little is left of Livy’s account of the siege of Numantia by Scipio Aemilianus. Cicero (*Epist. ad fam.* 5.12.2) mentions in passing Polybius’s *Numantia* (and see also *Pol.*, 38.20).

⁹⁸ Iberian wheat beer is also attested in Dioscorides (T55a).

⁹⁹ *CGL* III, 476.57 and 441.69.

¹⁰⁰ Holder 1907: 3:1033-1034. Whatmough (1970: 447) suggested that *cilia* be read.

life of the eighth century A.D. St. Guthlacus two monks are reprimanded for being drunk on *celia* (T170). In a letter of A.D. 790 to his friend Joseph, Alcuin speaks of sour *celia* (T174). More importantly, on the plan of the monastery of St. Gall from around A.D. 820, *celia* is shown to be produced in two different buildings (T199a-b) and is evidently considered equivalent to *cervisa* (a word which is also used at T199c-d), thus presumably being considered a generic word for beer. Furthermore, in the Old English translation of Orosius (T112) from the last years of King Alfred's reign (A.D. 871-899) *caelia* is translated as *ealo* ("ale"),¹⁰¹ and, in the Old English translation of Felix's life of St. Guthlacus (T170, quoted above) *celia* is translated as *aela*.¹⁰² Also, in Old English glossaries the terms *celeal/celia*, *cervisia/cervisa*, and *eala/eale/ealo* are considered synonymous.¹⁰³ All this tends to show that despite our evidence the word continued to be popularly used throughout Roman Imperial times and spread from Celtiberia (or Celtic areas generally?) to the rest of Europe.

Etymology:

As pointed out, *caelia/celia* was probably a native Celtiberian term for wheat beer,¹⁰⁴ thus any proposed Latin source (such as *calefaciendum* ["making hot"] by Orosius) should be dismissed. Chapot proposed that *caelia* should be connected to the word "ale" (through **aelia?*).¹⁰⁵ This makes good sense considering the evidence from Old English cited above.

¹⁰¹ Anon., *Oros. hist. adv. pagan.* 5.3 (edited in Bately 1980: 117). For the authorship and date of this translation, see Bately 1980: lxxiii-xciii.

¹⁰² Anon., *Fel. vit. Sanct. Guthl.* 15 (edited in Gonser 1909: 151, l. 3).

¹⁰³ Holder 1907: 3:1034.

¹⁰⁴ See especially Whatmough 1953: 478-479 and 1970: 447 and 451, who connects it to the Gallic terms *cervesia* and *curmi*. See also Walde and Hofmann 1938: 130, who say that it is a Spanish word and who connect it with Caelaon, the name of a Spanish people.

¹⁰⁵ Chapot 1919: 1075.

Derivatives:

2.2.2.1 *cerearius*:

Binsfeld restored one inscription (E11) to read that a woman was a *cerearius* (see further the discussion in section 2.2.5.1 below).¹⁰⁶ Since *cerea* is itself a doubtful form, this derivative is probably doubtful as well.

2.2.3 *furta*:

Occurrence and Definition:

A medieval glossary equates *zitos* with *furta* (T237). This is certainly glossed from the Latin version of Dioscorides (T54b), in which ζῦθος (and, it seems, κούρμι also) is translated as *furta*,¹⁰⁷ and to which is appended the note: “which some call *camum*” (*quem aliqui camum vocant*). Nowhere else are ζῦθος and κάμον (*camum*) equated, and in Diocletian (E16) they are even treated as different terms, and thus the translator’s claim may be suspect.¹⁰⁸

Etymology:

The use of the term *furta* is attested nowhere else, and is quite puzzling: it would normally mean “thefts” or “artifices” as the neuter plural of *furtum* but is here treated as a feminine singular. The translator of Dioscorides apparently proposes his own folk etymology of *furta* as coming from *infusus*, or the “soaking” (or possibly the “pouring out”) of the barley

¹⁰⁶ Binsfeld 1972: 258.

¹⁰⁷ However, ζῦθος is translated as *zutus* in another passage of Dioscorides (T56b).

¹⁰⁸ Unless he means that in the widest sense what some call *furta* is the same sort of drink (i.e. beer) as what others call *camum*.

used in the preparation of the beer (T55b).¹⁰⁹ Clearly *furta* was a common word in Longobardic times, the exact origins of which were no longer known.¹¹⁰ I can only propose a textual corruption from *frumenta* (or *fermenta*?) to *furta*,¹¹¹ or the Latinization of a Greek *φύρτα or *φούρτα (linked to φουκᾶς? [on which, see the note in section 2.2 above]), or possibly an unknown Germanic term.

2.2.4 κάμον / *camum*:

Occurrences:

Very surprisingly, the term κάμον is not found in the *LSJ* (or its newest supplement), though it was certainly a Greek word. The word is first found in the early third century A.D. Julius Africanus, who says that the Paeonians drink κάμον (or κάμος?) (T83). At around the same time, Ulpian twice mentioned *camum* (in the nominative) (T84), once quoting Masurius Sabinus (T38). Diocletian mentions an Italian pint of *camum*/κάμον (or *camus*/κάμος?) (*cami*/κάμου in the original) for 4 denarii (E16).¹¹² In none of these contexts is the term explained, though in both Ulpian and Diocletian it is contrasted with *cervesia* as well as *zythum*.

The fifth century A.D. historian Priscus Panites said (T109) that when he was in Scythia travelling with a delegation to Attila the Hun, the locals had “millet rather than wheat” (ἀντὶ μὲν σίτου κέγχρος) and that “the attendants following us carried millet and the drink supplied from barley. This the barbarians call *kamon*” (ἐκομίζοντο δὲ καὶ οἱ ἐπόμενοι ἡμῖν ὑπηρεταὶ κέγχρον καὶ τὸ ἐκ κριθῶν χορηγούμενον πόμα· κάμον οἱ βάρβαροι καλοῦσιν αὐτό). It is odd that though Priscus twice describes millet, and though there is independent evidence of Scythian millet beer

¹⁰⁹ Gregory (T129) speaks of cereal “soaked in water” (*aqua infusus*) to make beer.

¹¹⁰ Unfortunately, beer is not mentioned in the surviving Longobardic laws (see Beyerle 1962).

¹¹¹ The editors explain it as *furca*, but what does it have to do with a fork?

¹¹² In one version of the edict (T16d), μάκαμον (or μάκαμος?) is found. Note also the corrupt version at E16b.

(T68; and see T3 for the Paeonians), Priscus speaks of κάμον specifically as a barley drink. The Latin *camum* is similarly said to be a barley drink (πόματος κριθῶν = πόμα τὸ ἐκ κριθῶν ?) in a late glossary (T183), and also in the Latin version of Dioscorides (T55b).

Definition:

From the evidence above it seems safe to assume that the word was used of barley beer, especially in the Caucasus, but perhaps more generally as well. In fact when it is found coupled with *cervesia* (κερβησία) in both Ulpian (T84) and Diocletian (E16), it more than likely is meant to denote a barley as opposed to a wheat beer, as is explicitly the case in a late glossary (T183-184). Also in the Latin version of Dioscorides, *camum* is said to be a word for barley beer (T55b).

Etymology:

The word κάμον / *camum* is often thought to be originally a Celtic term,¹¹³ though it is not attested in areas of Celtic occupation. However, its closeness to Celtic *curmi*, *curmen*, etc. (see section 2.2.6 below),¹¹⁴ and its possible connection to the Latin *camba* (“malthouse” [for this word, see section 3.3.2.4 below]),¹¹⁵ could support this.

2.2.5 κερβησία / *cerbesia*/*cerevisa*/*cerevisia*/*cervesa*/*cervesia*/*cervisa*/*cervisia*/*cervissa*:

Occurrences and Definition:

¹¹³ Holder 1896: 1:728-729; Walde and Hofmann 1938: 149; and Whatmough 1953: 478 and 1970: 1185.

¹¹⁴ It is noteworthy that *curmi* (and variants) is never found coupled with *camum*, showing perhaps that these were synonymous Celtic terms for barley beer.

¹¹⁵ Holder 1896: 1:728; Hehn 1911: 145 (cited [from an older edition] by Olck 1899: 462); Walde and Hofmann 1938: 149; and Birkhan 1997: 1089.

Pliny is the first extant author to use the word *cervesia* (or *cerevisia* in some of the manuscripts), citing it as one of the terms for beer among the Gauls (T51).¹¹⁶ Similarly, Julius Africanus, in the early third century A.D., states that κεβησία is Celtic beer (T83). As I have already tried to demonstrate above (in section 2.1.3.3) from other evidence, *cervesia* probably originally referred to Celtic wheat beer, and came to be used of wheat beer generally by the early third century A.D., and of beer generally at least by the late seventh century A.D.

Etymology:

There is no reason to doubt that this was originally a Celtic word. Scholars, however, have in the past argued that it was specifically a Gallic term.¹¹⁷ In fact the word (in various forms) is found in a number of inscriptions in Gaul (*cervisia* given to the populace in Narbonensis [E4], inscriptions on vessels [E5, 6 (?), 7-8, 15 (?), and see 14, which is from Germany]), even as the nickname *Cervesa* (E2),¹¹⁸ and in the Gallic medical writer Marcellus Empiricus (T110 [*cervesa*] and 111 [*cervesia* and *cervisia* in the same sentence, and copied in a manuscript of Cassius Felix (T114) as *cervisa*]).¹¹⁹ Yet, after Pliny's reference to the word, the earliest extant examples of it (as *cervesa*) are from tablets from the Roman fort of Vindolanda in Britain from the late first and early second century A.D. (see the citations in section 2.1.3.3 above), thus showing that the term was British as well as Gallic. Lambert gives **keruisia* as the original form, Gallic according to him.¹²⁰

¹¹⁶ Holder (1896: 1:995) cites Dionysius of Halicarnassus on *cervesia* though he does not use the term.

¹¹⁷ Bolelli 1942: 153; Gernia 1981: 108; Billy 1993: 51-52; and Lambert 1994: 191. For a large amount of references to the use of the term, see Holder 1896: 1:995-997, with 1907: 3:1207-1208. I have actually collected many more in this thesis.

¹¹⁸ See also the possible, though unlikely, restoration *Ce[rvesa]* in an inscription at Marichal 1988: 188, no. 82.4, first proposed by Aymard 1955: 127. For a full discussion of this name, see Evans 1967: 333-334, who says (334) that it was "a nickname or a comic name;" Loth (1924: 54) had called it "humoristique."

¹¹⁹ See further section 2.2.5.1 below on the word *cervesarius* in sources in Belgian Gaul and Germany.

¹²⁰ Lambert 1994: 191. Loth (1924: 54) gives **cerueisa* or **cereueisa* as the original form.

Despite its obvious Celtic origins, a number of false Latin etymologies have been proposed for the word. Isidore of Seville wrote (T136), following an unknown source: “*Cervisia* [or *cervisa* in some of the manuscripts] is named from Ceres, that is from cereal” (*cervisia a Cerere, id est fruge vocata*). Scholars almost universally take this to be a false, folk etymology.¹²¹ Julian (T91) jokingly says that the beery Dionysus should be called Demetrius, meaning born of Demeter or born of two mothers, but nowhere else is the cereal goddess Ceres or Demeter connected to beer in our ancient sources.¹²² Other doubtful modern etymologies include: *Cereris* (“of Ceres”) + *vis* (“strength”),¹²³ *Cereris* (“of Ceres”) + *vitis* (“vine”),¹²⁴ *cerealis* (“of cereal”) + Celtic *vis* (“water”),¹²⁵ Celtic *cer* (“wax/honeycomb”) + *vis* (“water”),¹²⁶ and Latin *cervus* (“deer”).¹²⁷

Variants:

There are a great many variants of *cervesia*, perhaps further evidence that it was simply a loan word in Latin (though see on ζῆθος in section 2.2.11 below). Table 2 (on the following page) shows all of the textual variants known to me in chronological order in terms of the author

¹²¹ Strikingly, however, Siebert (1998: 123) has recently accepted it; see also Meid 1996: 34-35.

¹²² It is noteworthy that, for instance, Augustine connects Liber with vines and Ceres with grain (*Civ. D.* 4.11 [= *PL* 41.122]), but does not make the association of wine versus beer. Similarly, Paulus Silentarius (in *Anth. Pal.* 11.60.1-4) connects wine with Luaios (“the deliverer,” an epithet of Dionysus) and then bread with Persephone; Seltman (1957: 124) says that the mention of bread rather than beer here is “illogical and pedestrian.” Demeter’s κικεών cannot be interpreted as beer, as some have done (such as McGovern *et al.* 1999: 864): see the discussion in Richardson 1974: 345, and his definition of the beverage as “any form of mixture of grain ... and liquid ... often seasoned with herbs” (344). No mention of beer is made in a new work on Ceres (Spaeth 1996).

¹²³ Arnold 1911: 122, who rightly dismisses it. However, Butcher (1989: 5), Smith (1994: 3), and Dornbusch (1997: 17), among others, uncritically accept an etymology from *Ceres* + *vis*.

¹²⁴ Perrier-Robert and Fontaine 1996: 10.

¹²⁵ Sherratt 1987: 94.

¹²⁶ Arnold 1911: 144-147.

¹²⁷ Mayer 1939: 79, cited by Evans 1967: 334.

TABLE 2: <i>CERVESIA</i> AND RELATED WORDS				
	1 st - 2 nd C. A.D.	3 rd - 4 th C. A.D.	5 th - 6 th C. A.D.	7 th - 9 th C. A.D.
<i>cervesia</i>	T51	T84, 88, E16a	T111, 115, 120	T159
<i>cerevisia</i>	T51			T139a, 140-143, 157-158, 165, 213
<i>cervesa</i>	E2, 5 (?), 6 (?), 8, 14, 15 (?), <i>Tab. Vindol.</i> II, 186, l. 11, 190, ll. 6, 9, 10, 23 (= I, 4, ll. 12, 15, 26, 29), 482, <i>Tab. Vindol. Suppl.</i> 3, l. 13		T109	T155, 187
<i>cervisa</i>	E4 (?)		T114, 116-118, 128	T136, 138, 139b, 151, 146, 149, 153-155, 161, 162, 178-181, 187, 190, 191, 194-200, 203-205, 207, 212, T216a, c, e, 217-219
<i>cervisia</i>	E4 (?)	T90	T111, 113, 119, 130-131	T130-131, 133-136, 138-139, 144-150, 152-154, 156, 162-169, 171-172, 174-175, 187-190, 192-193, 196-197, 201, 214, 216b, d, 232
<i>cerrivisia</i> or -sa	E7			
κερβησία		T83, E16d		
καρβησίος or -ον?		E16b		
κερβησίος or -ον?		E16c		
<i>cervissa</i>			T119	
<i>herbisa</i>				T137
<i>cirvisa</i>				T138
<i>cerbisa</i>				T177
<i>cerbesia</i>				T184
<i>cervica</i>				T195

in which they are found (by T numbering).¹²⁸

The table clearly shows that there was an early preference for *cervesia/cervesa* which shifted to a later preference for *cervisia/cervisa*.¹²⁹ The switch between an *-esia* and an *-isia* ending is also paralleled in the use of both the word Alesia and Alisia in Gaul.¹³⁰ Scholars are divided as to whether the original word ended in *-ia* or simply *-a* (see above), and both are well attested at all periods.¹³¹ The v and b substitution (κερβησία/*cerbesia*)¹³² should cause no problems (note Byzantine and modern Greek β = v). The remaining rare forms (such as *cerbisa*, *cerrivisia* [or *cerrivisa*], *cervissa*, and *cirvisa*, and the highly unusual *herbisa*) can perhaps be explained on the whole as individual idiosyncratic spellings, though the *cervica* of one manuscript is evidently simply a mistake.¹³³ On the other hand, *cerevisia/cerevisa* seem to have been authentic late variants of *cervisia/cervisa*; I suspect that *cerevisia* was not written by Pliny (most manuscripts have *cervesia*) but by a later scribe.

¹²⁸ I am aware that this arrangement may be misleading for earlier authors since their texts survive only in later examples which were certainly prone to mistakes. Also some of the readings may be editorial corrections (which seems to be commonly done, for instance, in *PL* with no notice of the fact).

¹²⁹ Note how *cervisa* and *cervisia* are used interchangeably in Adalhard (T200-201 and 203-204) and in a Frankish capitulary (T215) and are found as variant readings in Bede (T168). There is only one early example of *cervisia/cervisa* (E4 [undated]) and inscriptions always have *cervesarius* (E5 [?], 6 [?], and 9-12, and see *Tab. Vindol.* II, 182, col. ii, l. 14 and *Tab. Vindol. Suppl.* 2, ll. 6 and 17) for “beer-maker,” as if the standard term for the product was considered to be *cervesa* (see section 2.2.5.1 below). I would give the original Gallic form as **keruesia/kervesa* or **keruesia/kervesia*.

¹³⁰ See Bertoldi 1931: 283 and Lambert 1994: 191 (with Flobert 1995: 268).

¹³¹ As noted by Adams (1975: 23), who shows that in Latin both *camisa* and *camisia* are found for the Gallic loan-word (now found in French *chemise*).

¹³² Evidently, the Latin term caused problems to the inscribers of Diocletian’s edict who wrote κερβησίος (or κερβησίον) (E16b), καρβησίος (or καρβησίον) (E16c), and κερβησία (E16d).

¹³³ Arnold (1911: 212) mistakenly cites the non-existent (though plausible) *cerevisa* as occurring on the map of St. Gall (T199), where only *cervisa* is found (see further sections 2.2.2 above and 3.11.4 below).

Derivatives:

Two derivatives are found: (2.2.5.1) *cervesarius/ cerevisarius* and (2.2.5.2) *cerevisor*.

2.2.5.1 *cervesarius/cerevisarius*:

The term *cervesarius* (obviously formed from the base word *cervesa* with the suffix *-arius*¹³⁴) is found both as a noun, meaning “a maker of *cervesa*” and an adjective meaning “having to do with *cervesa*.”¹³⁵

On one cup (identified as a *poculum*) is read *cervesar* and *esar* (E5, and see E6), which was restored by de Barthélemy as *cervesar[iis feliciter]*, a conjecture which is usually accepted without comment.¹³⁶ However, Déchelette has logically restored the inscription as *cervesa r[eple]*, which fits much better with what is known from other inscriptions on vessels (*reple ... cervesa* [E8] and *imple ... cervesa* [E14]).¹³⁷ However, the term *cervesarius* is found on a number of inscriptions from the early Empire from the Moselle River area, which apparently was an important centre for beer production.¹³⁸ One of them is the tombstone of Capurillus from Trier (ancient Augusta Treverorum) (E9), another the tombstone of Julius from Metz (ancient Mediomatrici) (E13). In a tablet from Vindolanda listing amounts owed by individuals, an

¹³⁴ Schmidt (1983: 754) assumes rather that it is formed from *cervesia*.

¹³⁵ See Souter 1949: 47, s.v.

¹³⁶ De Barthélemy 1877: 176, with, for instance, Rostovtzeff 1930: 253, Schmidt 1983: 754, and Kramer 1997: 208, n. 69.

¹³⁷ Déchelette 1904: 1:120, 125, nos. 6-7, and accepted by Loth 1924: 54. Note also the *[cer]vesa[ri ?]* restored on a vessel from Rheinzab (E14) by Whatmough 1970: 1076, no. 230.

¹³⁸ See Wightman 1970: 187-188, Heinen 1985: 1:147-148, and especially Binsfeld 1971. For the general fertility of the area around ancient Trier, see Pliny, *Hist. nat.* 18.49.183 and Tac., *Hist.* 4.73.7. The area now is best known for its wine, though the first ancient author to mention the grape vines of the Moselle was the fourth century A.D. Ausonius (*Mosella* 21, 25, 161-168, 190-191, and 194-196); see also Fortunat., 10.9. For depictions of wine barrels from the area, see section 3.8.1 below. For wine in the Moselle area in Roman times, see Loeschcke 1933; for wine in the Rhineland in Roman times, see Cüppers 1970.

Atrectus the *cervesar[ius]* is found.¹³⁹ As the editors have shown, the name is attested in Belgian Gaul, including Trier, and in the same tablet a Sabinus from Trier (*Sabinus Trever*) is attested.¹⁴⁰ Another fragmentary tablet listing amounts of money twice includes the word *cervesarius*.¹⁴¹

Another instance of a *cervesarius* from Trier is the inscription (E10) of a soldier in Domitian's German fleet who is rather enigmatically described as a *negotiator cervesarius artis affectur<a>e*, which, translated literally, means a "*cervesa*-related dealer of the guild of dyeing." Scholars assumed that this was a merchant who dealt with "dyed" or dark beer (which presumably would have been made with the infusion of roasted malt in the hot water, just as tea colours hot water)¹⁴² but Rostovtzeff has shown that *ars affecturae* cannot be read in this sense. He noted that on inscriptions from Lyons (ancient Lugdunum) and Augsburg (ancient Augusta Vindelicum) there are many references to a person who follows a certain *ars*, such as the *ars argentaria*, *barbariceria*, *brossaria*, *cretaria*, *fabricae ferrariae*, *flaturaria*, *lintiaria*, *macellaria*, *purpuria*, *retiaria*, *saponaria*, *vestiaria*, and *vitria*; sometimes the person is said to be an *artifex* or *opifex* ("artisan") or *negotiator* ("dealer"). He shows that Gauls not only passed on professions from father to son but also seemed to have belonged to professional corporations or guilds, thus this person may have been a merchant of *cervesa* who belonged to the guild of dyers.¹⁴³ Two other inscriptions show that there was also an *ars cervesaria* or guild of beer-makers. One of them is the tombstone from Trier of a Fortunatus (E12), the other a stone set up by a woman named Hosidia (?) which Binsfeld restored as referring to her *negotians artis*

¹³⁹ *Tab. Vindol.* II.182, col. ii, l. 14.

¹⁴⁰ Bowman and Thomas 1994: 133. Sabinus: col. i, l. 4. It is pointed out that most of the soldiers of Vindolanda were from Batavian and Tungrian units which were recruited originally in Belgian Gaul and in Germany (Bowman and Thomas 1994: 30).

¹⁴¹ *Tab. Vindol. Suppl.* 2, ll. 6 and 17.

¹⁴² See still, for instance, Wightman 1970: 188, n. 25.

¹⁴³ Rostovtzeff 1930: 254-256. He also suggests that *cervesa* may have been the name for a brown dye, but there is no evidence for this. Dr. Harry Edinger has suggested to me that the same equipment could be used for beer making and dyeing.

cervesariae sive cereariae or “dealing in the *cervesa* or *cerea* guild” (E11).¹⁴⁴

Apparently the term *cervesarius* is absent from the ancient literary sources. The earliest example of it (as *cerevisiarius*) in a literary source of which I am aware is in a law passed during the reign of the Anglo-Saxon King Edgar (who ruled from A.D. 959 to 975): “We instruct that no priest should be a *cerevisiarius*, nor in any way should he lead a buffoon with himself, or with others. But he should be, just as is suitable to his position, wise and worthy of praise” (*docemus etiam, ut nullus sacerdos sit cerevisiarius, nec aliquo modo scurram agat secum ipso, vel aliis; sed sit, sicut ordinem eius decet, prudens et venerandus*).¹⁴⁵ This assumes the rare base word of *cerevisia*. It cannot be certain that *cerevisiarius* here means “maker of *cerevisia*” (and why, after all, could a priest not be a brewer if monks could be?) rather than “drinker of *cerevisia*” or something similar.¹⁴⁶

2.2.5.2 *cerevisor*:

The word *cerevisor* is first found in an anonymous life of St. Lugidius (T210): “And the boy Lugidius, a good *cerevisor*, mixed at the time in one vessel the liquid and water” (*et puer Lugidius, bonus cerevisor, liquorem simul et aquam in unum vas commiscuit*). Since the previous line mentioned *cerevisia*, there can be little doubt that *cerevisor* is another word for a maker of beer¹⁴⁷ (see further section 3.5.4 below for this passage).

¹⁴⁴ Binsfeld 1972: 258; the inscription reads *gervesariae*. For the insecurity of the restoration, see further section 2.2.2.1 above.

¹⁴⁵ Edgar, *Canones* 58 (= PL 138.503A-B).

¹⁴⁶ In the contemporary laws of the Northumbrian elders (*Leg. presbyt. Northumbr.* 41 [= PL 138.523B]) a priest is not permitted to be “a drunkard, a buffoon, or an ale-poet” (*ebriosus aut scurrilis aut ealscop* [Nelson; PL: *calscop*]); the Old English version of this law says that a priest cannot love drunkenness or be a “gliman [i.e. a man who provides glee]” or an “eala-scōp” (Thorpe 1840: 2:296-297). The Old English word “scop” referred to a poet or minstrel (*OED* 1989: 14:671, where King Alfred is quoted as saying, c. A.D. 888 [*Boeth.* 30 (the prose version edited in Griffiths 1991: 145)]: *Omerus se goda sceop* [“Homer is a good poet”]), but it is not exactly certain what an “ale-scop” was (the word is not in the *OED*). For Old English legislation related to beer, see Monckton 1969: 16.

¹⁴⁷ DuCange (1842: 2:290, s.v.) defines *cerevisor* as a maker of *cerevisia* (*qui cerevisiam conficit*) and cites this instance and then further examples from the fourteenth and fifteenth centuries.

2.2.6 κόρμα/κούρμι / *corma/curmen/curmi*:

Occurrences and Definition:

Posidonius wrote of the Gauls (T27): “Among those who are poorer there is wheaten beer prepared with honey, and among the majority there is plain [beer]. It is called *korma*” (παρὰ δὲ τοῖς ὑποδεεστέροις ζῦθος πύρινον μετὰ μέλιτος ἐσκευασμένον, παρὰ δὲ τοῖς πολλοῖς καθ’ αὐτό· καλεῖται δὲ κόρμα). It is almost universally thought that κόρμα is meant to refer to both the honey wheat beer and the plain beer.¹⁴⁸ Further evidence, however, shows that it can only plausibly refer to the latter. By “plain” Posidonius certainly means that the common drink was made without honey, but he could also be referring to a drink made without *wheat*, that is, simply with barley, the basic beer cereal (as will be seen in section 3.2.1 below). Posidonius elsewhere (T26) speaks of the standard Gallic drink being a barley beer,¹⁴⁹ and such a beer is said to be foul-smelling by Dionysius Halicarnassus (T37),¹⁵⁰ and for this reason may have been the drink of the common or poorest Celts.

Furthermore the word κόρμα should be linked to κούρμι/*curmi*,¹⁵¹ which is known to have been applied to a barley beer.¹⁵² Dioscorides explicitly says that κούρμι was made from barley (T55a). The Gallic medical writer Marcellus Empiricus from the early fifth century A.D., in a prescription for coughing (T110), speaks of placing salt “in a drink of *cervesa* or *curmi*” (in

¹⁴⁸ For example, Yates and Flather 1890: 407; Olck 1899: 462; and Kidd 1999: 135.

¹⁴⁹ Malitz (1983: 186, n. 128) states plausibly that the barley beer referred to here is κόρμα.

¹⁵⁰ Julian (T91) speaks of Celtic beer smelling like τράγος, a pun on “he-goat” and a type of wheat; the title of this poem in the anthology is given as “On wine [made] from barley” (εἰς οἶνον ἀπὸ κριθῆς), but Gallic spelt beer is also attested, as will be seen below (section 3.2.2). We should not believe that beer was generally considered foul-smelling by the Greeks and Romans; see Diodorus Siculus (T29-32) with the comments in section 3.12.2 below.

¹⁵¹ Olck 1899: 462; Dottin 1920: 116; and *LSJ* 1996: 981, sv. κόρμα, and 987, s.v. κούρμι. Kidd (1988: 313) makes no such connection, only citing Hesych., *Lex.* s.v. κόρμα (= T107). Olck (1899: 462) goes so far as to assume that κόρμι was written by Posidonius. Inexplicably, Duval (1952: 122) differentiates between κόρμα and κούρμι.

¹⁵² Billy (1993: 60 and 179) defines *curmi* as “bière de blé,” ignoring the literary evidence. He also defines *korma* the same way (57 and 179).

portionem cervesae aut curmi). From what has been established about *cervesia* (in section 2.1.3.3 above), Marcellus almost certainly means “in wheat beer or barley beer” (see also my examples of the coupling of *camum* and *cervesia* in section 2.2.4 above).¹⁵³

However, a late glossary (T185) defines *curmen*, which should certainly be taken as the same word as *curmi* and company,¹⁵⁴ as ζῦθος ἄπὸ σίτου, which, since it is specified, probably means “beer made from *wheat*” rather than from cereals generally (which would be tautological). Without knowing the source of this gloss it is very hard to know what to make of it.

Etymology:

There is no doubt that these terms all stem from a Celtic word, and Holder gives **curme* or **curmen* as the original form.¹⁵⁵ It is undoubtedly linked to the Old and Middle Irish *cuirm* (genitive *corma*) and the Old Welsh *cwrwv* (*cwrw* in modern Welsh).¹⁵⁶ In the fifth century A.D., St. Cynon of Wales supposedly said: “Good beer is the key of the heart” (*cwrw da yw allwed calon*).¹⁵⁷ This should be compared to an inscription on a spindle whorl (found in Aûtun, France, ancient Augustodonum), perhaps from the first century B.C. (before Latin entirely took over as the written language in Gaul¹⁵⁸), which runs (E1): *nata vimpi | curmi da*. This has been

¹⁵³ Meid (1996: 33) for one remains unsure of whether the two are the same or different types of beer.

¹⁵⁴ See, for instance, Olck 1899: 462.

¹⁵⁵ Holder 1896: 1:1202, who also lists the variations of this word in different Celtic languages though he fails to mention T108 and E1; see further Dottin 1920: 116 and Whatmough 1970: 455. Birkhan (1997: 1089) connects *curmi* unconvincingly to the names Curmilla, Curmillus, and Curmisagius.

¹⁵⁶ Holder 1896: 1:1202, s.v. *curmi* and Dottin 1920: 115, 248, and 249. For instances of *cuirm*, see also Meyer 1906: 554, s.v. and Atkinson 1976: 1:600-601, s.v.

¹⁵⁷ This is quoted in *ASS* 66.145A. Welsh beer (*Wilisc eala*) is mentioned in passing in the Old English laws of King Ine (who reigned from A.D. 688 to 725) (*Leg.* 70 [in Thorpe 1840: 1:146-147]).

¹⁵⁸ Lambert (1997: 407) suggests rather a later date and speaks of the difficulty of dating the Gallic spindle whorls.

interpreted as a combination of Gallic and Latin and generally translated as: “Beautiful girl, give [me] beer.”¹⁵⁹ The first part of this translation seems fairly certain,¹⁶⁰ but the latter part should probably rather be interpreted as being purely Celtic and meaning rather “good barley beer,” paralleling precisely St. Cynon’s *cwrw da*.¹⁶¹

Walde and Hofmann connected *curmi* with *cremor* (“thick vegetable juice”).¹⁶² Scholars also consider *curmi* to be cognate with *cervesia*, with exchangeable *-ru-* (or *-rv-*) and *-rm-*.¹⁶³ Furthermore, Whatmough suggested that *crama* (a neuter plural meaning “cream,” from which the English “cream” is derived) was a term connected with *curmi*, and that it was used of the beer’s creamy head (see further section 3.12.5 below).¹⁶⁴

A lone suggestion has been made that the term was rather a Thraco-Celtic word connected to Sumerian *kurun/kurum* (“wine, intoxicating drink”) and Akkadian *kurunnu/kurumun* (“a beer of high quality”).¹⁶⁵ Recently it has also been suggested that the original word was the Thracian **kurmi-*.¹⁶⁶

¹⁵⁹ For instance, Polomé (1983: 530, n. 63) translates: “Beautiful girl, give (me) beer;” Meid (1983: 1034) has: “Schönes Mädchen, gib Bier;” Eska (1992: 18): “Pretty girl, give beer!;” Lambert (1994: 123): “Fille belle, donne(-moi) de la cervoise.”

¹⁶⁰ For *nata vimpi* meaning “beautiful girl” here, see Lejeune (1976-1978: 96-101), who cites similar spindle whorls and previous scholarship, and shows that *vimpi* was probably a feminine nominative and vocative (I here assume that it is a nominative). See also Billy 1993: 158, s.v. *vimpi*.

¹⁶¹ *Da* remains the modern Welsh word for “good.” The *cervesa da* from an inscription in Mainz (E14) should probably again be interpreted the same way; compare also E8. Also the expression *cervisa bona* is found in one version of the Council of Aachen (T195), and a transcriber of Diocletian’s edict seems to have taken *cervesiae* <*sive*> *cami* (E16a) as καρβησί<ο>καλοῦ (E16b).

¹⁶² Walde and Hofmann 1938: 287-288. See Valiño 1999: 67-68.

¹⁶³ Dottin 1920: 62 and 357 (and see 108 and 245), Evans 1967: 334 (with previous scholarship cited), and Whatmough 1970: 455.

¹⁶⁴ Whatmough 1970: 454.

¹⁶⁵ Wagner 1975: 12, cited by Bachellery 1976-1978: 376.

¹⁶⁶ Ködderitzsh 1993: 147-149 (who also connects it to Κυρμληνός), cited by Birkhan 1997: 138.

Finally, Hesychius (T107) defines κόρμα as ἡ τοῦ κόρματος καὶ Κορύβαντος αἰτία (“the [etymological] source of *korma* and of Corybant”). The intriguing connection between beer and Corybantic rites unfortunately occurs nowhere else.

Gender:

Whenever the gender can be determined, the word is found to be neuter: Dioscorides has the neuter genitive κούρμιθος (T55a),¹⁶⁷ Hesychius has κόρματος (T107), and *curmi* in the accusative is found on an inscription (E1). However, Marcellus Empiricus (T110) writes the genitive *curmi*. Most scholars accept that it is an undeclined neuter,¹⁶⁸ but it is possible that the *hapax legomenon curmum* or *curmus* should be read.¹⁶⁹ This word is after all simply an attempt at Latinizing an original Celtic word; notice all of the orthographic variants of *cervesia* mentioned in section 2.2.5 above (with Table 2).

2.2.7 παραβίας/παραβίη:

Occurrence, Definition, and Etymology:

Hecataeus (T3) says that the Paeonians drink παραβίην which is ἀπὸ κέγχρου (“[made] from millet”).¹⁷⁰ The word here could either be παραβίας or παραβίη, but there is no way to tell for certain, since it is a *hapax legomenon*. I have found no etymological explanation for the term, and assume that it stems from an otherwise unknown Illyrian word.¹⁷¹

¹⁶⁷ Olck (1899: 462) takes this as incorrect, and suggests κούρμενος instead.

¹⁶⁸ See, for example, *TLL* 4:1495, s.v.; Olck 1899: 462; and Chapot 1919: 1076.

¹⁶⁹ Meid (1996: 33-34) suggests that the nominative **curmus* should be understood here.

¹⁷⁰ Cassius Dio speaks of Pannonian barley and millet beers (T75), but without providing any names for these.

¹⁷¹ Could there be a connection between *par-ab[a]ia* and *s-abaia* (on which, see section 2.2.9 below)?

2.2.8 πῖνον:

Occurrences:

The word πῖνον is a *hapax legomenon*, occurring only in Aristotle (T14b) and derivative passages.¹⁷² Athenaeus (T78 and 80) quotes two passages of Aristotle on beer, only the second of which includes the word. In this second quotation, Athenaeus says that he is citing from Aristotle's work *On Intoxication* (περὶ μέθης),¹⁷³ a work which is usually identified with Aristotle's *Symposium* (συμπόσιον),¹⁷⁴ in which it is thought that he discussed both historical aspects of sympotic dining (including washing and coronation) as well as scientific questions about drinking and drunkenness.

The two passages on beer clearly go together though their contents are somewhat different. To point out the differences, I have placed the passages side by side and have underlined matching words and double underlined the possibly contradictory words:

T14a:

οἱ μὲν ὑπ' οἴνου μεθυσθέντες ἐπὶ
πρόσωπον φέρονται,

οἱ δὲ τὸν κρίθινον πεπωκότες ἐξυπτιάζονται
τὴν κεφαλὴν·

ὁ μὲν γὰρ οἶνος καρηβαρικός, ὁ δὲ κρίθινος
καρωτικός.

T14b:

πλὴν ἰδιὸν τι συμβαίνει περὶ τὰς τῶν
κριθῶν, τὸ καλούμενον πῖνον. ὑπὸ μὲν γὰρ
τῶν λοιπῶν τε καὶ μεθυστικῶν οἱ
μεθυσθέντες ἐπὶ πάντα τὰ μέρη πίπτουσι·
καὶ γὰρ ἐπὶ τὰ ἀριστερὰ καὶ δεξιὰ καὶ
πρηνεῖς καὶ ὕπτιοι. μόνοι δὲ οἱ τῷ πίνῳ
μεθυσθέντες εἰς τοῦπίσω καὶ ὕπτιοι
κλίνονται.

¹⁷² It was once thought that the word could be read in a fourth century B.C. inscription from Gortyn (*LSJ* 1996: 1405-1406, s.v.), but this has been refuted (1996: Suppl. 250, s.v.).

¹⁷³ This work was certainly originally also named in the first quotation, but all that now survives of it is in an epitome of Athenaeus.

¹⁷⁴ See Bignone (1936: 2:540-541, n. 1), Moraux (1951: 33, n. 33), cited in Teodorsson (1989: 1:35), Rose (1955 and 1957), and especially Laurenti (1987: 2:passim) on the identification of the two. Gigon (1987) considers these to be separate works. See also the similar sympotic works discussed in section 1.5.1 above.

First, Aristotle in the second passage equates αἱ τῶν κριθῶν with πῖνον. It is usually assumed that πόσεις should be understood, and thus that Aristotle used πῖνον as a general term for all barley beers. Wilamowitz, however, plausibly emended the phrase to τὸν ἀπὸ κριθῶν, in which case Aristotle would simply be speaking of one type of barley beer called πῖνον. This makes much more sense and is also attractive since a collocation with a genitive of material is never found in Greek to designate a beer (see Table 1 above). However, in the first passage κρίθινος is used rather than πῖνον, showing that Aristotle may have had in mind any type of barley beer. Clearly it was Athenaeus's understanding that πῖνον referred to barley beer generally (as I will soon show), though it is quite possible that Athenaeus himself substituted κρίθινος for πῖνον in the first passage so as not to have to explain the obscure word πῖνον.

Aristotle goes on to say, in the first passage, that those who become intoxicated from wine “fall onto their faces” (because of its “heavy-headedness”¹⁷⁵) and, in the second passage, those who become intoxicated from all other intoxicants but barley beer “fall in all [meaning any?] directions” (to the left, or right, onto the front or onto the back). These passages seem to be contradictory, since the second passage implies that if one drank a lot of wine (among other drinks) one would fall in various ways (or every way), while the first passage says that wine makes one fall specifically onto one's face. It is possible, however, that Aristotle meant that various intoxicants had various effects, without excluding the possibility that some intoxicants had specific effects.

In both passages, the effect of the barley beer is then described, though quite differently in each case. In the first passage beer drinkers “turn upside down on their heads” (which is very difficult to construe) because the beverage is “stupefying.” In the second passage they “fall onto their backs and lie flat.”

¹⁷⁵ Aristotle also says elsewhere (*De somn.* 3 [456b30]) that the opium poppy, mandrake, wine, and lolium cause “heavy-headedness” (καρηβαρία), that is, that they have a soporific effect. One wonders what other intoxicant aside from beer was considered by Aristotle to be “stupefying” (καρωτικός).

The second passage is usually taken as the primary one and Gigon for one omitted the first passage (found only in the epitome of Athenaeus) from his collection of fragments. Athenaeus clearly believed them both to refer to the same thing, and conflated them when he introduced the second passage, saying (T81):

... ὥς φησιν Ἀριστοτέλης ἐν τῷ περὶ μέθης, εἰς τὰ νῶτα καταπίπτουσιν οἱ τὸν κρίθινον πεπωκότες ὃν πῖνον καλοῦσι

... as Aristotle says in his *On Intoxication*, those who have drunk the barleyed [drink] which they call *pinon* fall onto their backs ...

Athenaeus assumes that the κρίθινος from the first passage is the same as the πῖνον in the second (perhaps, as I have suggested, because he [or perhaps the author of the epitome?] was the one who substituted κρίθινος for πῖνον), and moreover that these are synonymous with κρίθινος οἶνος as well as βρῦτος, and also that “turn upside down onto their heads” is the same as “fall onto their backs and lie flat.” However, as they stand, the two passages cannot be fully reconciled and cannot easily be combined into one seamless passage.¹⁷⁶ It remains quite possible that Athenaeus quoted quite loosely or that each passage was in fact found separately in Aristotle, and that each was spoken by a different character in the dialogue in a conversation about the various effects of intoxicating drinks.¹⁷⁷

Eustathius, following Athenaeus (whom he called “the Deipnosophist”), wrote (T235)

¹⁷⁶ One somewhat unsatisfactory possibility, which would assume that Athenaeus took great liberties in quoting the passages, is that Aristotle spoke of 1) wine making one fall onto one’s face because it causes heavy-headedness, 2) barley beer making one turn upside down on one’s head and lie flat on one’s back because it stupifies, and 3) other intoxicants (such as mead or date wine?) making one fall any (or every) which way. However, in both passages the pairing of two opposites seems essential. It should also be noted that these passages show that Aristotle (just as other ancients) did not recognize the common factor in all intoxicating drinks, alcohol (see section 2.1.2.1 above).

¹⁷⁷ Misinterpretations of these passages abound. Some speak of Aristotle condemning beer (for instance, Darby, Ghalioungui, and Grivetti 1977: 532 and Valiño 1999: 69, n. 59), though he does no such thing; Teodorsson (1989: 1:318) takes this as evidence that beer was considered “dangerous.” Just as mistakenly, Dornbusch (1997:23) takes this as “a kind word” about beer while Smith (2000: 17) says that Aristotle observed “that beer was better than other spirits.” One wonders what Garnsey was drinking when he inexplicably wrote (1999: 69): “Greeks when drunk (with wine) lie on their faces, whereas Egyptians when drunk (with beer) lie on their backs (as a comic poet jokes).”

that some call barley beer κρίθινος οἶνος πῖνος (“barleyed *pinos* wine”?), thus both conflating κρίθινος and πῖνον and reading πῖνον as πῖνος. At another point in the same passage he says:

λέγεται γὰρ ὡς οἱ τὸν κρίθινον πεπωκότες οἶνον, ὃν πῖνον μὲν τινες,
ἕτεροι δὲ βρῦτον καλοῦσιν, ὕπτιοι κατακλίνονται.¹⁷⁸

It is said that those who have drunk barley wine, which some call *pinon* and others *brūton* [or *brūtos*] fall down onto their backs and lie flat.

Eustathius again simply follows Athenaeus (T81) in treating πῖνον as a general term for barley beer.

Definition:

As I have shown, it is quite possible that even though Athenaeus (and then Eustathius) took πῖνον to denote barley beer generally that Aristotle in fact meant it as a specific type of barley beer. This is reasonable to assume since the word would be expected to be found in other sources if it had such a wide meaning. By the second century A.D. lexicographers and compilers were seeking to provide simplistic, and sometimes untrustworthy, definitions for words which had gone out of use.

Etymology:

The etymology of πῖνον is rather problematic. It is sometimes believed that the word came from πίνω.¹⁷⁹ This would make the word mean simply “a drink” (compare the English, which, in the right context, implies strictly an alcoholic drink). Chantraine thought that πῖνον was perhaps originally a foreign word which was borrowed and then remodelled on the word

¹⁷⁸ The reading is κλίνονται in Athenaeus.

¹⁷⁹ See, for instance, Wessely 1887: 38 (“Getränk”) and Frisk 1954: 2:540.

πίνω.¹⁸⁰ Some scholars have considered it a cognate of Slavic *pivo* and Old Prussian *piwis*, both meaning “beer.”¹⁸¹ It may not be far-fetched to consider it a Macedonian term, which Aristotle knew from his homeland, and perhaps one used to designate Thracian barley beer.¹⁸² In this case it would be genuinely synonymous with βρῦτος as Athenaeus thought.¹⁸³ The political union of the Macedonians with the Thracian Odrysae from the fifth to the third century B.C. may well have provided an opportunity for Macedonians to be well introduced to Thracian beer,¹⁸⁴ though certainly wine remained the drink of choice at the Macedonian court, as the countless stories of Alexander the Great’s wine-imbibing adventures testify.¹⁸⁵

2.2.9 *sabaia/sabaium*:

Occurrences and Definition:

Ammianus Marcellinus (T96) noted that when the emperor Valens was besieging Chalcedon, the inhabitants within insulted him for his beer-drinking: “he was derisively addressed as *Sabaiarius*. Now *sabaia* is a drink of the poorer in Illyricum, made from barley or wheat, changed into a liquid” (*irrisive compellebatur Sabaiarius. est autem sabaia ex ordeo vel frumento, in liquorem conversis, paupertinus in Illyrico potus*).

Jerome (T100), commenting on a passage in the *Septuagint* (T19), says of a drink made

¹⁸⁰ Chantraine 1968: 903, s.v., citing Schwyzer 1939: 1:693, n. 8.

¹⁸¹ Schrader and Nehring 1917: 1:143 and Kramer 1997: 203.

¹⁸² Tomaschek (1894: 2:18, cited in Kramer 1997: 203) proposed that it was a Thracian word.

¹⁸³ Athenaeus (T78) quotes Aristotle after mentioning Egyptian wine and beer but there is no reason to think that Aristotle was referring here to Egyptian beer. However, since πίνω is a *hapax legomenon*, it is impossible to say for certain.

¹⁸⁴ For the political, as well as ideological and cultural union of the Macedonians and Thracians, see Stakenborg-Hoogeveen 1989: 181-189.

¹⁸⁵ See O’Brien 1980 and 1992: *passim*.

from cereal and water (*ex frugibus aquaque*), “in the local vernacular and barbaric speech in the provinces of Dalmatia and Pannonia it is called *sabaium*” (*vulgo in Dalmatiae Pannoniaeque provinciis, gentili barbaroque sermone appellatur sabaium*). Jerome, as a native of Dalmatia (from the city of Stridon), was certainly well acquainted with the local beer.

Etymology:

Mayer proposed that the original Illyrian form was **sabaia*, which he took to be a general term for beer, and he connected it with the Indo-European **sab-* for “juice” (found in the English “sap” and Latin *sapa* [“must”]¹⁸⁶) and also **saub-* (found in the English “soup”).¹⁸⁷ A connection with the Thraco-Phrygian god Sabazius has also been suggested.¹⁸⁸ It has thus been suggested that Sabazius was originally a beer god;¹⁸⁹ it is in fact known only that he was a god of inducing sleep, and a god of intoxication (identified often with Dionysus) and that his worshippers would get drunk,¹⁹⁰ but whether on beer or some other intoxicant (for example mead) is unknown.

Derivative:

Only the derivative (2.2.9.1) *sabaiarius* is found in the extant literature.

¹⁸⁶ See also Olck 1899: 461 for the connection with *sapa*.

¹⁸⁷ Mayer 1959: 1:287 and 2:96. Among his citations of Illyrian beer (1:287-288) should be added Julius Africanus (T83). Could the *hapax legomenon* σάβαννι in Hipponax, fr. 28 West also be connected to this word?

¹⁸⁸ See, for instance, Olck 1899: 461; Harrison 1903: 323 and 1922: 419, with n. 2 for the opinions of other scholars; Cumont 1911: 929 (with previous scholarship at n. 3); Mayer 1959: 1:288; Johnson 1984: 1586 (who notes other suggestions); Turcan 1989: 291; Kramer 1997: 210; and Tassignon 1998: 190.

¹⁸⁹ See especially Harrison 1922: 417-419.

¹⁹⁰ Sleep: Arist., *Vesp.* 5-12 (with Harrison 1922: 419); see also *Lys.* 387. Intoxication: see Johnson 1984: 1599; this is based mainly on the first literary evidence on Sabazius in Aristophanes and Sabazius's identification with Dionysus (see Johnson 1984: 1587-1588).

2.2.9.1 *sabaiarius*:

Sabaiarius, the term by which Valens was derided (T96), probably means either “a lover of *sabaia* beer” or “a maker of *sabaia* beer.”¹⁹¹ Mayer logically connected the construction of *sabaiarius* with that of *cervesarius* (for which, see section 2.2.5.1 above).¹⁹²

2.2.10 σικερα/σίκερα / *sicera*:

Occurrences and Definition:

In Old Akkadian and other Assyrian languages, the word *šikaru* (or *shikaru*) could be applied to any fermented beverage, including date wine, fig wine, and (especially in Syria) grape wine, but is most often found referring to beer, presumably because this was the intoxicating drink *par excellence* in the ancient Near East.¹⁹³ Julius Africanus rightly reported that the Babylonians called beer σίκερα (T83), our only extant Greco-Roman reference to Near-eastern beer.

In ancient Hebrew שֵׁכָר (ŠKR or *shēkār*) could similarly be used of any intoxicating drink,¹⁹⁴ though it is usually found coupled with wine in the Old Testament, as if it refers to a drink other than wine (and usually vaguely translated in English as “strong drink”).¹⁹⁵ In one

¹⁹¹ Harrison 1922: 419, translates it as “Beer-man,” meaning a beer-drinker or maker.

¹⁹² Mayer 1959: 1:287.

¹⁹³ Brinkman *et al.* 1992: 17.2:420-429, s.v. (with exhaustive references), and see also Salonen 1970: 192-198 for related terms. For beer as the intoxicating drink *par excellence*, see Bottéro 1995: 26. In Sumerian *kaš* (or *kash*) was the standard word for beer.

¹⁹⁴ Brown, Driver, and Briggs 1907: 1016, s.v. (with references). The term was שֵׁכָרָא (ŠKR’ or *shikra*) in Aramaic.

¹⁹⁵ I have shown in section 2.1.3.4 above that *sicera* at least in the early Middle Ages came certainly to be used in Greek and Latin to mean any intoxicating drink except for wine. For the biblical prohibitions against wine and *sicera*, see Kottek 1989.

text from the Talmud it is said that the Jewish benedictions and sanctifications usually performed over wine could be performed over שכר in Babylonia since this was “the wine of the region.”¹⁹⁶ There is little doubt that in this case beer is being specifically referred to, as is usually thought.¹⁹⁷ Some suggest that in general the term referred to beer.¹⁹⁸

In the *Septuagint* it is either, most often, transliterated as the undeclinable σικερα or σίκερα¹⁹⁹ or else translated as μέθη²⁰⁰ or even οἶνος.²⁰¹ The word σίκερα is also found coupled with wine in Luke.²⁰² In Isaiah the word is consistently transliterated,²⁰³ except in one case. In the section known as the “oracle against the Egyptians,” among many of the disasters predicted to beset Egypt, it is said that certain “makers” will be grieved. The *Septuagint* translates “makers of ζῦθος” (masculine) (T19), reading (or perhaps emending to) שכר.²⁰⁴ However, it is usually accepted that the proper reading in the Hebrew is שכר (ŠKR or *seker*), which can

¹⁹⁶ *Pesahim* 107a, translated in Neusner 1983: 50. The same problem is addressed at *Berakhoth* 12a, though more cursorily. At *Shabbat* 109b-c it is said that it can be drunk on the Sabbath.

¹⁹⁷ See, for instance, Freedman 1967: n. p. and Neusner 1983: 50. For further references to beer in the Babylonian Talmud, see Stol 1994: 158-161.

¹⁹⁸ Kellermann 1977, Sasson 1994: 414 and 415, Dayagi-Mendels 1999: 120, and Frankel 1999: 198.

¹⁹⁹ For example, Lev. 10:9 (coupled with wine), Numb. 6:3 (coupled with wine), 28:7 (clearly equated with wine, as is obvious from 28:14), Judg. 13:4, 7, 14 (coupled with wine each time), Deut. 14:26 (coupled with wine); coupled with wine also in 1 Sam. 1:15 and Micah 2:11, but not translated in the *Septuagint*; the genitive σίκερος is found in Eus., *Praep. Evang.* 6.10 as pointed out by Olck 1899: 459. The biblical passages in which the word occurs are quoted, of course, by numerous Latin and Greek Christian authors.

²⁰⁰ For example, Prov. 20:1 and 31:6 (in both cases coupled with wine).

²⁰¹ Prov. 31:4. In the original it is coupled with wine, thus this translation seems inadequate.

²⁰² Luke 1:15; see the citation of this passage by Chrodegangus (T171).

²⁰³ See Is. 5:11, 28:7, and 29:9; in each of these cases it is coupled with wine. Is. 56:7, in which again it is coupled with wine, is missing from the *Septuagint*.

²⁰⁴ This reading lead to later Christian attacks on beer (see T87, 95, 96, and 97), as will be seen in section 4.3.3 below.

mean “wages,”²⁰⁵ and thus that “makers of wages” (that is, workers for hire) were meant. To make matters even more complicated, some take שכר to mean “ponds,” “dams,” or “sluices,”²⁰⁶ and in fact the Latin vulgate translation of the Hebrew has “makers of *lacunae*” (see Jerome [T100]).

In Latin the declinable *sicera* is usually used in translations of the bible.²⁰⁷

Derivative:

There is only late evidence for one derivative from *sicera*, namely (2.2.10.1) *sicerator*.

2.2.10.1 *sicerator*:

Charlemagne (T179) defines *siceratores* as those “who know how to make *cervisa* or cider or perry or another sort of liquor fit for drinking” (*qui cervisam vel pomatium sive piratium vel aliud quodcumque liquamen ad bibendum aptum fuerit facere sciant*). This shows that in practice *sicera* was used as a general term for all fermented beverages apart from wine.

2.2.11 ζῦθον/ζῦθος/ζῦθος/ζῦτον/ζῦτος/ζῦτος / *zithum/zitos/zutus/zythum/zythus*:

Occurrences and Definition:

The earliest references to the term ζῦθος is in Theophrastus (T16), who spoke of “the so-called *zithos* in Egypt” (τὸ ἐν Αἰγύπτῳ καλούμενον ζῦθος). The same beer is referred to in

²⁰⁵ Brown, Driver, and Briggs 1907: 969, s.v., citing Prov. 11:18 and the passage in question. They are followed, for instance, by Skinner 1909: 147; Box 1916: 93; Alexander 1953: 352; and Watts 1985: 249.

²⁰⁶ See, for instance, Lange 1884: 221; Slotki 1949: 89; and Ginsberg 1973: 50.

²⁰⁷ See *siceram* at Deut. 14:26, 29.6, Judg. 13:4, 7, 14, and Prov. 31:6. Some manuscripts of Luke 1:15 have the undeclined σίκερα.

a passage in the *Septuagint* Isaiah (T19, with T87, 97, and 98) concerning Egyptians (see above on *sicera*). Later, Pliny connected *zythum* with Egypt (T51) just as Julius Africanus said that the Egyptians drink ζῦθος (T83). Dio Chrysostom spoke of it as an Alexandrian drink (T57), and Galen spoke of it as drunk by the youth of Alexandria (T72).²⁰⁸ As I have shown already (section 2.1.3.2 above), by the first century B.C. the word could be used of beer generically, and by the first century A.D. it became established as a term meaning barley beer generally.²⁰⁹

In the Greco-Egyptian papyri, barley is often found as the cereal specifically to be used to make ζῦτος. In numerous accounts a certain amount (usually *artabae* or *choinikes*) of barley (κριθή, always abbreviated either as κριθ or κρ) is delivered at a certain price εἰς ζῦτον (sometimes abbreviated as ζῦτο or ζῦτ).²¹⁰

Etymology:

The origins of the most popular Greek word for a type of beer, ζῦθος (and variants) is a vexed question, since, on the one hand, the word is most often connected to Egyptian beer (as seen above) and is in fact the only specific word used of Egyptian beer in Greek (or Latin),²¹¹ while, on the other hand, the word has been found nowhere in native Egyptian texts, which are

²⁰⁸ Oribasius also mentioned a type of ζῦθος from Cyrene (T92), though here he is probably using the term to denote barley beer generally.

²⁰⁹ Because of these various uses of the word, *LSJ* (1996: 757, s.v.) provide two entries for it, 1) Egyptian beer and 2) beer of northern nations, instead of 1) Egyptian beer, 2) beer generically, and 3) barley beer. See also Duval 1952: 122. Some inferior lexica simply take it as a name for Egyptian beer (see, for instance, Keller, McCormick, and Efron 1982: 277, s.v. *zythos*, *zythum*, *zythem* [*sic*]).

²¹⁰ *P.Mil.Vogl.* I.28, ll. 46, 63, 79, 87, 103-104, VII.303, ll. 17-18, 26-29, 40, 43-44, 60, 65, 76; *P.Oxy.* I.85, col. iv, l. 17; and *P.Tebt.* III.701, l. 249. Note also the ground barley to be used for beer at *BGU XVI.2608*, ll. 4 and 6 (see further section 3.4.2 below on this papyrus). Barley is given to a beer-maker at *P.Mil.Vogl.* VI.278, l. 22. Barley (κρ) is mentioned in one papyrus in which beer is also mentioned (*P.Cair.Zen.* IV.59791). See also *P.Wisc.* I.29, l. 11, in which the type of grain is not identified. It would seem that one could speak of a certain amount of *artabae* of beer, meaning a beer made from a certain amount of *artabae*-worth of cereal (see *P.Mil.Vogl.* II.60, l. 17 and *O.Tebt.* 4, l. 3 [restored]). For possible references to Egyptian wheat beer, see section 3.2 below.

²¹¹ This is also the only word for beer found in the extensive Egyptian papyrological material which spans the millennium from the 3rd C. B.C. to the 7th C. A.D.

rich in terminology for the beverage. Scholars have thus been divided in assigning the word an Egyptian or a Greek origin.

First, though no precise model has been found, many scholars have thought that it was probably originally an Egyptian word.²¹² Schrader argued that it came from the Old Egyptian *hekt*, while Loret suggested an origin from Old Egyptian *haqi*.²¹³ It obviously takes a lot of imagination to see a direct link with these terms. Recently, Kramer argued for a derivation from the Egyptian *swt* meaning “wheat.”²¹⁴

Lutz for one convincingly argued that it was not an Egyptian word, but that it came rather from Greek ζέω (“to boil or foam”),²¹⁵ an etymology already noted by Olck and taken for granted by Arnold.²¹⁶ Other scholars have shown that the word bears a striking resemblance with ζύμη (“yeast”), a word itself derived from ζέω.²¹⁷ These etymologies are much more attractive than the Egyptian ones proposed, and thus it must almost certainly be conceded that ζῦθος is a genuinely Greek word, which was originally applied to the Egyptian product.²¹⁸ It seems to have formed in the same way as the Latin *fermentum* (“yeast” or “intoxicant,” and hence “beer” [see section 2.1.2.1 above]), which came from *fervere* (“to boil”), and it is interesting that one

²¹² See Chantraine 1968: 401, s.v. and Kramer 1997: 204, both of whom cite previous scholarship on the question.

²¹³ See the citations in Olck 1899: 458.

²¹⁴ Kramer 1997: 205.

²¹⁵ Lutz 1922: 75.

²¹⁶ Olck 1899: 458 and Arnold 1911: 88, n. 1, and see Nencioni 1939: 21, n. 2.

²¹⁷ Schrader and Nehring 1917: 1:143, Nencioni 1939: 21, n. 2, Schwyzler 1939: 330 (and see 512), Chantraine 1968: 401, s.v., and Kramer 1997: 204-205, citing previous scholarship.

²¹⁸ For the most part the ancient sources (as mentioned above) simply say that ζῦθος is a name for beer in Egypt, but Diodorus Siculus (T31, perhaps based on Agatharchides [T20a]) relates that the Egyptians *call* their barley beer ζῦθος (ὁ καλοῦσι ζῦθος) (Nencioni [1939: 21, n. 2] is wrong that Theophrastus [T16] and Pliny [T51] also say that the word is Egyptian). However, Diodorus clearly did not understand well the use of the term, since, as I have already shown (in section 2.1.3.2 above), he mistakenly said that the Gauls called their beer ζῦθος (T33; ultimately based on Posidonius [T26]).

glossary even equates ζύθιον and *fermentum* (T186). See further section 3.4.3 below.

It would be logical to think that the Greeks found it necessary to coin a term when they first encountered the beverage with the colonization of Egypt in the eighth century B.C. However, it is noteworthy that Hecataeus (T2), Aeschylus (T4), and Herodotus (T7) all used periphrases for Egyptian barley beer, and it is only at the time of Alexander's Egyptian conquest that the word ζύθος is first found (T16). Yet, some scholars have wanted to go so far as to say that these authors, as well as Dio the Academic (T24), were referring to ζύθος,²¹⁹ and this is not at all impossible. It is important, however, to ask why they used the periphrases which they did. Hecataeus was careful to give the proper terms for Paeonian beers (T3), but speaks only of an Egyptian barley drink (T2), as if he did not know the proper term for it (though it must be conceded that Athenaeus could have left something like "which is called ζύθος" from his citations [T80-81] of Hecataeus). Aeschylus (T4) could well have learned about Egyptian beer from Hecataeus,²²⁰ and metrical considerations or else the intention to pun on κριθή = penis²²¹ could have prevented him from using ζύθος. However, the scholium at least does not suggest that Aeschylus had ζύθος specifically in mind (T5). Herodotus (T7) may well have known the term, but may have wished to contrast the drink with grape wine when he called beer "wine made from barley" (οἶνος ἐκ κριθέων πεποιημένος) (see my discussion in section 4.2.2 below). It is interesting to note that Herodian (T63) defines ζύθος as "wine [made] from barley" (ὁ ἐκ κριθῆς οἶνος), Hesychius (T106) and the *Suda* (T226) both define ζύθος as "a wine arising out of barley" (οἶνος ἀπὸ κριθῆς γινόμενος), and Photius (T210) as "a wine [arising] out of barley" (οἶνος ἀπὸ κριθῆς), thus in each case precisely in terms reminiscent of Herodotus's.²²² Finally,

²¹⁹ See for instance, Johansen and Whittle 1980: 3:255.

²²⁰ This is suggested, for instance, by Garvie 1969: 179 and n. 6; Hall 1989: 133 (connecting the two beer references and also pointing to the general indebtedness of Attic tragedians to the Ionian historians and geographers).

²²¹ See Sommerstein 1990-1993: 60, to be discussed in full in section 4.2.3.2.2 below.

²²² Very strangely, in the first century A.D. Erotianus (T35) claimed that some call μυττωτός "the so-called *zūthos*" (τὸν λεγόμενον ζύθον). The term μυττωτός is used elsewhere to designate a dish made from various ingredients, such as cheese, honey, and garlic (*LSJ* 1996: 1157, s.v.). Unless this is an outright mistake, does this suggest that by analogy (Egyptian) beer was called a "mixed dish" because it contained many ingredients (such as malted barley, honey, herbs, etc.)?

Dio the Academic (T24) was probably simply following Herodotus in calling Egyptian beer “wine [made] from barley” (οἶνος ἐκ τῶν κριθῶν) rather than ζῦθος.

Variants:

The roots ζυθ- and ζυτ- always refer to beer in Greek. The form ζυθ- is found exclusively in the manuscript tradition, and ζυτ- is found exclusively in the papyrological tradition.²²³ I have discovered only two exceptions to this rule: there is a reference to six *artabae* (of barley?) for beer (ζύθ' [ω]) in a third century A.D. papyrus (provenance unknown)²²⁴ and the term ζυθοπώλης is found in a papyrus from Oxyrhynchus from A.D. 338.²²⁵ I have no ready answer for this linguistic phenomenon. Could it be that the original form was ζῦτος and that later scribes systematically corrected it to the Byzantine ζύθος (or ζῦθος)? In any case, I would suggest that the original was ζῦτος rather than ζῦθος.

Accentuation:

The manuscripts usually accentuate the word as ζύθος, but it is clear that the υ should be long, as this is metrically guaranteed in Dio Chrysostom (T57) and, for the Latinized form, by Columella (T53).²²⁶ It is questionable whether ζῦθος should be universally emended in all

²²³ Even when a literary (rather than documentary) source is found in a papyrus, ζυτ- is used (see T68).

²²⁴ *P. Wisc.* I.29, l. 11; I suspect that this may have been an editorial mistake. Note that ζύθ' [ει] could also be restored here.

²²⁵ *P. Oxy.* I.85, col. iv, l. 4. Strangely this has occasioned no commentary in the editions of this papyrus (Grenfell and Hunt 1898: 147-148; Coles 1980: 115-123; and *SB* XVI.12648). However, Drexhage (1997:34) reads ζυτοπώλης without comment. It may be of relevance that this is one of our latest papyrological references to beer. However, another papyrus from Oxyrhynchus, from A.D. 315-316, has ζυτοπωλίου (*P. Oxy.* LXIV.4441, col. vi, l. 15) and yet another from the fourth or fifth century A.D. has ζυτοπωλῆι (*SB* XII.11003, l. 5), thus conforming to the usual orthography.

²²⁶ This is pointed out by Vieillefond 1970: 348 and *LSJ* 1996: 757, s.v.

our ancient texts,²²⁷ since in modern Greek the spelling is ζύθος.²²⁸ But as late as Photius, ζύθος is found (T210).

Gender:

Usually the masculine form ζύθος, ζύθου, ζύθω is found (first in the *Septuagint* [T19]). The neuter form ζύθος, ζύθους, ζύθει is rarer. However, the first appearance of the word, in Theophrastus, is in its neuter form (T16),²²⁹ and thereafter it is found in Posidonius (T26 and 27) (followed by Eustathius [T234]), Dioscorides (T54),²³⁰ Strabo (T45), and finally Plutarch (T59; perhaps from Dioscorides). In every case, except the first, ζύθος is used generically (or at least could be) and it is noteworthy that when Strabo speaks of ζύθος as specifically Egyptian beer he uses the masculine (T43). This tends to show that in general ζύθος, ζύθου refers to Egyptian beer, and that ζύθος, ζύθους refers to beer generally, at least by the first century B.C. The exception, Theophrastus's use of the neuter for Egyptian beer specifically, is important, and may show that the word originally was neuter and that its -ος ending naturally made it seem masculine, as it came to be commonly treated.²³¹ The neuter form is occasionally found in the papyri beside the more popular masculine.²³² Oddly, both the neuter (E16d) and the masculine

²²⁷ Schneider emended ζύθος to ζύθος in Theophrastus (T16) and I have decided in Appendix I to consistently so emend. However, I have not assumed a lengthened υ in the derivatives from the word. Editors of Posidonius (Jacoby, Edelstein-Kidd, and Theiler) universally keep the manuscript reading ζύθος at T27 yet all write ζύθος in T26.

²²⁸ Olck (1899: 458) accepts both ζύθος and ζύθος.

²²⁹ Hyp., *Dips.* 3.1 clearly conflates this passage with Theophr., fr. 579 Fortenbaugh *et al.*, probably for humorous effect (see Scruton *ad loc.*): "Milesian women, in accordance with a law, drank neither wine nor that which is called in Egypt *zūthos*" (αἱ Μιλήσiai γυναῖκες, κατὰ νόμον, οὔτε οἶνον οὔτε τὸ ἐν Αἰγύπτῳ καλούμενον ζύθος ἔπινον).

²³⁰ The lemma in another passage of Dioscorides (T54a), which reads περὶ ζύθου, ignores Dioscorides's own use of the neuter.

²³¹ At least Dioscorides's neuter used in a generic sense became a masculine used in a generic sense by other medical authors (see 2.1.3.2 above).

²³² Neuter: *P.Alex.* 1, l. 5, 239, col. i, l. 2 (tentatively restored); *P.Cair.Zen.* III.59403, l. 1; *P.Hib.* I.113, l. 6; *P.Oxy.* IV.784; *SB XVIII.* 13093, l. 15. Masculine: *P.Berl.Leihg.* II.39v, col. i, l. 101; *O.Berl.* 95 (and see 96 [ζύτ]); *BGU* IV.1069, col. i, ll. 8-10, VI.1355, l. 2, XVI.2588, l. 3; *P.Cair.Zen.* IV.59791, l. 5; *P.Fay.* 101v, col. i, l. 8, 104, l. 12, 219,

(E16b-c) forms are found in different Greek versions of Diocletian's price edict. That the original was neuter also seems likely since the Latin form is almost invariably found as a neuter (see below). The feminine ἡ ζύθος is also found in some manuscripts.²³³

Borrowings:

In Latin ζύθος was adapted as *zythum* (Pliny [T51] and Ulpian [T84]), *zythus* (masculine) (a translation of Cyril [T97b]), *zithum* (a glossary [T182a]), *zitos* (a glossary, defining *furta* [T237]), and *zutus* (a translation of Dioscorides [T56b]). Columella (T53) has the genitive *zythi* which could be from *zythum* (most likely because of the contemporary parallel in Pliny) or *zythus*. One glossary (T182b) provides for ζύθος the Latin term *turbulentum*, probably simply a word to describe its cloudy appearance (on which, see section 3.12.1 below).

There is some evidence that the word ζύθος was also borrowed into Etruscan from Greek. In the Etruscan *Liber Linteus Zagabiensis* the word *zuθeva* is found, which has been connected to Greek ζύθος. Since this work was written in Greco-Roman Egypt the term seems

I. 3; *P.Flor.* I.101, ll. 11-12; *PGM* IV.908; *P.Leid.* IC, ll. 12 and 14; *P.Lond.* I.131, col. xii, l. 262 (and see col. xiii, l. 294 and col. xviii, l. 398), II.219r, l. 2; *P.Lond. Zen.* 1976, l. 2; *P.Mich.* II.123r, col. id, l. 18, v, fr. ii, l. 33, fr. iii, ll. 8, 10, 15, 20, 28, 31, 36, and 38, fr. v, ll. 9, 23, 27, 29, 30, 31, and 33, fr. vi, ll. 24, 32, and 36, fr. xi, ll. 4, 8, 14, and 15, 123v, col. ii, ll. 4 and 11, col. iii, ll. 6 and 29, col. v, l. 6, col. vi, ll. 5, 6, 12, 21, col. vii, l. 4 (to be restored), col. xi, l. 26, 127, col. ii, l. 9, V.245, l. 35, 322b, col. i, l. 2, XVIII.783a, l. 3; *P.Mil.Vogl.* I.28, col. ii, ll. 46 and 63, col. iii, ll. 79 and 87, col. iv, l. 104, II.60, l. 17, III.180, col. i, l. 6, 188, col. i, l. 6, VII.303, col. ii, ll. 60, 65, and 76; *P.Oxy.* IV.736, col. iii, l. 27, col. iv, l. 60, 784, XII.1513, l. 7; *P.Oxy.Hels.* 33v, l. 18; *P.Rev.* fr. 6c, ll. 13-14; *PSI* III.181, l. 4; *PSI Congr.* XVII.22, 479r, col. iii, l. 26; *SB* VI.9095, ll. 5, 10, and 16, 9385, l. 10, VIII.9653, l. 6, XVI.12515, col. ii, l. 30, XVIII.13092, ll. 14-15; *P.Stras.* IV.185v, l. 3; *P.Tebt.* II.331, l. 13, 401, col. vii, l. 37, III.894, fr. 5, l. 13, fr. 8, l. 1, 1067, l. 8; *O.Tebt.* 3, l. 1; *O.Vleem.* 11Ar, l. 2. Sometimes the gender cannot be determined: *P.Alex.* 417, col. i, l. 19, *P.Lond.Zen.* 2002v, col. ix, l. 185, 2153, l. 5, 2166, l. 2; *P.Paris* 60bis, l. 14; *P.Petr.* III.112, fr. g, l. 23, 138r, col. ii, l. 11; *SB* VI.9617 (tentatively restored); *P.Tebt.* III.884, l. 13. The word is often abbreviated, making the original gender unknowable: ζυτο at *O.Mich.* II.799-800, *P.Mil.Vogl.* VII.303, passim, *P.Princ.* I.13, col. xix, l. 11; ζυτ at *O.Fay.* 8, l. 3, *P.Lond.* II.254v, col. i, l. 6, col. iii, l. 68, col. iv, ll. 70-75, *O.Mich.* III.1028, IV.1127 (restored), *P.Mil.Vogl.* I.28, col. ii, l. 63, *P.Princ.* I.13, col. iii, ll. 7 and 32 (with the reading τσοζυτ[]), *SB* XIV.11561, l. 3, *O.Tebt.* 4, l. 3, *P.Zen.Pestm.* 63v, col. iii, ll. 40 and 42; ζυ at *BGU* VI.1356, l. 2, *O.Mich.* II.797, IV.1128, col. i, l. 2 (restored) and 3, *P.Tebt.* III.894, fr. 1, col. iii, l. 26, fr. 5, col. ii, 7, fr. 12, col. ii, ll. 31 and 32, *O.Tebt.* 5, l. 2; ζ at *O.Mich.* II.789-796, 798, 801, III.1003, 1026 (restored), 1027. The odd ζυτος (masculine) is found at *P.Berl.Sarisch.* 22, l. 5, which may be ζυτος, as the editor suggests.

²³³ Wessely 1887: 40 and Olck 1899: 458.

to have been borrowed there.²³⁴

In Hebrew ζῦθος was taken over as the masculine זיתן (ZYTWM or ZYTHWM).²³⁵ In certain texts it was specifically used to refer to Egyptian beer.²³⁶ In one Hebrew text the method by which Egyptian זיתן was made is even cursorily described (see further, section 3.4.1 below).²³⁷ The word was also taken over into Syrian.²³⁸

Derivatives:

There are numerous derivatives from ζῦτος/ζῦθος, most of which are found in Greek papyri.²³⁹ ζῦθιον, ζυτικός, ζυτηρά, ζυθοποιός/ζυτοποιός, ζυτᾶς, ζυτοπώλης/ζυτόπωλις ζυτοποιέω, ζυτοποιῖα/παραζυτοποιῖα, and ζυτοπωλείον/ζυτοπώλιον. However, the widely accepted ζυτουργεῖον/ζυτουργίον is a modern scholarly ghost word, as I will demonstrate.

2.2.11.1 ζῦθιον:

The term ζῦθιον is found only in glossaries. Hesychius (T106) defines it as “a drink made from barley meal/groats” (ἐξ ἀλφίτου πόσις). A late Greek-Latin glossary defines it as

²³⁴ *Lib. Lint. Zagr.* col. x, l. 20 (edited in Rix 1991: 2:7), with the comments of Peruzzi (1947), who cites previous scholarship on the question.

²³⁵ The instances of this loan word in the Rabbinic literature are listed in Krauss 1899: 2:247.

²³⁶ *Berakhoth* 38a and *Shabbat* 156a (both in the context of the drinking of the beverage being allowed on the Sabbath) and *Pesahim* 42b (on the drinking of the beverage not being allowed during Passover). In the latter text Median beer is also mentioned.

²³⁷ *Pesahim* 42b.

²³⁸ Payne-Smith 1879: 1114, s.v.

²³⁹ For the discussion of terminology, I will cite the papyrological references in alphabetical order; for a chronological ordering, see bibliography section 1.2.1. I see no point in citing the provenance of these papyri, since there is no evidence that the terminology or the policies concerning beer in Ptolemaic and Roman times changed from place to place within Egypt and also because on the whole provenances have much to do with simple accidents of preservation and the modern extent of excavations.

fermentum (T112). It is clearly a diminutive of ζῦθος, and Forbes even suggested that it was used contemptuously,²⁴⁰ though there is absolutely no evidence for this (nor is there for the parallel βρύτιον, on which see section 2.2.1.1 above).

2.2.11.2 ζυτικός:

The adjective ζυτικός (“beery”) is found in a number of papyri, and should be compared to βρυτικός (T12, with section 2.2.1.3 above).²⁴¹ This word is inevitably connected to the Ptolemaic (and later Roman) beer tax: once as τιμὴ ζυτική,²⁴² and often as ζυτικόν,²⁴³ in which case τὸ τέλος is probably to be understood. Furthermore, ζυτικά is also found for “beer tax.”²⁴⁴

2.2.11.3 ζυτηρά:

The standard term for beer tax was ζυτηρά (alongside ζυτικά; note the parallel ἰχθυηρά = ἰχθυικά [“fish tax”]²⁴⁵), used throughout Greco-Roman rule.²⁴⁶ The term is found abbreviated

²⁴⁰ Forbes 1951: 284.

²⁴¹ Such parallels as ζύθιον/βρύτιον and ζυτικός/βρυτικός may further prove that both were originally Greek words; see further section 3.4.3 below.

²⁴² *P.Mich.* II.121r, fr. iv, col. vi, l. 2.

²⁴³ *P.Hib.* II.264, l. 2; *P.Lond.* II.254, col. iii, l. 69, col. iv, ll. 71-75 (abbreviated as ζυτ), col. iv, ll. 70 (abbreviated as ζυτικο and restored in *BL* I); *P.Oslo* II.29, l. 6 (read as ζυτικῶν); *P.Rain.Cent.* 49r, l. 2 (restored); *P.Tebt.* II.337, col. i (restored three times).

²⁴⁴ *P.Sorb.* I.10, l. 10.

²⁴⁵ The parallel is noted by Eitrem and Amundsen on *P.Oslo* II.29.

²⁴⁶ *P.Austin* inv. 34, l. 5; *BGU* I.1, l. 2, VI.1358, l. 3, IX.1894, col. v, l. 52, X.1917, l. 3, XV.2501, l. 11; *O.Bodl.* I.51; *P.Bour.* 45, col. ii, l. 5; *P.Cair.Zen.* 59176, l. 30; *P.Col.Zen.* III.42r, l. 4; *P.Col.* V.1v, fr. 1a, col. iii, l. 35; *CPR* I.183, col. v, l. 40; *O.Elkab* 3, ll. 1-2, 10, l. 2; *P.Fay.* 327; *P.Gur.* 3, fr. a, l. 13, 24, fr. b, col. i, l. 16; possibly at *P.Hels.* I.9, l. 3; *P.Hib.* I.106, l. 7, 107, l. 6 (restored), 112, col. ii, ll. 11, 25-26, 113, l. 11, 136-138, 139, l. 8, 140-142, II.212, col. i, l. 21, col. ii, ll. 36 (restored), 41, and 43; *P.Jena* 2r, l. 4; *P.Köln* VI.259, l. 2, VII.315, fr. d, l. 1; *P.Lille* 3, col. iii, l. 52; *P.Leipz.* 15, l. 6; *P.Lond.* II.255, ll. 12 and 17; *P.Lond.Zen.* 2170, l. 6; *P.Mich.* II.123r, col. vii, ll.34-35, IV.361Av, l. 16, XVIII.780a, l. 6; *O.Narm.* 72, l. 21; *P.Paris* 62, col. iv, l. 4, col. v, l. 19 (with *UPZ* I.112, col. v, l. 19), 63, col. iv, l. 98, 67, col. ii, l. 10; *P.Petr.* III.32, l. 3, 76v, col. ii, l. 13, 112, fr. e, v, col. i, l. 7, 121, fr. b, col. ii, l. 5, 124, fr. a, col. i, l. 3; *P.Rain.Cent.* 49r, l. 5, 63, l. 10 (restored); *SB* I.5982, l. 6, III.7202, l. 2, XIV.12170, l. 17, 12174, l. 6, XVI.12504,

as ζυτηρ,²⁴⁷ ζυτη,²⁴⁸ ζυτ,²⁴⁹ or ζυ,²⁵⁰ though there is no way to tell whether or not the last two may be short for ζυτικά (or something else?) instead.²⁵¹ Alternatively the tax is called τὸ τέλος τῆς ζυτηρᾶς,²⁵² which seems to have been abbreviated as ζυ τέλος²⁵³ or even ζυ τε,²⁵⁴ though it is not out of the question that these are rather abbreviations for τὸ τέλος ζυτικόν or τὸ τέλος τοῦ ζύτου.²⁵⁵ Beer tax is indeed sometimes simply called ζύτου τιμή²⁵⁶ or, much more commonly, τιμὴ ζύτου,²⁵⁷ and there is one example of φό(ρος) ζυ[.²⁵⁸

The issue of the beer taxation system in Ptolemaic and Roman Egypt is complicated and

col. i, l. 19, col. ii, l. 36; *P.Sel.Warga* 10, col. ii, l. 23; *P.Sorb.* I.18, l. 5; *P.Stras.* V.439, l. 10, 440bis, l. 5, 441bis, l. 7; *O.Stras.* 13, l. 2; *P.Tebt.* I.40, l. 4, II.353, ll. 7 and 11, III.701(a), l. 1, 877, l. 5, 935, l. 3; *O.Tebt.Pad.* 51, l. 2. At *SB* VI.9623, l. 3 ζυτερᾶ is found.

²⁴⁷ *BGU* IX.1894, col. iv, l. 43.

²⁴⁸ *O.Elkab.* 7, l. 2; *P.Mich.* IV.224, col. cxliii, l. 6415, col. cxlvi, l. 6431; *O.Mich.* III.987; *SB* XII.10921, l. 5, XVI.12709, l. 8.

²⁴⁹ *P.Berl.Leihg.* II.38, col. i, l. 9; *BGU* XIII.2286, l. 3, XV.2498, l. 12, 2499, l. 5, 2501, l. 4 (restored), l. 13; *P.Mich.* IV.224, col. cxviii, l. 6358, col. cxliii, l. 6420 (restored), col. cxlvi, l. 4; *P.Stras.* V.414, col. ii, l. 4, 424, l. 3, 425, l. 17, 426, l. 4; *O.Stras.* 165, l. 3.

²⁵⁰ *BGU* VI.1357, l. 2; *O.Cair.* 11, l. 3; *O.Edfou* III.365, l. 1; *P.Fay.* 13, l. 1; *P.Hels.* I.26, col. i, l. 16; *P.Hib.* I.133; *O.Mich.* II.745 (with the restoration in *BL* IV); *O.Princ.* AM 15960 (4) E, l. 3; *SB* XVIII.13092, l. 4, XVIII.13093, l. 4; *O.Wilck.* 1277, l. 4 (possible restoration).

²⁵¹ The abbreviation ζυ at *P.Gur.* 4, l. 6 is read as ζυ(τικά). Eitrem and Amundsen (on *P.Oslo* II.29) suggested usually reading “ζυτ or the like” as ζυτικά.

²⁵² *O.Bodl.* I.125 and *O.Leid.* 16r, l. 2 (= *SB* X.10394, l. 2).

²⁵³ *O.Cair.* 12, l. 2.

²⁵⁴ *BGU* VI.1356, l. 2 (12 drachmas) and *O.Cair.* 13, l. 1 (with a note on the restoration). See also τέλ ζ[at *P.Ryl.* II.194, l. 8.

²⁵⁵ Thus the editor of *BGU* VI.1356, l. 2 has ζύ(του) τέ(λος) while in *BL* IX ζυ(τηρᾶς) τέ(λος) is suggested.

²⁵⁶ *BGU* VI.1355, l. 2 (1 drachma, 2 obols [?]) and *O.Vleem.* 11Ar, l. 2 (2 drachmas).

²⁵⁷ *BGU* IV.1069, col. i, ll. 8-10, XVI.2588, l. 3; *P.Fay.* 101v, col. i, l. 8, and 219, l. 3; *P.Mich.* II.123r, col. id, l. 18, 123v, col. ii, ll. 4 and 11, col. iii, ll. 6 and 29, col. v, l. 6, col. vi, ll. 5, 6, 12, 21, col. vii, l. 4 (to be restored), col. xi, l. 26, XVIII.783a, l. 3; *PSI* III.181, l. 4. It is once abbreviated as τι ζύτου (*P.Berl.Leihg.* II.39v, col. i, l. 101).

²⁵⁸ *P.Fay.* 42(a), l. 9.

has been much debated. The first attempt at examining the question was made by Wessely in 1887, who argued, working from only five papyri, that this was a consumption tax.²⁵⁹ Twelve years later Wilcken argued that it was rather a commercial production tax, and he has been widely followed.²⁶⁰ However, as recently as 1976, Nelson could write that “it is not yet entirely clear exactly what purpose the tax served nor what standard rate, if any, was assessed and collected.”²⁶¹

There was also a special form of the beer tax known as the ζυτηρά κατ’ ἄνδρα²⁶² or the κατ’ ἄνδρα ζυτηρά,²⁶³ usually found abbreviated,²⁶⁴ that is the individual or capitation or *per capita* tax. It has been hotly debated whether this was a tax on private production or a poll-tax

²⁵⁹ Wessely 1887: 40-44, citing *P.Leipz.* 15, *P.Paris* 62, 63, and 67, and *SB* I.5982 (at that point not yet published).

²⁶⁰ Wilcken 1899: 1:369-373, §166, followed, for instance, by Maspero 1905: 85, Bouché-Leclercq 1906: 3:248-249, Mitteis and Wilcken 1912: 251-252, s.v. ζυτός, Edgar on *P.Cair.Zen.* II.59199 (= *SB* III.6738), Rostovtzeff 1922: 119, and Préaux 1939: 155.

²⁶¹ Nelson 1976: 121.

²⁶² *BGU* VII.1705, l. 2; *P.Bour.* 27, l. 6 (restored); *P.Giss.Univ.* VI.48, l. 7; *P.Mich.* IV.362, l. 28; *P.Oxy.* XII.1433, col. ii, ll. 52-53 (and see 41); *P.Rein.* I.42, l. 12; *P.Ryl.* II.196, l. 11; *O.Tebt.* 1, ll. 3-4; *O.Tebt.Pad.* 31, ll. 1-2, 43, ll. 2-3, 45, l. 3. ζυτηρά κατ’ ἄνδ: *P.Jena* 2r, ll. 3 (restored) and 6; *P.Mich.* IV.224, col. xcvi, l. 6307; *O.Tebt.Pad.* 34, ll. 3-4 (restored), 36, ll. 3-4, 38, ll. 2-3, 44, l. 3, 46, l. 3, 47, ll. 2-3, 52, l. 3. ζυτηρά κατ’: *O.Tebt.Pad.* 50, l. 3. ζυτηρ κατ’ ἄνδρα: *P.Fay.* 262. ζυτη κατ’ ἄνδ: *P.Fay.* 47(a), l. 4. ζυτ κατ’ ἄνδ: *P.Amh.* II.121, l. 3; *BGU* XV.2497, l. 14 (restored); *O.Oslo* 12, ll. 2-3; *SB* VI.9043, l. 3, XVIII.14008, l. 6; *O.Tebt.* 2, l. 2; *O.Tebt.Pad.* 30, l. 2 (restored), 32, l. 3, 42, l. 4, 48, l. 3 (restored). ζυ κατ’ ἄνδ: *O.Tebt.Pad.* 39, ll. 2-3. ζυ κατ’ ἄ: one possible restoration at *SB* XIV.11613, l. 4, in *BL* IX. ζυτ κατ’: *O.Tebt.Pad.* 28, l. 3, 29, l. 1. κατ’ ἄνδ ζυτ: *P.Fay.* 47, l. 5, but *BL* VIII reads κατ’ ἄνδ ζυτῶν which is unattested elsewhere.

²⁶³ *BGU* XIII.2283, l. 8, XV.2502, ll. 6 and 16 (restored); *P.Mich.* VI.383v, col. i, ll. 41-42. κατ’ ἄνδ ζυτηρά: *P.Mich.* VI.382v, col. i, ll. 53-54; *SB* XVI.12332, l. 45. κατ’ ἄνδρα ζυτ: *BGU* XV.2497, l. 8 (restored). κατ’ ἄνδρ ζυτ: *BGU* XV.2500, l. 5; *SB* XIV.11865, l. 5. κατ’ ἄνδ ζυτη: *P.Gen.* II.93, l. 4; *P.Mich.* VI.383v, col. ii, l. 47, inv. 5938, l. 10 (restored). See also κ ἄνδ ζυτ[at *O.Mich.* III.988. *O.Princ.* AM 15960 (4) D, l. 3 has κατ’ ἄντρα σιτη, which should be read as κατ’ ἄνδρα ζυτη.

²⁶⁴ Note the quite vague κατ’ ἄνδ at *O.Princ.* AM 15960 (4) B and *O.Tebt.Pad.* I.33, l. 3, 40, ll. 3-4, known to refer to beer because of the similar *O.Tebt.Pad.* beer tax ostraca.

on private consumption.²⁶⁵ Nelson has made a convincing case for the latter explanation.²⁶⁶ All of the information on the tax was also gathered by Gallazzi shortly after.²⁶⁷

From Ptolemaic and Roman times, there have survived a number of receipts for payment of beer-tax on papyrus or, as was most often the case, on ostraca, which were to be retained either by the payer or by the collector. These usually included the date (regnal year, month, and day) with the total amount paid or collected (in drachmas and obols, or occasionally in talents), which could vary widely, no doubt depending on the changing rate and the amount of beer being taxed.²⁶⁸ Sometimes the tax is paid in kind, that is with beer.²⁶⁹ The tax was collected monthly by a tax farmer or collector (ὁ ἐξελιφώζ) who could bid to get contracted for the job.²⁷⁰ The money collected was then deposited at irregular intervals at the local branch of the royal bank

²⁶⁵ Reil 1913: 169 (gives both options but opts for the former); Amundsen 1933: 31 on *O.Oslo* 12 (opts for the latter); Heichelheim 1933: 171-172 and 196 (mentions both); Johnson 1936: 563 (the latter); Wallace 1938: 187-188 (the latter).

²⁶⁶ Nelson 1976: 126-129. She also argues that it may not have been different from the simple ζυτηρά.

²⁶⁷ Gallazzi 1979: 47-57 (on *O.Tebt.Pad.* 28-53).

²⁶⁸ For instance, from Ptolemaic times, an unknown amount on the 30th of Pachon in the 1st year (of an unidentified ruler) in *O.Leid.* 16 (= *SB* X.10394); 24 drachmas (?) on the 29th day of Pauni in the 24th year (of the rule of Ptolemy VI [157 B.C.]) in *O.Bodl.* I.51 (and see *O.Bodl.* I.125); 30 drachmas on the 2nd day of Epeiph in the 30th year (of an unidentified ruler) in *O.Stras.* 13; 1060 drachmas on the 27th day of Athur in the 6th year (of an unidentified ruler) in *O.Elkab* 7 (and see *O.Elkab.* 3 and 10); 100 talents on the 2nd day of Xoiax in the 36th year (of an unidentified ruler) in *O.Cair.* 12 (and see *O.Cair.* 11 and 13). See further *BGU* VI.1355-1358, X.1917; *P.Gur.* 3, 4, 24; *P.Petr.* III.32; *O.Vleem* II.A; *O.Wilck.* 1277. For Ptolemaic or Roman times, see *O.Kar.* 745 and 789-799. For Roman times, see *P.Alex.* 239; *P.Amh.* II.121; *BGU* IV.1069, VII.1705, IX.1894, XIII.2283, 2286, XV.2497-2502; *P.Bour.* 27; *P.Col.* V.1; *P.Eg.Mus.* inv. 43; *P.Fay.* 47, 47a, 262, 327; *O.Fay.* 9 (?), 10; *P.Gen.* II.93; *P.Giss.Univ.* VI.48; *P.Jena* 2; *P.Kar.* 382-383; *O.Kar.* 800-801; *P.Mich.* VI.382-383, inv. 5938; *O.Mich.* I.155, 299, II.745, III.987-988, IV.1127 (= *SB* XIV.11514); *P.Mil.* I.11; *P.Oslo* II.29; *O.Oslo* 12; *P.Ryl.* II.194, 196; *SB* VI.9043, XII.10921, XIV.11865, XVI.12332, XVIII.14008; *PSI* III.181; *P.Stras.* V.414, 424-426, 439-441, VI.501; *O.Stras.* 165; *P.Tebt.* II.353; *O.Tebt.* 1-2; *O.Tebt.Pad.* 28-32, 34, 36, 38-40, 42-48, 50-52.

²⁶⁹ See *P.Fay.* 219, *O.Fay.* 11, 48, and *P.Lond.* 254, and possibly also *P.Mich.* XVIII.783A, *O.Mich.* I.362 (= *SB* XIV.11445), *SB* VI.9028, and *PSI Congr.* XVII 22.

²⁷⁰ Bids are preserved at *P.Mich.* XVIII.777 and 778. One document concerning the appointment of beer tax collectors in A.D. 136 from Karanis has survived (*P.Lond.* II.255; discussed in Wallace 1938: 312). Note the petition by Pnepherus son of Paous, a collector of the taxes on beer and nitrate, who asked for protection from the basilico-grammateus in 117 B.C. (*P.Tebt.* I.40). A similar issue is discussed concerning two beer and nitrate tax collectors at *P.Tebt.* III.935. Beer tax collectors are also mentioned at *P.Fay.* 13 and *P.Hib.* I.133 (= *SB* X.10260).

(λογευτήριον).²⁷¹ If the collector did not deposit payment within a certain time limit he would have to pay double.²⁷²

2.2.11.4 ζυθοποιός/ζυτοποιός, ζυτᾶς, and ζυτοπώλης/ζυτόπωλις:

All the instances of the terms for the beer-maker and beer-seller in Greek papyri have recently been collected by Harrauer and Drexhage.²⁷³ The beer-maker was known most commonly in the Greco-Egyptian papyri as the ζυτοποιός.²⁷⁴ This term is only found once certainly outside of the papyri, when Eusebius mentions the ζυθοποιός (T87). It is more accurate to translate this as “beer-maker” than “brewer” since Egyptian ζυτος/ζύθος was not

²⁷¹ This is well demonstrated in a surviving series of receipts from Hibeh which count from the first year of the reign of Ptolemy III (246 B.C.): Athur 16, 2nd year: 19 dr., 5 ½ ob. for Phaophi (= *P.Hib.* I.140); Athur 24, 2nd year: 8 dr. for Athur (= *P.Hib.* I.138); Athur 30, 2nd year: 20 dr. for Athur (= *P.Hib.* I.106); Pauni 30, 3rd year: ? dr. for Pauni (= *P.Hib.* I.107); Pachon 13, 3rd year: 11 dr. for Pharmouthi and 9 dr. for Pachon (= *P.Hib.* I.136); Pachon 22, 3rd year: 15 dr., 3 ob. for Pachon (= *P.Hib.* I.141); Pachon 30, 3rd year: ? dr. for Pachon (= *P.Hib.* I.137); Phaophi 27, ? year: 9 dr. for Phaophi (= *P.Hib.* I.139 = *SB* XII.10783); and ? : 12 dr. for ? (= *P.Hib.* I.142). In a papyrus from A.D. 238 a list of a year's worth of deposits of tax to the bank is addressed to the strategus of the Oxyrhynchite nome (*P.Oxy.* XII.1433).

²⁷² See *P.Sorb.* I.10. Lists of arrears for beer tax are also found in *P.Austin* inv. 34 and *P.Mich.* XVIII.780A (both Ptolemaic) and *P.Fay.* 42a (Roman). Ptolemaic accounts of beer tax also include *P.Hib.* I.112-113; *P.Köln* VII.315; *P.Leipz.* 15; *P.Lille* I.59; *P.Tebt.* III.877. Roman accounts of beer tax are *P.Lond.* II.254 (?); *P.Mich.* II.121, 123, 127, IV.224, 361A, 362; *SB* XIV.12170. Beer tax is also noted in passing in a number of other Ptolemaic papyri: *BGU* I.1; *P.Col.Zen.* III.42; *O.Edfou* III.365 and 372; *P.Grenf.* II.39; *P.Hels.* I.9 and 26; *P.Hib.* II.212 and 264; *P.Köln* VI.259; *P.Lille* 3; *P.Paris* 62 (= *UPZ* I.112), 63 (= *UPZ* I.110), and 67; *P.Petr.* III.76, 112, 121, 124; *P.Rain.Cent.* 49 and 63; *SB* III.7202, VI.9623, XVI.12709, XVIII.13093; *P.Sorb.* I.18; *P.Stras.* IV.185; *P.Tebt.* III.701(a) and 833. Also in Roman papyri: *P.Berl.Leihg.* II.38-39; *P.Bour.* 45; *CPR* I.183; *P.Fay.* 42(a); *P.Lond.* II.255; *P.Rein.* I.42; *SB* I.5982, III.7166, XIV.11613, 12174, XVI.12504; *P.Sel.Warga* 10.

²⁷³ Harrauer 1987: 82-86 and Drexhage 1997. To their instances of the terms add *SEG* XLI.1612, l. 5 (= E18) (ζυτοπ) and Eusebius (T88) (ζυθοποιός). For a Ptolemaic list of beer-makers, see Peremans and Van 't Dack 1977: 3-9 (nos. 12460-12534). Clarysse has been working on the addenda and corrigenda of this volume (see 1988: 11), but his work, as far as I am aware, has not yet appeared in print.

²⁷⁴ *BGU* VI.1244r, l. 5, XIV.2379, l. 3, XVI.2608, l. 3; *P.Cair.Zen.* II.59199, l. 2 (= *SB* III.6738, l. 2), 59202, l. 4 (= *SB* III.6739, l. 4, and see 13), 59297, l. 16 (with 59403); *P.Flor.* III.366, ll. 10-11; *P.Genova* III.113, l. 3; *P.Grenf.* II.39, l. 3; *P.Heid.* VI.379, l. 12; *P.Hib.* I.94, l. 10; *P.Köln* VI.263, ll. 2 and 5, 264, l. 3, 268, ll. 4-5; *P.Lond.Zen.* 2161, l. 7, 2170, l. 3; *P.Mich.* II.123v, col. 1d, l. 8, col. 15, l. 14, v, col. xi, l. 27, XVIII.783A, l. 1 (restored); *P.Mich.Zen.* 36, l. 2; *O.Mich.* I.119, l. 1; *P.Petr.* III.37v, col. iv, l. 15, 87, fr. a, r, l. 6 (restored), fr. a, v, col. i, l. 17 (restored), fr. b, v, col. i, l. 5 (restored), l. 10; *P.Rain.Cent.* 49r, l. 2; *P.Ryl.* II.127, l. 18, 145, ll. 6 and 12; *SB* III.7202, fr. a, l. 2 (restored), fr. e, l. 84, XII.10860, l. 4; *P.Sorb.* I.18, l. 10; *P.Tebt.* I.5, col. vii, l. 173. Note also the beer-maker Apolinarius (*sic*) mentioned at *P.Mil.Vogl.* I.28, l. 46. For sureties for beer-makers, see *P.Freib.Clar.* 1-2, 3 (= *SB* III.6094), and 4, and *P.Sorb.* I.36 (= *SB* XVI.12415).

brewed (see section 3.4.1 below).

Liddell, Scott, and Jones claim that ὁ ζυτᾶς means “brewer” on the evidence of a restoration in a papyrus from the third century A.D. where the editors had already read ζ[υτοπόλα]ις, a reading fully confirmed by a later edition of another part of the same papyrus.²⁷⁵ However, in a fragmentary context in another papyrus (dated to the seventh century A.D.) τὸν ζυτᾶν has been read.²⁷⁶

The beer merchant or seller was known as the ζυτοπώλης (masculine)²⁷⁷ or ζυτόπωλις (feminine).²⁷⁸ No term for the activity of selling beer is attested. There exists much editorial confusion between the ζυτοποιός and ζυτοπώλης. Editors tend to restore ζυτοπ,²⁷⁹ ζυτο,²⁸⁰ ζυτ,²⁸¹ and ζυ,²⁸² when these refer to a person, as either ζυτοποιός or ζυτοπώλης without comment

²⁷⁵ BGU IV.1087, col. ii, l. 2, with col. vi, l. 3 as reprinted in XIII.2280b, l. 1. See LSJ 1996: 758, s.v., and already Preisigke 1925: 1.648, s.v., who read ζ[υτᾶτα]ις.

²⁷⁶ SB VI.9140, l. 15. Strangely, ζυτά was tentatively restored in *P.Alex.* 239.

²⁷⁷ BGU I.9, ll. 10 (to be restored), IV.1087, col. ii, l. 2 (restored), col. vi, l. 3 (= XIII.2280b, l. 1), IX.1898, l. 328, XVI.2588, l. 1; *P.Freib.Clar.* 1, ll. 5-6; *Tab.Mom.Louvre* IV.1204, l. 4 (= *C.Étiq.Mom.* 1599, l. 4); *P.Mil.Vogl.* VI.278, l. 22, SB VI.9385, l. 22, XII.11003, l. 5. Note also the abbreviation ζυτοπ at BGU IX.1898, col. xvi, l. 328. The unique ζυθοπώλης is found at *P.Oxy.* I.85, col. iv, l. 4.

²⁷⁸ The word ζυτόπωλειν at BGU I.38r, ll. 18-19 is understood as the accusative of ζυτόπωλις by Preisigke (1925: 1.648, s.v.) and Liddell, Scott, and Jones (LSJ 1996: 758, s.v.). The term ζυτόπωλις has been restored for a certain Helen at *P.Stras.* IX.831, l. 3. Another woman beer-seller is found at *P.Lond.Zen.* 1976.

²⁷⁹ Restored as ζυτοπ(ώλης) at *P.Berl.Leihg.* II.39v, col. viii, l. 210. Brashear at BGU XVI.2670, col. i, l. 2 leaves ζυτοπ, though in his note he leans toward restoring ζυτοπ(οι-) following Harrauer, the editor of CPR XIII; Clarysse restores ζυτοπ[ώλην] at *P.Freib.Clar.* 4, l. 2. However, ζυτοπ[is left at *P.Rev.* fr. 6h, l. 3, SB III.6803, col. iii, l. 9 (where ζυτ[is more cautiously read in the reprint in *P.Zen.Pestm.* 63, col. iii, l. 40), and *P.Stras.* IV.185v, l. 2. At E17 the editors restore ζυτοπ as ζυτοπ(οίος) with incorrect accentuation. Note the ζυτοπ at SB XVIII.13889v, l. 1.

²⁸⁰ At *O.Fay.* 8, l. 1 ζυτο(ποιός) is tentatively read. The word ζυτο[is found in SB XVIII.13093, l. 14 and 13889, l. 3, and is wisely not restored in either place.

²⁸¹ Restored to ζυτ(οποιός) at *O.Mich.* I.56, l. 1, *P.Princ.* I.13, col. iii, l. 7, and *P.Stras.* V.333, l. 21.

²⁸² Restored as ζυ(τοποιός) in CPR XIII.4 (six times), 5 (twice), 11 (once), and 13 (once), SB III.6739, l. 13, XVI.12414, l. 6, 12415, ll. 2-3, and *P.Sorb.* I.36, l. 3.

though usually there is no way to tell which is meant.²⁸³

2.2.11.5 ζυτοποιέω and ζυτοποιία/παραζυτοποιία:

The activity of the beer-maker was denoted by ζυτοποιέω (“to make *zūtos*”)²⁸⁴ and, possibly, ζυτοποιία (“the making of *zūtos*”);²⁸⁵ the odd παραζυτοποιία has also been read in two instances.²⁸⁶

2.2.11.6 ζυτοπωλείον/ζυτοπώλιον:²⁸⁷

The term ζυτοπωλείον, which was almost always found as ζυτοπώλιον, certainly usually applied to a “beer store.”²⁸⁸ However, there is clear evidence that the term was also the proper one to refer to a “beer factory.” Peremans and Van ’t Dack have shown that in Ptolemaic Egypt the term ζυτοπώλιον could denote a “brewery,” citing two letters from Apollonius to Zenon of

²⁸³ Rostovtzeff (1922: 119) even argued that generally the ζυτοποιός and the ζυτοπώλης were the same.

²⁸⁴ *P.Cair.Zen.* II.59199, l. 9 (= *SB* III.6738, l. 9), where the participle is found. It is wrongly read at *P.Sorb.* I.18, l. 10 by Kiessling and Rübsam 1969-1971: 118, s.v.

²⁸⁵ The abbreviation ζυτοποι is found at *P.Stras.* VI.501, l. 12 (which is read as παραζυτοπ by *BL* VIII, but accepted as ζυτοποιία by Ruprecht and Jördens 1991: 88, s.v.), and ζυτοπ at *P.Fay.* 215 and *O.Fay.* 10, l. 4 (restored). Preisigke (1925: 1:648, s.v.) understood ζυτοποιία to mean “brewery” while Liddell, Scott, and Jones (*LSJ* 1996: 758, s.v.) have the more plausible “brewing.”

²⁸⁶ In *BL* VIII παραζυτοπ(οία) is read at *P.Fay.* 47, l. 5 (where the editors have παραζυτ()) and at *P.Mil.* I.11v, l. 6 (where the editor has, without hesitation, παραζυγής).

²⁸⁷ A version of this section and the next will be printed in *Mnemosyne*. I would like to thank the anonymous reviewer of this journal for his/her comments and criticisms.

²⁸⁸ For ζυτοπωλείον, see *P.Lond.* III.1177, col. iii, l. 51; *P.Mich.* V.322b, col. i, l. 3; *P.Ross.Georg.* V.14, l. 8 (restored); and *P.Stras.* V.449, ll. 4-5. For ζυτοπώλιον (aside from the instances discussed in the next section), see *BGU* IV.1126, l. 10, X.1908, l. 10; *P.Cair.Zen.* II.59176, l. 206, 59189, l. 6, IV.59791, l. 6; *P.Freib.Clar.* 3, l. 11; *P.Mich.* II.123v, col. iia, l. 4, col. vi, l. 21, V.326, col. ii, l. 62, XI.620r, col. v, l. 109, XVIII.777, l. 6, 778, l. 9; *P.Oxy.* LXIV.4441, col. vi, l. 15; *P.Prag.* II.132r, l. 6; *SB* III.6094, l. 10; and *P.Zen.Pestm.* 63v, col. iii, l. 33 (= *SB* III.6803, col. iii, l. 2). Also [ζυτοπο]λίον is read in one inscription (= E17). The emendation ζυτοπώλου from ζοιτοπόλου in *P.Prag.* II.176r, l. 11 is probably wrong; read instead ζυτοπώλιον. The word is also abbreviated as ζυτοπωλ at *P.Gen.* II.91r, col. ii, l. 26 (= *SB* VI.9224, l. 26), and see *BGU* IX.1898, col. xi, l. 227. It should be also noted that the term ζυτηρά could be used synonymously with ζυτοπώλιον (see A. Loftus and G. Schwendner in Römer and Gagos 1996: 148).

254 B.C. In the first, Apollonius speaks of twelve *artabae* of barley to be used to make beer daily at a ζυτοπώλιον in Philadelphia; in the second he mentions Amenneus the “beer-maker” (ζυτοποιός) at the same ζυτοπώλιον.²⁸⁹ In another letter in the same series both the ζυτοπώλιον and the ἐργαστήριον are mentioned, and both have also been restored in yet another papyrus of the series.²⁹⁰ There is further proof for this contention. In another Ptolemaic text (dated to 253 B.C.) in which barley is to be supplied for beer, it is sent to a ζυτοπώλιον,²⁹¹ surely a simple beer store would have no need for cereal. Later instances could also be advanced; for instance, in A.D. 29, Papontos the former “beer-maker” (ζυτοποιός) allegedly broke into a house in Dionysias from the ζυτοπώλιον next door, where he presumably had worked (and neglected to return the key?).²⁹²

2.2.11.7 *ζυτουργεῖον/*ζυτουργῖον:

Despite the evidence above, it has been generally accepted that the word for a “brewery” in ancient Greek was ζυτουργεῖον (or ζυτουργῖον), following the model of such terms as ἐριουργεῖον (“wool factory”), καθαουργεῖον (“bakery”), λινουργεῖον (“linen factory”), πλινθουργεῖον (“brick factory”), or ὑαλουργεῖον (“glass factory”).²⁹³ However, ζυτουργεῖον is found in no ancient text and is in fact a modern scholarly invention.

In 1902, Grenfell, Hunt, and Smyly wrote that the Ptolemaic government in Egypt

²⁸⁹ Peremans and Van 't Dack 1977: 5: xxviii and 3 (no. 12462), citing *P.Cair.Zen.* II.59199 (= *SB* III.6738) (April 29, 254 B.C.) and 59202 (= *SB* III.6739) (May 23, 254 B.C.), with which, see Turner 1966.

²⁹⁰ *P.Mich.Zen.* I.36, ll. 8 and 10 (May 7, 254 B.C.) and *P.Col.Zen.* III.34r, ll. 2, 7, 9, and v, l. 13 (May 21, 254 B.C.). For a discussion of this whole series, see Préaux 1939: 153-154. See also ἐργαστήριον at *P.Cair.Zen.* III.59403, l. 6.

²⁹¹ *P.Tebt.* III.701v, col. iii, l. 249.

²⁹² *P.Ryl.* II.127. In *P.Ryl.* II.145 the former estate beer-maker Chaeremon is accused of having assaulted the present estate beer-maker Artemidorus.

²⁹³ Some of the -ουργεῖον terms denote a place where a substance is naturally found or produced, such as ἀμπελουργεῖον (‘vineyard’), λιθουργεῖον (‘quarry’), μελισσοουργεῖον (‘beehive’), or μεταλλουργεῖον (‘mine’). Sometimes these terms refer to a machine, such as ἐλαιουργεῖον (‘oil press’) or στεμφυλογεῖον (‘wine press’).

possibly levied a beer tax “from the ζυτοποιοί who worked at the βασιλικὸν ζυτουργεῖον.”²⁹⁴ This “royal brewery” is found in no ancient text. By 1905, Smyly, this time with Mahaffy, had found an opportunity to restore ζυτουργεῖον/ζυτουργεῖον from ζ in one of the Flinders Petrie papyri (from the third century B.C.), and twice from ζυ in another contemporary papyrus where a place for beer production was needed.²⁹⁵ The ghost word was then accepted, for instance, by Preisigke, and from there in Liddell, Scott, and Jones, where it remains unchallenged (there is no retraction in the supplement).²⁹⁶ In two of the restored instances of ζυτουργεῖον, both in a papyrus dating to 228 B.C., the texts involve a μεγάλου ζυ. There is little doubt that this should be read as μεγάλου ζυτοπωλίου and not μεγάλου ζυτουργείου.²⁹⁷ In one of the famous papyri of the Zenon archive, dated to 253 B.C., Haünchis, who is petitioning Zenon to help her get her daughter back from a so-called abductor, says that she distributes beer each day ἐκ τοῦ μεγάλου ζυτοπωλίου. Moreover, this is again more than likely a large beer factory and not a beer wholesaler as sometimes thought.²⁹⁸

2.3 Conclusions about the Terminology:

It would seem that the Greek and Latin terminology for beer was, on the whole, rather vague. A number of collocations could be used to refer to beer generally (see section 2.1.2 above), and specific words for types of beer could be used generically (see section 2.1.3 above).

²⁹⁴ Grenfell, Hunt, and Smyly 1902: 49 (on *P.Tebt.* I.5, l. 170). This was uncritically copied by Maspero 1905: 85.

²⁹⁵ Mahaffy and Smyly 1905: 221: *P.Petr.* III.87, fr. a, r, l. 16, where even the ζ is not a certain reading; 312 and 313: *P.Petr.* III.124, fr. a, col. i, l. 5 and fr. b, col. iii, l. 2 for ζυ, restored at 374 (and see the note at 314). ζυτουργεῖον is found in the first case at 221 while ζυτουργεῖον is found for all three cases in the index at 374.

²⁹⁶ Preisigke 1925: 1:649, s.v. ζυτουργεῖον (“Bierbrauerei”) and *LSJ* 1996: 758, s.v. ζυτουργεῖον (“brewery”).

²⁹⁷ *P.Petr.* III.124, fr. a, col. i, l. 5 and fr. b, col. iii, l. 2. Note that the ἐκ τοῦ ζυ at *P.Col.Zen.* III.34v, l. 13 has been expanded by the editors as ἐκ τοῦ ζυ(τοπωλίου). Furthermore, instead of the third restored instance of ζυτουργεῖον/ζυτουργεῖον (at *P.Petr.* III.87, fr. a, r, l. 16) Heichelheim long ago pointed out that ζυτοπωλίον should be read (1933: 170).

²⁹⁸ *P.Lond.Zen.* 1976, ll. 2-4. Large beer factory: for instance, Clarysse and Vandorpe 1995: 98-100 and Rowlandson 1998: 272. Beer wholesaler: for instance, Pestman 1990: 77-78.

For a review of the possible origins of the specific words for beer found in Greek and Latin, consult Table 3 below.

TABLE 3: ORIGINS OF THE GREEK AND LATIN WORDS FOR BEER		
Word	Original Form(s)	Origin
βρῦτος, etc.	βρῦτος ?	Greek ?
<i>caelia/celia</i> , etc.	<i>kelia</i> ?	Celtiberian
<i>furta</i>	?	?
κάμον / <i>camum</i> , etc.	<i>kamon</i> ?	Celtic ? Illyrian ?
κερβησία / <i>cervesia</i> , etc.	* <i>keruesa</i> ? * <i>keruisa</i> ?	Celtic
κούρμι / <i>curmi</i> , etc.	* <i>kurme</i> ?	Celtic
παραβίας/παραβίη	* <i>parabaiam</i> ?	Illyrian ?
πῖνον	?	Macedonian ? Thracian ?
<i>sabaia/sabaium</i>	* <i>sabaiam</i> ?	Illyrian
σικερα/σίκερα / <i>sicera</i>	<i>šikaru/shikaru</i> /SH-K-R	Akkadian / Semitic
ζῦθος / <i>zythum</i> , etc.	ζῦτος ?	Greek ?

It is impossible to say whether a word like **sabaiam* was simply the Illyrian *vox propria* for beer or whether it was an Illyrian name for a specific type of beer, or whether, for instance, *caelia* was originally the Celtiberian word for “beer” (which was usually made of wheat) or a specialized term for Celtiberian wheat beer (such as *wit* today is used to designate Belgian wheat beer, which is characteristically light-coloured, cloudy, and made with bitter orange and coriander). However, I will argue (in section 3.12 below) that beer styles as they exist today with individual brewing specifications (as with stout, lambic, etc.) did not really exist in antiquity, and that the surviving words probably are simply native words for “beer,” Greek

words for foreign drinks (as I have argued for βρῦτος < βρύω and ζῦτος < ζέω [and see section 3.4.3 below]), or words for specific beers made with certain cereals.

The specific words were thus connected to 1) a certain location, 2) a certain type of cereal from which it was made, or 3) both. 1) Pliny (T51) and Julius Africanus (T83) both catalogued beers by location: *zythum*/ζῦθος in Egypt, *caelia/cerea* in Hispania, *cervesia*/κερβησία in Gaul (or among the Celts generally), κάμον among the Paeonians, σίκερα among the Babylonians. To this list (compiled from both authors) could be added βρῦτος from Thrace (and Phrygia) and *sabaia/sabaium* from Illyria and environs. All these connections are shown in Table 4 below.

TABLE 4: TYPES OF BEER IN GREEK AND LATIN ACCORDING TO LOCAL ASSOCIATIONS		
Beer Type	Earliest Local Association(s)	Later Local Association(s)
βρῦτος, etc.	Thrace / Phrygia	Paeonia Anywhere
<i>caelia/celia</i> , etc.	Hispania / Numantia	Anywhere
<i>furta</i>	?	
κάμον / <i>camum</i> , etc.	Paeonia	Scythia
κερβησία / <i>cervesia</i> , etc.	Gaul / Britain	Anywhere
κοῦρμι / <i>curmi</i> , etc.	Gaul	
παραβίαζ/παραβίη	Paeonia	
πῖνον	?	
<i>sabaia/sabaium</i>	Illyria / Dalmatia / Paeonia	
σικερα/σίκερα / <i>sicera</i>	Babylonia	Anywhere
ζῦθος / <i>zythum</i> , etc.	Egypt	Gaul / Lusitania / Scythia Anywhere

An arrangement purely by country like this one is quite simplistic. Many of the terms, as can be seen, could be applied to beers from other locations (and even from anywhere).

However, for the most part this sort of arrangement can usefully show the linguistic origins of the words, except that κάμον / *camum* may have been Celtic and ζύθος / *zythum* was almost certainly Greek (as βρῦτος may have been as well), as shown on Table 3 above.

The 2) cereals out of which the beer was made could also be important, as shown in Table 5 below. Some of these terms may have been used to specifically designate a beer made from a certain cereal (such as παραβίας/παραβίη), while others may simply designate “beer” generally in the region of production, where a certain cereal was simply especially used (such as ζύθος / *zythum*).

TABLE 5: TYPES OF BEER IN GREEK AND LATIN ACCORDING TO CEREAL INGREDIENT(S)		
Beer Type	Earliest Cereal Ingredient(s)	Later Cereal Ingredient(s)
βρῦτος, etc.	Barley	Rye (?) / Any
<i>caelia/celia</i> , etc.	Wheat	
<i>furta</i>	Barley	
κάμον / <i>camum</i> , etc.	Barley	
κερβησία / <i>cervesia</i> , etc.	Wheat	Barley / Any
κουρμι / <i>curmi</i> , etc.	Barley	
παραβίας/παραβίη	Millet	
πῖνον	Barley	
<i>sabaia/sabaium</i>	Barley / Wheat	
σικερα/σίκερα / <i>sicera</i>	Any	
ζύθος / <i>zythum</i> , etc.	Barley	Wheat / Millet / Any

A look at this table alone could give the misleading impression that βρῦτος, πῖνον, and ζύθος were synonymous Greek terms meaning “barley beer,” when in fact they probably had important local associations and were perhaps also produced in different ways. 3) A comparison

of Tables 4 and 5 demonstrates a number of things. Among the Gauls κοῦρμι / *curmi* (and related words) designated a barley beer while κερβησία / *cervesia* designated a wheat beer, perhaps at least from the 1st C. B.C. to the 7th C. A.D. Among the Paenonians/Pannonians, βρῦτος (and variants) or κάμον / *camum* (and variants) would designate a barley beer and παραβία or παραβίη a millet beer, while *sabaia/sabaium* was perhaps a later term for barley or wheat beer drunk by those who were poorer. There was only one name for beer in Egypt, ζῦθος / *zythum* (and variants), and it was made at least mainly from barley.

All this analysis brings us to a question about the use of three different beer terms in Diocletian's price edict of A.D. 301 (E16). Mention is made of *cervesia* / κερβησία (and variants) or *camum* / κάμον (or *camus* / κάμος ?) at four denarii the pint, and *zythum* (or *zythus*) / ζῦθος at 2 denarii the pint. These are translated, for instance (in representative translations), as "beer, Celtic or Pannonian" and "beer, Egyptian," respectively.²⁹⁹ As I have argued (in section 2.2.4 above), the first pairing most logically means "wheat beer or barley beer," and perhaps specifically those made in Europe, though the idea of location of origin need not be present.³⁰⁰ The term *zythum* (or *zythus*) / ζῦθος could not be used here generically of beer, since other beers are mentioned, nor could it simply refer to barley beer if this is already covered by *camum* / κάμον; it must then refer to Egyptian beer (or perhaps specifically Egyptian barley beer).³⁰¹ The production of beer in Egypt may well have exceeded that in Europe, and thus its wide availability will have made its cost cheaper. However, it is possible that European beers were considered to be of higher quality,³⁰² though there is not much in our sources to support this

²⁹⁹ Williams 1985: 131 and Humphrey, Oleson, and Sherwood 1998: 502.

³⁰⁰ Valiño (1999: 66) rightly considers *camum* a type of barley beer.

³⁰¹ Thus in the very same way Theophrastus (T16) distinguished between barley beer and wheat beer on the one hand, and Egyptian ζῦθος on the other.

³⁰² Wightman (1970: 188) speaks of German beer being rated higher than Egyptian beer in this edict. Salway (1981: 655) rightly comments on the higher price that "whether that is much of a recommendation remains an open question."

notion (see further section 4.2.3.3 below).³⁰³

³⁰³ Williams (1985:131) assumes that Egyptian beer was inferior. Dionysius of Halicarnassus speaks negatively of Celtic barley beer (T37) while Oribasius speaks negatively of Cyrenaic (Libyan) beer (T92). Others condemn beer generally (see further sections 4.2 and 4.3 below).

CHAPTER 3

THE TECHNOLOGY OF BEER

In this chapter I will attempt to present all the information that survives concerning the production of beer in Greco-Roman antiquity, what I term its “technology.” Rather than separating the subject into examinations of the ingredients (cereal, water, yeast, and additives) and then of the process (conversion, fermentation, etc.), I have combined the two in a step by step study of the production of beer. I will begin by speaking of (3.1) the beer production process generally and then move on to (3.2) the choice of cereals, (3.3) the conversion of starch into sugar, either beginning with (3.3.1) masticating or (3.3.2) malting, with the added step of (3.3.3) mashing, (3.4) baking and brewing, with the evidence from preserved ancient recipes and from the Greek terminology, (3.5) the use of additives, (3.6) fermentation and the use of yeasts, (3.7) filtration and storing with the evidence for beer containers used for (3.8) storage and transportation, (3.9) aging and preservation techniques, and (3.10) drinking vessels. I will then discuss (3.11) the evidence for breweries in ancient and early medieval Europe. Finally, I will include a section (3.12) on the characteristics of the finished product.

3.1 The Beer Production Process:

Two basic steps in the making of beer can be distinguished: 1) *conversion*, the process of converting starches into sugars from the action of enzymes, and 2) *fermentation*, the process of anaerobic glycolysis in which the sugars are transformed into ethanol (as well as carbon dioxide) from the action of yeast. It is certainly possible for beer to be naturally (that is, accidentally) produced, under very special circumstances:¹ for instance, grains of cereal detached from the living plant may be soaked by rain (or unsown grains may be moistened because of poor storage conditions), may

¹ There is no evidence that the ancients knew this. Theodoret said that (T98): “*Zūthos* is an invented beverage, not a natural one” (πόμα ἐστὶν ὃ ζῦθος ἐπινενοημένον, οὐ φυσικόν). Similarly, Paulus of Aegina characterized beer as “man-made” (σύνθετος; T132), adding this to Galen’s account (T68). Jonas (?) said (T155) that it “is made by the skill of man” (*arte conficitur humana*), and Johannes Zonaras (T236) that it was invented by men. It is noteworthy that all these authors are Christian (see section 4.3.3 below); the invention of beer was attributed by pagans to Dionysus/Osiris (see section 4.2.2 below). Theophrastus (T16), however, noted that the nature of a substance can be changed by human arts, and gave the example of beer.

sprout, then be dried by the sun and then soaked again and finally fermented spontaneously by airborne yeast.² However, an understanding of the importance of saliva in mastication or of malting (consisting of the steeping, germination, and drying, and possible roasting, of the cereal) was essential for the systematic production of beer. We find two ways of preparing the malted cereal

TABLE 6: THE ANCIENT BEER PRODUCTION PROCESS			
▼		▼	
1A. MASTICATING		1B. MALTING	a. Steeping b. Germinating c. Drying / Roasting
▼		▼	
2A. BAKING	a. Milling b. Bread-making c. Leavening d. Cooking e. Dissolving f. Mashing (possible)	2B. BREWING	a. Milling b. Mashing (possible) c. Boiling
▼			
3. ADDITIVES (possible)			
▼		▼	
4A. SPONTANEOUS FERMENTING		4B. ARTIFICIAL FERMENTING	
▼		▼	
5A. STORING		5B. FILTERING AND STORING	
▼			
6. AGING (possible)			

² It is usually proposed that beer was discovered when some adventurous pre-agricultural man drank some such liquid (see, for instance, Durkan 1972: 267, Corran 1975: 15-16, Forni 1975: 75, MacLeod 1977: 45-46, and Ritchie 1981: 31). See, however, the alternate theory cited in section 3.3.2 below.

for fermentation, either through baking (in which malted loaves are crumbled hot into water) or brewing (in which the malt is simply boiled). It would not have been essential to understand the next step, that of fermentation; it would have been enough to leave out soaked malted cereal to be spontaneously fermented by air-borne yeast, though there is some evidence that artificial fermentation (with yeast being added) was known.³ On top of this, the beer could be filtered or left unfiltered, could be flavoured or preserved with additives, and could even be aged. I have made a table (6, on the previous page) outlining the basic steps for the ancient beer-making process (which will be explained in detail in sections 3.3 following). For modern attempts at recreating ancient beers, see Appendix IV.

3.2 Cereals:

The basic ingredient of beer is cereal (σῖτος or *frumentum*⁴), which is malted and then fermented. Just as today, the most popular cereal for beer production was barley, which was used practically everywhere that beer was made, and usually for the most basic type of beer, that is to say the most widely produced and drunk. Second in popularity, in antiquity as today, was wheat, which was found in use throughout the Mediterranean to make beer. Third in popularity was millet which seems to have been used mainly in the areas north of Greece (Paeonia, Pannonia, Scythia) and in Africa south of Egypt, as the secondary beer after a barley beer. Fourth, rice beer was found in India. There is also some slight evidence for the use of oats and possibly rye for beer-making. I have included a table (7, on the following page) of the cereals used for beer production in antiquity

³ All ancient beers were produced without refrigeration, and thus were always ales (top-fermenting) and not lagers (bottom-fermenting), which were only first made, at least in large quantity, in the early nineteenth century (for the distinction, see further section 3.6.2 below).

⁴ Both of these terms could also refer to wheat specifically, especially from the third century A.D. on, as they do in Diocl., *Ed.* 1.1; see Jasny 1944: 53-54 (who limits it to naked wheats), André 1985: 106, and Sallares 1996: 313. It is possible that ζῦθος ἀπὸ σίτου in the definition of *curmen* provided in T187 refers to wheat beer (see section 2.2.6 above). When Leontinus (T220) says τὰ ἀπὸ τοῦ σίτου καὶ τῶν κριθῶν γινόμενα πόματα he certainly means “drinks arising from wheat and barley.” Pliny already speaks of wheat beers being made from *frumentum* (T49), and Vergil may have as well (T34).

TABLE 7: ANCIENT CEREALS CONNECTED TO BEER PRODUCTION						
English	Greek	Reference in Dioscorides <i>Mat. med.</i>	Greek Beer Sources	Latin	Reference in Pliny <i>Hist. nat.</i>	Latin Beer Sources
Barley [<i>Hordeum distichum</i> or <i>hexastichum</i>]	κριθή	2.86 W = 108 S	T2-5, 7, 9, 13-14, 16-17, 22, 24, 26, 28-32, 37, 41, 44, 54, 55a, 60-64, 66, 69-70, 76, 78, 81, 86, 91, 93, 94b, 101, 103-106, 109, 121, 183, 210, 218-219, 226-227, 230-231, 234-235, 238	<i>hordeum</i>	18.13-15.71-75 18.18.78-80 22.65.134-135	T46, 55b, 58, 84, 96, 120, 146, 155
Naked wheat [varieties of emmer or spelt]	πυρός	2.85 W = 107 S	T16, 26, 55a, 184 See T91	<i>triticum</i>	18.12.63-70 18.19.81-82 18.20.85-91 18.21.94-95	T84, 112, 120, 136, 155
Hulled emmer wheat [<i>Triticum dicoccum</i>]	σίτος	—	T185 (?), 220, 222	<i>frumentum</i>	—	T34 (?), 49, 58, 74, 96, 136, 146, 159b, 221
	ὄλυρα	2.91 W = 113 S	T220, 222	<i>far braxis/-e</i>	18.19.83-84 18.11.62 18.20.93	— See T148, 178, 180, 203, 204, 208, 232
	τράγος	2.93 W = 115 S	See T91	<i>tragos</i>	—	—
Millet, common [<i>Panicum miliaceum</i>]	κέγχρος	2.97 W = 119 S	T3, 44, 68, 76, 220, 222	<i>milium</i>	18.10.52-55 18.24.100 22.62.130	—
Millet, Italian [<i>Setaria Italica</i>]	ἔλυμος	2.98 W = 120 S	T220, 222	<i>panicum</i>	18.10.52-55 18.25.101 22.63.131	T84 (?), 120 (?)
Rice [<i>Oryza sativa</i>]	ὄρυζα / ὄρυζον	2.95 W = 117 S	T11 (?), 18 (?), 42, 75, 238	<i>oryza</i>	18.20.93	T50
Oats [<i>Avena sativa</i>]	βρόμος	2.94 W = 116 S	T220, 222 See T91	<i>bromos</i> <i>avena</i>	18.20.93 22.79.161 18.10.61 18.44.149-150	— —
Rye [<i>Secale cereale</i>]	βρίζα	—	T8 (?)	<i>secale centenum</i>	18.40.141	— —

with their names in English, Greek, and Latin,⁵ their occurrence in Dioscorides's *Materia medica* (with the numbering from both Wellmann [= W] and Sprengel [= S])⁶ and Pliny's *Historia naturalis*, and the Greek and Latin references (by T numbering) of beers made from these cereals. What is strikingly noticeable from this table is not only that there are many more references to the cereals used in beer in Greek texts than in Latin, but that, for some reason, almost all of our evidence for barley beer comes from Greek sources. Also, though Jonas in the late seventh century feels he must define what beer is (T146, and see 155), after that no text with which I am dealing does so, obviously demonstrating that beer became a popularly known product.

Obviously peoples on the whole fermented whichever cereals were readily available (and conducive to a potable beer⁷), and thus a history of beer could rely on a historic study of the areas of cultivation of various cereals. However, for the most part I have decided to work from the actual literary references to, and archaeological finds of, cereals used in beer production; further work on cereal cultivation could, however, expand our knowledge.⁸ I show on Table 8

⁵ There is some dispute about the ancient terminology for different types of wheat, which Jasny (1944) attempted to resolve. I have followed his classification, except when dealing with *bracis* (see further section 3.3.2.4 below).

⁶ I omit references in Theophrastus or Galen since they are not as complete as Dioscorides; I do, however, quote them below.

⁷ Rye was widespread in ancient Europe (see Behre 1992), but apparently not really considered useful in beer making (just as today). It may be worth noting that maize (*Zea mays* L) was once also commonly used for beer in the Americas where it grew plentifully (see Morris 1979, Moore 1989, Stika 1998: 32-33, and Schienerl 1998: esp. 161-163), but this cereal was, of course, unknown in the Old World. For other cereals (such as sorghum, manioc, and quinoa) used in brewing in the New World and in modern Africa and Asia, but apparently not used by the ancients, see Muller 1986, Novellie 1986, Stika 1998: 34-36, and Schienerl 1998.

⁸ I can provide two examples of the usefulness of my "if the cereal was here, then so was the beer" principle. First, Strabo mentions the growing of millet (κέγγρος) in Transalpine (4.1.2 [178], and see 4.2.1 [190] for Aquitania specifically) and Cisalpine (5.1.12 [218]) Gaul, while Caesar (*De bell. civ.* 2.22.1) speaks of the Massilians having barley and *panicum* (Italian millet) and Pliny says that the Gauls, and particularly those of Aquitania, use *panicum* (*Hist. nat.* 18.25.101). Also, the very word *panicum* is thought to be Gallic (Billy 1993: 118; see also Holder 1904: 926-927). It is therefore reasonable to assume that the Gauls used this cereal to make a beer, even though, as far as I am aware, there is no literary or archaeological evidence that they did. Reynolds (1995: 308, table 1) shows that based on cereal finds, the Celts had four types of barley, four types of wheat, millet, oats, and rye, while Ross (1970: 107) speaks of ancient Celtic barley, wheat, oat, and rye *beer* (though not millet, for some reason), without citing any evidence. Second, the main cereal crop grown by the Scythians throughout antiquity was wheat (Marčenko and Vinogradov 1989: 805), wheat was grown in Thrace (Pliny, *Hist. nat.* 18.12.69), and the neighbouring Germans (T58) and Illyrians (T96) made wheat

(below) at which locations beers made of certain cereals were produced. It should be noted that, as far as we know, every people who made beer made a barley beer (the only exception being the Indians⁹), and most people also had a secondary beer, usually made of wheat or millet. The people from the Caucasus even brewed barley, wheat, *and* millet beers.¹⁰

TABLE 8: CEREALS USED IN BEER PRODUCTION, BY LOCATION	
Cereal	Location used in Beer Production
Barley	Everywhere (except India)
Wheat	Western Europe / Caucasus / Egypt
Millet	Caucasus / Ethiopia
Rice	India
Oats	?
Rye	Phrygia ?

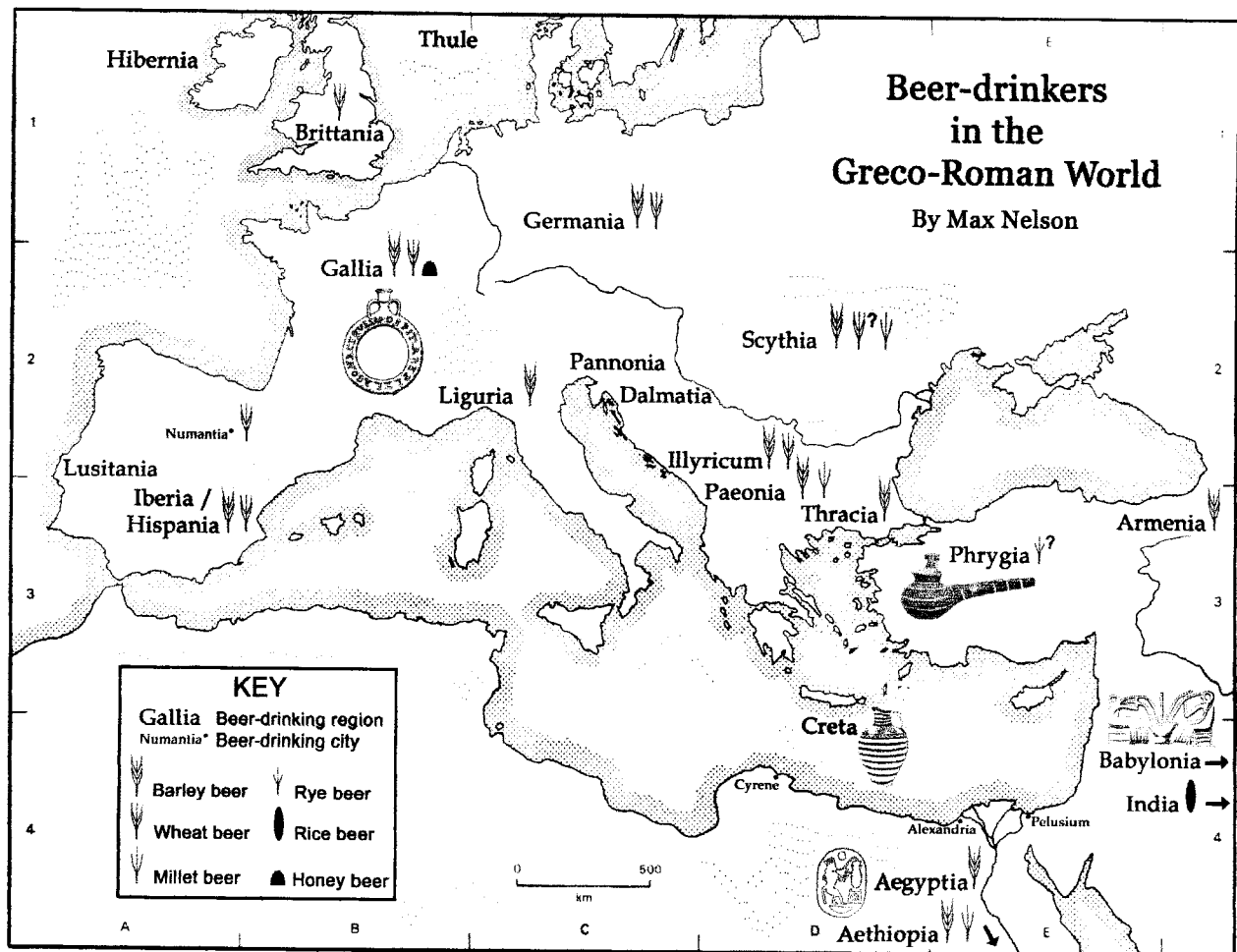
To get a full idea of the distribution throughout the Greco-Roman world of various beers in terms of the cereals from which they were made, according to the Greek and Latin literary sources, I include a map with full index of sources (Map 1, on the following page, synchronically presented).¹¹ This literary evidence can be supplemented from a number of different sources. To give a good example, though it was known that wheat was grown in Egypt,

beers. Though the Scythians are not certainly known to have brewed wheat beer (though see T34, with my comments at section 2.1.2.1 above), it is again reasonable to suppose that they did.

⁹ As both Strabo (T43) and Pliny (T51) relate (perhaps from the account of Ctesias [T11] or that of Megasthenes [T18]) Indians made a drink from rice, just as everyone else made it from barley.

¹⁰ For general remarks about the spread of different cereals in antiquity, and the importance of climate as a factor, see Segrè 1950: 162-168.

¹¹ This map clearly shows that the only cereals of significance around the Mediterranean were barley, wheat, and millet, as Jasny (1944: 14), among others, has stated. Note the mention of this triumvirate in Ulpian (T84/T120). I leave out most early medieval references which mention beer in passing in specific areas (and will discuss them in section 4.3.3 below), except for those in Jonas (T146-149 and 153-155) since he speaks of places generally where beer was drunk.



Map 1

INDEX OF GRECO-ROMAN LITERARY SOURCES:

Hibernia

GENERAL: Jonas, *Vit. Col.* 26

Lusitania

GENERAL: Posid., fr. 22 Th

Numantia

WHEAT: Florus, 1.34.12; Orosius, 5.7.13; Isid., *Etym.* 20.3.18

Iberia / Hispania

GENERAL: Pliny, *HN* 14.29.149, 22.82.164; Isid., *Etym.* 20.3.18

BARLEY: Plb., 34.9.15

WHEAT: Diosc., *Mat. Med.* 2.88; Pliny, *HN* 18.12.68

Brittania

GENERAL: Jonas, *Vit. Col.* 26

WHEAT: Diosc., *Mat. Med.* 2.88

Gallia

GENERAL: Pliny, *HN* 14.29.149, 22.82.164; Jul. Afr., *Cest.* 1.19 V; Julian in *AP* 9.368; Ammian., 15.12.4; Jonas, *Vit. Col.* 26

BARLEY: Posid., fr. 169 Th; Dion. Hal., 13.11.1

WHEAT: Pliny, *HN* 18.12.68

WHEAT + HONEY: Posid., fr. 170 Th

Thule (near)

GENERAL: Pytheas, fr. 7 Roseman

Liguria

BARLEY: Strabo, 4.6.2

Germania

GENERAL: Jonas, *Vit. Col.* 26 and 53

BARLEY + WHEAT: Tac., *Germ.* 23.1

Pannonia

GENERAL: Jerome, *Comm. Is.* 7.19

BARLEY + MILLET: Cass. Dio, 49.36.3

Dalmatia

GENERAL: Jerome, *Comm. Is.* 7.19

Illyricum

GENERAL: See Jonas, *Vit. Col.* 26

BARLEY + WHEAT: Ammian., 26.8.2

Paeonia

GENERAL: Jul. Afr., *Cest.* 1.19 V

BARLEY + MILLET: Hect., *FGrH* 1F 154

Cyrene

GENERAL: Orib., *Coll. Med.* 3.23.4 = *Syn. Eust. Fil.* 4.22.4

Scythia

BARLEY: Priscus, fr. 11.2 Blockley

WHEAT: Verg., *G.* 380 + Servius?

MILLET: Glaucus in *P.Oxy.* XV. 1802.11.41-42

Thracia

GENERAL: Archil., fr. 42 West;

Aesch., *Lyc.* fr. 124 Radt?

BARLEY: Hellan., *FGrH* 4F66

Beer-drinkers in the Greco-Roman World

By Max Nelson

Phrygia

GENERAL: Archil., fr. 42 West

RYE: Hellan., *FGrH* 4F66?

Alexandria

GENERAL: Strabo, 17.1.14; Dio. Chr., *Or.* 32.82; Galen, *Hipp. Aph. Comm.* 20

Aegyptia

GENERAL: Thphr., *Caus. Pl.* 6.11.2; Strabo, 17.2.5; Pliny, *HN* 22.82.164; Jul. Afr., *Cest.* 1.19 V

BARLEY: Hect., *FGrH* 1F323; Aesch., *Suppl.* 953 + Σ; Hdt. 2.77.4; Thphr., *Hist. Pl.* 4.8.12; DioAcad. in Athen., *Deipn.* 1.34b; Diod. Sic., 1.34.10; Aret., *Caus.* 1.9.4

Aethiopia

BARLEY + MILLET: Strabo, 17.2.2

Pelusium

GENERAL: Colum., 10.116

Armenia

BARLEY: Xen., *Anab.* 4.5.26-27

Babylonia

GENERAL: Jul. Afr., *Cest.* 1.19 V

India

RICE: Strabo, 15.1.53; Pliny, *HN* 18.13.71; see Ael., *Nat. Anim.* 13.8 and Man. Phil., *Eleph.* 149

Egyptian wheat beer is nowhere mentioned in Greek or Latin literary sources.¹² However, a number of Greco-Egyptian papyri suggest that wheat was used,¹³ and archaeochemical analysis has made this certain.¹⁴ Also, it is only from the archaeological evidence that it is known that barley beers were made in Phrygia.¹⁵ Since the eastern evidence has often been analysed,¹⁶ I provide here only maps dealing with the lesser known European archaeological evidence, including a general one (Map 2, on the next page), and a detailed map centring on what is now Belgium (Map 3, on the page following the next).

There is no certain Greek or Latin literary evidence for the combination of more than one cereal in the production of a single beer.¹⁷ Reynolds, for one, wrongly interprets Tacitus (T58)

¹² Strangely, Herodotus (2.36.2) says that the use of barley and wheat as food was considered disgraceful by Egyptians. On the other hand, Egyptian wheat is also mentioned by Diodorus Siculus (*Hist.* 1.72.2) and Pliny (*Hist. nat.* 17.3.31 and 18.12.63, 66-68). When Pliny says that rice is grown in Egypt, he probably means olyra wheat (see Darby, Ghalioungui, and Grivetti 1977: 493); Darby, Ghalioungui, and Grivetti (1977: 537) are wrong, however, in stating that Pliny said that the Egyptians made beer out of wheat, since Pliny merely says *e fruge* (T48). Interestingly, in the Babylonian Talmud Rabbi Pappa is recorded as having said that Egyptian beer was made from wheat (*Pesahim* 42b).

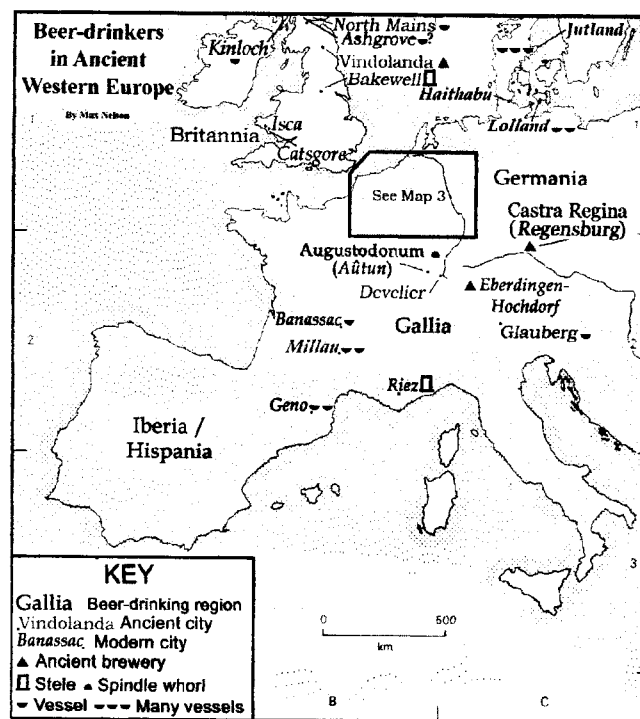
¹³ A papyrus from around 250 B.C., which mentions amounts of πυρός, κριθή, κριθόπυρον, and ὄλυρα, also mentions beer tax four times (*P.Hib.* II.212, col. i, l. 21 and col. ii, ll. 36, 41, and 43). One ostrakon from the second or first century B.C. seems to include an account of new wheat, wheat, barley, and beer (*O.Mich.* IV.1128 = *SB* XIV.11515). An Imperial papyrus (not dated precisely) seems to mention that σῖτος is used by beer-makers, which could mean barley (if translated as "cereal in general") or wheat (the editors translate "old wheat") (*P.Duke* inv. 975r [b]). One papyrus mentions costs for πυρός a number of times as well as beer tax (*P.Fay.* 101). A papyrus from the second century A.D. has on the recto an account of wheat distribution and on the verso mentions beer a number of times (*P.Lond.* II.254).

¹⁴ Samuel (1993: 278, 1996b: 5, and see Lucas and Harris 1962: 15 and Darby, Ghalioungui, and Grivetti 1977: 479-497) shows that after barley, the main cereal in ancient Egypt was hulled emmer (*Triticum dicoccum*). Samuel has also detected both emmer wheat and barley in ancient Egyptian beer, either used separately or mixed together (Samuel 1996: 488 and 1996b: 3, 5; see also Grant 1930: 232 and Darby, Ghalioungui, and Grivetti 1977: 493). For an analysis of ancient grains preserved in desert conditions, see Palmer 1995.

¹⁵ See McGovern *et al.* 1999, on traces of a drink made from a mixture of grapes, barley, and honey from the Midas Mound (c. 700 B.C.) in Gordion, the capital city of Phrygia. In Gordion, vessels fitted with sieved spouts and sipping vessels for beer have been found, and were used by the higher classes in the eighth and seventh centuries, while lower classes perhaps simply used straws (Sams 1977).

¹⁶ See the bibliography cited in section 1.3 above. For Greco-Egyptian papyri, see bibliography 1.2.1, with the discussion in section 2.2.11 above and sections 4.2.1.4.3 and 4.3.2 below; also two Greek inscriptions from Egypt (E17-18), and two from Axum, Nubia (E19) which mention beer can be found in Appendix II.

¹⁷ See above for the possibility of barley-wheat beer in Egypt. Mixed malts were also used in Mesopotamia: Powell 1994: 92.



Map 2 INDEX OF ANCIENT ARCHAEOLOGICAL SOURCES:

Britannia

MALTING EQUIPMENT: Van der Veen 1989 and Anonymous 2000 (1st-4th C. A.D.)

North Mains, Scotland

VESSEL: Barclay *et al.* 1983 and Dineley 1996 (c. 2330 B.C.; cereal and mead/sweet)

Ashgrove Farm, Scotland

VESSEL (?): Dickson 1978: 111 and 112 (Bronze Age; mead or honey beer?)

Kinloch, Isle of Rhum, Scotland

VESSEL: Wickham-Jones *et al.* 1990: 126-127 (2000 B.C.; heather beer)

Vindolanda

TABLETS: *Tab. Vindol.* II. 182, 186, 190, 482, and *Suppl.* 2-3 (1st-2nd C. A.D.)

BREWERY: Birley 1977: 45-46 (3rd C. A.D.)

Bakewell, England

INSCRIPTION (?): *CIL* VII.176 = *RIB* I.278 (= E3) (undated)

Isca, Wales

MALTED WHEAT: Helbaek 1964 (late 1st or early 2nd C. A.D.)

Catgore, Wales

MALTED SPELT: Hillman 1982 (Roman)

Iberia / Hispania

Geno, Spain

VESSELS: P.1999 (Late Bronze Age, c. 1100 B.C.; wheat and barley)

Gallia

Banassac, France

VESSEL: *CIL* XIII.10012.7 (= E5), and see 15b (= E6) and E7 (undated)

Millau, France

VESSELS (?): *GLG* 12.13 and 14.11 (and see 82.4) (= E2) (mid 1st C. A.D.)

Augustodunum (Aütun, France)

SPINDLE WHORL: *ILTG* 529 (= E1) (undated)

Develier, France

HOPS: Behre 1999: 40 (6th - 8th C. A.D.)

Riez, France

STELE: *CIL* XII.372 (= E4) (undated)

Germania

Jutland and Lolland, Denmark

VESSELS: Nierhaus 1954: 257-258 and Dickson and Dickson 2000: 81 (A.D. 200-250; barley and berries, and wheat, berries, and honey, etc.)

Österbölle, Denmark and Eketorp, Sweden

Malt: See Helbaek 1938 and 1966 (1st C. A.D. and 6th C. A.D.)

Haithabu, Germany

HOPS: Behre.1999: 39-40 (9th-10th C. A.D.)

Eberdingen-Hochdorf, Germany

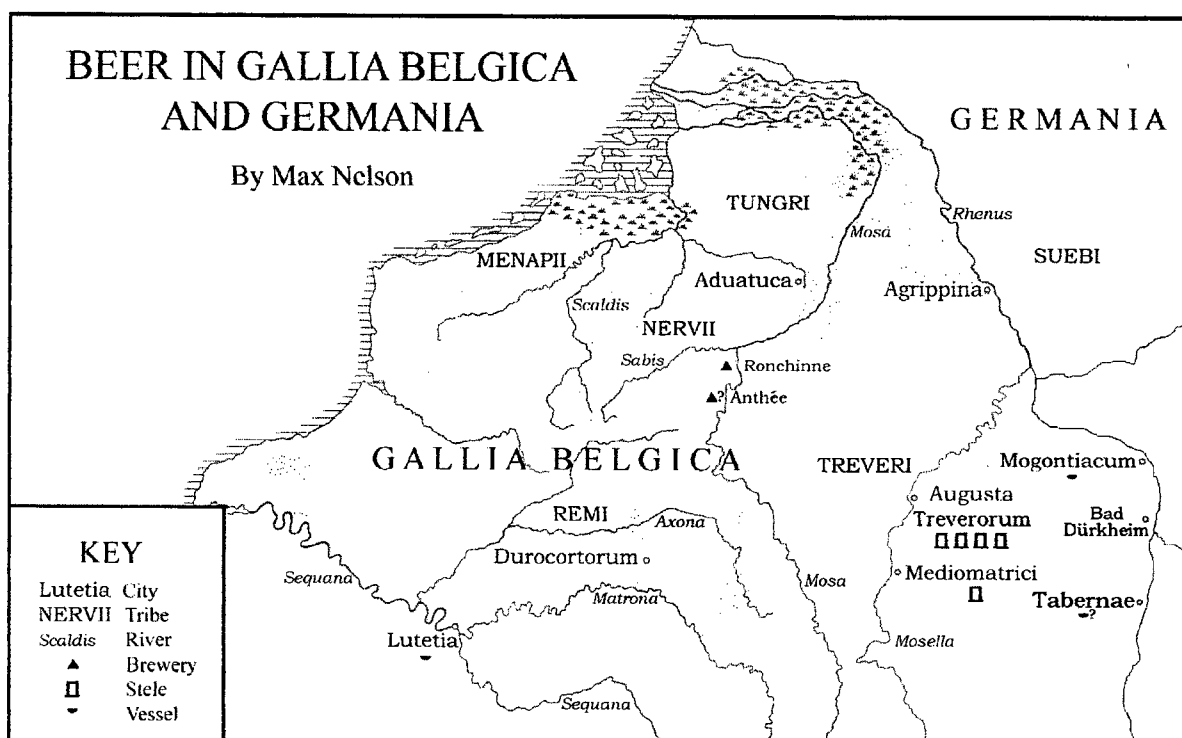
BREWERY: Stika 1996a (c. 600 - 400 B.C.; barley)

Glauberg, Germany

VESSEL: Rösch 1999 (undated; honey beer)

Castra Regina (Regensburg, Germany)

BREWERY: Rieckhoff 1992 (Roman)



Map 3

INDEX OF ANCIENT SOURCES:

Lutetia (Paris)

VESSEL: *CIL* XIII.10018.7a (= E8) (undated)

Nervii

FORBADE THE IMPORTATION OF WINE: *Caes., De bell. gall.* 2.15. 4 (and see 1.1.1, 3) (mid 1st C. B.C.)

Ronchinne

BREWERY: Bequet 1895 (3rd - 4th C. A.D.)

Anthée

BREWERY (?): Del Marmol 1881: 36 (mid to late 1st C. A.D.)

Rhine estuary

FINDS OF SWEET GALE (PROBABLY FOR BREWING): Behre 1999: 39 (1st C. B.C. - 1st C. A.D.)

Germania

FORBADE THE IMPORTATION OF WINE: *Caes., De bell. gall.* 4.2.6 (mid 1st C. B.C.)

BARLEY AND WHEAT BEER: Tacitus, *Germ.* 23.1 (= T59) (A.D. 98)

BEER DRINKERS: Jonas, *Vit. Columb.* 26 (= T148) (c. A.D. 640)

Suebi

PRAYER TO WOTAN OVER BEER: Jonas, *Vit. Columb.* 53 (= T151) (c. A.D. 640)

Agrippina (Cologne)

VOMITED LIBATIONS: Greg. Turn., *Vit. patr.* 6.2

BARLEY MARKET: *CIL* XIII.10015.108 (undated)

Augusta Treverorum (Trier)

STELAS: *CIL* XIII.11319 (= E9) (undated)

BRGK 17, no. 41 (= E10) (undated)

CIL XIII.450* with Binsfeld 1972 (= E11) (undated)

unpublished (= E12) (undated)

Mediomatrici (Metz)

STELE: *CIL* XIII.11360 = 597* (= E13) (undated)

Mogontiacum (Mainz)

VESSEL: Künzl 1991: 171 (= E14) (early 4th C. A.D.)

Bad Dürkheim

MALT: Piening 1988: 325-340 (undated)

Tabernae

VESSEL (?): Ludowici 1905: x with Whatmough 1970: 1076, no. 230 (= E15) (undated)

as speaking of “a fermented liquor made from barley *and* wheat grain” (my emphasis).¹⁸ Strabo writes that the Ethiopians (T44) “live on millet and barley, from which [pl.] they also have a drink” (ζῶσι τ’ ἀπὸ κέγχρου καὶ κριθῆς, ἀφ’ ὧν καὶ ποτὸν αὐτοῖς ἐστίν).¹⁹ This at first sight seems to refer to one drink made from a combination of the two cereals; however, this is a rather common ambiguity in referring to two separate drinks, which will be encountered again below in the discussions on Pytheas (T15; see section 3.5.1 below) and Aretaeus (T62; see section 3.5.3 below).

In Diocletian’s price edict of A.D. 301 the prices of cereals are given.²⁰ I reproduce in Table 9 (below) the prices of those cereals with which I am dealing in this study; the significance of the differences in prices will be discussed below in the sections on each cereal.

TABLE 9: CEREALS USED IN BEER PRODUCTION, BY PRICE IN DIOCLETIAN’S EDICT	
CEREAL	PRICE (PER MILITARY MODIUS)
Barley	60 denarii (1.2)
Wheat	100 denarii (1.1)
Millet, Common	150 denarii (1.5)
Italian	50 denarii (1.6)
Rice	200 denarii (1.23)
Oats	30 denarii (1.17)
Rye	60 denarii (1.3)

I will now discuss in order the use in beer production of (3.2.1) barley (κριθή / *hordeum*), (3.2.2) wheat (πυρός/σίτος / *triticum/frumentum*), (3.2.3) millet (κέγχρος/ἔλυμος / *milium/panicum*), (3.2.4) rice (ὄρυζα/ὄρυζον / *oryza*), (3.2.5) oats (βρόμος / *avena/bromos*), and

¹⁸ Reynolds 1995: 314.

¹⁹ Pliny says that the only cereals known to the Ethiopians were barley and millet (*Hist. nat.* 18.24.100); he may have been using Strabo (though there is no evidence at all that he knew his work) or drawing on a common source.

²⁰ For a discussion, see Segrè 1950: 173-175.

(3.2.6) rye (βρίζα / *secale/centenum*). For each cereal I will speak of its characteristics, its varieties, its distribution in the ancient world, and its use in making beer.

3.2.1 Barley (κριθή / *hordeum*; Fr. *orge*, Germ. *Gerste*, It. *orzo*):

Barley is a very hardy cereal, easily cultivated as well as malted.²¹ As Pliny correctly noted of barley, “certain ears have two rows [of grains], some have more, up to six” (*spicae quaedam binos ordines habent, quaedam plures usque ad senos*).²² These characteristics formed the basis of the ancient classification of barley as two-row (*Hordeum distichum* [also the modern term] or *Galaticum*) and six-row (*Hordeum hexastichum* [also the modern term] or *cantherinum*; also *Hordeum vulgare* in modern times).²³ It seems in fact that two-row and six-row, both hulled varieties (with chaff fused to the grain), were the only types of barley commonly cultivated in antiquity.²⁴ However, in the literary sources of antiquity one usually finds references to κριθή / *hordeum*, with no mention of the number of rows of grain,²⁵ making it impossible to know precisely out of which type of barley beer was made.

In general, in antiquity the production of barley was usually of greatest importance

²¹ See Hough, Briggs, and Stevens 1971: 13-35 and Lambert 1997: 134.

²² Pliny, *Hist. nat.* 18.18.78. Pliny goes on to mention that variations among types of barley can be identified in terms of height, colour, etc.

²³ See André 1985: 126.

²⁴ For Greece: Amouretti 1986: 37; for Greece and Rome: André 1981: 50; for Egypt: Samuel 1993: 278 (from archaeobotanical finds). Pliny (*Hist. nat.* 18.15.75) also mentions *hordeum glabrum* (modern *Hordeum trifurcatum*; see André 1985: 126) in Africa and Baetica. Sergé (1950: 189) suggests that in Egypt *Hordeum hexastichum* and *tetrastichum* were grown, but this is not borne out by the more recent studies (see Samuel, cited above); he also speaks of *Hordeum polystichum* in ancient northern Europe (168).

²⁵ The only Greek exception is Theophrastus, as noted by Amouretti 1986: 37. The only Roman exception is Pliny (quoted above).

among the cereals, though in late antiquity it was exceeded in places by wheat.²⁶ Among Greeks and Romans it was considered inferior to wheat as a food, and, when possible, was reserved for livestock.²⁷ Barley beer was also probably considered inferior to wheat beer; at least *cervesia* (or similar terms), which, as I have argued (in section 2.1.3.3) was a wheat beer, is more frequently mentioned than Celtic barley beer. Barley was still certainly a popular cereal from which to make beer, since its soft kernels make it perfect for the production of beer.²⁸ It should be no surprise then, because of its wide distribution²⁹ and ideal characteristics that barley was, and still is, the main ingredient for the majority of beers.

Barley beer was known by many different names to the Greeks and Romans. It was “barley drink” (T2, 13, 28, 30-32, 41, 44, 58, 60, 61, 63-64, 66, 86, 96, 101, 103-105, 109, 146, 183, 220, 222, 227, 230, and 235; see section 2.1.2.3 above), “barley intoxicant” (T4-5; see section 2.1.2.1 above), “barley wine” (T7, 13, 16, 22, 24, 37, 62, 81, 91, 93, 106, 210, 226, 231, and 235; see section 2.1.2.2 above), “barley juice” (T46, 146, and 155; see section 2.1.2.4 above), and simply “the barleyed” (T14, 70, 78, and 81). Barley beer could also more specifically be called βρῦτος (or similar) (T3, 8, 17, 63, 81, and 235; see sections 2.1.3.1 and 2.2.1 above), *furta* (T55b; see section 2.2.3 above), κάμον / *camum* (T55b and 183; see section 2.2.4 above), *cervesia* (or variants) (T146 and 155; see section 2.1.3.3 above); κοῦρμι (T55a; see section 2.2.6 above), πίνον (T14b, 81, and 235; see section 2.2.8 above), and ζῦθος (or variants) (T26, 54, 62, 69, 84, 89, 94b, 106, 120, 122, 210, 226, and 234; see sections 2.1.3.2 and 2.2.11 above). Also one could speak simply of drinking barley (T76).

²⁶ Jasny 1944: 14. See also Mayerson 1984: 244, on a particular example of wheat being more popular than barley in late antiquity. Sallares (1996: 313) explains this as due to the high gluten content of wheat which makes it better for baking. Galen says that wheat is the most useful (πολυχρησιμώτατον) and most used (πολυχρηστότατον) grain among Greeks and barbarians (*De alim. facult.* 1.2 [= 6.480.15-481.1 Kühn = *CMG* V.4.2, 217.2-4]), and that barley is widespread but not as good as wheat (1.9 [= 6.501.1-3 Kühn = *CMG* V.4.2, 228.18-19]).

²⁷ André 1981: 50 and Sallares 1996: 313.

²⁸ See Jasny 1944: 135.

²⁹ Pliny noted (*Hist. nat.* 18.13.71) that barley was common all over the world.

3.2.2 Wheat (πυρός/σίτος / *triticum/frumentum*; Fr. *blé/froment*, Germ. *Weizen*, It. *grano/frumento*):

Wheat is a readily cultivated cereal (though somewhat less hardy than barley) with a large number of different species.³⁰ The proper classification of the various species of wheat from classical antiquity is a very complicated matter, which has spawned a number of monographs, most importantly that of Jasny in 1944.³¹ Jasny explained that “[t]he classification of wheats naturally was in a very loose state in antiquity” and thus that it really cannot be fully understood.³² On the whole, the ancients classified in terms of naked and hulled wheats, whereas moderns further divide these according to the chromosomes that make up each variety, creating three major groupings (einkorn, emmer, and spelt), each of which has one hulled variety, and the latter two having a number of naked varieties.³³ Adapting the modern classification to the ancient names is tricky, but Jasny³⁴ starts from the fact that emmer, both hulled (*Triticum dicoccum* Schrank) and, to a lesser degree, naked (mainly *Triticum turgidum* L, and also *Triticum durum* Desf.), was the principal wheat in the Mediterranean in antiquity,³⁵ while hulled spelt (*Triticum spelta*) and naked spelt (principally, it would seem, *Triticum vulgare* L or *compactum* Host.) was hardly grown in the Mediterranean,³⁶ einkorn (*Triticum*

³⁰ Pliny says (*Hist. nat.* 18.12.63): “There are many types of wheat which peoples produce” (*tritici genera plura quae fecere gentes*).

³¹ For previous works, see Jasny 1944: 11, nn. 1-2. His classification is followed on the whole by André 1981: 51-53 and Amouretti 1986: 34-35, among others.

³² Jasny 1944: 38.

³³ See Jasny 1944: 19 for the full modern classification (also in Segre 1950: 161).

³⁴ Jasny 1944: 27.

³⁵ See also Helbaek (1964: 162) for emmer as the standard wheat.

³⁶ The earliest known spelt comes from Switzerland and northern Italy from around 2000 B.C.; by the next millennium it had spread south in Italy, to France, England, and Denmark (Helbaek 1964: 162).

monococcum L.) seems to have been even rarer, and thus can be set aside.³⁷ Jasny argues that *πυρός* / *triticum* referred almost always to naked wheat,³⁸ though this would usually be emmer, it could at times also include spelt. It is usually accepted, however, that these terms referred to any type of wheat.³⁹ Jasny further shows that *ὄλυρα* / *far* referred to a hulled emmer wheat.⁴⁰ He says that *τράγος* was either emmer groats or hulled wheat without the hulls;⁴¹ I have thus classified it as a hulled emmer for convenience, though for my purposes it does not really matter since the only use of the word with reference to beer is in Julian's epigram in which he puns on its meaning of "goat" (T91). For the type of wheat known as *bracis* (or *brace*), see section 3.3.2.4 below.

Samuel has noted that emmer takes longer to germinate than barley and thus she has inferred that this may have affected the choice of which to use in the production of beer.⁴² References to wheat beer are relatively infrequent in ancient sources, though they attest, if not a voluminous use of wheat beer, at least a widespread one.⁴³ For the most part it is impossible to tell which type of wheat is used.

³⁷ It seems to be called *τίφος* by Theophrastus (*Hist. plant.* 8.9.2) and Galen (*De alim. facult.* 1.13 [= 6.510.17-522.16 Kühn = *CMG* V.4.2, 234.19-241.24], who cites Theophrastus along with other authorities) and *tiphe* by Pliny, who placed it in Cilicia (*Hist. nat.* 18.19.81 and 20.93), with whom, see André 1981: 52. Some minor finds of einkorn have also been made in England for the Neolithic and Bronze Age (Helbaek 1952: 224-227). Amouretti (1986: 36) claims that it was found in prehistoric Greece (where the wild variety may have been native).

³⁸ Jasny 1944: 53-55; see 57-70 for his discussion of the types of naked wheat in antiquity.

³⁹ André 1985: 265 (on *triticum* only); Amouretti 1986: 35 (on *πυρός* only).

⁴⁰ Jasny 1944: 112, 115, and 116 (for *ὄλυρα*) and 13, 38, and 114-115 (for *far*). See also André 1985: 102 and 177 (who shows that *ὄλυρα* / *olyra* could sometimes be distinguished from *far*, and then probably referred to *Sorghum vulgare*).

⁴¹ Jasny 1944: 55 and 115, respectively. Chantraine (1980: 2:1127, s.v.) says that *τράγος* is perhaps spelt.

⁴² Samuel 1996b: 8.

⁴³ Today, wheat beers are much less extensively produced, being found mainly in Belgium (as wit and lambic), Germany (as Hefeweizen), and in North America. In all of these cases, however, the majority of the malted cereal used is still barley. In antiquity, wheat beers were probably made entirely of malted wheat, though there is some evidence in Egypt for barley-wheat beers (see section 3.2 above).

Theophrastus is the first to speak of “wheat wine,” and couples it with “barley wine” (T16),⁴⁴ and this drink was found in Britain (T55a), Spain (Iberia [T55a], among the Hispanians [T49], and Numantia [T74, 113, 136, 143, and see 221]), Germany (T58), Illyricum (T96), and possibly Scythia (see T34). Also, Posidonius (T27) speaks of wheat beer (ζῦθος πύρινον),⁴⁵ made with honey, in southern Gaul; as I have shown *cervesia* was probably a Celtic word for wheat beer (see T159b and 184). Pliny confirms that the Gauls used wheat for beer (T49). Julian plays on the fact that beer was made from wheat (T91). Finally, Leontinus speaks both of a drink ἀπὸ τοῦ σίτου and one ἀπὸ τῶν ὀλυρῶν (T220/T222), perhaps contrasting naked emmer beer with hulled emmer beer.

3.2.3 Millet (κέγχρος/ἔλυμος / *milium/panicum*; Fr. *millet/panic*, Germ. *Hirse*, It. *miglio*):

Millet is not hardy and it also yields a small return,⁴⁶ facts which readily explain why it was not a popular cereal (for food or drink).⁴⁷ There is no doubt as to the ancient classification of millet: there were two types of millet, common or Russian millet (*Panicum miliaceum* L), which was known as κέγχρος / *milium*, and Italian millet (*Setaria italica* L), which was known as ἔλυμος (or μελίνη or μελίβιον) / *panicum*.⁴⁸

Leontinus (T220) says that both κέγχρος and ἔλυμος were used to make intoxicating beverages. Otherwise the Greek sources that mention millet beer invariably speak of κέγχρος

⁴⁴ Barley beer and wheat beer are also paired in Tacitus (T58), Ammianus (T96), Jonas (T146 and 155), and Leontinus (T220/T222).

⁴⁵ Kidd (1988: 312, and also 1999: 135, n. 83) does not accept the adjective πύρινος as the proper reading, but this parallels precisely the term κριθίνος (T13, 14a, 61, 70, 81-82, 227, 231, and 234-235).

⁴⁶ Jasny 1944: 16.

⁴⁷ Today, millet beers are mostly produced (though usually non-commercially) in sub-Saharan Africa: see, for instance, Schienerl 1998: 152.

⁴⁸ The two are coupled in *SEG* XIII.13, ll. 138-139 (cited by Amouretti 1986: 40), Dioscorides (2.97-98 Wellmann [= 2.119-120 Sprengel]), Pliny (*Hist. nat.* 18.10.52-55, 24-25.100-101, and 22.62-63.130-131), Galen (*De alim. facult.* 1.15 [= 6.523.10-524.11 Kühn = *CMG* V.4.2, 242.9-25]), and Diocletian (*Ed.* 1.4-6). See Jasny 1944: 12 and 13; André 1981: 53 and 1985: 161 and 187; and Amouretti 1986: 40.

(Hecataeus [T3], Strabo [T41], an anonymous lexicographer [T68], and Cassius Dio [T76]), while the one possible Latin source (Ulpian [T84]) that mentions the drink speaks of *panicum*.⁴⁹ It may be that ἔλνμος / *panicum* was generally considered an inferior cereal not worth turning into beer; at least in Diocletian's price edict it is found as one of the cheapest cereals, while κέγγρος / *milium* is one of the most expensive (see Table 9 above).

Millet beer was found among the Paeonians/Pannonians (Hecataeus [T3], as βρῦτος or βρῦτον, and Cassius Dio [T75]) and the Scythians (a lexicon [T68]),⁵⁰ as well as the Ethiopians (Strabo [T44]).⁵¹

3.2.4 Rice (ὄρυζα/ὄρυζον / *oryza*; Fr. *riz*, Germ. *Reis*, It. *riso*):

Rice (*Oryza sativa* L) is a cereal grown in water-logged areas which can be readily fermented.⁵² In antiquity rice was the staple grain in Asia, and it was occasionally found in the West, especially in Germany, though it was not cultivated in southern Europe.⁵³ Theophrastus

⁴⁹ The manuscript reading is *ex pane*, but *ex panico* makes much more sense after the mention of barley and wheat for beers. Pliny (*Hist. nat.* 18.25.101) says that *panicum* was grown in Gaul (especially in Aquitania), in northern Italy, and around the Black sea, but does not mention its use in beer.

⁵⁰ Herodotus already mentioned that the Scythians had millet (4.17.1). It is interesting that though Priscus says that the cereal used for food by the Scythians was millet, he only says that they drank barley beer (T109). In the mid-thirteenth century, William of Rubruck spoke of Mongolian millet beer (29.17).

⁵¹ Pliny (*Hist. nat.* 18.24.100) says that the Ethiopians only grow the cereals *milium* and *hordeum*. Diodorus Siculus (*Hist.* 1.33.4) also says that the Ethiopians grow κέγγρος.

⁵² Rice beer is today best known from Japanese *saké*; for a history of this beverage, see Huber 1928: 59-77. Rice is also fermented into *arrack* in other parts of Asia.

⁵³ André 1981: 54-55 and 1985: 182, and for recent archaeobotanical finds of rice in Europe, see Kroll 2000: 45. Humphrey, Oleson, and Sherwood (1998: 154) are wrong that rice never made its way westwards, though it was certainly rare in the northern Mediterranean, as its enormous price in Diocletian's edict testifies (1.23). However, Grant (2000: 200, n. 25), commenting on Galen's mention of rice, shows that Apicius's reference to rice water (2.2.8) tends to show that rice was not that exotic.

and Galen mention it in passing,⁵⁴ while Pliny says that though the Indians have both wild and cultivated barley⁵⁵ their favourite cereal is rice, and that they make a drink from it which the rest of the world makes from barley (T50). Very similarly, Strabo had already said that the Indians did not usually drink wine, but a drink made of rice rather than barley (T43). It seems plausible that both these authors were indebted to the same source, which could be Ctesias (= T11) or Megasthenes (= T18), both of whom both Strabo and Pliny knew. Aelian, who also knew Ctesias's work, says that elephants are given wine made from rice (T76), presumably in India, and Ctesias wrote extensively on Indian elephants.⁵⁶ In Byzantine times, Manuel Philes also mentioned the fact that elephants would be given rice beer (T233). See section 3.5.12 below on a possible reference to rice beer among the Paeonians.⁵⁷

3.2.5 Oats (βρόμος / *avena/bromos*; Fr. *avoine*, Germ. *Hafer*, Ital. *avena*):

The cultivation of oats (*Avena sativa* L) was already known in Switzerland in the Bronze Age, but during Greco-Roman times it was only important in Germany.⁵⁸ Theophrastus mentioned oats as a wild plant.⁵⁹ Pliny considered oats (*bromos* or *avena*) a type of wheat, and mentions its use among the Germans, while Dioscorides more correctly stated that it simply

⁵⁴ Theophr., *Hist. Pl.* 4.4.10 and Galen, *De alim. facult.* 1.17 (= 6.525.1-4 Kühn = *CMG* V.4.2, 243.8-11). Herodotus's mention of a millet-like cereal in India (3.100) is probably the first extant Greek reference to rice (see Amouretti 1986: 33, n. 3). Diodorus Siculus (*Hist.* 2.36.3 and 4) mentions both Indian millet and rice.

⁵⁵ This *hordeum *Indicum* is actually sorghum (*Sorghum halepense*) according to André 1985: 126.

⁵⁶ For Ctesias on elephants, see Scullard 1974: 33-36.

⁵⁷ In the mid-thirteenth century William of Rubruck mentioned Mongolian rice beer (*cervisia de risio*) which he enjoyed (2.9 and 28.1); he also called it *terraccina* (28.15 and 30.2) which comes from the Mongolian word *darasun*.

⁵⁸ André 1981: 54 and 1985: 30 (with the possible different types of oats known to Greeks and Romans). See also Amouretti 1986: 33, n. 3.

⁵⁹ Theophr., *Hist. Pl.* 8.9.2.

looked liked wheat (πυροῖς ὅμοιος).⁶⁰ Galen notes its presence in Asia.⁶¹ Leontinus is the only author to claim explicitly that beer was made from this cereal (T220/T222), and the validity of his testimony is hard to assess. Julian, for the sake of a pun, says that the beery Dionysus should be known as Βρόμος rather than Βρόμιος (T91). Page sensibly suggests that the word is simply used for the sake of the pun and that oats were not used to make beer in ancient times.⁶² Oats were certainly rarely considered worthy of being eaten by anything but animals, and it is the cheapest cereal in Diocletian's edict (see Table 9 above).⁶³

3.2.6 Rye (βρίζα / *secale/centenum*; Fr. *seigle*, Germ. *Roggen*, It. *segale*):

It has been shown that wild rye was indigenous to Anatolia originally and that it was domesticated and cultivated there already in the early Neolithic period, around 6600 B.C.⁶⁴ From there rye (*Secale cereale* L) spread to Europe, where it was adapted as a crop during the pre-Roman Iron Age.⁶⁵ Rye, however, does not grow well in the Mediterranean because of the climate and soil, but very well in the North.⁶⁶ In late antiquity, wheat on the whole was replaced by rye in Western Europe through the influence of Germanic and Slavic peoples who used rye

⁶⁰ Pliny, *Hist. nat.* 18.20.93, 18.44.149-150, and 22.79.161 (and see 18.10.61) and Diosc., *Mat. med.* 2.94 Wellmann (= 2.116 Sprengel).

⁶¹ Galen, *De alim. facult.* 1.14 (= 6.522.17-19 Kühn = *CMG* V.4.2, 241.26-28).

⁶² Page 1981: 572.

⁶³ Oats are only commonly found today in oatmeal stout, which comprises only 5% rolled oats (thus "oatmeal" is a misnomer) and 95% barley; larger amounts of oats contribute an undesirable astringent character in beer (Lewis 1995: 30-31 and 50). However, Triple Karmeliet, made from a seventeenth century Flemish Carmelite monks' recipe by the Bosteels brewery in Belgium, contains both raw and malted barley, wheat, and oats (Jackson 1999: 277). For medieval oat beer, see, for instance Corran 1975: 48 and Scully 1995: 152.

⁶⁴ Hillman 1978.

⁶⁵ Behre 1992. Amouretti claims (1986: 33, n. 3) that evidence for rye in the Roman period is only found in Anatolia.

⁶⁶ Jasny 1944: 16 and 17. However, Pliny, who is the first certainly to mention rye, says that it grows well in any soil (*Hist. nat.* 18.40.141). Jasny suggested (1944: 105) that Theophrastus's references to strong wheat in Thrace (*Hist. Pl.* 8.4.3-4 and *Caus. Pl.* 3.21-22) involve rye. See further André 1981: 53-54.

as their bread grain.⁶⁷

Pliny says that rye (*secale*) is “detestable” (*deterrimum*) and very bad for the stomach,⁶⁸ though it is priced the same as barley in Diocletian’s edict (see Table 9 above). There is only one possible ancient reference to its use for beer (even Leontinus [T220] does not mention it this time).⁶⁹ Hellanicus (T8) spoke of some people (who may have been Phrygians, as I have argued in section 2.2.1 above) who made βρῦτον (or βρῦτος ?) “from roots” (ἐκ τῶν ῥιζῶν). Wilamowitz brilliantly proposed βριζῶν (“rye”) for the ῥιζῶν found in the manuscripts of Athenaeus (T81), which is a perfect contrast to the barley beer mentioned directly after. The word βρίζα, however, is not attested until the second century A.D. in Galen, who says that it is found in Thrace and Macedonia,⁷⁰ and scholars generally accept that βρίζα was originally a Thracian word.⁷¹ It is later found in Diocletian’s price edict, where it is made equivalent to the Latin *centenum sive secale*.⁷² The very rarity of this word points to the possibility of a simple trivialization in the manuscripts of Athenaeus, which occurred before Eustathius’s time (who twice quotes Athenaeus on “root” beer [T234-235]). Rye also was certainly found among the Phrygians.⁷³ However, Arnold for one assumes that Hellanicus is speaking of roots which are

⁶⁷ Jasny 1944: 15, speaking of an “invasion of rye.”

⁶⁸ Pliny, *Hist. nat.* 18.40.141 (with André 1985: 233). See also his mention of *centigranum*, a type of *triticum* (18.21.95), which is probably equivalent to *centenum*, a word for rye (see André 1985: 55).

⁶⁹ Rye is also only very rarely used in modern brewing, and rye beer is said to have a disagreeable taste (Stika 1998: 30, who suggests that it may have been used as a cheap substitute cereal for beer), and is most often used to make whiskey (which begins from a “green” rye beer which is then distilled). Neuberger (1930: 100 and 101) claims, citing no proof, that the first beers in Babylonia and then Egypt were made of rye and (102) that the beer in Phrygia and Thrace was made of rye and fruits.

⁷⁰ Galen, *De alim. facult.* 1.13 (= 6.514.6-10 Kühn = *CMG* V.4.2, 236.20, 23-24): “... in Thrace and Macedonia ... they all said to me that this whole plant, even the seed, is called *briza* ...” (... ἐν Θράκη καὶ Μακεδονίᾳ ... καὶ μοι πάντες ἔφασαν αὐτό τε τὸ φυτὸν ὅλον καὶ τὸ σπέρμα αὐτοῦ καλεῖσθαι ‘βρίζαν’ ...); and also mentioned again in passing in the same passage at 6.515.9-10 and 18 Kühn (= *CMG* V.4.2, 237.11-12 and 18-19).

⁷¹ Tomaschek 1894: 2.1:137; Russu 1959: 61; Chantraine 1968: 1:196, s.v.; Duridanov 1969: 9 and 85; and *LSJ* 1996: 330, s.v.

⁷² Diocl., *Ed.* 1.3.

⁷³ See Hillman 1978.

used to make the beer “more aromatic or narcotic.”⁷⁴ Plutarch says that still in his day the barbarians who do not drink wine drink mead (μελίτειον), “mellowing the sweetness by means of wine-like and harsh roots” (ὑποφαρμάσσοντες τὴν γλυκύτητα οἰνώδεσι ῥίζαις καὶ αὐστηραῖς).⁷⁵ Julius Africanus (T83) also says that people have imitated wine from a “combination of roots” (ρίζων συνθέσει). Also, Strabo speaks of Medes making wine “from certain roots” (ἐκ ... ῥιζῶν τινῶν).⁷⁶ Thus, though the rye reading seems the most logical, it cannot be guaranteed.

3.3 Conversion:

The most complicated process (from the point of view of human production) in the making of beer is that of conversion. To produce beer a cereal's insoluble starches and sugars, polymers, must be converted into soluble starches and sugars (mainly maltose but also dextrose), monomers, through the actions of enzymes.⁷⁷ There have been two main ways of doing this, (3.3.1) masticating (in which case the natural enzyme ptyalin found in the saliva is used) or (3.3.2) malting (in which case the enzyme diastase along with other enzymes formed from germinated cereal are used). For complete conversion, the added step of (3.3.3) mashing, that is the heating (but not boiling) of the malt in water for a period of time, is essential.

3.3.1 Masticating:

Sherratt assumes that beer was first made by masticating (or chewing) cereal.⁷⁸ There

⁷⁴ Arnold 1911: 116.

⁷⁵ Plut., *Quaest. conv.* 4.6 (= *Mor.* 672b).

⁷⁶ Strabo, 11.13.90 (526).

⁷⁷ See Hough, Briggs, and Stevens 1971: 1-3 and 54-107 and Lambert 1997: 134. It should be noted that beer can be made without converting the cereal, but would then be of very weak alcohol content because of the small amount of sugar found in unprocessed cereal (see Corran 1975: 17).

⁷⁸ Sherratt 1987: 93-94, and see Forni 1975: 75.

is no Greco-Roman evidence for this method, and in fact if this method was known it would have certainly attracted the distaste of Greeks and Romans.

3.3.2 Malting:

It has been suggested that malting was first used to make grains more palatable and nutritious, and more easily preserved in gruel or bread, and was then found to be useful to make beer.⁷⁹ Malting consists of steeping cereal grains in water to allow them to sprout or germinate and then to cut short the sprouting by heating and drying the cereal. In effect one would incite the birth and growth of a new stalk of cereal and then kill it. Quite logically, the following step in the process, that of fermentation, was considered a type of decomposition or rotting, since the cereal had been killed, thus making beer disreputable (see further section 3.6.3 below). I will discuss the three steps of (3.3.2.1) steeping, (3.3.2.2) germinating, and (3.3.2.3) drying/roasting, as well as (3.3.2.4) the ways in which Greeks and Romans referred to malted cereal.

3.3.2.1 Steeping:

Whereas wines are produced from the fermented juice of fruits, cereal must be steeped or soaked in water to malt it and must be subsequently fermented in water (either warm or boiled; see further section 3.4 below). This meant that water was an essential ingredient, and this is often noted by ancients. I have already shown (in section 2.1.2.4 above) that the use of the expression a “juice” of cereals may have been used to refer to the steeping of the cereal for malting. Pliny (T48) speaks of grains which are soaked (*madida*) to make beer while Jerome (T100) correctly defines beer as “a kind of beverage made from fruits [i.e. cereal] and water,” though he omits the essential yeast. Dionysius (T37) negatively defines Gallic beer as “barley

⁷⁹ Kahn 1996: 90 and Brothwell and Brothwell 1998: 166. Kavanagh (1994) suggests that beer was only regularly made after the invention of pottery.

rotted in water.”⁸⁰

3.3.2.2 Germinating:

It seems that the actual sprouting of the malt is not overtly mentioned in our ancient sources. It is impossible to imagine, however, that from simple observation this would not be known, and the absence of any evidence for it must simply be due to the indirect nature of our surviving sources. Pseudo-Zosimus (T89) perhaps does allude to germination when he writes: “dry it [i.e. the soaked cereal] in the sunlight until it falls apart, since the little hairs are bitter” (ψῦξον ἐν ἡλίῳ ἕως οὗ πέσῃ· τὸ μαλίον γὰρ πικρόν.). The falling apart of the cereal may be a reference to its germination, and the little hairs to the rootlets (typically three) which grow out of the sprouting cereal.

There have been a number of finds of germinated cereals in Europe dating back to Roman times. For the most part these may have simply resulted from damp storage conditions, but in a few cases the cereals seem to have been purposely malted, presumably to make beer.⁸¹ In a first century A.D. house in Østerbølle, Denmark germinated barley was found along with other seeds which had not germinated, thus pointing to purposeful malting.⁸² Similar Roman finds have been made at the Roman fort of Isca in Caerleon, Wales (see further section 4.2.1.4.2 below), in Eketorp, Sweden, and in Bad Dürkheim, Germany.⁸³

⁸⁰ For beer as watery, see section 3.12.3 below, and as intoxicated water, see section 4.2.1.3 below. For water miraculously turning into beer, see section 4.3.3 below.

⁸¹ See the discussion of the finds in van Zeist 1991: 118-119, with table 4 at 120. For finds of sprouted grains in Egypt, see Samuel 1996b: 7.

⁸² Helbaek 1938, with van Zeist 1991: 119.

⁸³ Isca: Helbaek 1964 (and Dickson 1989: 141); Eketorp: Helbaek 1966; and Bad Dürkheim: Piening 1988. All of these are cited by van Zeist 1991: 120.

3.3.2.3 Drying / Roasting:

Drying the malt does not simply arrest germination, but it preserves the cereal, and it can also impart flavour and colour to the beer through various intensities of roasting.⁸⁴ The only direct attestations to drying malt of which I am aware are those in the recipes of Pseudo-Zosimus (T89) and Paulus Orosius (T112), discussed in full in section 3.4 below. The former simply speaks of drying the malt in the sun, while the latter does not specify how the malt is to be dried. Certainly in northern locations lacking the luxury of year-round sun, a kiln or oven for the job was essential. Indeed one of the main criteria used by archaeologists to identify the remains of breweries is the presence of a source of heat (see section 3.11 below). In numerous sites in Britain (especially in rural areas and villas), kilns (commonly known as “corn-dryers”), dating especially from the first to fourth centuries A.D., certainly used in part for malting, have been discovered.⁸⁵ In such kilns at the Roman village of Catsgore, Wales, malted spelt was even found.⁸⁶

3.3.2.4 The Terminology for Malt:

Most Greco-Roman sources mentioning beer do not explicitly speak of malt. Yet there is some evidence that βύνη was a Greek word for malt, and that *bratium* was a Latin word for it; the case for *bracis/brace* is more tendentious.⁸⁷

⁸⁴ A dark-coloured beer is one with heavily roasted malt, a light-coloured one is one with lightly roasted malt, and thus colour and alcohol content are mutually exclusive.

⁸⁵ See van der Veen 1989, who cites previous scholarship. Reynolds and Langley (1979) had shown by experiment that such ovens were not simply used to dry cereal but to roast malted cereal. It has been noted that many types of cereal were dried in ovens because of the unfavourable climate, and that spelt especially needed parching before being threshed (Rivet 1969: 19). For a recent find of a fifth-century A.D. steam-heated stone table and charred grains in Yanworth, Glos, England, see Anonymous 2000.

⁸⁶ Hillman 1982, discussed by Van Zeist 1991: 119.

⁸⁷ For the Mesopotamian terms, see Salonen 1970: 190-192; for the ancient Egyptian terminology for malt, see Darby, Ghalioungui, and Grivetti 1977: 534-535; for malting among the Hittites, see Hoffner 1974: 37.

According to Liddell, Scott, and Jones, the word βύνη (which is the modern Greek word for malt) is found in two papyri and in book 10 of Aëtius of Amidena, who was the Emperor Justinian's personal physician.⁸⁸ Oddly, book 10 of Aëtius has never been published,⁸⁹ and thus I have not seen this reference or been able to include it in my Appendix I; furthermore, the second papyrus cited does not seem to contain this word. However, the first papyrus does, though not in the context of beer-making. The fragmentary βυνοκ[(presumably βυνοκοπία) found in one papyrus account of a beer-seller is probably also connected with βύνη.⁹⁰

The case for the Latin terminology is somewhat more complicated. It is sometimes claimed that the originally Gallic word *bracis* was used to mean "malt,"⁹¹ especially because of parallel words in surviving Celtic languages,⁹² but the certain evidence for this is in fact quite late. The word *bracis* (or *brace*) is first found in Pliny, who says: "The Gauls also devote themselves to a type of *far* with very shiny grain, which there they call *bracis* [or *brace*], and among us *scandala*" (*Galliae quoque suum genus farris dedere, quod illic bracem vocant, apud nos scandalam, nitidissimi grani*).⁹³ Since the word is found in the accusative here, it is impossible to know whether *bracis* or *brace* is meant.⁹⁴ Jasny suggests that this was a word for

⁸⁸ *P.Holm.* XV.33, *P.Leid.* X.22, and Aët. Amid., *Iatr.* 10.29, cited in *LSJ* 1996: 333, s.v.

⁸⁹ See Berkowitz and Squitier 1990: 10.

⁹⁰ *P.Tebt.* II.401, col. vii, l. 30, with the comments of the editors *ad loc.*, followed by Preisigke 1925: 1:280 and *LSJ* 1996: 333, s.v. (where it is translated as "preparation of malt").

⁹¹ For instance, Holder (1896: 1:509 with 1907: 3:923) and Billy (1993: 33) suggest that Pliny so meant it, but this is clearly wrong, as will be seen. See also *drasca* meaning "malt residue" as cited in Billy 1993: 65 and 172.

⁹² For instance, the Welsh word for malt is *brag* which may come from **brac-* (Ross 1967: 180) and in Middle Irish (Atkinson 1976: 1:154, s.v.) and Goidelic (Ross 1967: 201) it is *braich*; see further Holder 1896: 1:509. Interestingly, in modern day Romania a millet beer is called *braga* (Hesseltine 1979: 369). Schmidt (1957: 154-155 and 237) argues that the *-bracius* in the Gallic personal name Mandubracius (Caes., *De bell. gall.* 5.20.1-3 and 5.22.5 and Oros., *Hist. adv. pag.* 6.9.8) means "backside."

⁹³ Pliny, *Hist. nat.* 18.11.62. Pliny also mentions *arinca* as a Gallic type of wheat (*Hist. nat.* 18.19.81), which Jasny (1944: 129-133) considers a type of soft emmer.

⁹⁴ Lewis and Short (1896: s.v.) and Jasny (1944: 134-135) suggest *brace*, *-es* while the *TLL* (2:2162, s.v.), *OLD* (1989: 241, s.v.; doubtfully), and André (1985: 37) suggest *bracis*, *-is*.

hulled spelt.⁹⁵ However, since Jasny says that *far* is a type of hulled emmer (as shown in 3.2.2 above), this cereal must be as well, and it is so defined by André.⁹⁶ Very importantly, the word *bracis* (and probably not *brace*) is found shortly later in five different tablets from the Roman fort of Vindolanda.⁹⁷ In these cases it is not possible to say whether *bracis* refers to a type of wheat or to malted cereal.⁹⁸ The editors note: “There are also signs of the provision of beer probably brewed locally ... for which the *braces* may well have been the basis” and also more confidently state that *bracis* was in fact the cereal from which the beer was made.⁹⁹ This is based principally on a much later glossary (T232) in which *braces* is defined as “what one would make *cervisia* from” (*sunt unde fit cervisia*). As I have argued (in section 2.1.3.3 above), this probably means that *cervisia* was made from wheat, as is confirmed from other sources, though it remains possible that here again malt specifically is meant. In a life of St. Columban (from the seventh century) mention is made of (T148) “one hundred *modii* of wine, two hundred of wheat [or cereal generally?], and enough *bracis* from which they could make one hundred pecks of beer” (*centum modios esse vini, ducentosque frumenti, sed et braci unde cervisiam faciunt centum modios*).¹⁰⁰ Here again it is difficult to tell whether *bracis* is a type of wheat or

⁹⁵ Jasny 1944: 134-135. Also Duval 1952: 122 (“épeautre”).

⁹⁶ André 1985: 37. He says that it is of “genre inconnu,” but surely its identification as a type of hulled emmer is accurate enough for our purposes. Some scholars leave the cereal type totally undefined, such as Adams 1975: 22 (“a type of corn used in malting;” he also suggests that it is “a technical term of beer-making”), Birley and Birley 1994: 433, and Bowman and Thomas 1994: 327, who wrongly attribute this to André. André’s identification would further suggest that the ancients had no term for hulled spelt, and presumably this could be called simply *πυρός* / *tritium* (terms which did not have to invariably refer to naked wheats).

⁹⁷ *Tab. Vindol.* I, 5, l. 16 (= II, 191, l. 16) (*bracis* probably in the genitive singular in a very fragmentary list of products), with which, see Adams 1975: 21-22 (who suggests that it is in the accusative plural [i.e. = *braces*]); II, 343, col. iii, l. 25 (119 *modii* of threshed *bracis* [*bracis excussi*]); II, 348, l. 2 (as the ablative *brace* in a fragmentary text); Birley and Birley 1994: 431, no. 1, l. 6 (*bracis*, genitive singular); no. 4, l. 14 (where it is read as *Britem*; it is read as *bracem* in Bowman and Thomas 1996: 326, appendix I. 14 [see commentary at 328]).

⁹⁸ Dalby (2000: 102) states that according to the Vindolanda tablets Roman soldiers drank beer “brewed from *braces*, ‘malted barley.’” The tablets mention also *frumentum* (meaning “wheat” specifically) and *hordeum*; see Bowman 1974: 366-367.

⁹⁹ Bowman and Thomas 1994: 33 and 156 (respectively); for beer at Vindolanda, see sections 3.11.3 and 4.2.1.4.2 below.

¹⁰⁰ Other versions of this text do not mention beer, but simply *braces centum idemque modia* (MGH) or *bracis centum modios* (PL), that is “one hundred *modii* of *bracis*.”

malt; this depends somewhat on how *frumentum* is taken, whether as (unmalted) cereal in general (in contrast to malted cereal) or (a type) of wheat (in contrast to emmer).

In the ninth century, *bracis* is found in Charlemagne's instructions for the management of his imperial estates (the *Capitulare de villis imperialibus*). In one section (T178) mention is made of the importance of care and cleanliness with things prepared "with the hands" (*manibus*), including "bacon, smoked meat, sausage, partially salted meat, wine, vinegar, mulberry wine, cooked wine, fish sauce, mustard, cheese, butter, *bracis*, beer, mead, honey, wax, flour" (*lardum, siccamen, sulcia, niusaltus, vinum, acetum, moratum, vinum coctum, garum, sinape, formaticum, butirum, bracios, cervisas, medum, mel, ceram, farinam*). *Bracis* is again certainly connected to beer, which is found right next to it, and because it must be specially prepared is certainly meant to be malt. Later, the same ambiguity is once again found (T180): "That each steward, when he is serving, does so that his *bracis* be brought to the palace, and with him there come masters who are used to making good beer there" (*ut unusquisque iudex quando servierit suos bracios ad palatium ducere faciat, et simul veniant magistri qui cervisam bonam ibidem facere debeant*). In A.D. 822 Adalhard the Elder of Corbie (the first to mention hopped beer, as will be seen in section 3.5.9 below) twice speaks of the making of *bracis* (T202 and 204), thus certainly referring to malt. He also distinguishes it from *annona* (T202-203, and see 204), which must mean here "unmalted cereal." Further, Adalhard says that the *braces* come from the *cambae* (T204, and see 202), which must mean "malthouses."¹⁰¹ Finally, in A.D. 832, Hilduin, abbot of St. Denis in Paris, made a list of tithes owed to the monastery from neighbouring villages, including pecks (*modii*) of *bracis* and of hops (T208), no doubt for the production of beer.¹⁰²

It is clear from at least some of the passages above that *bracis* by the ninth century A.D.

¹⁰¹ Thus translated by C. W. Jones in Horn and Born 1979: 3:107 and 116, though inexplicably he translates *braces* as "mash" (107) or as "brews" (116). For the possible connection of the word *camba* to *camum*, a term for a type of beer, see the discussion in section 2.2.4 above.

¹⁰² See Ministère de la culture, etc. 1988: 124-125.

(if not earlier) was used to mean malt. I would suggest that *bracis*, a type of hulled emmer was the standard ingredient for Celtic *cervesia* and that when *cervesia* became a generic term for beer (at least by the seventh century A.D.), *bracis* became a generic term for “cereal out of which beer is made.” The word *bratium*, defined in two late glossaries (T160a-b) as *malt*, perhaps itself derived from *bracis*, may have independently been used to mean malt.

In an anonymous Irish rule (T134), perhaps from the seventh century A.D., nuns are mentioned who “had inhabited the *braxatorium* for the making of *cervisia*” (*in braxatorium ad cervisiam faciendam inhabitaverint*).¹⁰³ Benedict of Aniane (T193) copied this passage for his rule for monks of A.D. 816, speaking of the *brachisitorium* rather than *braxatorium*. Only four years later, on the map of St. Gall reference is once made to a *bracitorium* (T199d; see further section 3.11.4 below). There can be little doubt that *braci*-, *brachisi*-, and *braxatorium* are connected to *bracis/brace*, but it is difficult to determine in these instances whether the meaning is “brewery” or “a place for malting.” In a contemporary document, Adalhard also mentioned *cervisas bratsare bratsatores* (T204), clearly here using *bratsator* to mean “brewer” and *bratsare* to mean “brewing,” as in later Latin usage.¹⁰⁴ Again these words are surely ultimately derived from *bracis/brace* or *bratium*.

Among the numerous unofficial gods of the Roman army, on the British frontier there was much fusion of Roman and British deities.¹⁰⁵ One of these deities, attested by only one inscription (E3), was Mars Braciaca, a fusion of the Roman Mars and the Celtic Braciaca. The inscription, on an altar from Haddon House near modern Bakewell, Derbyshire, England, runs:

¹⁰³ This is the earliest reference to nuns making beer. Note also that the abbess Sadalberga makes beer (T155); and for St. Brigid’s beery miracles, see section 4.3.3 below. Beer certainly was and still is rather the specialty of monks: the six Trappist monasteries in Belgium all make beer, while the six Trappist nunneries do not.

¹⁰⁴ The common medieval Latin word for “brewer” was *bratsator* or *braciator/braciatrix* and for “to brew” was *bratsare*, from which are derived French *brasseur* and *brasser*.

¹⁰⁵ Helgeland 1978: 1499. For the *interpretatio Romana/Celtica* in Britain, see Irby-Massie 1999: 158-181; Mars had at least sixteen counterparts in Britain (164-165).

*Deo | Marti | Braciacae | Q(uintus) Sittius | Caecilian(us) | praef(ectus) coh(ortis)
| I Aquitano(rum) | v(otum) s(olvit)*

Quintus Sittius Caecilianus, prefect of the First Cohort of the Aquitanians, fulfilled this vow to the god Mars Braciaca.

Eric Birley has shown that from the evidence of his name, this prefect was almost certainly from Roman North Africa, and probably from Numidia, and that this cohort is attested in Britain elsewhere in the second and third centuries A.D.¹⁰⁶

It is often said that Braciaca was the Celtic god of malt.¹⁰⁷ However, it seems fairly clear that *bracis* at the time would have simply indicated a certain type of cereal (a type of wheat), that which was malted, as shown above. This makes Braciaca the beer-cereal god. However there is another explanation: Wright shows that Braciaca could be a name taken from a locality, since there were five places called Braciacus in Gaul.¹⁰⁸

3.3.3 Mashing:

Mashing is the process of placing the malted cereal in water kept at a constantly hot temperature (though not boiling) to release more sugars from the cereal and to stimulate further enzyme action (while the subsequent boiling of the mixture, called wort, arrests the action of enzymes).¹⁰⁹ Malting alone, aside from producing an enzyme, does little more than uncover the

¹⁰⁶ Birley 1978: 59-60, reprinted in 1988: 385-386. Irby-Massie says that he is Numidian (1999: 183, n. 5 and 309, with further bibliography) or African (211); for this cohort, see 327-238.

¹⁰⁷ Holder 1896: 1:509, s.v. Braciaca ("G. des malzes"); Schrader and Nehring 1917: 1:142 and 145 ("Gott des Malzes"); Ross 1967: 181 ("god of (malt-induced) Intoxication"), 201 ("god of Malt" (?)), 377, and 406 ("god of intoxication") and 1970: 107 ("Mars of the Malt or Ale"), followed by Birley 1986: 68 (no. 26) and Irby-Massie 1999: 309, no. 605 ("may indicate 'the god of intoxication'"); and Birkhan 1997: 647 ("Gott des Malzes").

¹⁰⁸ Wright in Collingwood and Wright 1965: 93 and Bowman, Thomas, and Wright 1974: 480. Birkhan (1997: 1088) suggests, rather unconvincingly, that the deity *Latis* known from two inscriptions around Hadrian's wall (*CIL* VII.580 [= *RIB* I.2043] and 828 [= *RIB* I.1897]) is connected to an Irish word for ale.

¹⁰⁹ In modern brewing mashing is done in many different ways: by infusion, decoction, or double-mashing (Hough, Briggs, and Stevens 1971: 3-6). See also Lambert 1997: 134.

starch in the cereal for conversion into sugar, and thus mashing is essential for proper conversion. The only certain ancient reference to mashing can be found in the recipe of Pseudo-Zosimus (T89) in which it is said that some beer-makers (though, strangely, not all) “bake the loaves and cast them in a vat with water and they heat it slightly, so that it does not boil nor become lukewarm” (ὁπτῶντες ἄρτους βάλλουσιν εἰς κλουβὸν μετὰ ὕδατος, καὶ ἐψοῦσι μικρὸν, ἵνα μὴ κοχλάσῃ, μήτε ἦ χλιαρὸν).

3.4 Baking and Brewing:

As I have already pointed out, there were two main ways to make beer in ancient times, baking (3.4.1) and brewing (3.4.2). I also wish to show (3.4.3) the possibility that these two types of beer were distinguished by the Greek terminology.

3.4.1 Baking:

On the whole, details of the ancient process of beer-making come from passing references to various stages or ingredients, though there does survive one very important recipe in Greek preserved in the works of the early fourth century A.D. alchemist Zosimus of Panopolis (T89).¹¹⁰ It describes the process of making ζῦθος as follows (with the numbering from Table 6).¹¹¹

1B.a. Nice, clean, white barley (κριθή) is soaked in water for one day.

b. Germination occurs.

c. The barley is taken up out of the water, laid out in a windless place until early the following day [to dry]. The barley is then again soaked (for five hours), placed in a shallow

¹¹⁰ For this recipe having been added by a scribe to Zosimus's work, and thus to be attributed to a “Pseudo-Zosimus,” see Mertens 1995: lix with n. 163.

¹¹¹ For a modern adaptation of this recipe, see Appendix IV.

bowl and strained, then again soaked and left to dry.¹¹²

2A.a. The barley is ground.

b. Loaves (ἄρτοι) are made.

c. Yeast (ζύμη) is added.

d. The loaves are heated.

e. Once the loaves have risen,¹¹³ they are crumbled into fresh (γλυκύ) water.¹¹⁴

f. At this point the water could be heated (though not to a boil), that is mashed.

4A. [At this stage the liquid is certainly allowed to ferment from yeast naturally present in the air or possibly from pitched-in, cultivated yeast.]

5B. The liquid is poured through a strainer (ῥηθμός) or fine sieve (κόσκινον λεπτόν).

It has usually been thought that Pseudo-Zosimus was describing the standard Egyptian way of making beer, by soaking malted loaves,¹¹⁵ and that this process is clearly shown in numerous Egyptian tomb paintings and wooden models.¹¹⁶ Furthermore, this same process is still utilized in modern Egypt (and Nubia) to make *bouza*.¹¹⁷ It is also thought that ancient

¹¹² There is no easily conceived rationale as to why the steeping/drying procedure is repeated three times, since once is really all that is necessary.

¹¹³ Barley bread does not have enough gluten to rise properly, and thus this might betray a misunderstanding on the part of the author of this recipe. Also, the leavening of the bread itself probably would have had little effect on the finished beer.

¹¹⁴ This certainly seems to be a reference to the use of fresh or non-salted water rather than water to which a sweetener has been added in the process of making beer. However, Berthelot and Ruelle (1888: 1:356) translate: "l'eau sucrée."

¹¹⁵ Interestingly, the text of Ulpian reads (T84) that *zythum* is made *ex tritico vel ex hordeo vel ex pane*, the last of which would imply the method mentioned by Pseudo-Zosimus. Yet Cujas's *ex panico* ("from Italian millet") is almost certain in conjunction with the references to wheat and barley (see section 3.2.3 above).

¹¹⁶ See, for instance, Lutz 1922: 78-81 and especially Darby, Ghalioungui, and Grivetti 1977: 537-541 (with further bibliography). See also Olck 1899: 459-460.

¹¹⁷ See, for instance, Lucas and Harris 1962:13-14; Darby, Ghalioungui, and Grivetti 1977: 534 and 541; Watterson 1991: 130; Geller 1992: 20; and Tyldesley 1994: 113. For technical aspects of *bouza*, see Morcos, Hegazi, and El-Damhougy 1973.

Sumerians made beer in a similar way.¹¹⁸

Despite the evidence from Pseudo-Zosimus and the modern making of *bouza* it has recently been hotly debated whether the ancient Egyptians did in fact commonly make beer from bread. Samuel doubts this from the archaeochemical evidence. An analysis of the morphology of starch granules (marked with pits and channels by malting) in beer residue, points to a deliberate germination of cereals (as would only be expected), a fermented mixture of coarsely ground, well-heated, cooked malt or grain along with unheated, uncooked malt, but no baked bread.¹¹⁹ Also possibly unsprouted grain was used, both heated and not, which would provide more flavour.¹²⁰ In this method, the malt would still be ground, but would be added directly to boiling water rather than baked into bread.

Another very laconic description of how Egyptian beer is made is preserved in the Babylonian Talmud, and includes (again, following the numbering of Table 6): 1B.a. soaking, 1B.c. roasting, and 2A.a. grinding.¹²¹ Strikingly, no mention is made of baking or fermentation.

3.4.2 Brewing:

Various peoples have probably been practising the usual modern method of making beer,

¹¹⁸ See, for instance, Hartman and Oppenheim (1950: *passim*) and Katz and Maytag 1991 (who suggest that the bread was twice-baked like modern Italian *biscotti* [32]).

¹¹⁹ Samuel 1996: 488-490; more in depth in 1996b, with the summary by Williams 1996: 432, and also Samuel 2000: esp. 555. Samuel (1996b: 8) argues that sieves were used to remove chaff, not for the crumbled bread. Samuel proposes that the only certain method to approach Egyptian beer is neither through literary or iconographical evidence, both of which are open to numerous interpretations, but to use scientific analysis and experimental archaeology (for the iconographical evidence, see esp. Samuel 1993: 276-278, with an example of experimental archaeology; 280-282 for the processing of cereals for bread).

¹²⁰ Samuel 1996b: 9 and 10.

¹²¹ *Pesahim* 42b.

that is brewing it, since remote antiquity,¹²² but the first certain evidence for this of which I am aware is from the early fifth century A.D. in the Christian author Paulus Orosius (T112, copied by Isidore of Seville [T136] and Paul the Deacon [T173]).¹²³ He says that Numantian *caelia* is juice of wheat (*sucus tritici*) which has been so named from being “heated” (*calefaciendo*). Gregory of Tours, writing only shortly after (T129), logically says that Orosius is referring to a *coctio* which is “boiled” (*coquendo*), and Gregory himself speaks of beer made “from cereals soaked and boiled in water” (*ex annonis aqua infusis atque decoctis*), as does also Jonas (T146) when he says that beer “is boiled from the juice of wheat or barley” (*ex frumenti vel hordei succo excoquitur*).¹²⁴ Orosius was not so explicit when he explained: “In fact the potency of the grain of the soaked fruit [i.e. cereal] is activated by this fire and then it is dried, and after being reduced to flour is mixed with soft juice. With this fermentation, a harsh flavour and intoxicating heat is conferred” (*suscitatur enim igne illa vis germinis madefactae frugis ac deinde siccatur et post in farinam redacta molli suco admiscetur; quo fermentato sapor austeritatis et calor ebrietatis adicitur*).¹²⁵

Thus the very rudiments of the process of brewing can be reconstructed from Orosius, Gregory, and Jonas (following the numbering in Table 6 above):

- 1B.a. The cereal is soaked.
- b. [Germination presumably occurs.]
- c. The cereal is dried.
- 2B.a. The cereal is ground into flour.

¹²² In traditional African societies beer is usually brewed (see, for instance, Pendered 1931 [cited in Gelfand 1971: 180] and Gelfand 1971: 177-178). See also the etymological evidence for βῆτρος in section 2.2.1 above and section 3.4.3 below.

¹²³ It is possible, however, that this account is ultimately indebted to Livy or Polybius, as I have argued in section 2.2.2 above.

¹²⁴ Note further Alfridus’s expression (T190): “the composition of *cervisa* was cooked” (*cervisae ... confectio cocta*), and the mention of *infusus* in the Latin translation of Dioscorides (T55b).

¹²⁵ This was copied by Isidore (T136).

- c. The cereal is mixed with water and boiled or it is mixed with “soft juice” and heated.¹²⁶
4. Fermentation takes place [after the water has been cooled¹²⁷].

Orosius (though not Gregory or Jonas) includes a reference to grinding the malted cereal into flour (and, as we have seen in section 3.2 above, Samuel posits that this was the method used in ancient Egypt). It is necessary to grind the malted grain (turn it into grist) at least enough so that it cracks open and the sugars inside will be accessible to fermentation. At the monastery of Corbie in A.D. 822, the millers ground cereal (*annona*), presumably for bread, and malt (*bracis*), presumably for beer (T202).¹²⁸ There are some other ancient references to grinding cereals in the making of beer which have been generally overlooked. Hecataeus says that the Egyptians grind (καταλέουσιν) barley to make a drink (T2). Hesychius defines ζύθιον as “a drink made from barley meal [i.e. ground barley]” (<ἐξ> ἀλφίτου πόσις) (T105); this may have been simply a gloss on Hecataeus (T2). Also, in a papyrus dating to around 7 B.C. from Heracleopolites, a Heracleides writes to an Athenodorus about recalcitrant beer-makers in Tilothis: “the *zūtos*-makers have not ground the barley” (οἱ ζυτοποιοὶ οὐκ ἤλησαν τ[ε]τ[ε]ν κρ[ε]τ[ε]ν).¹²⁹ In all three cases, the baking or the brewing process could be referred to (that is to say, steps 2A.a. and 2B.a. on Table 6 above are identical).

The great advantage of the brewing as opposed to the baking method is not only that it is much more efficient, but also that the water which makes up the majority of the beverage is boiled, thus sterilizing it. It was well known at least from the first century A.D. on that boiling

¹²⁶ It is not easy to construe what Orosius means by “soft juice” (*mollis succus*). Could it be water flavoured with unmalted cereals? For this practice in ancient Egypt, see sections 3.2 and 3.4.1 above. The detail of heating the mixture could be a reference to mashing (see section 3.3.3 above).

¹²⁷ Locations for cooling beer are marked on the map of the abbey of St. Gall of around A.D. 820 (T199b and d); see further section 3.11.4 below.

¹²⁸ Note also in the anonymous Irish rule (T134) that the nuns working in the *braxatorium* do so according to the rule of the millers (see also Benedict’s copy of this rule [T193]).

¹²⁹ BGU XVI.2608, with quotation from ll. 3-4 (slightly restored).

water could purify it,¹³⁰ and the application of this principle to brewing (whenever this may have occurred) must be regarded as an important advance. It is interesting, however, that ancient critics of beer say that it is drunk by people who refuse to drink *pure* water (Julius Africanus [T83] and Jerome [T100]) or that beer was a liquid “which so evilly infected pure waters” (*tam male sinceris qui vitiavit aquas*) (Fortunatus [T115]), precisely the opposite of the reality.¹³¹

3.4.3 The Possible Greek Distinction between Baked and Brewed Beer:

As I have argued, βρῦτος (and variants) may have been a purely Greek term, in which case it would have meant roughly “that which is brewed” (see section 2.2.1 above), while ζῦτος (or ζῦθος, and variants) may have also been a Greek term which meant roughly “that which is leavened” (see section 2.2.11 above). It is quite possible that these two terms were used to designate what were thought to be not only different types of beer, but fundamentally different types of intoxicating cereal-based drinks, one that was made by boiling converted cereal in water, which the Greeks first associated with the Thracians, the other with leavened bread, which the Greeks first associated with the Egyptians. Also, it may have been mistakenly thought that only the last sort of beer employed yeast (see further section 3.6.3 below).¹³²

3.5 Additives:

Plain beer, made up mainly of starch, is not very flavourful, thus creating the need for additives.¹³³ Though the primary function of additives is to change the taste (and smell) of a

¹³⁰ The earliest references seem to be Pliny, *Hist. nat.* 31.23.2-3, Juv., *Sat.* 5.50, and Mart., *Epigr.* 2.85. These and further sources are cited by Baudrillart 1907: 606, n. 9.

¹³¹ See further section 4.2.1.3 below, where medical attitudes to beer versus water are discussed.

¹³² Note also how Galen (T69, copied by Oribasius T92a-b) distinguishes between two general types of beer; see further section 4.2.2 below.

¹³³ I discuss here only additives in beer used during the fabrication of the product, not ingredients added later to the finished product, for which there is no concrete evidence (for wine, however, see section 1.1 above).

beer, by sweetening it (as with honey), bittering it (as with hops), etc., they can also increase the alcohol content of the beer, if they contain sugar (as with honey), and are then known as adjuncts. Finally, they may have a preservative effect on the beer (as with meadowsweet, sweet gale, and hops), and possibly even a clarifying effect (as with hops).

There is little evidence for the use of additives in beer in our ancient Greek and Latin sources, which to an extent must reflect ignorance of beer production, but which may also suggest that beers were probably at least sometimes drunk plain.¹³⁴ This is difficult to imagine for many scholars, since today all beers are made with hops, and a number also are made with other ingredients.¹³⁵ I will discuss sweeteners first, for which there is the most evidence. It is certain that (3.5.1) honey was used, as is known from both archaeological and literary evidence, though there is some good evidence for the use of (3.5.2) dates, (3.5.3) grapes, and (3.5.4) berries as well. There is also one Greek source which mentions the use of a type of (3.5.5) sedge to sweeten the beer. There is much less evidence for bittering agents, though there is some proof for the use of (3.5.6) meadowsweet and (3.5.7) heather (and royal fern) in prehistoric times, (3.5.8) sweet gale (or bog myrtle) during Roman times,¹³⁶ and (3.5.9) hops at least by the ninth century A.D., and no good evidence for (3.5.10) lupines, skirwort, and Assyrian root as is sometimes claimed. Finally, I will discuss the possible uses of other herbs, namely (3.5.11) safflower, (3.5.12) fleabane, and (3.5.13) henbane. For the possibility of ancient "root" beer, see section 3.2.6 above.¹³⁷

¹³⁴ Though there is some evidence for adjuncts in Egyptian records, Samuel (1996: 488 and 1996b: 10) has shown that no certain flavourings have been detected in analyses of beer containers in Egypt. Ghalioungui (1979: 8) claims that when Greeks and Romans mentioned beer flavouring they were really speaking more about "medicated" beer.

¹³⁵ Note the fruit beers of Belgium (especially cherry and raspberry), the use of bananas in Africa, the use of coriander and curaçao orange peel in Belgian wit beer, the addition of table or candi sugar in Belgium and elsewhere, etc. For the types of additives which have been and still are used in beer, see especially Buhner 1998 and Behre 1999: 43.

¹³⁶ Though meadowsweet and sweet gale sound as if they should be sweeteners they are in fact bittering agents.

¹³⁷ Some have suggested that in ancient Egyptian beer rue, mandrake fruit, bitter orange peel, and resin were used, though Lucas and Harris (1962: 14-15, with references to previous scholarship and discussion) show that the evidence is "unsatisfactory." In any case, there are no Greek or Latin sources for such additives.

3.5.1 Honey:

Before fermentation, honey (μέλι / *mel*), that is flower nectar converted by bee enzyme, could be added to the malt, producing a honey beer. Honey can sweeten a beer, increase the alcohol content, and also act as a preservative. There are three ancient passages which connect beer and honey.

Strabo, who does not believe Pytheas's account from the fourth century B.C. of the people of the far north quotes him¹³⁸ as saying that they live on millet (κέγχρος), as well as herbs, fruits, and roots, and that (T15/T40): "Among those where there grows grain and honey, the beverage also has them" (παρ' οἷς δὲ σῖτος καὶ μέλι γίγνεται, καὶ τὸ πόμα ἐντεῦθεν ἔχει). This sentence is ambiguous and can refer to either a drink made from *both* cereal and honey¹³⁹ or two distinct beverages, one made from cereal and the other honey. In either case, Pytheas was ostensibly distinguishing the beverage or beverages from wine made from grapes, as showing that people made intoxicating beverages from the fermentable substances that were most readily available.

In his monumental history, which began in 145 B.C. where Polybius had left off, Posidonius presented a detailed ethnography of the Gauls.¹⁴⁰ As I. G. Kidd has memorably said: "Of this potent historical brew, only the superficial froth has survived."¹⁴¹ As part of this tantalizing froth, Posidonius writes (in Athenaeus [T27/T79]), after explaining that the rich

¹³⁸ Strabo elsewhere quotes Pytheas through Posidonius (see Jones 1923: 263, n. 1), and perhaps does so here.

¹³⁹ As thought, for instance, by Nansen 1911: 63 ("those that have corn and honey they make a drink thereof"), Jones 1923: 262, n. 2 ("obviously a kind of beer") and also Polomé 1996: 99 ("the inhabitants of the British Isles [*sic*!] made a fermented beverage from grain and honey").

¹⁴⁰ For a careful examination of what is known of this book (23), see Malitz 1983: 169-198, with previous scholarship cited at 169, n. 1; and see Meid 1986 and the comments of Hahm 1989: 1344-1347.

¹⁴¹ Kidd 1988: 310.

Gauls drink wine: “Among those who are poorer there is wheaten beer¹⁴² prepared with honey, and among the majority there is plain [beer]. It is called *korma*” (παρὰ δὲ τοῖς ὑποδεστέροις ζῦθος πύρινον μετὰ μέλιτος ἐσκευασμένον,¹⁴³ παρὰ δὲ τοῖς πολλοῖς καθ’ αὐτό· καλεῖται δὲ κόρμα). Kidd comments: “This is odd. The beer was made from barley, and honey was used for a separate drink, mead.”¹⁴⁴ Kidd bases his comment on another passage attributable to Posidonius quoted in Diodorus Siculus (T26/T33¹⁴⁵), in which it is said that the Gauls “prepare the drink from barley which is called *zūthos*,¹⁴⁶ and in washing the honeycombs they use the drain-off from them” (πόμα κατασκευάζουσιν ἐκ τῆς κριθῆς τὸ προσαγορευόμενον ζῦθος καὶ τὰ κηρία πλύνοντες τῷ τούτων ἀποπλύματι χρῶνται). Kidd assumes that the honeycomb “drain-off” is used for a separate drink, but it is logical to take the καί in this passage as epexegetical (or explanatory), and thus that the Gauls washed honeycombs with water, and the honeyed water was then used in the making of their beer.¹⁴⁷ However, the beer here is clearly made from

¹⁴² For the generic use here of ζῦθος (neuter), perhaps coined by Posidonius, see section 2.1.3.2.

¹⁴³ The phrase μετὰ μέλιτος ἐσκευασμένον is often translated as “with honey added” (Gulick 1928: 193; Kidd 1988: 312, 1999: 135) but this is certainly wrong. The verb σκευάζω or κατασκευάζω refers to the initial preparation of the drink, and with alcoholic drinks, specifically refers to the fermentation, as is clear elsewhere in Posidonius (T26); for other examples dealing with beer, see T29-32, 45, 54-55, and 81. Galen (T70) explains that barley can be prepared in a number of different ways, including to make ζῦθος (see further section 2.1.2.3 above). Thus Posidonius is saying that the honey is fermented along with the wheat malt in the initial preparation of the Gallic beer, not added to the already fermented wheat beer, in which case the verb μίγνυμι would most naturally be used, or else κεράννυμι (used of honey added to wine in *Anth. Pal.* 12.164.1). Among others, Dottin (1920: 248: “boisson faite de froment fermenté et de miel”), Jones (1923: 262, n. 2: “prepared with honey”), Malitz (1983: 189: “mit Honig zubereitet ist”), and Birkhan (1997: 1019: “zubereitet mit Honig”) translate this correctly.

¹⁴⁴ Kidd 1988: 312, and repeated in part in 1999: 135, n. 83.

¹⁴⁵ Kidd acknowledges that Diod. Sic., *Hist.* 5.25-32 (a section on the mores of the Gauls) was derived from Posidonius, but leaves it out of his collection of fragments since Posidonius is not mentioned by name (1989: xx, n.3) and also because there may have occurred a certain amount of doctoring on the part of Diodorus (1988: 308-309; 1997: 234). Concerning this very passage he says that Diodorus “approaches conflict” with Posidonius (1988: 308) and he proposes that a full examination of the named fragments and then a detailed study of Diodorus is needed before such passages can be accepted as Posidonian (1986: 28). Marcovich (1986: 292) effectively shows that this passage should not be neglected in studying Posidonius’s Gallic ethnography. For problems posed by this passage, see also Hahn 1989: 1345, n. 34.

¹⁴⁶ Diodorus here uses ζῦθος differently from Posidonius, in making it the Gallic word for beer (which it certainly was not) rather than a generic word for beer (see section 2.1.4.2 above).

¹⁴⁷ Jones (1923: 262, n. 2) came close to this, when he interpreted Diodorus as speaking of one beverage made of barley and mead. I owe this insight to Dr. Robert Todd. However, Eska (1992: 21, n. 1) for one takes this as evidence for Gallic mead; he does show (20-23) that a Gallic inscription in Greek letters on a silver goblet (now lost) reads: “mead

barley, not wheat, a fact which moved Kidd to further conclude that *πύρνον* (“wheaten”) “must be a mistake” in the first passage.¹⁴⁸ But these two passages, our earliest references to Gallic beer, far from being contradictory, rather point to that variety of Gallic fermented drinks noted by Pliny, who says that the Gauls have “many types” (*plura genera*) of beer (T51, and see also T48 [*pluribus modis*]).¹⁴⁹ I have shown that Celts certainly had barley beer (*κάμνον* / *camum*, *κόρμα* [Posidonius], and *κούρμι* / *curmi/curmen*), which may have been inferior (see the criticism of it by Dionysius [T37]), and wheat beer (*κερβησία* / *cervesia* and variants), and there is good evidence outside of Posidonius that they fermented these with honey as well.¹⁵⁰

In a Celtic grave in Glauberg, Germany, dating from around 450-400 B.C., residue from honey beer has been recently discovered.¹⁵¹ Similarly, in a bronze age grave of a young woman in Egtved, southern Jutland, Denmark, a birch bark bucket was found containing traces of lime, meadowsweet and white clover pollen, wheat grains, bog myrtle, cowberry, and cranberry.¹⁵² This was probably a honey wheat beer with berries (see further sections 3.5.4 and 3.5.6 below). Eva Koch has also collected other prehistoric evidence for the burial of both mead and honey beer (though no plain beer has yet been found), and suggests, based on the social class of the

of a kinsman” (*οὐενικοί μεδου*).

¹⁴⁸ Kidd 1988: 312, and more cautiously at 1999: 135, n. 83 (“This seems a mistake”). Kidd does not specify whether Posidonius himself was at fault, whether Athenaeus has miscited Posidonius, or whether the mistake lies with a later scribe. Kidd also proposes the possibility that *πύρνον* is “simply used for grain” (1988: 312), though the use of *πυρός* to mean cereal generally is not recorded in Liddell, Scott, and Jones (*LSJ* 1996: 1558, s.v. *πυρός*); the only evidence for this in Jasny (1944: 54) involves the Homeric *πολύπυρος*, which probably means “rich in grain in general.” Incidentally, Kidd ignores his own assessment of Diodorus Siculus (as seen above), by giving his evidence more weight than the ostensibly undoctored quotation in Athenaeus.

¹⁴⁹ As Ammianus Marcellinus correctly noted of the Gauls (15.12.4): “It is a race fond of wine, and disposed to numerous drinks resembling wine” (*vini avidum genus, affectans ad vini similitudinem multiplices potus*).

¹⁵⁰ Bowen (in Rivet 1969: 20) rightly says that among Celts: “Both barley and wheat were used for beer, with or without honey.”

¹⁵¹ Rösch 1999.

¹⁵² Dickson and Dickson 2000: 81, citing Thomsen 1929 and an unpublished study of J. J. Troels-Smith. See also Nierhaus 1954: 258 (citing previous scholarship) and van Zeist 1991: 121; Clark (1952: 208) says only “a fermented drink mixed with honey.” See also the grape honey beer mentioned in section 3.5.3 below.

deceased with whom the drinks were found, that pure mead was the beverage of the rich while honey beer was rather for commoners.¹⁵³ This fits rather well with the testimony of Posidonius (T27), as long as we are to imagine that sometime after wine was introduced to the Gauls from the Mediterranean (around 600 B.C.) it came to replace mead as the upper class drink.

The first certain literary reference to honey beer in what is now France (apart from Posidonius) is found in Frankish texts, which mention “honeyed” (*mellita*) *cervisa* or *cervisia* (which by this time probably denoted beer generally, as seen in section 2.1.3.3 above). The seventh century penitential of Theodore (T130), copied in the following century by Halitgarius (T189), forbids the drinking of *mellita cervisia* during fasts, though it allows the drinking of *cervisia*.¹⁵⁴ The writings from the Council of Mainz of October 3, A.D. 852 explain that a person found guilty of homicide is to be deprived of this drink (T212); the same law is also found a number of times in the *Additamenta ad capitularia regum Franciae orientalis* of A.D. 895 (T216). At the Council of Worms of May, A.D. 868 honey beer was not allowed for those guilty of patricide and fratricide (T215). This type of beer is also found in later texts,¹⁵⁵ and was known as “bragget” in Middle English.¹⁵⁶

Certainly honey beer was highly regarded (and probably also wheat beer over barley beer), as it was the drink of fairly well-to-do Celts and was forbidden as too good for criminals. Its popularity was probably due both to its sweet taste (see section 3.11.3 below on the standard

¹⁵³ Koch forthcoming.

¹⁵⁴ In the *PL* the first text is mistakenly printed as *mellita et cervisia* and the second as *mellita, cervisia*. The correct reading must be *mellita cervisia*, not only because of the later parallels, but because *cervisia* is said to be allowed later in Theodorus and Halitgarius. Furthermore, in the eleventh century Theodore was copied by Burchard of Worms (*Decretum* 6.2 [= *PL* 140.765B], 40 [= 774D], and 19.9 [= 980C-D]) as well as Ivo of Chartres (*Decretum* 189 [= *PL* 161.897A]), both of whom wrote *mellita cer[e]visia*.

¹⁵⁵ For example, in a diploma of A.D. 1147 issued by Conrad II to the monastery at Corvey (= *PL* 189.1492C [*mellita cervisa* and *non mellita*]). See further DuCange (1842: 2:290, s.v. *cerevisia mellita* and 1845: 4:349, s.v. *mellita*).

¹⁵⁶ *OED* 1989: 2:477, s.v. A medieval recipe is found in Scully (1995: 153-154), in which ground pepper and ground cloves are also added.

sourness of ancient beers) as well as its high alcohol content.

3.5.2 Dates:

Though dates (*Phoenix dactylifera*) are never mentioned as an ingredient in beer in Greco-Roman sources,¹⁵⁷ I include them here for the sake of completeness. In Egyptian texts involving beer, reference is often made to “the sweet thing.” Scholars almost unanimously agree that this must be a reference to dates, the main source of sweetness among ancient Egyptians, and thus that dates were used in beer.¹⁵⁸ It has recently been claimed that fragments of fruits of dates have been found in beer from c. 3500-3400 B.C. from Hieraconpolis.¹⁵⁹ Similarly, it is thought that dates were used in Sumerian beer production.¹⁶⁰ It is at least known beyond question that they were used in beer production in Neo-Babylonian times.¹⁶¹

3.5.3 Grapes:

The combination of grapes (*Vitis vinifera*) and cereal to make a drink is not unheard of, even today.¹⁶² If we are to read Aretaeus (T62) literally, he speaks in Egypt of “a pungent drink [made] from barley and grapes” (δριμὺ δὲ τὸ ἀπὸ τῶν κριθέων καὶ τὸ τῶν βρυτέων πόμα). One

¹⁵⁷ Note, however, that Antyllus (T66) suggested serving crushed dates (and other ingredients) in beer to help a woman lactate.

¹⁵⁸ See the evidence gathered in Lucas and Harris 1962: 15 and Darby, Ghalioungui, and Grivetti 1977: 543-547. The former argue that it was used as a sweetener (rather than as an aromatic substance), the latter that it was used mainly to produce a higher alcohol beer.

¹⁵⁹ Maksoud, El Hadidi, and Amer 1994: 221. Samuel (1996: 488; 1996b: 3) doubts this evidence, and shows that there is no archaeochemical evidence that dates were so used, and thus suspects that it was a possible but not standard ingredient (1996b: 10).

¹⁶⁰ See, for instance, Katz and Maytag 1991: 30.

¹⁶¹ See the full collection of evidence presented by Stol 1994.

¹⁶² Vigneronne is made by Cantillon in Belgium with malted barley and muscat grapes (Jackson 1999: 22 and 118).

can readily understand why Ermerins was disturbed enough by this to delete the τὸ ἀπὸ τῶν κριθέων, although this emendation seems too rash. Adams deletes the καί, and translates τῶν βρυτέων as if it were related to βρῦτον and similar words.¹⁶³ Aretaeus otherwise mentions βρυτέων πόμα as a drink made in places instead of wine.¹⁶⁴ Both instances are taken by Liddell, Scott, and Jones as referring to a drink made from the refuse of grapes (or olives) after pressing.¹⁶⁵ Adams inexplicably thinks that beer is involved in both cases. Since there is no other literary evidence for a grape beer in antiquity, the phrase should perhaps be read: “both a bitter [drink made] from barley and a drink [made] from grapes.” However, the existence of grape beer should not be entirely discounted.¹⁶⁶ Again, archaeobotanical analysis of beer from Hieraconopolis dated to c. 3500-3400 B.C. has been said to show that it contained grape pips.¹⁶⁷ Also honey grape beers have been recently detected among the Minoan Cretans (in goblets and conical cups in a cemetery in Armenoi) and Phrygians (in cups in Midas’s tomb in Gordion). However, it is suggested that in both cases the evidence could also point to a drink made of wine, beer, and mead mixed together.¹⁶⁸

3.5.4 Berries:

There seems to be only one possible Greco-Roman source for the use of berries in beer.¹⁶⁹ In an anonymous life of the Irish St. Lugidus or Luanus (who died in A.D. 609) it is said (T213): “And they made *cerevisia* from the juices of mulberries, as is the habit with playful

¹⁶³ Adams 1856: 15 and 255.

¹⁶⁴ Aret., *De caus. et sign. acut. morb.* 4.9.3 (= *CMG* II, 76.14-15).

¹⁶⁵ *LSJ* 1996: 332, s.v. βρύττα.

¹⁶⁶ Laennec and Grmek (2000: 27) assume that one beverage is being referred to here.

¹⁶⁷ Maksoud, El-Hadidi, and Amer 1994: esp. 221, cited, and doubted, by Samuel 1996b: 10.

¹⁶⁸ Cretans: Pain 1999: 56 and Tzedakis and Martlew 1999: esp. 166. Phrygians: McGovern *et al.* 1999, with Glaser 2001: 31 (who shows how this was recreated).

¹⁶⁹ Vergil (T34) could be read as referring to one drink made of wheat and rowanberries, but I have argued in section 2.1.2.1 above that it is most likely that he refers to two separate drinks.

boys” (*feceruntque sibi cerevisiam de succis mororum, sicut ludentibus pueris mos est*). This seems to show that mulberries were being fermented along with malted cereals, though it remains possible that *cerevisia* here is used very loosely to mean “an intoxicating beverage” and thus that this refers to a simple mulberry wine.¹⁷⁰ However, there is archaeological evidence for the ancient use of berries in beer. Nierhaus mentions finds in Denmark of Bronze Age vessels with the residue of drinks made from barley and berries, and of wheat, berries, and honey (see further section 3.5.1 above).¹⁷¹

3.5.5 Sedge:

Theophrastus, in speaking of plants found in sandy regions in Egypt mentions the μαλιναθάλλη and says that Egyptians collect its leaves and (T17): “boil them in *brūtos* [*brūton* ?] [made] from barley, and it becomes very sweet” (ἔψουσιν ἐν βρυτῷ τῷ ἀπὸ τῶν κριθῶν καὶ γίνεται γλυκέα σφόδρα).¹⁷² Theophrastus describes this plant as “round in shape” (στρογγύλον τῷ σχήματι), “large like a medlar” (μέγεθος δὲ ἡλίκον μέσπilon), “without stone” (ἀπόρηνον), and “without bark” (ἄφλοιον), and says that its leaves are like those of the κύπειρον. From his description elsewhere, it would seem that the κύπειρον here is the galingale or common *Cyperus* or *Cyperus rotundus*,¹⁷³ and it is logical to think that his μαλιναθάλλη is another type of *Cyperus* (or sedge, as it is usually called in English), like the *Cyperus esculentus* or earth almond or

¹⁷⁰ Note that Servius (T88) interprets Vergil as speaking of *cervesia* where only a drink of rowanberries is certainly mentioned (T34) (see section 2.1.2.1 above). In another version of this account (Anonymus, *Vita Sancti Lugidi sive Moluae* 10 [= *VSH* 2.209]) mulberry wine is simply mentioned.

¹⁷¹ Nierhaus 1954: 257-258 (cited in Rives 1999: 214). Steiger (1954: 88) mentions rather remains of barley, berries, and sweetgale. MacKendrick, citing no sources, speaks of remains of fermented barley and berries among the Germans (1970: 11). Wilson, quoting MacKendrick (1975: 640) mistakenly thinks that he is referring to a find from Schleswig-Holstein (which he mentions in an entirely different context at 1970: 10).

¹⁷² Pliny seems to call this plant *anthaliūm* (*Hist. nat.* 21.52.88) but notes no connection with beer.

¹⁷³ Theophr., *Hist. Pl.* 4.10.5.

chufa.¹⁷⁴ I have found no other ancient, or for that matter medieval or modern evidence for any plants in the Cyperaceae family used in beer, but there is little reason to doubt Theophrastus that the leaves of some Cyperi or sedges could have been used to sweeten beer.

3.5.6 Meadowsweet:

Meadowsweet or meadsweet (*Spiraea ulmaria* L or *Filipendula ulmaria* L or *Spiraea filipendula*) is a fragrant wild perennial plant with creamy white flowers and dark green leaves, common in meadows and damp areas in Europe.¹⁷⁵ It is perhaps mentioned as an additive to wine in Pliny and the *Geoponica*, but nowhere is it connected to beer in the ancient Greek or Latin sources.¹⁷⁶ However it is known to have been so used from archaeological finds. Meadowsweet was discovered along with traces of cereals in a vessel buried in a Neolithic grave (c. 1600-1500 B.C.) of a young woman at North Mains, Strathallan, Perthshire, in Scotland.¹⁷⁷ Also in a Bronze Age cist burial of an older man from Ashgrove Farm, Methilhill, Fife, Scotland, remains of lime (*Tilia cordata*) and meadowsweet pollen found in a beaker have been interpreted as having come from a mead or a honey beer made from lime honey and flavoured with flowers of meadowsweet.¹⁷⁸ A similar find was made in Jutland (see section 3.5.1 above).

¹⁷⁴ *LSJ* 1996: 1078, s.v. Dr. Eleanor Irwin (in a private correspondence of July 31, 2000) has called this “a well-informed guess and probably right.” The papyrus (*Cyperus papyrus*) is also in the same family of plants. For sedge in general, see Grieve 1959: 2:729-731.

¹⁷⁵ See Grieve 1959: 2:524-525 (who mentions at 524 the plant’s use in wine and beer) and Lust 1974: 269-270. André (1985: 176) suggests that οἰνάνθη / *oenanthe* / *oinanthe* was the ancient term for meadowsweet. Dr. Eleanor Irwin, however, has told me (on March 3, 2001) that there can be no doubt that this term was at least sometimes used of other plants. In the *OLD* (1996: 1240, s.v.) it is said perhaps to be dropwort (*Filipendula hexapetala*).

¹⁷⁶ Pliny says (*Hist. nat.* 23.5.9) that *oenanthe* taken in wine is good for the stomach, while the *Geoponica* (5.51.2) speaks of using οἰνάνθη in wine.

¹⁷⁷ Finds: vessel SF17 in burial B in Barclay *et al.* 1983: 136, 157, 176-177, with 137, fig. 14, 138, fig. 15, 158, fig. 29a, and pl. 10. Analysis: Barclay *et al.* 1983: 178-180, with Dineley 1996 (who also mentions other Neolithic finds of meadowsweet in Britain, though not in the context of cereals), Pain 1999: 57, and Dickson and Dickson 2000: 82. For a similar lime pollen find in Sweden, see Dickson and Dickson 2000: 207-208.

¹⁷⁸ Dickson 1978: esp. 111 and 112. See also Barclay *et al.* 1983: 179, Sherratt 1987: 96, van Zeist 1991: 121, and Dickson and Dickson 2000: 79-81 (and see 78-84 for meadowsweet finds generally in Scotland).

Meadowsweet has been shown to have a preservative effect in beer,¹⁷⁹ and it has been used in brewing in medieval and modern times.¹⁸⁰

3.5.7 Heather:

Heather (*Erica* spp.) is a type of evergreen shrub which grows in barren areas, which is even today used in the making of beer.¹⁸¹ Again, though its use in beers in antiquity is also fairly certain, it is not mentioned in Greek or Roman sources.¹⁸² At Kinloch, on the Isle of Rhum (just south of the Isle of Skye) in Scotland, Neolithic pot sherds (from around 2000 B.C.) were found to contain the residue of mashed cereal straw, cereal-type pollen, meadowsweet, types of heather (including ling [*Erica vulgaris*]), and royal fern, thus most likely having come from a type of beer.¹⁸³

3.5.8 Sweet Gale or Bog Myrtle:

Sweet gale, also known as bog myrtle (*Myrica gale*), is a shrub which grows in wetlands, the leaves of which are bittering (and also preservative) as well as somewhat narcotic.¹⁸⁴ This plant was usually the main ingredient in the medieval alternative to hopped beer, which was

¹⁷⁹ Dineley 1997.

¹⁸⁰ Buhner 1998: 320-323. The Heather Ale Brewery in Craigmill, Strathaven, Lanarkshire in Scotland, run by Bruce and Scot Williams, presently makes a barley/wheat beer named Grozet with hops, bog myrtle, meadowsweet, and gooseberries (Gloser 2001: 29, who also lists other similar beers made there). Dineley and Dineley (2000a and 2000b), cited in Dickson and Dickson (2000: 84), have recently also been experimenting with meadowsweet beer.

¹⁸¹ See generally Buhner 1998: 25-35. The Heather Ale Brewery in Scotland presently makes a beer named Fraoch with malted barley, sweet gale, and flowering heather (see Glover 1997: 10 and Glaser 2001: 28-29).

¹⁸² Buhner mistakenly says (1998: 28): "Both the Greeks and Romans commented on Pictish production of a remarkable fermented beverage brewed from heather and coveted it highly."

¹⁸³ Wickham-Jones *et al.* 1990: 126-127. Dickson and Dickson (2000: 218 and 262) say that this evidence needs reevaluation without explaining why. Locke (1859) long ago suggested that Scandinavians at least by the early middle ages used heather and sweet gale in their beers, and brought this beverage to Ireland.

¹⁸⁴ See especially Buhner 1998: 175-179.

known as *gruit*.¹⁸⁵ The first known literary references to sweet gale beer are from the late tenth and early eleventh centuries A.D. from the district of Teisterbant in The Netherlands.¹⁸⁶ Dated to around the same time are large finds of sweet gale in north-west Germany which was also probably used for beer-brewing.¹⁸⁷ Very recently, however, there have been large finds of sweet gale fruitlets dated to the pre-Roman Iron Age (from the first century B.C. to the first century A.D.) in the northern Netherlands in the area of the Rhine estuary. These were probably used for beer since there is no other obvious reason why so much of the plant would have been gathered together, and it is also probable that sweet gale beer was produced on a continuous basis in this region from the first century B.C. through to the Middle Ages.¹⁸⁸ However, there is no evidence that the Greeks or Romans were aware of this drink, nor in fact is there any evidence of which I am aware that they even knew of the sweet gale plant.

3.5.9 Hops:

The hop (*Humulus lupulus* L) is a perennial climbing plant of the Cannabinaceae family, found in marshes or wetlands; it grows throughout mainland Europe, and probably has been wild there since the earliest times.¹⁸⁹ In the hop's female flower (or inflorescence or cone) is found, among others, a resin *lupulin* in which are found the oils *humulone* (an alpha acid) and *lupulone* (a beta acid), which are now universally used in beer as a bittering agent (for flavour and

¹⁸⁵ See especially Doorman 1955 on *gruit* (in Dutch with an English preface at ix-xi) with Behre 1998: 59-62. Wilson notes that the composition of *gruits* was not uniform, though it usually excluded hops (1975: 643-644). Often yarrow (*Achillea millefolium*) and marsh rosemary (*Ledum palustre*) were added along with the sweet gale.

¹⁸⁶ Doorman 1955: x. See also Behre 1999: 41-43.

¹⁸⁷ Behre 1999: 36 and 39.

¹⁸⁸ Behre 1999: 35 and 39. Behre had earlier shown that there was no pre-medieval evidence for sweet gale beer (1984: 115, 119, and 121); see also the discussion of the use of the plant in medieval times in van Zeist 1991: 119 and 121.

¹⁸⁹ See Wilson 1975: 634-637, who notes that the similarity of hop pollen to that of *Cannabis sativa* L (that is, hemp) makes it very difficult to identify it certainly in many archaeological contexts.

aroma), preservative, and sterilizer, and also tannin which acts as a clarifier.¹⁹⁰ The use of hops in brewing was unknown in antiquity,¹⁹¹ as were, apparently, the qualities of the hop flower. The only indubitable ancient Greco-Roman reference to hops comes from Pliny who, in a list of wild plants (*herbae sponte nascentes*), calls it the *lupus salictarius* ("the willow wolf") and says that it is rather a delicacy (*oblectamentum*) than an ordinary food;¹⁹² this is probably a reference to the edible shoots of the hop plant.¹⁹³ It is sometimes also thought that Pliny mentioned hops as a type of non-cultivated *asparagus* which he said grew widely in Upper Germany.¹⁹⁴ Finally, Martial says that "when *lupus* is served one hungers for a low-quality olive" (*appetitur posito vilis oliva lupo*).¹⁹⁵ This may be a reference to a fish named *lupus*,¹⁹⁶ or perhaps to hops.¹⁹⁷ This evidence tends to show that in so far as hops were known it was only as a wild plant, the shoots of which were occasionally eaten like asparagus.

While in classical Latin the hop was called the *lupus* or *asparagus*, in early medieval

¹⁹⁰ On the hop plant in general, see Clinch 1919 (for England specifically); Burgess 1964; Ashurst 1971; Hough, Briggs, and Stevens 1971: 300-349; Wilson 1975: 634 and 638; and Neve 1991.

¹⁹¹ Wilson (1975: 639) discusses the apocryphal tradition that the Jews in captivity in Babylon were free from leprosy since they drank hopped beer, arising from the incorrect medieval Latin translation of a Rabbinic source from the fourth century A.D.: *siceram veprium, id est, ex lupulis confectam*. The original does not refer to hops but to *Cuscuta* L. This tradition seems to be first found in Bickerdyke 1889: 26 (and see 66) and later, for instance, in Wright-St.Clair 1962: 513. See further Appendix III.

¹⁹² Pliny, *Hist. nat.* 21.50.86.

¹⁹³ Steiger 1954: 89 and Forbes 1956: 140, and see Hünemörder 1996: 714. For some reason, Wilson (1975: 637) suggests that Pliny was referring to the "young leaves of the hop." Hop shoots, often pickled, are a delicacy today, most notably in Belgium. Pliny (*Hist. nat.* 14.23.119, and see 23.3.3-4) mentions the eating of grape vine shoots which are sometimes pickled.

¹⁹⁴ Pliny, *Hist. nat.* 19.42.145, with André 1985: 28. This and the following reference are neglected by Wilson (1975) in her otherwise excellent study of the history of hops in antiquity and the early Middle Ages. Note the mention of asparagus wine in Pliny (*Hist. nat.* 14.19.105) and in Hebrew texts (Frankel 1999: 293).

¹⁹⁵ Mart., *Epigr.* 9.26.6.

¹⁹⁶ See *TLL* 7:1858, s.v and Shackleton Bailey 1993: 2:255.

¹⁹⁷ Hehn 1911: 485, cited in *TLL* 7:1859, s.v. Both Pliny and Martial are cited (though wrongly) by Forbes 1965: 137, n. 40.

Latin we find the word *humlonis* (T202 and 204), *humulonis* (T206), or *umlonis* (T208), and other variants, for the hop.¹⁹⁸ A document of September, A.D. 768 contains a listing of which areas King Pepin granted to the abbey of St. Denis including “*humlonariae* completely” (*humlonariae cum integritate*).¹⁹⁹ This could mean “hop gardens,” that is areas where hops were cultivated, though Wilson has shown that it may simply refer to a piece of land called *Humlonariae* known for its wild hops.²⁰⁰ Texts dating to the early ninth century A.D. from the abbey of St. Germain-des-Prés and to the late ninth century A.D. from the abbey of St. Remi in Reims mention *modii* of hops.²⁰¹ The first certain reference to hops being used for beer is to be found in the statutes of Adalhard the Elder (the ninth abbot, from A.D. 753 to 826) for the monastery of St. Peter and St. Stephen at Corbie written in January A.D. 822.²⁰² It is said (T204) that the porter of the monastery received a portion of the hops which were given as a tithe to the monastery, and if that were not enough, “he may acquire for himself as much as necessary from which to make his own beer” (*sibi adquirat unde ad cervisas suas faciendas sufficienter habeat*).²⁰³ Only a little while later the abbot Ansegis (from A.D. 823 to 833), in the rules for the abbey of Fontanella, spoke of supplying the monastery with *sicera* <ex> *humolone*, clearly

¹⁹⁸ See further Moulin 1984: 15-16.

¹⁹⁹ *MGH-Diplomatum Carolinarum* I, 28, 39.37-38. See Steiger 1954: 91.

²⁰⁰ Cultivated hops: Arnold 1911: 226, Steiger 1954: 91, and Serjeant 1964: 57; see further Hünemörder 1996: 713-714. Wild hops: Wilson 1975: 644. However, Wilson (1975: 637) does suggest that hops were cultivated before Merovingian times by “the Germanic tribes of Scandinavia and North-west Europe;” see further below for the first certain evidence of hop cultivation.

²⁰¹ Steiger 1954: 91-92 and 92, respectively. See also Horn and Born 1979: 2:263.

²⁰² That this is the first certain reference is pointed out by Kylstra 1974: 15, n. 19 (who, however, misdates the source to A.D. 882) and Wilson 1975: 644. This may not have been recognized previously because the *PL* omits the key passage (even Steiger [1954: 92] in his excellent collection of evidence overlooks it); for the general neglect of Adalhard by scholars, see Verhulst and Semmler 1962: 91-92; for the circumstances surrounding the writing of the statutes, see Jones in Horn and Born 1979: 3:92-99. Arnold (1911: 231) and Forbes (1956: 141 and 1965: 133), among others, rather say that Hildegard of Bingen (on whom, see below) was the first to speak of the use of hops in beer.

²⁰³ The porter (here *portarius*, often *ostiarius*) was in charge of food and shelter for visitors; see Horn and Born 1979: 1:335.

beer made with hops (T206).²⁰⁴ Tithes of hops (along with malt and other products) are also collected by the abbey of St. Denis, as is clear from the abbot Hilduin's list of items due from neighbouring villages dating to A.D. 832 (T208). At least in the case of Corbie the hops used were wild ones since it is stated by Adalhard (T202) that millers are excluded from the duties of other tenants, such as gathering firewood and hops.²⁰⁵ The first certain evidence for the cultivation of hops is a reference to a hop garden (*humularium*) in the abbey of Freisingen around A.D. 860.²⁰⁶ Hops are also found in a ninth or tenth century A.D. version of Pseudo-Apuleius's *Herbarium*, though not in connection with beer.²⁰⁷ The most famous early references to hopped beer can be found in the abbess Hildegard of Bingen from the twelfth century A.D., who writes of it very negatively:²⁰⁸

humela tepidum frigus in se habet et quemdam torporem caloris, qui luxuriam in homine excitat ita quod hominem infatuat. nam in homine illo, qui eam comederit aut in potu sumpserit, luxuriam parat, quemadmodum vinum forte facit si illud biberit, et eum etiam velut fatuum facit; ac in homine plus tabem quam sanguinem parat, et ideo pene ad nullam utilitatem valet.

The hop has a tepid coolness in itself and a certain sluggishness of heat, which rouses immoderation in a person since it makes a fool of that person. For, in that person who consumes it *or takes it in a drink*, it produces immoderation, in the same way as strong wine does if one drinks it, and in fact it [i.e. the hop] makes him practically insane. And in a person it produces more gore than blood, and it is effective for nearly

²⁰⁴ Steiger (1954: 92) reads *sicera, humolone* as if the two words were unrelated. See also Horn and Born 1979: 2:263.

²⁰⁵ As Wilson shows (1975: 644) there is no reference to grinding hops here, as thought, for instance, by Forbes 1956: 140 and 1965: 132 and Kylstra 1974: 15, n. 19 (with previous scholarship). Compare also the inferior accounts of early use of hops in beer in Arnold 1911: 226-234; Behre 1984: 117 and 119; and Moulin 1984: 18-19.

²⁰⁶ As noted by Wilson 1975: 644. The text can be found in Steiger 1954: 92, and see also Horn and Born 1979: 2:263. Corran (1975: 42) and Neve (1991: 25) claim, without citing any evidence, that the earliest reference to hop cultivation dates to A.D. 736 near Geisenfeld, Germany.

²⁰⁷ Ps.-Apul., *Herb.* 52 and 68 (in *Cotton Vitellius* 103), discussed in detail by Wilson 1975: 641-643. Hops were also known to Anglo-Saxons before the ninth century; see Wilson: 1975: 643.

²⁰⁸ Hild., *Physica* 1.50 (2.94) (= *PL* 197.1149B-C).

no use.

Even more clearly she also writes of the hop's property of preserving a drink (no doubt beer).²⁰⁹

hoppo calidus et aridus est, et modicam humiditatem habet, atque ad utilitatem hominis non multum utilis est, quia melancoliam in homine crescere facit, et mentem hominis tristem parat, et viscera eius gravat. sed tamen in amaritudine sua quasdam putredines de potibus prohibet, ad quos additur, ita quod tanto diutius durare possunt.

The hop is hot and dry and has a moderate moistness and it is not very useful for the use of man since it causes the melancholy in a man to increase and makes a man's mind sad and weighs down his innards. However, in its bitterness it prevents putrefaction in those drinks to which it is added, so that they can last much longer.

Hop flowers have also been found in ancient archaeological contexts, but in small numbers, and thus probably not for beer brewing.²¹⁰ Recently finds in large numbers have been made from somewhat earlier than A.D. 800 (even possibly in the sixth century A.D.), and in Haithabu in northern Germany abundant amounts of hop flowers dated to the ninth century were found coupled with malt residue, and thus clearly in beer production contexts.²¹¹ Hundreds of hop fruitlets were also found as cargo on a boat abandoned at Graveney, Kent (in south-eastern England), dated to the tenth century A.D., a probable indication that by this time hops for use in beer brewing were being traded.²¹²

²⁰⁹ Hild., *Physica* 1.61 (2.74) (= PL 197.1153C).

²¹⁰ Stika 1996: 87, for instance, mentions the find of one "charred nutlet of hops" from the early Celtic site of Freiberg, but admits that this may have nothing to do with brewing.

²¹¹ Behre 1984: 115-119 with the map at 118, fig. 2 (summarized by van Zeist 1991: 119 and 121), 1998: 63-75, and 1999: 39-41 with the maps at 38, fig. 4 and 40, fig. 6. Hünemörder (1996: 713) assumes that hops were already used in beer between the fifth and seventh centuries A.D.

²¹² Wilson 1975: esp. 633-634 and Behre 1999: 40.

3.5.10 Lupine, Skirwort, and Assyrian Root:

Some scholars have proposed that the lupine or lupin (*lupinus termis* Forskal; θέρμος / *lupinus*), a type of edible leguminous herb, along with skirwort or skirret (*siser* in Latin; modern *sium sisarum* L), a liquorice-flavored plant,²¹³ and a certain Assyrian root (*radix assyrius*)²¹⁴ were used in Egyptian beer, though this is based on a controversial passage of Columella (T53):

*iam siser, Assyrioque venit quae semine radix,
sectaque praebetur madido sociata lupino,
ut Pelusiaci proritet pocula zythi.*

There are two very different interpretations of this passage: that the plants are beer additives or that they are snacks to be consumed with the beer.

Peck, for instance, assumes that the Assyrian root is used to add fragrance to the beer and lupines to bitter the beer (like hops).²¹⁵ Most recently, Van Minnen, in a note showing that when products are said to be Pelusian in ancient sources it often simply means that they came from Egypt (since Pelusium was an important point of export), mentions Columella's Pelusian beer and says that it indicates that lupines and probably liquorice were added to make beer "tasteful." He also suggests that lupines were soaked before being placed in the beer, as Columella mentions, "to soften the bitter taste" on the evidence of Athenaeus, who simply said (with no mention of beer) that the "lupine" (θέρμος) is "very bitter" (πικρότατος), but once steeped becomes "sweet" (γλυκύς) and "very mild" (προσηνέστατος).²¹⁶ Athenaeus, however, is

²¹³ André (1961: 295) proposed rather that this was parsnip.

²¹⁴ This is usually thought to be the *radix Syriaca* or "radish" (Wessely 1887: 39; Forster and Heffner 1955: 15, n. h; Darby, Ghalioungui, and Grivetti 1977: 543; Katz and Maytag 1991: 30).

²¹⁵ Peck 1965: 321. Neuburger (1930: 104) also accepted that lupines were used in beer.

²¹⁶ Van Minnen 1991: 167-168 with nn. 6-7, citing Athen., *Deipn.* 2.55f. Spiller (1955: 89) speaks of Pelusium as "the Egyptian counterpart to Burton-on-Trent," and even wrongly says that Diodorus Siculus sampled the beer of Pelusium. Renfrew (1995: 198) wrote: "The neighborhood of Pelusium (Tell al-Farama) was best noted for its beer." It seems that beer was imported to Pelusium in Pharaonic times: Darby, Ghalioungui, and Grivetti 1977: 549. For

speaking of eating lupines, and if anything suggests that Columella's "soaked lupines" are meant to be eaten. Athenaeus elsewhere notes that lupines are served as part of a low class symposium.²¹⁷

Arnold long ago rightly showed that though at first sight the passage might seem to show that "the Egyptians made the sweetish [?] taste of their Pelusian beer more palatable by adding to it pungent spices and lupine," a bittering agent, it should rather be read as referring to food "eaten with the beer of Pelusium."²¹⁸ A proper understanding of Columella relies on the correct translation of the two verbs; *praebetur ... ut ... proritet* most straightforwardly means "is supplied/served ... to provoke thirst." It is more natural to think of snacks provoking a thirst for beer rather than ingredients already in a beer provoking thirst for it.

3.5.11 Safflower:

Safflower (*Carthamus tinctorius*), an annual plant found throughout Europe and known especially for its use as a dye,²¹⁹ is said in one Hebrew account to have been used to make Egyptian beer. Rabbi Joseph is quoted in the Babylonian Talmud as saying that Egyptian beer was made of one part barley, one part safflower, and one part salt, while Rabbi Pappa said that wheat was used rather than barley.²²⁰ This unique evidence should surely be doubted.²²¹

Pelusian products during the Roman Empire, see also Dalby 2000a: 174.

²¹⁷ Athen., *Deipn.* 10.420b.

²¹⁸ Arnold 1911: 87. Lutz (1922: 75 with n. 7, who also cites previous scholarship) admits that this is more likely, especially since there is no evidence for the use of bittering additives to beer otherwise in the East. Lucas and Harris (1962: 14-15) follow Arnold, and others are equally sceptical of the addition of these plants to beer (for instance, Darby, Ghalioungui, and Grivetti 1977: 543 and Samuel 1996: 488 with n. 2).

²¹⁹ See Grieve 1959: 2:698 and Lust 1974: 340-341. Safflower is not related to saffron, despite the similarity in names.

²²⁰ *Pesahim* 42b.

²²¹ I have found no other evidence for the use of safflower in beer at any time. Galen, however, seems to mention safflower wine (T68), if one follows the *CMG*'s reading of κνήκος against Kühn's κήκος ("thistle").

3.5.12 Fleabane:

Common fleabane (*Inula dysenterica* L) is native to most parts of Europe, particularly in watery locations.²²² I have been unable to find any evidence that fleabane was ever used as an adjunct to beer, though there is one ancient Greek source which seems to point that way. Hecataeus (T3) says that the Paeonians drink παραβίν ἀπὸ κέγχρου καὶ κόνυζαν (“*parabiē* [made from] millet and [drink] fleabane”). This is usually emended to κονύζης (“[made from] fleabane”), which makes the most sense. Kaibel tentatively suggested κυρηβίν (“[drink] bran”), which makes no sense since no one drinks bran (the husks on the grain); even κυρηβίνης would make no sense, since bran would not be used to make beer either. Another possible emendation could be ὀρύζης (“[made from] rice”), though there is no evidence that Paeonians, or anyone else in the West made rice beers. It is best, then, to assume that fleabane was possibly used as an additive in Paeonian beers.²²³ In the *Geoponica* at least “fleabane wine” (κονυζίτης οἶνος) is found.²²⁴

3.5.13 Henbane:

Henbane (*Hyoscyamus niger* L) is a biennial plant found in dry soil, which is narcotic and wholly poisonous. Stika has suggested the possibility that the fifteen seeds of henbane found in eight samples in Hochdorf, southwestern Germany, may have been used “as a beer flavouring agent.”²²⁵ At first this seems fairly implausible since henbane seeds, though they have been used against toothaches, are extremely dangerous and can lead to convulsions,

²²² Grieve 1959: 1:321-322.

²²³ This is accepted, for instance, by Peck 1965: 321.

²²⁴ *Geopon.*, 8.10.

²²⁵ Stika 1996: 87.

TABLE 10: EVIDENCE FOR ADDITIVES TO BEER IN ANTIQUITY					
	Stone Age	Bronze Age	Iron Age	Classical	Late
Honey		Denmark Scotland ?	5 C. B.C.: Eastern Gaul	1 C. B.C.: Southern Gaul	9 C. A.D.: France
Date		c. 3000 B.C.: Egypt ? Mesopotamia			
Grape		c. 3000 B.C.: Egypt ?		2 C. A.D.: Egypt ?	
Berries		Denmark			9 C. A.D.: Ireland ?
Sedge				4 C. B.C.: Egypt	
Meadowsweet	c. 2000 and c. 1550 B.C.: Scotland	Denmark Scotland ?			
Heather, etc.	c. 2000 B.C.: Scotland				
Sweet gale			1 C. B.C. - 1 C. A.D.: Holland		11 C. A.D.: Germany
Hop					6-9 C. A.D.: N. Europe
Lupine, etc.				1 C. A.D.: Egypt ?	
Safflower				2 C. A.D.: Egypt ?	
Fleabane				5 C. B.C. Paeonia ?	
Henbane			5 C. B.C.: Germany ?		

insanity, and death.²²⁶ However, Plutarch in passing speaks of people “throwing henbane into wine” (ὕοσκούαμον ἐμβαλόντες οἶνω) thus producing a bitter flavour, and Pliny also speaks of its use in wine against asp poison.²²⁷

I append a table (10, on the previous page) showing the evidence for beer additives discussed above.

3.6 Fermentation and the use of Yeast (ζύμη / *fermentum*):

As I have already pointed out (in section 3.1 above), there are two basic ways of fermenting beer, (3.6.1) spontaneously or (3.6.2) artificially. It is usually claimed that the ancients had no knowledge of the importance of yeast; though they may not have understood the process, they did understand that without yeast there would be no beer.²²⁸ The usual Greek term for yeast was ζύμη and the Latin one was *fermentum*, which are often equated in glossaries.²²⁹

3.6.1 Spontaneous Fermentation:

Yeast is a uni-cellular type of fungus which is found wild on plants and in the air. In wine-making the yeast naturally found on the grape skins is enough for fermentation, while in beer-making that found in the air can just as easily be used by leaving the soaked malted cereal out to ferment. In this process the organisms which infect the beer cannot be controlled and the

²²⁶ See Grieve 1959: 1:397-404 (with 403 for the effect of the seeds) and Lust 1974: 222-223. Xenophon (*Econ.* 1.13) in fact says that eating henbane causes insanity. Dioscorides (*Mat. med.* 4.68 Wellmann [= 4.69 Sprengel]) speaks of extracting oil from henbane seeds.

²²⁷ Plut., *Quaest. conv.* 1.4.3 (= *Mor.* 621e) and Pliny, *Hist. nat.* 25.58.104.

²²⁸ Behre (1999: 35), for instance, wrongly says that the role of yeast was “unknown in older times” and was only first mentioned in 1551 in Munich. Neuburger (1930: 10) also speaks only of the use of spontaneous fermentation in antiquity.

²²⁹ See, for instance, *CGL* II, 503.53, 530.10, and 547.30. In addition, a Greco-Latin lexicon (*CGL* II, 322.44) equates ζύμη and *hocfermentum*. For *fermentum*, see also section 2.1.2.1 above.

result may be fairly unpredictable; the effective organisms could include wild yeasts which may not provide a favourable taste, or else bacteria or mould.²³⁰ However, the natural constitution of the air in a certain place can provide organisms conducive to good beer,²³¹ as could the reuse of properly contaminated vessels. It is probable that this was the usual method of fermenting beer, though there is some evidence for artificial fermentation as well.

3.6.2 Artificial Fermentation:

Wild yeasts are now almost universally avoided in brewing, while cultivated beer yeasts have been carefully developed.²³² Modern “brewer’s yeast” is almost always a species of *Saccharomyces*, usually *Saccharomyces cerevisiae* as the top-fermenting yeast (that is, for “ales”) and *Saccharomyces Carlsbergensis* or *uvarum* as the bottom-fermenting yeast (that is, for “lagers”).²³³ Yeast is the single most important ingredient for the production of a very good beer, and because of the modern knowledge of and cultivation of yeasts strains, the best beers can only be better now than those of the past.²³⁴

In antiquity, wild yeasts were certainly collected and picked out to make leavened bread. Pliny explains that bread leaven (*fermentum*) is obtained by leaving out roasted barley and water

²³⁰ Yeast, bacteria, and mould have all been discovered in Egyptian beer residue (Lucas and Harris 1962: 15); Samuel mentions yeast and lactic acid bacteria (1996b: 5 and 10). For the types of wild yeasts, bacteria, and moulds which are now considered to spoil beer, see Ault and Newton 1971. There is very little evidence for the ancient recognition in the importance of hygiene in the production of beer; Charlemagne, however, rightly emphasized the necessity of cleanliness (T178). Note also Bede’s (?) recommendation that one not drink a beer in which there has been a dead mouse (T165).

²³¹ Thus, for instance, the *Brettanomyces Bruxellensis* and *Brettanomyces lambicus* wild yeasts, and lactic acid bacteria, found naturally around Brussels, Belgium can produce an excellent lambic beer (Jackson 1999: 73-98).

²³² See Hough, Briggs, and Stevens 1971: 409-504.

²³³ See especially, Gilliland 1971, Tubb 1987, and Johnston 1990 (with a list of types of yeasts used at 57).

²³⁴ On the other hand, the average modern beer need not be better than the best ancient beer.

or else flour paste (possibly boiled) and salt.²³⁵ It makes sense that the same process was used in the making of beer, though it is impossible to determine the level at which beer yeast was cultivated.²³⁶ As we have seen in the recipe of Pseudo-Zosimus (T89), the malted bread is leavened with ζύμη; it would have been a small step to simply leaven the water in which the cooled mixture of malt and water (or mash) would be placed, a process known as “pitching” yeast. In one account of a beer-maker from the first century A.D. preserved on a papyrus from Tebtunis mention is made of “pitchers of yeast” (ζύμης χό(ες)), which tends to show that a leavened liquid was added to ferment the beer.²³⁷ In Greco-Egyptian papyri of the first and second centuries A.D. there is also found the profession of “yeast-maker” or ζυμουργός.²³⁸ This cumulative evidence tends to show that at least by the first century A.D. there were individuals skilled in the breeding and cultivation of yeasts for both bread and beer.

The activity of fermentation creates a froth which is known today as the “krausen head.” It is clear that Pliny mentioned this foam or froth (and not the head on the finished beer²³⁹) as *spuma* as being “top-cropped” and used, instead of yeast (*pro fermento*), to make light leavened

²³⁵ Pliny, *Hist. nat.* 18.26.103-104.

²³⁶ It has been suggested that yeast was cultivated in Neolithic times even before the cultivation of grain (Lambert 1997: 134).

²³⁷ *P. Tebt.* II.401, col. vii, 35. Chantraine (1968: 401, s.v.) points out that ζύμη was used specifically of beer yeast in the papyri, but this is the only certain instance of this of which I am aware. Interestingly, in another Tebtunis papyrus (from A.D. 140) Ision son of Heron promises, as part of a land leasing deal, to pay annually a dry measure of yeast, namely $\frac{2}{3}$ *artaba* “of prepared [or hung?] yeast” (ζύμης ἡρτυμένης) (*P. Tebt.* II.375, ll. 27-28); no mention here is made of beer.

²³⁸ See the references cited in Liddell, Scott, and Jones (*LSJ* 1996: 757 s.v. and Suppl. 143). Darby, Ghalioungui, and Grivetti (1977: 535-536) interpret this evidence as showing that beer was artificially fermented. See also the discussion in Lucas and Harris (1962: 16) on the possible cultivation of yeasts in ancient Egypt.

²³⁹ This is correctly stated by Forbes 1956: 140 and 1965: 131; Wilson 1975: 639; and Kahn 1996: 90-91.

bread among Gauls and Hispanians (T49)²⁴⁰ and also as a facial cosmetic for women (T51).²⁴¹

3.6.3 The Ancient Knowledge of Fermentation:

It is certain that in classical times the actual process of the conversion of sugar into alcohol by yeast was not properly understood. There is no evidence that the ancients even realized that sugar needed to be present for fermentation (see sections 1.1 and 2.1.2.1 above), though they did know that, at least when it came to beer, yeast was needed, though there is no evidence that they realized this concerning other alcoholic beverages, and in fact some evidence that they did not in the case of wine.²⁴² As I have noted (in section 3.3.2 above), since the process of malting is basically a sprouting and killing of grains, the process of fermentation was logically seen as a subsequent decomposition of the cereal. Theophrastus says (T16): “They even turn into drinkable juices things which they have caused to depart from their nature and have somewhat rotted, such as those who make wines from barley and wheat and the so-called *zūthos* in Egypt” (τοὺς δὲ καὶ ἐξιστάντες τῆς φύσεως καὶ ὑποσέποντες εἰς χυλοὺς ἄγουσι ποτίμους οἶον ὡς οἱ τοὺς οἶνους ποιοῦντες ἐκ τῶν κριθῶν καὶ τῶν πυρῶν, καὶ τὸ ἐν Ἀιγύπτῳ καλούμενον ζῦθος). Dionysius of Halicarnassus (T37) claims that Celtic beer was a foul-smelling liquid, made from “barley rotted in water” (κριθῆς σαπίσης ἐν ὕδατι). Tacitus (T58) speaks of German beer as a liquid made from barley or wheat “which, once rotted, has a certain resemblance to wine” (*in quandam similitudinem vini correptus*).²⁴³ It is striking here that it was believed that beer (or at least certain types of beer [see section 3.4.3 above]) had to decompose,

²⁴⁰ Similarly, in the twelfth century A.D., Pierre de Blois (Petrus Blesensis) (*Epist.* [= *PL* 207.45]) speaks of “bread made from the dregs of beer” (*panis ... confectus ex cerevisiae faecibus*).

²⁴¹ I thank Iain Hill for discussing such details with me. The term *spuma* in later Latin (see, for instance, Anon., *Vit. et res gest. sanct. Altmanni* [= *PL* 148.881A], from the late eleventh or early twelfth century A.D.) and in modern Italian does refer to the head on a beer. One would expect the ancient Greek word to have been ἀφρός; that is, in any case, the modern Greek word.

²⁴² For Vergil’s possible reference to the use of yeast for an intoxicating beverage (T34), see section 2.1.2.1 above.

²⁴³ Furneaux comments (1894: 79): “the idea appears to be that of decomposition or change of nature.”

that is be subject to yeast, while wine was not seen as arising in the same way.²⁴⁴ This is certainly the case because, with the natural sugars in the grapes and the yeast present on the grape skins, there is no need to go through a process of growing then killing (i.e. malting) or of “decomposing” (i.e. adding yeast or leavening). Plutarch, speaking about why it was not permitted for a *Flamen Dialis* to touch flour or yeast, explains that flour (ἄλευρον) is a sort of liminal food, no longer a cereal and not yet bread, and in fact is in a way dead, having been ground, and no longer able to germinate. It is interesting that beer is made from cereal which in a sense has twice died, its germination having been terminated and it being further subsequently ground (see sections 3.4.1 and 3.4.2 above). Plutarch goes on to say: “On the other hand, yeast itself also arises out of corruption and corrupts the dough when mixed [with it] since the dough²⁴⁵ becomes slack and inert and leavening [or fermentation] on the whole is similar to rotting. In any case, going too far, it completely sours and corrupts the flour” (ἡ δὲ ζύμη καὶ γέγονεν ἐκ φθορᾶς αὐτῇ καὶ φθείρει τὸ φύραμα μειγνυμένη· γίγνεται γὰρ ἄτονον καὶ ἀδρανὲς καὶ ὅλως ἔοικε σῆψις ἢ ζύμωσις εἶναι· πλεονάσασα γοῦν ἀποξύνει παντάπασι καὶ φθείρει τὸ ἄλευρον).²⁴⁶ It is quite possible that beer was often considered a drink inferior to wine precisely because the process of fermentation was misunderstood and because wine was thought to be unaffected by the “corrupting” power of yeast. Galen (T69) in fact explicitly connected the element of rotting in the course of production with the bad effect of beer on the humours (see further section 4.2.1.3 below).

²⁴⁴ However, there was a type of wine known as σαπρίας (Hermippus, fr. 77.6 Kassel and Austin [= fr. 82.6 Kock] in Athen., *Deipn.* 1.29e [epitome] and Phyllyllius, fr. 23 Kassel and Austin [= fr. 24 Kock] in Athen., *Deipn.* 1.31a [epitome]) or “rotten,” which may have been thought to be affected by yeast. Other sources, however, suggest that the term rotten relating to wine simply referred to its old age (see *LSJ* 1996: 1583, s.vv. σαπρία and σαπρός, with references), though Dalby (2000b: 399) suggests that rotten grapes were used in the making of this wine.

²⁴⁵ Interestingly the same word for dough (τὸ φύραμα) is also found in the account of the beer-seller from the early first century A.D. in which pitchers of yeast are mentioned (*P. Tebt.* II.401, col. vii, l. 27). If connected directly, they surely point to the baking method of making beer (on which, see section 3.4.1 above). Hesychius (*Lex.* s.v. ζύμη [ζ203]) even equates ζύμη and φύραμα.

²⁴⁶ Plut., *Quaest. rom.* 109 (= *Mor.* 289e-f). Plutarch also connects ζύμωσις and σῆψις at *Quaest. conv.* 3.10 (= *Mor.* 659b). Aulus Gellius (10.15.19) similarly says that the *Flamen Dialis* may not touch leavened bread, but he does not attempt to explain the prohibition. Dr. Robert Cousland, who has introduced me to these sources, logically associates them with similar prohibitions among the Jews.

3.7 Filtration:

There is much evidence that ancient beers were not usually well filtered. Pseudo-Zosimus (T89), as we have seen (in section 3.4.1 above), ends his recipe by saying that the beer is to be strained, but this is only to be expected when malted loaves are used. Many sources speak of the cloudiness of beer (see section 3.12.1 below), and there is also evidence for the use of sieved containers and filtered straws for drinking beer.

Sieved-spouted beer containers are best known from finds in Gordion and in Palestine and it has been tentatively suggested that similar containers found in the sanctuary of Demeter and Kore in Corinth were also used for beer.²⁴⁷ In the Near East there is much iconographic and archaeological evidence for the use of clay, bone, or metal tubes with bone and metal strainers at the tips for beer-drinking (see Figure 2 on the right).²⁴⁸ Such beer straws are also mentioned by Archilochus and Xenophon. Archilochus (T1) speaks of Thracians and Phrygians sucking beer through an αὐλός. Here the term is used also as a double entendre for “penis.”²⁴⁹ Xenophon (T13) speaks of the use by Armenian beer-drinkers of κάλαμοι (literally “reeds”) of different sizes which “did not have joints [literally knees]” (γόνατα οὐκ ἔχοντες).²⁵⁰ In Archilochus the action of using a straw is denoted by the verb βρύζω, a *hapax legomenon*, while Xenophon uses μύζω, a *hapax keimenon*.²⁵¹

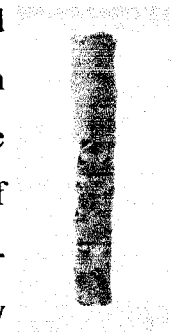


Figure 2:
Near Eastern
Straw Tip

²⁴⁷ Gordion: Sams 1977, and see the photographs in Akurgal 1955: pll. 10-12, 17, 20, and 23. Palestine: Dayagi-Mendels 1999: 122-125. Corinth: Bookidis 1990: 93.

²⁴⁸ Depictions: see especially Röllig 1970: *passim*. Finds: Maeir and Garfinkel 1992.

²⁴⁹ See Gerber 1976: 10-13; for similar words for pipe used of the penis, see West 1974: 142 and Henderson 1991: 243.

²⁵⁰ This “knees” expression was unusual enough to occasion a gloss in the *Suda* (T225).

²⁵¹ Again, this use of the verb by Xenophon is commented upon by the *Suda* (T228). Wilamowitz, on the model of Xenophon, wanted to change ἔβρυξε to ἔμυξε in Archilochus (on which see Gerber 1976: 13-14); see further section 2.2.1 above.

There is yet another reference to straws, not specifically in relation to beer, and betraying it seems a misunderstanding as to their use. Pomponius Mela says that beyond the Sahara desert is a race of men whose lips had grown together except for a small opening under the nose, through which they drank by means of straws.²⁵²

3.8 Storage and Transportation:

It is well attested that wine was stored and transported in amphoras in antiquity, but there is no good evidence for a corresponding vessel for beer. It must be admitted that usually beer was probably made (like bread) to be consumed quickly, though (as will be seen in section 3.9 below) there is some evidence for aged beer. In any case, the only real candidate for a beer storage and transportation container is the barrel.

3.8.1 The Barrel:

The wooden barrel is an ideal container for alcoholic beverages as its use still today testifies; it is relatively light (more so than ceramic containers), easily transportable (by rolling), and good for storage and aging. It is normally suggested that the wooden barrel was a Gallic invention.²⁵³ It is first attested in literature and archaeologically in the first century B.C. Caesar speaks of *cupae* filled in time of war with grease, pitch, and shingles put on fire which Gauls rolled (*provolvunt*) toward Roman fortifications.²⁵⁴ Strabo says that Illyrians buy wine in northern Italy and store it in “wooden jars” (ξύλινοι πίθοι) and also speaks of the Cisalpine

²⁵² Pomp. Mela, *De situ orbis* (= *Chorogr.*) 3.9.91; he makes no mention of what sort of beverage these people drink. Further, Posidonius (*Hist.* 23, fr. 169 Theiler in Diod. Sic., *Hist.* 5.28.3) says that the thick moustaches of the Celts acted as strainers for their drinks. Drinking from a straw is also mentioned in the Talmudic text *Sotah* 18a (see Dayagi-Mendels 1999: 115). See further section 4.1.2.2 below on the modern use of straws in beer-drinking.

²⁵³ See, however, the βίκοι ποτινκείοι of the Armenians used to transport wine in Hdt., 1.194.2, which probably are Phoenician vessels, but could possibly be palm-wood casks (see McNeal 1986: 185-186). See also the possible evidence for more ancient barrels cited by Singleton 1996: 76; Forbes (1956: 136) claimed that the “wooden cask” was already known in ancient Egypt.

²⁵⁴ Caes., *De bell. gall.* 8.42.1.

Gauls storing their wine in “wooden jars” (πίθοι ... ξύλινοι) larger than houses which were covered in pitch.²⁵⁵ Pliny says of wine in the Alps: “they store [it] in wooden containers and bind them with hoops” (*ligneis vasis condunt circulisque cingunt*).²⁵⁶ He also says that yew (*taxus*) when used by Gauls for the transportation of wine proved poisonous.²⁵⁷

The Celtic god Sucellus is often associated with barrels and the tools of the cooper in iconography, and he is thus sometimes identified as a beer god.²⁵⁸ However, in one relief from Trier he is clearly shown holding a bunch of grapes, while two barrels are seen behind him, thus showing that he was the patron of makers of wine barrels.²⁵⁹ Further iconographical evidence, on the other hand, only exists from the second century A.D. on (such as a depiction on Trajan’s column dating to A.D. 113 of soldiers loading barrels onto a boat on the Danube and the famous carving of the wine boat from Neumagen [ancient Noviomagus, North from Trier on the Moselle] from around A.D. 220). The analysis of archaeological remains of barrel hoops, staves, and stoppers has proven only that these containers were used for wine.²⁶⁰

All the early evidence then seems to point to the fact that barrels were simply used by Gauls to transport wine, perhaps starting with the huge influx of Italian wine which occurred

²⁵⁵ Strabo, 5.1.8 (214) and 12 (218). Collingwood and Wright (1992: 1) show that ancient barrels have been found with capacities of up to around 1050 litres. For a picture of the massive barrels found in Silchester, England, see Scullard 1979: 142.

²⁵⁶ Pliny, *Hist. nat.* 14.27.132. The remains of a barrel dating to Roman times have even been found in Manching, Switzerland: see Kaenel 1985: 156, with the discussion of wine there generally in antiquity at 152-158.

²⁵⁷ Pliny, *Hist. nat.* 16.20.50.

²⁵⁸ See, for instance, Chapot 1919: 917, n. 20 (“Sucellus est un dieu de la bière”).

²⁵⁹ Nagy 1994: 821, no. 19, with the picture at 580.

²⁶⁰ Desbat (1991) and Amouretti, Brun, and Eitam (1993: 575) present the evidence; see also Horn and Born 1979: 1:281-286 for depictions. Desbat mentions a reference by Vitruvius without citation, while Amouretti suggests Caes., *De bell. civ.* 2.2, but this is not clear. See also Collingwood and Wright (1992: 1) on British finds of barrels, most of which are from the first and second centuries A.D. and were clearly imported (as the non-British types of wood demonstrate).

around the second and first centuries B.C.²⁶¹ Before this, when wine was first imported into Gaul by Greeks and Etruscans, ceramic containers were used for it.²⁶² Some scholars, however, have assumed that the barrels were also used for beer from an early time.²⁶³

Our first certain evidence for beer barrels comes from the seventh century A.D. The author (perhaps Jonas) of a life of the abbess Sadalberga (T155) speaks of beer “in a vessel which in the common language they call a *tonna*” (*in vas, quod lingua communi tonnam vocant*), a word connected to English “tun” and French “tonneau.”²⁶⁴ Jonas, in his life of St. Columban, also mentions (T149) a large beer vessel (*vas magnum*) “which they popularly call a *cupa*” (*quod vulgo cupam vocant*); a similar definition is found in an anonymous martyrology (T135), in which also the hole for the tap is called the *cuniculus* or “rabbit-hole,” and this type of beer vessel is also later found in Eginhard (T187).²⁶⁵ In another passage, Jonas (T146) mentions that the beer storage vessel (left unnamed) has a “plug” (*serraculum*) which is specifically called a *duciculum* and that its contents are poured into a jug known as a *tiprum* (or *tybrum* in some manuscripts). Though there is no way to tell exactly what the difference was between a *tonna* or *cupa* (design or capacity?), it can be fairly certain that these were types of wooden barrels.²⁶⁶

²⁶¹ See especially Tchernia 1983.

²⁶² See Dietler 1990.

²⁶³ Desbat (1991: 333) suggests the possibility that the barrel was not always used for wine, and Jalmain (1988: 150) and Amouretti, Brun, and Eitam (1993: 575) suggest that it was used early on for beer and wine. See also, for instance, Wilson (1975: 640, citing no evidence, but perhaps relying on Wightman [1970: 183], who mentions beer barrels in Trier): “Beer was one of the commodities exported in barrels from Trier,” and Bequet 1895: 197 and 203 (for which, see also section 3.11.1 below).

²⁶⁴ See *OED* 18:667, s.v., where a ninth century A.D. instance of the Latin *turna* is cited.

²⁶⁵ The word *cupa* is connected to English “cooper,” the maker of a barrel (see *OED* 3:895, s.v.).

²⁶⁶ Two types of barrels, presumably for both wine and beer, were found at the abbey of St. Gall in the early ninth century; see section 3.11.4 below.

3.9 Aging beer:

Beer, unlike wine, is often best fresh, and this may have been especially true of ancient beer. As Dietler has pointed out: “most traditional grain-based beers will sour within a few days time.”²⁶⁷ This is best shown in the life of the abbess Sadalberga (or Salaberga) from the late seventh century A.D. in which the delay of a guest makes a woman say about the beer, rather tautologically (T155): “I fear that the liquid to drink will turn sour into the sourness of vinegar” (*vereor, ne poti liquor in acerbitem aceti acescat*). However, it was possible for beer to be kept alive with yeast or with the addition of other preservatives as long as unwanted contaminants were kept away.²⁶⁸ Certain beers today are aged in oak or chestnut casks for up to three years (and then blended like whiskeys) or refermented in the bottle (most notably in Belgium).

Pliny notes (T48): “the Hispanians have even taught the aging of such types [of drinks, i.e. beers]” (*Hispaniae iam et vetustatem ferre ea genera docuerunt*). It is unfortunate that Pliny does not explain how the beers were aged. Wilson assumes that Pliny is referring to “preservative herbs,”²⁶⁹ yet (as has been seen in section 3.5 above) there is no evidence for the use of these at this time. It is just as possible that Pliny is referring to a process of secondary fermentation, in which yeast would be added to the beer in its storage container, thus giving it a much longer life.²⁷⁰ In any case, Pliny elsewhere speaks of storing wine in barrels (as seen above) or in jars placed in the ground or in the open air.²⁷¹

²⁶⁷ Dietler 1990: 392, n. 10 (and see 393, n. 17). See also Dayagi-Mendels 1999: 115.

²⁶⁸ For ancient methods of stoppering vessels, see Singleton 1996: 70-72.

²⁶⁹ Wilson 1975: 640.

²⁷⁰ Interestingly, Plutarch (*Quaest. conv.* 6.7 [= *Mor.* 692d]), copied by Macrobius (*Saturn.* 7.12.7), speaks of the dregs of wine providing it strength, which may point to an indirect recognition of the fact that yeast can increase the alcohol content of beverages during fermentation in the vessel.

²⁷¹ Pliny, *Hist. nat.* 14.27.132-136. For aging wine, see, for instance, Jacques 1996.

Also, Aeschylus (T6) may have referred to an aged beer. In the manuscripts of Athenaeus where Aeschylus is quoted the beer-drinking Lycurgus is referred to as being “weakened by time” (ἰσχναίνων χρόνῳ). However, Hartung convincingly read ἰσχναίνον, thus making the participle modify the beer and not Lycurgus, thus making the beer weakened by time. Some have replaced ἰσχναίνων with ἰσχνανόν, giving the contrary meaning of the beer being “strong through time.”²⁷² This reading is in a way preferable since though aging a beer should not usually drastically affect its alcohol content, if it is refermented with a great quantity of yeast it could be made (at least slightly) stronger. However, Aeschylus is probably contrasting the weakness of the beer and the ridiculous boast of courage of Lycurgus.

3.10 Drinking Vessels:

Very little is said in our literary sources about vessels which were specifically used for drinking beer. Xenophon (T13; and see the *Suda* [T223 and 239]) speaks of Armenian barley beer being served “in mixing bowls” (ἐν κρατήρῳ) though he also mentions that the beer is not mixed with water; evidently he simply mentioned the sort of vessel in which he was used to finding wine. Polybius (T22) also spoke of mixing bowls (κρατήρες) for beer. Similarly, Burkert has noted that Herodotus mentions Scythians using a mixing bowl, which, he suggests “may be a misnomer for a beer bowl.”²⁷³ It is striking that even in a hagiographer of the seventh century A.D. or later (T144) beer is said to be served “in mixing bowls” (*in crateribus*). Posidonius (T27) speaks of Gallic beer being served in a communal ποτήριον and Columella (T53) similarly speaks of a *pocula* of Egyptian beer; again both these terms are usually found in ancient sources for the cup from which wine was drunk. Many later sources simply vaguely speak of a vessel or container of beer (*vas/vasculum*: Gregory of Tours [T129], anonymous hagiographers [T139b, 140-142 and 151], Jonas [T146, 148-149, and 154-155], Alcuin [T174], Eginhard [T187], Altfrid [T190], Adalhard [T200], Hincmar [T217], and Wolfhard [T218]; see

²⁷² See also section 2.2.1 above for other readings.

²⁷³ Burkert 1991: 22, n. 63, on Hdt., 4.66. For Scythians drinking their wine straight, see section 4.2.3.1 below.

also T136 and 213).

More specifically, beer is found served in a jar known as a *sicla* (i.e. *situla*) (Hlotharius II [T138]) or a *dolium* (anonymous hagiographers [T144 and 150]) and in a bottle or flask (*flascula*: Felix [T170]; and *flasco* Eginhard [T187]).

The Greco-Egyptian papyri mention many different types of beer containers, which represent various liquid measures. Thus we find a “Rhodian” (Ῥοδίων), which is said to equal half a κεράμιον (“jar”),²⁷⁴ as well as a χοῦς (“pitcher”)²⁷⁵ and a δίχωρον, a measure equal to eight pitchers.²⁷⁶

Archaeological finds, supplemented in part by literary sources, give us a better idea about what sort of vessels beer-drinking ancient Europeans used;²⁷⁷ this can be conveniently divided into (3.10.1) bark, (3.10.2) horn, (3.10.3) clay, and (3.10.4) bronze containers.²⁷⁸

²⁷⁴ Rhodian: *P.Tebt.* II.894, fr. 5, l. 13 (with note), and probably fr. 6v (an account of drinks provided at general meetings of a club). Jar: *O.Fay.* 11, l. 4 (κερα), *P.Flor.* I.101, l. 12 (κερ), *O.Mich.* II.796, l. 3 (κε), 797, l. 3 (κερα), III.1003 (κερ) and 1026-1028 (κε), and *O.Tebt.* 5, l. 2 (κε [restored]).

²⁷⁵ See ζύρου χό(ε)ς κ (“20 pitchers of *zūros*”) at *P.Lond.* II.219r, l. 2 (second century B.C.). Beer is distributed in pitchers in an account of a beer-seller from the early first century A.D. (*P.Tebt.* II.401, coll. vi-vii, with beer explicitly mentioned at col. vii, l. 38). In one papyrus from A.D. 47, it is stated that each salt merchant of Tebtunis is to be given one pitcher of beer to drink on the 25th of each month (*P.Mich.* V.245, ll. 34-35). An account of a beer store in Tebtunis dating to A.D. 51 gives a long account of how many pitchers of beer were sold each month (*P.Mich.* V.322b). *P.Antw.* 4 (first century A.D. ?) has been tentatively restored by the editor as Πνούθιος | ζύρου χό(ε)ς β | ἐπ(ι) τρ(απέζῃ), thus implying that it was a receipt for two pitchers of beer bought as a “round” for the table by a certain Pnouthius. Note also the “70 baskets for the drinking of beer” (πόσις ζύρου ... κοφ[ίνους] ο) provided by Zoilus son of Orsenouphis at the temple of Bubastus in Tebtunis sometime in the second century A.D. (*O.Tebt.* 3, ll. 1 and 4) which must refer to baskets containing the cereal ingredient for the making of beer (as noted by the editors).

²⁷⁶ *O.Berl.* 95 and 96 (abbreviated as δι) and *SB* XIV.11561, l. 3 (διχ).

²⁷⁷ For beer vessels in the Near East, see the papers collected in Milano 1994a: 187-318.

²⁷⁸ See also, for instance, the Scythian custom of drinking from the skulls of enemies (Hdt., 4.65.1 and Strabo, 7.3.6 [298] and 7 [300]), though this is never specifically connected with beer-drinking.

3.10.1 Bark:

Clark has shown that in prehistoric times sewn birch-bark containers, often lined with pitch, were among the most popular types of vessels in Europe.²⁷⁹ Such a vessel discovered in Denmark was found to contain a type of beer (see sections 3.5.1 and 3.5.4 above).

3.10.2 Horn:

A popular drinking vessel for northern people in antiquity was the animal horn.²⁸⁰ Athenaeus explains that the first men drank “from the horns of oxen” (τοῖς κέρασι τῶν βοῶν) and that the practice continued in his day; he goes on to cite numerous sources, many of which are not otherwise attested.²⁸¹ Xenophon mentioned in passing that wine was drunk by Thracians from a drinking horn (κέρας), while Julius Caesar explained that Germans used the horn (*cornu*) of the auroch (or ure-ox), a now extinct species of cattle, encased in silver as a drinking cup (*pocula*) at feasts.²⁸² Interestingly, in the ship cenotaph (probably of an East Anglian king) at Sutton Hoo in southern England, dated to the seventh century A.D., silver fittings for three drinking horns have been found, and the horns themselves were reconstructed to show that they were indeed from aurochs.²⁸³ I know of no direct evidence linking a drinking horn to beer-drinking, but there can be little doubt that it was at least occasionally so used.

²⁷⁹ Clark 1952: 208-210.

²⁸⁰ For a full study of the use of animal horns as vessels and for other horn-shaped containers, see Krausse 1996: 95-197.

²⁸¹ Athen., *Deipn.* 11.476a-e. See also his discussion at 496f-497e of the ῥυτόν, a drinking horn from which the liquid is drunk from a hole bored into the pointed end.

²⁸² Xen., *Anab.* 3.21 (cited in Athen., *Deipn.* 4.151b) and 7.2.23 (cited in Athen., *Deipn.* 11.476c) and Caes., *De bell. gall.* 6.28.6.

²⁸³ Finds: two sets of fittings from mound 1 (Bruce-Mitford 1975: 1:442, no. 120-121, with Davidson 1988: 41-44 and Carver 1998: 30 and 132, fig. 82) and one set from mound 2 (Carver 1998: 88 and 132, fig. 82). See also the finds of gold-adorned drinking horns at Hochdorf, Germany noted in section 3.10.4 below.

3.10.3 Clay:

Clay drinking cups (so-called baden and globular amphoras, corded ware, and bell beakers) started to be found throughout all of Europe, usually in sets, in the third millennium B.C., probably due to the spread of secular drinking rituals, and probably involving beer or mead.²⁸⁴ Posidonius speaks of Gauls using vessels of clay or silver, before mentioning that they drank beer (T27).²⁸⁵ Ruprechtsberger has discussed the Celtic clay cups possibly used for beer, and has noted that a boot-shaped vessel may have been so used (see Figure 3 on the right), as it has been in medieval and modern Germany as well as other places.²⁸⁶ A clay cup from Mainz (E14) from the early fourth century A.D., decorated with a man fighting a panther with a spear, has inscribed on it: *imple (h)ospita ol(l)a(m) de cervesa da* ("Fill up, waitress, the pot from the good beer!").²⁸⁷ Alcuin (T174) also speaks of a "pot" (*olla*) of beer. Finally, a clay ring-shaped flask found in Paris has (E7) on one side in white paint on varnish: *(h)ospita, reple lagona(m) cervesa* ("Waitress, fill up the flask with beer").²⁸⁸ Similar shaped vessels have been found in the province of Hainaut in Belgium and in the Rhineland and Trier regions in Germany.²⁸⁹



Figure 3:
A Celtic Boot of Beer?

²⁸⁴ Sherratt 1987: 92-93 (cups) and 93-96 (beer or mead). See also the general recent treatment of Benz, Gramsch, Wiemann, and van Willigen 1998. Numerous clay vessels found in Europe were probably used for beer but there is no way of knowing certainly without archaeochemical analysis.

²⁸⁵ Posid., *Hist.* 23, fr. 170 Theiler (= fr. 67 Edelstein-Kidd) in Athen., *Deipn.* 4.152b.

²⁸⁶ Ruprechtsberger 1992c: 25-26.

²⁸⁷ Künzl 1991: 171-172, with photographs at 179. A photograph of this vessel is also found at Siebert 1998: 123. For *cervesa da* meaning "good beer" rather than "give beer," see section 2.2.6 below.

²⁸⁸ A photograph is found at Duval 1979: 131. Venantius Fortunatus (T116) similarly speaks of a *lagunarus* filled with beer. Interestingly, some scholars have suggested that the abbreviation λακ in certain Greco-Egyptian ostraca referring to beer stands for *λάγυνος* (that is Latin *lagona*), though it is usually thought to stand for *λάκκος*, which would be a term for a liquid measure. See the full discussion in Youtie 1940: 639-642 (= 1973: 79-82).

²⁸⁹ Read 1868: 226-227.

3.10.4 Bronze:

Bronze vessels, with flat bottoms (buckets) or rounded bottoms (cauldrons) were common in prehistoric (late La Tène), Celtic Europe, and were often placed in burials from the Hallstatt period onwards.²⁹⁰ In a chieftain's grave in Hochdorf, Germany dated to the sixth century B.C. a 500-litre bronze cauldron made in Greece and nine gold-adorned drinking horns were found, which, as archaeochemical analysis suggested (because of the detection of pollen and beeswax residues) were used for mead.²⁹¹ However, this analysis is not inconsistent with honey beer, and such containers were certainly used for beer as well. The Cimbri sent their most sacred cauldron (λάβης) to the Emperor Augustus, which may have been a vessel for beer, as suggested by Salin.²⁹²

3.11 Ancient Breweries:

At least five breweries in ancient Celtic territory, dating from about 600 B.C. to A.D. 400, have been identified (see Maps 2 and 3).²⁹³ However, even less can be gleaned from the remains about the ancient beer-making process than from the information surviving in our literary sources, especially since these places have simply been identified as breweries from

²⁹⁰ See, for instance, Hawkes and Smith 1957; Olmsted 1979: 17-18; O'Connor 1980: 147-148, 191-192, and 250-251; Fitzpatrick 1985: 312; and Dietler 1990: 382. For the famous Celtic decorated gilded silver Gundestrup cauldron (from Jutland), probably dating to the first century B.C., see Olmsted 1979. For the ritual use of burial vessels, see Ross 1967: 70.

²⁹¹ Finds: Biel 1982: 84-90 and 1985 (especially 102, fig. 119 for a reconstructed drawing of the grave) and Krausse 1996 (with complete drawings of all the finds), with Davidson 1988: 41 and Dietler 1990: 382. Archaeochemical analysis: Körber-Grohne 1985: 121-122, with van Zeist 1991: 121, who cites other possible finds of mead.

²⁹² Strabo, 7.2.1 (293), cited in Salin 1959: 4:45. Dornbusch (1997: 11) assumes that this was a "brew kettle." Strabo goes on to say that a bronze cauldron with a capacity of about twenty amphoras was used by the Cimbri to catch the blood of slaughtered prisoners of war (7.2.3 [294]). See also Brogan (1936: 210) for German bronze vessels.

²⁹³ For the sake of convenience I refer to all of these places as "breweries" even though we cannot always be certain whether beer was actually baked or brewed there (for the distinction, see section 3.4 above). I leave aside the ancient Egyptian evidence, which is to be dated to Pharaonic times, and which, in any case, has been often dealt with. For the Greek words used to denote a place where beer was produced, see sections 2.2.11.6 and 7 above; for the Latin words, see section 3.3.2.4 above.

what is otherwise known about beer-making. Two of these possible breweries are in Belgium in the area close to Namur (3.11.1), two are in southern Germany (3.11.2), and one is in Vindolanda in northern England (3.11.3). Furthermore, three breweries are shown on the plan of the abbey of St. Gall in Switzerland which dates to around A.D. 820 (3.11.4).

3.11.1 Breweries in Belgium:

The ancient territory of the Belgae during the Roman Empire was dominated by large villas, many of which have been found and excavated.²⁹⁴ These were fully self-sufficient agricultural estates, and some of them surely included breweries.²⁹⁵ The best evidence for this comes from the area around modern Namur, at the villas of Ronchinne and Anthée.

The villa of Ronchinne from the third and fourth centuries A.D. included a large residence, workhouses and storehouses, as well as what was identified as a brewery.²⁹⁶ This building (see Figure 4 on the right; the location of doors is not known) had (1) a gallery in the front, (2) a small room containing three stone weights of

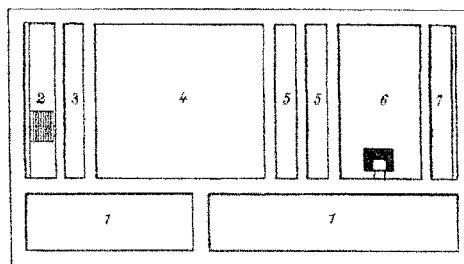


Figure 4: The Brewery in Ronchinne

25-30 kgs., probably used to weigh cereals, (3) another small room with low walls on which malting vessels could have stood, (4) a very large room in which the grain may have been spread to germinate, (5-6) rooms with access to a heater which could have been used for the actual

²⁹⁴ See Lemaire *et al.* 2000. Tacitus in passing mentions villas in Gaul (*Ann.* 3.46 and *Hist.* 4.67).

²⁹⁵ The archaeological finds of breweries in Belgium are cited by Julian 1920: 5: 256, n. 4 (who is himself cited by Duval 1952: 346, n. 28). Bequet suggested (1895: 192) that some of the beer produced in estates might have been sold to outsiders. For the reliance of the Roman army on cereal produced in estates in northern Gaul, see the recent analysis of Quick and Simon 1999.

²⁹⁶ Bequet's description of the brewery in Ronchinne is not without its problems; he assumes, for example, that hops were used (1895: 198, 200, and 202). As I can attest, no trace of the villa can now be seen, though it is said by locals to lie just below ground level under the present-day fields of wheat and other crops.

brewing of the beer, and (7) a final room where the brew could be cooled and fermented.²⁹⁷ A small nearby tower contained an oven, which could have been used to roast the germinated cereals before brewing.²⁹⁸ Of course, it is just as possible that the facilities could have been used to make malted bread which was then fermented. A cellar found in the neighbouring residence, with a ramp facing the brewery, was suggested to be the storeroom for barrels of beer produced on the estate.²⁹⁹ There is little reason to doubt that the villa was indeed equipped with a brewery, though it seems that the excavators could have benefited from modern archaeobotanical methods; they cite no finds of cereals or, for that matter, of containers for beer.

The other possible villa brewery in Belgium is at the Villa of Anthée, the principal part of which is to be dated from the mid to late first century A.D. It has been plausibly suggested that the cellar and hollow (meant for a cauldron?) found in building XV of the villa pointed to this structure's possible use as a brewery.³⁰⁰

3.11.2 Breweries in Germany:

In the last few years extensive excavations in southern Germany have uncovered the possible traces of two different Celtic breweries, one in Regensburg and one in Eberdingen-Hochdorf.

It has been tentatively suggested that a structure measuring 8 by 13 meters on the grounds of a large villa in Regensburg (ancient *Castra Regina*), dating to the second and third centuries A.D., was used as a

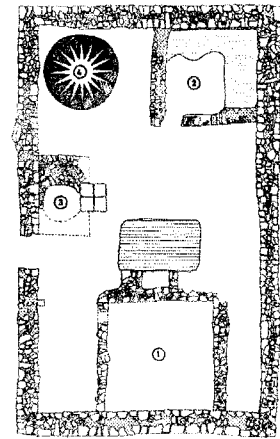


Figure 5: The Brewery in Regensburg

²⁹⁷ Bequet 1895: 199-203.

²⁹⁸ Bequet 1895: 201-202.

²⁹⁹ Bequet 1895: 197 and 203. However, as has been seen in section 3.8.1 above, there is no evidence that barrels were used to hold beer until the seventh century A.D.

³⁰⁰ Del Marmol (1881: 36); Grenier has thought this plausible (1934: 848, 849, and see 845). Again, no traces of the villa can now be seen (it is at present a cow pasture).

brewery.³⁰¹ The building (see Figure 5 on the previous page) consists of (1) a kiln or oven, (2) a basin or pool, (3) an oven or heater, and (4) a well. Though the structure is not elaborately equipped, it does provide the basic requirements for making either baked or brewed beer, including a water supply for the steeping of the cereal and for the beer itself and two oven-like structures for drying the malt (and baking bread?). However, since there has been no find of malt the identification remains uncertain.³⁰²

Finally, the discovery of a large amount of pure hulled barley which was evenly, and thus probably deliberately germinated, in three U-shaped trenches, dated to c. 600-400 B.C., in Eberdingen-Hochdorf could point to the location of a brewery. The actual structure of the brewery would have been made of wood, which has not survived.³⁰³

3.11.3 Breweries in Britain:

It has been suggested that a small structure from the mid third century A.D. connected to a large *mansio* at the fort of Vindolanda, may have been used for brewing (Figure 6 on the right). This identification was based on the find of two flues used to heat vats above them, and a large number of amphora

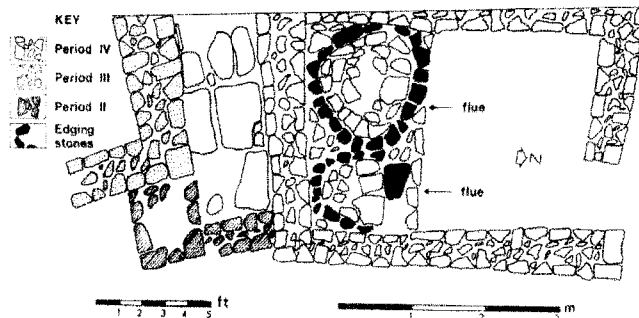


Figure 6: The Possible Brewery in Vindolanda

³⁰¹ Rieckhoff 1992.

³⁰² As pointed out by Stika 1996a: 87. Dornbusch (1997: 17) assumes that this brewery provided beer for Roman soldiers stationed at Castra Regina (for beer supplied to Roman soldiers, see section 4.2.1.4 below).

³⁰³ Stika 1996a and 1998b: 43-44.

fragments.³⁰⁴

3.11.4 The Breweries at the Abbey of St. Gall, Switzerland:

In around A.D. 820 a detailed plan of the abbey of St. Gall (founded around A.D. 673) with descriptive captions in Latin was created by an anonymous drafter who dedicated it to Gozbertus, the abbot of St. Gall (from A.D. 816 to 836) who initiated a building program there.³⁰⁵ On the map are found three separate breweries, one for the production of the beer for the monks, one for that for the pilgrims and paupers, and one for the beer for the distinguished guests.³⁰⁶ The most elaborate is that of the monks, which is surrounded by a number of auxiliary buildings (see Map 4 on the following page).³⁰⁷ First, a granary (*granarium*) (A), located in the same structure as the coopers' (*tunnario domus*) (H) and wheelwrights' (*tornariorum*) (I) quarters, consisted of a square room with cross-shaped floor and four storage bins in the corners for both unmalted cereal (*ubi mundatu frumentum servetur*) and malted cereal (*quod ad*

³⁰⁴ Birley 1977: 45-46, with pl. 17 and fig. 11 (reproduced here). For beer at Vindolanda, see section 4.2.1.4.2 below. For further possible archaeological evidence for beer-production in Roman Britain, see sections 3.3.2.2 and 3.3.2.3 above.

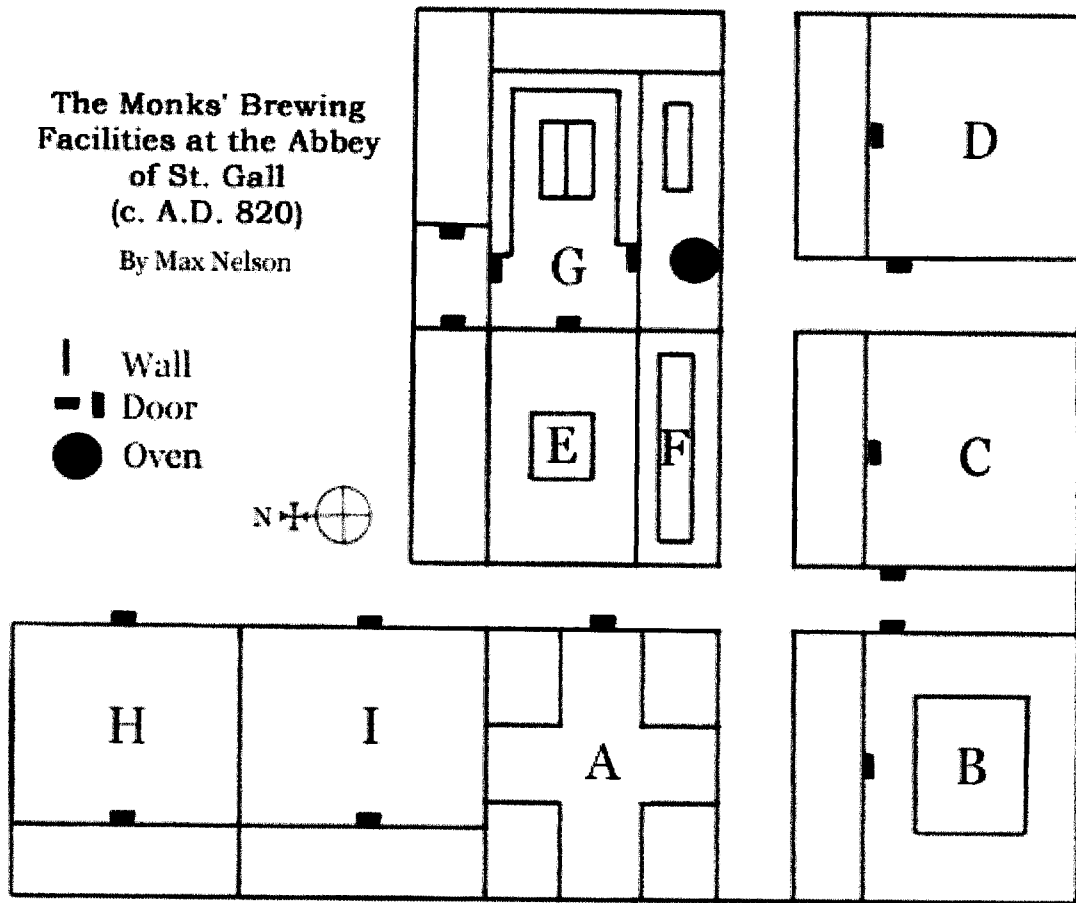
³⁰⁵ Horn and Born 1979: 1:9-11, suggesting (11-14) that the plan may have made from a no longer existing copy by Hatto of Basel, bishop (from A.D. 803 to 823) and abbot of Reichenau (from A.D. 806 to 823), since the script of the plan is that of the monastery of Reichenau; see the other possible candidates listed at 11. For the date, see 25. A drawn reproduction of the plan can be found at 1:xxiv, with the index of the building numbers at xxv-xxvii (also at 3:14-15), a photograph of the plan at 1:xxviii, and a reconstruction at 2:xii. For the plan in general, see also the studies in Duft 1962. For the writings pertaining to the abbey of St. Gall up to A.D. 920, none of which mention beer, see Wartmann 1863 and 1866.

³⁰⁶ For beer and brewing at St. Gall, aside from the sources below, see Arnold 1911: 207-215, Müller 1941, Hecht 1983: 250-251 (who also discusses wine there), and Corran 1975: 27. For monastic brewing in general, see section 4.3.3 below.

³⁰⁷ This map (as well as the following) is a computer-drawn recreation of the original following the original proportions; for an in-depth discussion of the scale of the original map, see Horn and Born 1979: 1:77-126. It should be noted that in the original the only door leading to the brewery (E) is from the bakery (G), and no door is shown from the brewery (E) to the filtration room (F); however, it seems probable that the brewery would have had a door directly leading to the outside and another leading to the filtration room. Horn and Born (1:68, with n. 3) note that doors are missing in the plan of this building, though they do not posit the existence of an extra exterior door here.

**The Monks' Brewing
Facilities at the Abbey
of St. Gall
(c. A.D. 820)**

By Max Nelson



Map 4

- A** - Granary for storing unmalted and malted cereal in four bins
- B** - Drying kiln to dry/roast the malt (after germination)
- C** - Mortars to grind unmalted and malted cereal
- D** - Mills to grind unmalted and malted cereal
- E** - Brewery with hearth
- F** - Place for filtering the brew
- G** - Bakery
- H** - Coopers' quarters
- I** - Wheelwrights' quarters

cervisam praeparatur) (= T199c).³⁰⁸ Next to the granary was a drying kiln (B) (*locus ad torrendas annonas*) presumably used for the drying and roasting of malted cereals.³⁰⁹ Next to it were buildings housing mortars (C) and mills (D), probably water-powered,³¹⁰ where the unmalted and malted cereal would be ground, for the brewery and bakery (G), which are centrally located.³¹¹ The brewery consists of a room with a hearth (E) and a side room (F) where the brew was filtered (= T199a).³¹² After this the beer was evidently placed in barrels made by the cooper which were stored in a nearby cellar (not shown on Map 4).³¹³ The second brewery was that for the house of the distinguished guests (see Map 5 on the following page) (= T199b).³¹⁴ The third brewery, just to the south of the second, on the other side of the basilica, was that for the house of pilgrims and paupers (see Map 5 on the following page) (= T199d).³¹⁵ Both of these included a central hearth for the brewing (A and D, respectively), a place for

³⁰⁸ For the granary, see Horn and Born 1979: 2:222-224 and 3:69 (= no. 30.5). For the coopers' and wheelwrights' quarters, see 3:68 (= no. 30.1 and 3). Since there is no building specifically labeled as a malthouse, it is probable that the malted cereal was brought in from outside the abbey, perhaps as a tithe (see the tithes of malt listed by Hilduin for the abbey of St. Denis in A.D. 832 [T208]).

³⁰⁹ For the drying kiln, see Horn and Born 1979: 2:248-249 and 3:68 (= no. 29). They also suggest that the kiln may have been used to dry hops (2:261 and 263).

³¹⁰ For the mortars, see Horn and Born 1979: 2:235-248 (= no. 28); for the mills, see 2:225-235 (= no. 27). For the granary, kiln, and mortars and mills, see also Price 1982: 60-65.

³¹¹ For brewing and baking taking place together, see Horn and Born 1979: 2:249-252. For the baking ovens and brewing ranges, see 2:134-139.

³¹² See Horn and Born 2:253-255, 258, 260-264 and 3:42-43 (= no. 9.3), with Price 1982: 57-59. Horn and Born assume that yeast was cultivated at St. Gall for the bread and beer (2:251).

³¹³ For the cellar, see Horn and Born 1979 1:102, 286, 292-307 (with calculations of the volume of wine and beer found in the cellar) and 2:261 (= no. 7), with Price 1982: 24-27, *passim*. It was designed to hold nine elongated barrels and five larger round barrels.

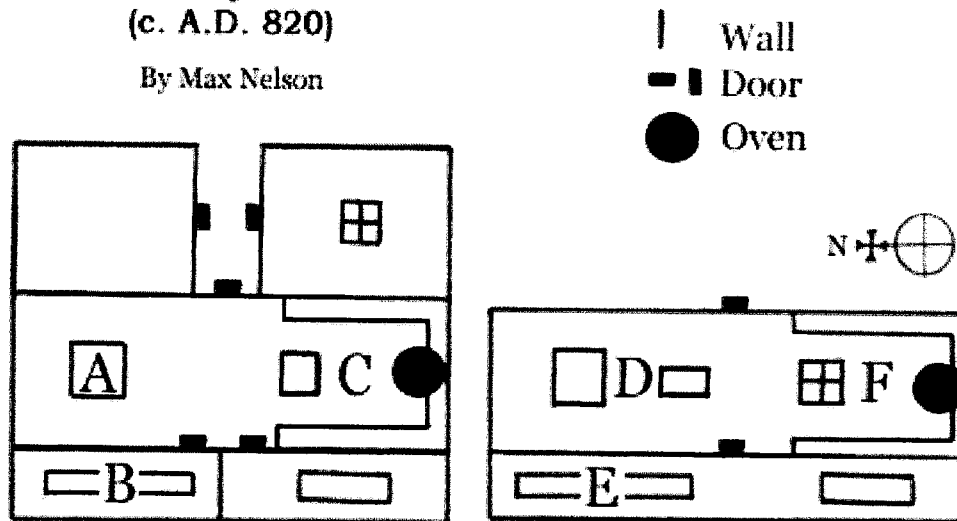
³¹⁴ See Horn and Born 1979: 2:146, 151-154, 165, 256 and 3:44 (= no. 10), with Price 1982: 42-47.

³¹⁵ See Horn and Born 1979: 2:141-142, 151, 153, 257 and 3:71 (= no. 32), with Price 1982: 48-51.

cooling the brew (B and E, respectively),³¹⁶ and an adjoining bakery (C and F, respectively).³¹⁷

The Smaller Brewing Facilities at the Abbey of St. Gall (c. A.D. 820)

By Max Nelson



Map 5

- A - Brewery with hearth for the distinguished guests
- B - Place for cooling the brew
- C - Bakery for the distinguished guests
- D - Brewery with hearth for the pilgrims and paupers
- E - Place for cooling the brew
- F - Bakery for the pilgrims and paupers

3.12 Characteristics of Beer:

So far I have shown that beer in antiquity was made from a variety of malted cereals, was either baked or brewed, was fermented with various yeasts and bacteria, and filtered, stored, and aged in different ways. All this evidence would tend to point to the fact that there were a great

³¹⁶ It is odd that the monks' brewery has a place for filtering the brew and no place designated for its cooling, while the reverse is true of the two other breweries. The filtering and cooling probably occurred in all breweries at the same place.

³¹⁷ The brewery/bakery building for the distinguished guests also contains a kitchen and larder.

many varieties of beers, with various flavours. Mesopotamian and Egyptian evidence points to this kind of variety in listing various types of beer,³¹⁸ but hardly any such evidence exists in the Greek and Latin sources where there is practically no recognition of various beer styles (except in so far as different base cereals were used) and rather a tacit assumption, shared I may add by many today, that all beers are more or less the same. Notable exceptions are Strabo, Pliny, and Isidore (probably using an older source). Strabo says (T45): “*Zūthos* is prepared in a particular way among them [i.e. the Egyptians]; it is common among many, but the ways of preparing it in different places are different (τὸ δὲ ζῦθος ἰδίως μὲν σκευάζεται παρ' ἐκείνοις, κοινὸν δ' ἐστὶ πολλοῖς, καὶ παρ' ἐκάστοις δὲ αἱ σκευασίαι διάφοροι). Pliny speaks (T48) of beers in the West being made “in many ways, ... with various names, but the same technique” (*pluribus modis, ... nominibus aliis, sed ratione eadem*) and says (T51) that the Gauls have “many types” (*plura genera*) of beers. Isidore of Seville (T136) also says that beer (*cervisia*) is “made in different ways” (*vario modo confecta*). Unfortunately all three of these authors are very vague and do not explain the different methods or different results. It is necessary then to consider the evidence for the characteristics of beer in antiquity very carefully; just because one author says that beer is sour or that it is as strong as wine does not mean that all ancient beers were so (as many scholars assume).

Galen speaks of five categories to be used to describe wine, which could just as well be used of beer: colour (χρῶα), taste (γεῦσις), consistency (σύστασις), smell (ὀσμή), and strength (δύναμις).³¹⁹ Similarly, I will discuss (3.12.1) appearance, (3.12.2) aroma, (3.12.3) taste and mouth-feel, (3.12.4) strength, and (3.12.5) carbonation and foam. Other effects of beer (for example as a diuretic or as flatulence-causing) will be discussed in the examination of the medical literature on beer in section 4.2.1.3 below.

³¹⁸ For instance, one Mesopotamian tablet lists different types of beer according to colour (e.g. dark, whitish, or reddish), cereal-base (e.g. emmer), quality (e.g. excellent), strength (e.g. diluted or not), and use (e.g. for sacrifice); among other categories (see Hartman and Oppenheimer 1950: 23, with 17).

³¹⁹ Galen, *In Hippocr. libr. de acut. victu comment.* 3.1 (= 15.627 Kühn = CMG V.9.1, 218.7-9), cited and translated in Brock and Wirtjes 2000: 456.

3.12.1 Appearance:

Very little is said of the appearance of ancient beer in Greek and Latin sources, except for the fact that it could be cloudy.³²⁰ Eusebius (T87) says that Egyptian beer was “adulterated” (νόθος) and “cloudy” (τεθολωμένος), and Jerome (T100) similarly said that it was “cloudy” (*turbidus*) adding “as if mixed with dregs” (*commixtarum fecium similes*). One glossary (T159b) defines ζῶθος as *turbulentum*, which may simply be a description of its common cloudiness rather than a Latin equivalent for the term. Finally, Fortunatus mentions the cloudiness of beer (T116). Even filtered beer must have contained particles from the malted cereal, and as Jerome points out, dregs (or lees), the remains of the yeast, could similarly cloud the beer.³²¹

There is no ancient Greek or Latin evidence, however, for the colour of beer.³²² As I have shown (in section 2.2.5.1 above) the interpretation that an inscription from Trier (E10) deals with a merchant of dark *cervesa* is not tenable.³²³

3.12.2 Aroma:

Numerous factors contribute to beer aroma, and thus there can be a wide variety of different smells for different beers.³²⁴ Dionysius of Halicarnassus calls Celtic barley beer “a bad smelling liquid” (χολὸς δυσώδης) (T37). The Emperor Julian (T91) agrees about the stinkiness

³²⁰ For the general cloudiness of ancient beers, see Zito 1994: 72 and 75. See also section 3.7 above on filtration.

³²¹ Jerome may have been making a pun on *faex* meaning both “dregs” and “excrement.” Isidore (T138) says that what is gathered from overflowing (beer) vessels is called *fex*. For the use of dregs in medicine, see section 4.2.1.3 below. Beer dregs are eaten by a woman in an account by Jonas (T155). There does not seem to be any ancient Greek evidence for beer lees (presumably τρύξι, as with wine).

³²² Pliny (*Hist. nat.* 14.11.80) speaks of *albus* (“white”), *fulvus* (“yellow”), *sanguineus* (“red”), and *niger* (“black”) wines while Athenaeus (*Deipn.* 1.32c [*epitome*]) speaks of λευκός (“white”), κίτρινός (“yellow”), and μέλας (“dark”) wines. These references are cited by Dalby 2000b: 400.

³²³ See Rostovtzeff 1930: 254.

³²⁴ See especially Nykänen and Suomalainen 1983.

of Celtic barley beer,³²⁵ saying that the real Dionysus, wine, smells of nectar, while the fraudulent one, beer, smells of a billy-goat (τράγος); of course this is mainly said for the sake of a pun on τράγος meaning a type of wheat (perhaps hulled emmer; see section 3.2.2 above). The further puns are quite playful and do not necessarily denote any negative characteristics of beer.³²⁶

Both the testimonies of Dionysius and Julian are not straightforward. Dionysius speaks of the bad smell in the context of rotting, which I have shown was a misunderstanding of the fermentation process (see section 3.6.3 above), while Julian's main goal is to present a play on words as part of a rhetorical exercise. If these texts can be taken seriously, they perhaps refer simply to inferior (barley-based) Celtic beer (note the hierarchy of Gallic beers in Posidonius [T27]).

Theodoret (T97), however, does say that ζῦθος (here probably Egyptian beer) is foul-smelling (δυσώδεις).³²⁷ Yet we do also have other evidence for good-smelling beer. Diodorus Siculus said that the smell of Egyptian beer, and also in fact beer in general, was not much inferior to wine; he repeats this so often that it seems to be a defining characteristic for him (T29-32):

T29:

... διδάξαι τὸ ἐκ τῆς κριθῆς
κατασκευαζόμενον πόμα, λειπόμενον οὐ
πολὺ τῆς περὶ τὸν οἶνον εὐωδίας τε καὶ
δυνάμεως.

“... he [Dionysus/Osiris] taught [the making
of] the **drink** prepared from barley, [which
is] not much **lacking in the good aroma**
and in the strength **characteristic of wine**.”

³²⁵ Julian probably learned of Celtic beer during his stay in Gaul from A.D. 355 to 361 (Forbes 1951: 284, and see Page 1981: 571). Page (1981: 572) believes that Julian refers to the Gauls and perhaps also the Germans.

³²⁶ Dionysus is to be Δημήτριος “born of Demeter” but also perhaps “born of two mothers” (i.e. beer made of two types of cereal) as suggested by Page (1981: 572); πυρογενῆ, “wheat born,” presumably rather than “fire-born” (πυριγενῆ or πυρογενῆ with a short υ); and Βρόμος (“oats”) rather than Βρόμιος (“roarer/thunderer”), which may refer to flatulence (see section 4.2.1.3 below).

³²⁷ Interestingly, Arnold (1911: 116 and 118) interprets Sophocles (T10) as speaking about beer that smells “earthy.”

T30:

κατασκευάζουσι δὲ καὶ ἐκ τῶν κριθῶν
Αἰγύπτιοι πόμα λειπόμενον οὐ πολὺ τῆς
περὶ τὸν οἶνον εὐωδίας, ὃ καλοῦσι ζῦθος.

"The Egyptians prepare a **drink** from barley
not much **lacking in the good aroma**
characteristic of wine, which they call
zūthus."

T31:

... τὸ κατασκευαζόμενον ἐκ τῶν κριθῶν
πόμα βραχὺ λειπόμενον τῆς περὶ τὸν οἶνον
εὐωδίας.

"... the **drink** prepared from barley little
lacking in the good aroma characteristic
of wine."

T32:

εὐρεῖν δ' αὐτὸν καὶ τὸ ἐκ τῆς κριθῆς
κατασκευαζόμενον πόμα, τὸ
προσαγορευόμενον μὲν ὑπ' ἐνίων ζῦθος, οὐ
πολὺ δὲ λειπόμενον τῆς περὶ τὸν οἶνον
εὐωδίας.

"He [Dionysus/Osiris] discovered the **drink**
prepared from barley, which is called by
some *zūthus*, and [which is] not much
lacking in the good aroma characteristic
of wine."

3.12.3 Taste and Mouth-feel:

There are four general types of taste: sweet (γλυκός / *dulcis*), bitter (πικρός / *amarus*), sour (ὀξύς / *acerbus/acidus*), and salty (ἄλκός / *salsus*).³²⁸ In terms of beer, sweetness is produced from the use of added sugars (from excess malt or from fruits, honey, etc.), bitterness occurs with the addition of such plants as hops, sourness with the contamination of certain types of air-borne bacteria, and saltiness due to the contamination of minerals.³²⁹ Normally, modern beers tend to be bitter (from the now ubiquitous use of hops) and sometimes sweet, while

³²⁸ In practice, of course the use of terminology for taste could be quite vague, just as the notoriously unreliable ancient colour terminology. To the four categories mentioned, Athenaeus (*Deipn.* 3.121d) adds two more: δριμύς ("pungent") and στρυφνός ("astringent" or "harsh"); these can be classified rather as mouth-feels (on which, see below). For a modern attempt at classifying all beer tastes, see Meilgaard, Dalglish, and Clapperton 1979, and for technical issues involving beer flavours, see Pierce 1982.

³²⁹ The addition of salt to (warm) beer is advised by Marcellus for coughs (T111). Strabo mentions bad salty wine from Libya in conjunction with beer (T43). Wine was sometimes drunk with sea-water; see Younger 1966: 130-131, Dalby 2000b: 403, and Brock and Wirtjes 2000: 461.

sourness and saltiness are generally regarded as unadvisable tastes.³³⁰ What tastes then was the ancient beer-drinker accustomed to?

The practice of allowing the product to ferment spontaneously with air-borne yeasts invites the contamination from bacteria (see section 3.6.1 above), resulting in a sour beer. There can be little doubt that the standard product in antiquity, because of the poor control of yeasts and bacteria, was usually sour.³³¹ Galen (T69) contrasts a type of barley beer which is “pungent and warming” (δριμὺ καὶ θερμαῖνον) with another which is “cold” (ψυχρόν), “watery” (ὕδατῶδες), and “sour” (ὀξύ).³³² Beers are regularly described in terms of these two categories, that is, as either pungent (which could just as well describe odour as taste or even mouth-feel) or sour. The physician Aretaeus (T62), also from the second century A.D., similarly speaks of pungent (δριμύ) Egyptian barley beers, while the Christian author Theodoret (T98), some two hundred years later, speaks of beer as sour (ὀξῶδες). This term is rather vague; it could imply anything from pleasant tartness or sourness, to unpleasant acidity or a vinegary quality. Certainly a vinegar-like taste (resulting from the contamination of air-borne bacteria and yeasts, and a general lack of preservatives [see section 3.9 above]), would have made beers unappetizing to connoisseurs of good wine, for which the fermentation, arising as it does from yeast found naturally on the grape skins, could be better controlled. In A.D. 790 Alcuin (T174) lamented to his friend Joseph that when he ran out of wine he had to drink “sour” (*acerba*) beer which raged in his stomach.

Whereas the tendency in modern hopped beer, as well as medieval *gruit* beer, has been to make a bitter brew, the ancients do not seem to have thought very highly of bitter products.

³³⁰ There are, however, some intentionally sour brews, particularly in Belgium. A tart beer (such as Rodenbach) can be quite refreshing, though if overdone (like some Cantillon products) can be hard to consume. Belgian gueuze often has a beautifully balanced sweetness and sourness.

³³¹ Serjeant, for instance, speaks of “the murky sour liquids of the past” (1964: 53). Lloyd (1976: 334) states that ancient Egyptian beer was “slightly acidulous.”

³³² This is copied later by Oribasius (T94-95) and Paulus of Aegina (T132).

Plutarch, for instance, states that bitterness (ὁ πικρός) is “the most unpleasant” (ἀηδέστατος) taste.³³³ In a life of St. Liudgerus (or Ludgerus), probably from the ninth century A.D. (T190), it is said that the only beer which he miraculously allowed to spill after a gust blew over a vessel had a bitter taste (*gustu amarum*), certainly showing that this was an unenviable flavour. Even in the late ninth century A.D., when hops were starting to be used in beer, it is said in one source (T214) that because the beer (*cervisia*) prepared for a dinner had become bitter (*amara*) all who drank it threw up. Rather than bittering agents, the ancients mostly opted for sweeteners in their beers (as has been seen in section 3.5 above).³³⁴

Little is found in the ancient sources about the “mouth-feel” of ancient beers. Paulus Orosius (T112; copied by Isidore of Seville [T136] and Paul the Deacon [T173]) speaks of the “flavour of harshness” (*sapor austeritatis*) of Numantian beer.³³⁵ Arnold takes this to mean tart rather than bitter,³³⁶ but in fact it is a much vaguer description of an overall feel. Ancient beers were also certainly usually drunk warm, giving them a very different feel than their modern counterparts.³³⁷

Surely the ancient beer-makers would not have commonly produced a *thoroughly* foul beverage. Xenophon (T13) had the occasion to drink Armenian barley beer; though he unfortunately does not describe the taste, he does note that it is very good once one gets used to it (πάνυ ἡδὺν συμμαθόντι τὸ πῶμα ἦν).³³⁸

³³³ Plut., *Quaest. conv.* 1.6.4 (= *Mor.* 624d).

³³⁴ Note also the “sweet water” mentioned in Pseudo-Zosimus’s beer recipe (T89), discussed in section 3.4.1 above.

³³⁵ Compare Galen’s mention (T72) of “harsh wine” (οἶνος αὐστηρός).

³³⁶ Arnold 1911: 139.

³³⁷ See Zito 1994: 72 and 75. There is evidence, however, for wine having occasionally been drunk cold by Greeks and Romans (Geer 1935). Note also that the vessel from which beer is tasted (for which, see section 3.10 above) also can impart its own certain mouth-feel, and thus explains the widespread modern use of innocuous glass.

³³⁸ Note that συμμαθόντι here is glossed in the *Suda* (T230) as συνεθισθέντι. The word ἡδὺν here clearly has to be translated as “good” rather than “sweet.”

3.12.4 Strength:

The strength of a beer depends upon the amount of sugars in the cereals and in additives such as fruits or honey and the ability of the yeast used to transform those sugars into alcohol. It is probable that just as today, there were both weak beers and high alcohol beers being made.³³⁹ There is good evidence that standard beers were strong. Xenophon wrote of Armenian beer (T13): “it was very strong [lit. unmixed] unless one poured in water” (καὶ πάνυ ἄκρατος ἦν, εἰ μὴ τις ὕδωρ ἐπιχέοι). Diodorus Siculus wrote of barley beer in general that it was (T29): “not much lacking in the good aroma and in the strength characteristic of wine” (λειπόμενον οὐ πολὺ τῆς περὶ τὸν οἶνον εὐωδίας τε καὶ δυνάμεως).³⁴⁰ The only other ancient or early medieval reference dealing with the strength of beer of which I am aware is a notice (from the late eighth or early ninth century A.D.) by Eigil (T176), that St. Sturmian recommended that monks drink “weak” (*tenuis*) beer.³⁴¹

3.11.5 Carbonation and Foam:

The addition of yeast to sugar creates two byproducts: ethanol (ethyl alcohol) and carbon dioxide.³⁴² The more malt and other products containing sugar, the more the yeast can convert into alcohol and the stronger the beer will be, while in the proper circumstances (such as warm storing temperature, pressurized storage, live refermentation, etc.) the carbon dioxide in the beer can manifest itself as foam or froth on top of the beer. Certainly the average ancient beer had

³³⁹ Ancient Egyptian documentary evidence, for example, shows that beer there was made in different strengths (Samuel 1996b: 3). Scholars often dogmatically speak of a certain strength of alcohol for all ancient beers: for instance, little alcohol (Zito 1994: 72 and 75), less than 4% (Farb and Armelagos 1980: 77 [“probably”]), 6 to 8 % (Dayagi-Mendels 1999: 113), or 8 to 12 % (Keller 1958: 154).

³⁴⁰ It should be noted that despite what scholars may suggest, as with beer, there is no accurate way of determining the usual strength of ancient wines, since no detailed ancient wine-making recipe survives.

³⁴¹ Similarly, in the thirteenth century *Chronica* of Willelmus, mention is made of *tenuis cervisia* in the context of an abbey (116 [= *MGH-S* XXIV, 724.50]). Trappist monks in Belgium today make strong beer only for outside sale, while themselves drinking lower alcohol beer.

³⁴² See Lambert 1997: 135.

little carbonation.³⁴³

There is no direct Greek or Latin evidence for the head on a beer (for *spuma* meaning the “krausen head,” see section 3.6.2 above). Whatmough, however, suggested that the Gallic word *crama* (“cream”) was originally used to denote a frothy beer (see section 2.2.6 above).³⁴⁴ Also, the action of carbon dioxide in pressurizing a beer container may perhaps be detected in two late hagiographies (T147 and 175), as I will point out in section 4.3.3 below.

³⁴³ Zito 1994: 72 and 75; his claim, however, that ancient beers contained more sugar than modern beers is not based on any evidence.

³⁴⁴ Whatmough 1953: 479; 1970: 454. Lloyd (1976: 334) states that ancient Egyptian beer was foamy, without citing any evidence.

CHAPTER 4

THE IDEOLOGY OF BEER

In this chapter I will examine the Greek and Roman concepts involving, and responses to beer. For this cultural history exercise it is best first to look at how the drinking of alcohol in general is a culturally-determined activity, then turn to an examination of the different cultural ideologies in antiquity involving beer.

Anthropologists have long realized that cultural practices involving the fundamental elements of food and drink have more than simple nutritional or alimentary explanations, but that they are among the most important “media of material culture.”¹ This approach has been applied to a number of cultures and sub-cultures, and has only recently been imposed on a large scale to the Greco-Roman evidence by Garnsey who has studied the comestible in its societal role of “cultural object” and as “marker of ethnic and cultural difference.”² There is of course a problem in approaching the Greco-Roman evidence from such an anthropological perspective since one cannot observe the culture (or cultures) first hand nor does there survive a complete (or even substantial) body of evidence or record of ancient practices and beliefs concerning diet. It is therefore necessary to gather whatever information is possible from various types of sources from different times and, based on a carefully considered analysis, to propose a general unified model, however speculative and inaccurate it may be in certain details.

Before attempting such a model in terms of beer in Greco-Roman antiquity (a topic not much touched upon by Garnsey)³ it will be necessary to look first more generally at how (4.1) practices and beliefs concerning the drinking of alcohol are socially constructed (in both sacred and secular spheres) and then turn to examine how (4.2) culture-specific behaviours involving

¹ Sherratt 1995: 11. Sherratt pursues the interesting idea that consumption is a type of non-verbal communication, that whenever one eats or drinks one is making a statement (11-12).

² Garnsey 1999: xi and 6. See also the collection of essays in Flandrin, Montanari, and Sonnenfeld 1999.

³ A more wide-ranging study could also involve the ideologies surrounding the drinking of wine, mead, water, milk, or even blood.

alcohol act generally as markers of identity and alterity, and how these explain the continued Greco-Roman exclusion of beer from the diet. Finally, I will discuss (4.3) the influence of the Greco-Roman beer ideology.

4.1 The Social-Construction of Drinking:

The connections between alcohol and human behaviour have most often been studied in terms of physiological, pharmacological, chemical, biological, and psychological factors; however, anthropologists have pointed out that socio-cultural, ethnographical, and historical factors are just as important in this investigation.⁴ The former approach has on the whole emphasized the problematic nature of alcohol,⁵ and this has also been the standard concern of anthropologists until the recent past.⁶ Honigmann in 1979 could write about "the extent to which anthropological research on alcohol has been preoccupied with excessive and pathological drinking," and how it has usually explained such behaviour as a way of relieving stress. He further connected such studies to stereotypes about heavy-drinking ethnic groups such as Amerinds.⁷ Interestingly, Honigmann traces back such anthropological views to the ancient Greeks and Romans, whom he considered in a sense cultural anthropologists (though, he says, they were not interested in the functions and causes of drinking as their modern counterparts), and that in observing the way other peoples used alcoholic beverages and responded to drunkenness they emphasized especially the uncontrolled heavy drinking of those

⁴ For these two approaches, see Heath 1976b: 37-38 and 1987: esp. 16; Marshall 1979: 1; and Douglas 1987b: 3-7, who points that the two approaches should be combined (5 and 7). For a bibliography of anthropological work on alcohol, see Heath and Cooper 1981, with the earlier discussion in Heath 1976a.

⁵ Bacon 1976: 2-3 ("social-problem orientation" at 2); Douglas 1987b: 3 ("problem-oriented"); Heath 1987: 18-19; Dietler 1990: 359-360; and Gefou-Madianou 1992: esp. 3.

⁶ See, for instance, Farb and Armelagos 1980: 178-182.

⁷ Honigmann 1979: 32-33, with the quote from 32. Dietler shows that the introduction of alcohol into a society need not have negative effects (as with the Amerinds) but can act as a catalyst for positive change (1990: 381). Interestingly, Diodorus Siculus (*Hist.* 5.17.2) said that the Baleric islanders were very big wine drinkers since wine was so rare among them..

peoples.⁸

Recently, anthropologists have rather wanted to show that drinking⁹ and drunkenness are in fact perfectly normal behaviours which on the whole do not cause problems.¹⁰ Problem drinking is to be mainly connected with the excessive solitary drinking of alcohol, an activity which, aside from the modern day West, is on the whole quite rarely found in societies.¹¹ Drinking alcohol is primarily a social act (a form of commensality), performed in a social context, and as such is strongly imbedded in socio-cultural ideologies.¹² Even in the rare societies in which alcohol is abstained from it still remains a societal concern and is never altogether ignored.¹³ Anthropological work has also revealed that there is a surprisingly great diversity in the various cultural ideologies concerning the consumption of alcohol.¹⁴

Drinking not only reflects and reinforces these ideologies, but the form which it takes is itself a type of ritual or ritualization upon which are imposed certain emotionally-laden culture-specific rules, regulations, or prescriptions.¹⁵ These rules by which drinking is guided

⁸ Honigmann 1979: 30-31.

⁹ It should be noted that in this chapter I often use "drinking" as equivalent to "drinking alcohol," following colloquial English practice.

¹⁰ Heath 1987: 19 and Dietler 1990: 360. For a recent overview of anthropological studies on drinking alcohol, including the recent issue of "problem-deflation," see Gefou-Madianou 1992: 1-6.

¹¹ Dietler 1990: 360-361. Sherratt notes (1987: 91): "It is only with atomisation of society that has followed industrialisation that public use has given way to private use, and hence to uncontrolled indulgence, abuse and addiction." Lissarrague (1990: 19, n. 1) is able to find only one depiction of a lone drinker in archaic and classical Greece. For problem drinking in antiquity, see Sournia 1987 (Greece), Jellinek 1976 and D'Arms 1995 (Rome), and Rolleston 1927, Sournia 1986: 17-27, and O'Brien and Rickenbacker 1996 (antiquity in general).

¹² Douglas 1987b: 4; Heath 1976b: 45 and 1987: 46, and see 30; Murray 1995: 4-5; and Joffe 1998: 297-298. I use "ideology" to mean what Heath and Murray call societal "values, attitudes, norms."

¹³ Mandelbaum 1979: 14.

¹⁴ Bacon 1976: 7-10 and Gefou-Madianou 1992: 2-3.

¹⁵ Reflecting and Reinforcing: Murray 1990: 5; ritual: Mandelbaum 1979: 14-17, Douglas 1987b: 8, Murray 1990b: 4; rules: Douglas 1987b: 4 and Dietler 1990: 361 (and see 359).

or governed can often be quite arbitrary, though there are many instances in which they have specific functions or uses, such as promoting social solidarity or maintaining political authority.¹⁶ Furthermore, the meaning or symbolic significance which drinking has for a society is also culturally-defined, and drinking is often found connected to special sacred and secular rituals.¹⁷ It will be useful at this point to make some observations about different examples of beer (and wine) in (4.1.1) sacred rituals and then turn to beer (and wine) in (4.1.2) secular rituals, to show how the consumption of alcohol can take on different roles in various societies.

4.1.1 Beer in Sacred Rituals:

Beer is connected in our ancient sources to two types of sacred rituals, (4.1.1.1) the divine libation and (4.1.1.2) the mortuary feast.

4.1.1.1 The Divine Libation:

Wine of course was commonly used by Greeks and Romans as a divine libation, a drink offering to gods.¹⁸ Not surprisingly beer was found as a common libation in corresponding rituals in Mesopotamia and Egypt.¹⁹ One Greek piece of evidence, from the syncretistic magical

¹⁶ Arbitrary: Murray 1990b: 4 and 1995: 11; function: Deitler 1990: 361-370, who emphasizes the importance of the work-party feast, which he gives as the possible reason for the large demand for wine among the Iron Age Gauls (365-370, 388-389, and 390-391; see further 1996). Joffe (1998: 297), mainly following Dietler, also notes that an alcoholic beverage can function as "a mechanism for reorganizing agricultural production for intra and intersocietal exchange, labor mobilization, and centralized distribution."

¹⁷ Deitler 1990: 362-363 and Gefou-Madianou 1992: 6 and 18-19. Sherratt noted (1987: 82): "Because of its intoxicating properties, alcohol is a particularly powerful social lubricant, capable of sustaining both secular (usually elite) and religious symbolism." Jelinek (1977) has argued that drinking not only has a utility function but that it also has a symbolic function; wine, for instance, is often identified with life-giving substances such as blood, milk, and water.

¹⁸ The only complete study of wine in ancient religious rituals remains that of Kirchner 1910; for Greek libations, see also Tolles 1943 and Lissarrague 1995. For Greek and Roman distinctions between food for mortals and food for immortals, see Longo 1999: 153-155.

¹⁹ Mesopotamia: Röllig 1970: 64-72 and Michalowski 1994: esp. 32-33; Levine and Hallo (1967) discuss a text (their B) from the reign of Hammurapi in which beer is to be offered at the temple of Ur. Egypt: Helck 1971: 82-94.

tradition of Greco-Roman Egypt, has survived for the use of beer in a libation. In the so-called Great Magical Papyrus from Paris (which dates to the fourth century A.D., but the contents of which may date to the second century A.D.²⁰), in a charm of Solomon to produce a trance through ecstatic seizure, the pure medium is seated by the magician, protected with a head of wheat and a falconhead plant, and crowned with wormwood, a libation of wine, beer (ζῦτος [masc.]), honey, or milk (from a black cow) is made,²¹ male frankincense is burned, and the god (it would seem, Osiris, who is most often named) is invoked seven times (on two different occasions) by the magician to come into the medium and reveal information. The medium then falls down and answers the magician's questions.²²

Certain European peoples had a different libation ritual, in which the drink, rather than being poured out (and, in practical terms, wasted), was drunk. This is best known among the Scandinavians, who would drink toasts to gods and the dead.²³ A unique Latin passage shows the Germanic version of this type of libation. Gregory of Tours wrote in the sixth century A.D. that in Cologne (ancient Agrippina) there was a temple "filled with various adornments, in which a barbarism similar to libations is displayed, it being filled even with vomited up food and drink" (*diversis ornamentis refertum, in quo barbaries proxima libamina exhibens, usque ad vomitum cibo potuque replebatur*).²⁴ Gregory recognizes this barbaric practice as similar to libations (as taken over in Christianity from pagan Roman practice), though it involves not only

²⁰ Hull 1974: 25.

²¹ There is a wide diversity of libations found in the Greek magical papyri, such as milk (III.410 and IV.2972 and 3149), milk and wine (III.694), wine, honey, milk, and saffron (XII.215), milk, honey, wine, and olive oil (IV.2192), and milk, wine, and water (XIII.1015). Beer is also mentioned in a Demotic spell for blinding someone (PDM xiv.390).

²² PGM IV.850-929, with the mention of beer at 908. In a similar Byzantine prescription, a libation of wine, honey, or milk (this time from a brown cow) is to be made, with no mention of beer: Theod. Phil., *Necr.* 23.8-9 (= *Anecd. Byz.* 2.617 Armitage). For this type of prescription, see Nelson 2000: 367, n. 14.

²³ Cahen 1921, with the review by Vendryes 1920-1921, and Davidson 1988: 42-44. See the discussion of liquids used in sacred rituals by northern pagans in Salin 1959: 4:45-49, who mentions beer.

²⁴ Greg. Turn., *Vit. patr.* 6.2 (= PL 71.1031A = MGH-SRM I.2, 231.15-16).

consumed drink, but regurgitated drink.²⁵

Beer sanctified to pagan deities is also found in accounts of two Christian saints, Columban and Vedastus (or Vedastes).²⁶ St. Columban encountered some German Suevi in Brigantia (modern Bregenz, Austria) “intending to offer a heathen sacrifice” (*sacrificium profanum litare velle*) over a large barrel to Wodan (*Vodanus*), whom he identifies with Mercury (T149). The account continues: “Hearing of this abominable deed, at a distance he breathed upon the vessel, and through a miracle the vessel was shattered into pieces, and broke into bits, and the swift force blew out the beer with the pieces. It was clear that the devil had been hidden in this vessel, and he would have captured the souls of the participants through the heathen offering” (*ille pestiferum opus audiens, vas eminus sufflat, miroque modo vas cum fragore dissolvitur, et in frusta dividitur, visque rapida cum fragore cervisiae prorumpit: manifestoque datur intelligi diabolum in eo vase fuisse occultatum, qui per profanum litatorem caperet animas sacrificantium*). Alcuin explained that when Saint Vedastus (who lived in the early sixth century A.D.) was invited to a party and entered the house, he made the sign of the cross and vessels filled with beer which “had been infected by demonic incantations through evil pagan error” (*male gentili errore daemoniacis incantationibus infecta*) burst, spilling their contents and sending the “devilish power” (*diabolica ... potentia*) hidden inside them fleeing (T175). In another version of the same story (T154), Saint Vedastes (so spelled) first found out about the beer vessels that “some were sacrificed by Christians and others truly by pagans contrarily and by native ritual” (*alia christianis, alia vero paganis opposita ac gentile ritu sacrificata*). He then deliberately made the sign of the cross over the vessels, and those blessed by pagans burst,

²⁵ It is of course impossible to know whether or not beer was involved in such libations. Incidentally, Jullian (1920: 57, n. 3) argued that the “barley market” (*forum hordiarium*) mentioned in one inscription from Cologne (*CIL* XIII.10015.108) could have been important for local beer-making.

²⁶ Both accounts are quoted by Davidson 1988: 44-45, who, however, only cites one version of the second account. It is quite possible that such stories were told to explain the phenomenon of kegs bursting from excessive carbon dioxide pressure (as suggested to me by Hanna Kepka).

as they had involved the “cunning of a devilish fraud” (*diabolicae fraudis astutia*).²⁷

Finally, Strabo (T42) provides a very interesting piece of evidence when he says that the Indians drink wine only “at sacrifices” (ἐν θυσίαις), whereas normally they drink beer. This shows an interesting dichotomy between the two drinks based on religious grounds.

4.1.1.2 The Mortuary Feast:

In antiquity, the dead were often honoured with a banquet at their tomb and with drink offerings, usually of wine.²⁸ There is one piece of Greco-Roman evidence pointing to the fact that beer could be served to the dead.²⁹ Florus (T74) says that the Numantians rushed to their deaths in battle against Scipio Aemilianus in 133 B.C. “after having filled themselves first in feasts like mortuary dinners, on half-raw meat and *celia*” (*cum se prius epulis quasi inferiis implevissent carnis semicrudae et celiae*). Here half-raw meat is considered a food for the dead, as is, it seems, *celia*, the wheat beer of the Numantians. Thus, at least from Florus’s point of view, these items are inversions of the normal diet, which presumably consisted of cooked meat and wine.

4.1.2 Beer in Secular Rituals:

It will be useful to turn to an examination of certain examples of ancient ideologies of drinking as exemplified in different secular arenas of commensality. It may be of some debate how far societal constructs or ideologies are normative or to what extent a society can embody competing ideologies. In light of this, it is most useful to limit oneself simply to a specific group or stratum within a large society (such as upper class classical Athenians) and to examine

²⁷ Champier (1877: 1088) contrasts the beer in this account (served to King Clotharius I) to that made by a farmer in Gregory of Tours (T129).

²⁸ See Garland 1985: 110-113 (banquet) and 113-115 (drink offerings).

²⁹ This was certainly an Egyptian practice; see, for instance, Darby, Ghalioungui, and Grivetti 1977: 531.

the ideal example of the drinking ideology which its members propound (such as the symposium). There are a myriad of examples of different ancient cultural constructions of drinking, many of which were tirelessly catalogued by Athenaeus.³⁰ For the most part he focuses on small details of difference which do not necessarily involve widely differing ideologies of drinking. I will look at examples of three very different drinking gatherings, (4.1.2.1) the symposium, (4.1.2.2) the communal vessel feast, and (4.1.2.3) the political drinking bout.

4.1.2.1 The Symposium:

The cultural history of drinking has been most often discussed by classicists in relation to the important institution of the archaic and classical Athenian symposium.³¹ Murray has shown how the drinking of wine at the symposium involved “elaborate ritualization.”³² As Pellizer has put it, the symposium’s ritualized use of alcohol, “the rules of an elaborate *ars bibendi*,” involved mainly a moderate balance between sobriety and drunkenness.³³ The central act of the symposium was the careful mixing of the wine with water.³⁴ Murray has emphasized the political aspects of the symposium, as a private, egalitarian meeting of aristocratic males.³⁵ Sherratt has also noted the aspect of social display present in the symposium, with the importance of cultured conversation and performance.³⁶ Here commensality is expressed by a

³⁰ See especially Athen., *Deipn.* 4.

³¹ See the large bibliography in Murray 1990a: 321-338.

³² Murray 1990b: 6. For a recent treatment of the ideology of the symposium, see Slings 2000.

³³ Pellizer 1990: 178-179, with the quote from 178, with Joffe 1998: 307. For the importance of moderation at the symposium, see also Lissarrague 1990: 9-10.

³⁴ Dietler 1990: 383.

³⁵ Murray 1983a and 1983b (and see 1982), with Burkert 1991: 7. Plutarch (*Quaest. conv.* 1.1 [= *Mor.* 614e] and 2 [= *Mor.* 616f]) emphasizes the democratic ideal of the symposium.

³⁶ Sherratt 1995: 12.

meeting of minds, of equals with common beliefs about sobriety and intellectualism.³⁷

4.1.2.2 The Communal Vessel Feast:

As Walter Burkert has shown, in many ways the Oriental banquet was very different from the Greek symposium, since it could involve members of both sexes drinking together, sharing their beer from a communal vessel with straws, as is depicted from the third millennium B.C. to the eighth century B.C.³⁸ Furthermore, Posidonius, a careful observer of foreign dietary practices, noted that the Gauls sat in a circle (ἐν κύκλῳ) except for the most distinguished, who sat in the middle,³⁹ that (T27) they drank wine (mainly unmixed with water) or beer, depending on their social class, did so “from the same cup” (ἐκ τοῦ αὐτοῦ ποτηρίου), which was passed “toward the right and not the left” (ἐπὶ τὰ δεξιὰ καὶ οὐ τὰ λαία),⁴⁰ and drank “no more than an ounce” (οὐ πλεῖον κυάθου), or “a shot,” as we would say, though they did this “frequently” (πυκνότερον).⁴¹ While the Athenian symposium would involve each person having their own cup, here commensality is expressed by sharing not only the same alcohol but also the same vessel by which it is drunk and by helping oneself only to a small amount, presumably in consideration for the needs of the others with whom one is drinking. The goal in the end, however, is certainly drunkenness (by whichever means, be it wine or beer), and the joy in

³⁷ The Roman *convivium* was similar in many ways, though women were allowed; see D’Arms 1990.

³⁸ Burkert 1991: esp. 8-9 (where he also shows the possible religious associations of this form of drinking), and see Michalowski 1994: 29. For the evidence for Mesopotamian banquets, see also Bottéro 1994 (literary sources) and Selz 1983 and Pinnock 1994 (iconographical sources). Though Xenophon is somewhat vague, he seems to imply that Armenians would each have their own bowl of barley beer from which they would drink with more than one straw. In certain modern tribes in Kenya and Uganda, beer is drunk with individual straws from one communal vessel (Karp 1980: esp. 84-85, 98-105, and 110; Katz and Voigt 1986: 28, with fig. 6a; and Dietler 1990: 364 and 1992: 405, fig. 1).

³⁹ Posid., *Hist.* 23, fr. 170 Theiler (= fr. 67 Edelstein-Kidd) in Athen., *Deipn.* 4.152b.

⁴⁰ To preserve the Greek found in the manuscripts, Kidd (1988: 313) assumes that there must be more than one cup being passed around, one to the right of the first drinker and one to the left. Yet, the emphasis placed on the fact of sharing from the same vessel makes Gulick’s conjectured οὐ probable.

⁴¹ Eska (1992: 16-17) shows a possible parallel in a Gallic inscription on a terra-cotta vessel from Banassac, France which reads: “I [i.e. the vessel] hold the drinks of the neighbours” (*neddamon delgu linda*).

sharing such a state with others.⁴²

Another variation of this type of feast was to be found among the Lusitanians. Posidonius says (T25/T39) that they drank beer when “feasting with kinfolk” (κατευοχούμενοι μετὰ τῶν συγγενῶν), and that when they ate they sat but “when they drink they dance” (παρὰ πότον ὀρχοῦνται).⁴³

4.1.2.3 The Political Drinking Bout:

Drinking alcohol could also be the vehicle through which political matters could be settled. Tacitus explains that the Germani, who drank barley and wheat beer (T58), would often drink heavily throughout the day and night, which was “a reproach to no one” (*nulli probrum*), and would then fight, sometimes to the death.⁴⁴ More importantly, during these drinking bouts, when drunkenness made them honest, they would debate “about the mutual reconciliation among enemies, family alliances, the appointment of leaders, even about peace and war” (*de reconciliandis invicem inimicis et iungendis adfinitatibus et adsciscendis principibus, de pace denique ac bello*), while the following day, once sober, they would decide upon such matters.⁴⁵ Here drinking is much less focussed on commensality and sharing⁴⁶ but on conflict and

⁴² Other ancient societies had similar practices. Athenaeus, for instance, gives the examples of Cretans (*Deipn.* 143c) and Arcadians (149b) sharing a common vessel. The modern Western parallel is the passing around of the marijuana joint or bong.

⁴³ Posid., *De Oceano* (?) fr. 22 Theiler in Strabo, 3.3.7 (155).

⁴⁴ Similarly, Posidonius (*Hist.* 23, fr. 169 Theiler in Diod. Sic., *Hist.* 5.28.5) says that fights often break out among Gauls during their meals. The same is found in heroic sagas of the Old Irish Ulster cycle (see Martin 1970: 12-13 and Feuvrier-Prévotat 1978:246, who compare these sources with the passage from Posidonius). Horace (*Od.* 1.27.1-2) says that it is a Thracian practice to fight when intoxicated.

⁴⁵ Tac., *Germ.* 22.2-4, with quotes from 2 and 3, respectively. Interestingly, Herodotus attributes a similar practice to the Persians (1.133).

⁴⁶ In fact, Tacitus (*Germ.* 22.1) says that the Germani eat “each at his own table” (*sua cuique mensa*). Note in this light the very anti-sympotic practice at the drinking competition of the Anthesteria in classical Athens in which each drinker (children included) would sit at his or her own table, each with his or her own pitcher, and drink unmixed wine (see Hamilton 1992: 24, who notes the anti-sympotic elements).

differences, and alcohol is consumed not because of its capacity to bring people together but to stimulate honesty and facilitate debate.

4.2 Drinking as Marker of Identity and Alterity:

Because of the power and breadth of the underlying cultural ideologies involved in drinking, any person or group of people can be readily categorized as a follower of such ideologies or as a deviant.⁴⁷ Thus drinking becomes a marker of identity and alterity, establishing boundaries of inclusion and exclusion, both within a culture as well as between cultures.⁴⁸ In this way cultures are not simply objectively identifiable groups of individuals, but self-identified groups which impose upon themselves markers of identity and alterity. Such markers are often reinforced with notions which do not reflect reality, and usually, though not inevitably, lead to presumptions of singularity and superiority.⁴⁹

Hartog has explained that there are two main ways of deploying a “rhetoric of alterity:” through a schema of *inversion* or through a schema of *comparison* (either direct or analogical).⁵⁰ Greco-Roman descriptions of beer often followed both schemas simultaneously, in so far as, on the one hand, the primacy of wine was usually assumed (that is, the Greeks and Romans were fundamentally vinocentric) and thus wine was used as a comparandum, and, on the other, beer was marginalised and was thus described in inverse terms. Beer was considered fundamentally opposed to wine in three main ways: (4.2.1) functionally (4.2.2), spatially, and (4.2.3) socially.

⁴⁷ Such distinctions are most readily noted with food taboos which identify groups, such as Pythagorean vegetarianism or Jewish abstinence from pork (see Garnsey 1999: 82-99 [“Forbidden foods”]).

⁴⁸ Honigsmann 1979: 33-35; Douglas 1987b: 8-11; Sherratt 1995: 12-14; and see Murray 1995: xiii, on drinking creating social stratification.

⁴⁹ Garnsey 1999: 62 and 65 (in a chapter on “otherness”). For Greco-Roman notions of the food of others, see also Longo 1999, who does not deal with beer.

⁵⁰ Hartog 1988: 213-224 (inversion) and 225-230 (comparison).

4.2.1 The Functional Marginality of Beer:

Beer was marginalised functionally by Greeks and Romans in that it was (4.2.1.1) excluded from the ordinary diet and (4.2.1.2) thought of as a substitute when wine was unavailable. It was also often viewed (4.2.1.3) medically, that is, in terms of being an item which might or might not be useful to the body.⁵¹ Finally, it was given (4.2.1.4) a military function.

4.2.1.1 The Exclusion of Beer from the Greco-Roman Diet:

As I have shown (see Map 1), beer was drunk in almost every ancient society. Pliny explains (T50) that the Indians have a fermented rice drink like "the rest of mankind from barley" (*reliqui mortales ex hordeo*), showing that the widespread use of beer was recognized. Moreover, other peoples usually drank other types of intoxicants as well, and do not seem to have been choosy about their alcoholic beverages. The Scythians, for instance, not only had a famous weakness for grape wine,⁵² they also drank rowanberry wine (Vergil [T34]), mead and barley beer (Priscus [T109]), millet beer (an anonymous lexicon [T68]), probably wheat beer (Vergil [T34] with sections 2.1.2.1 and 3.2 above), possibly fermented milk (see section 1.1 above), and they also used the narcotic incense of hemp seeds.⁵³

It has been suggested that there were two general drinking traditions in prehistoric times,

⁵¹ Adams (1975: 23) writes: "beer was used by the Romans mainly for medicinal purposes."

⁵² See, for instance, Anacr., fr. 356b West, Hdt. 6.84.3, Pl., *Legg.* 1 (637e), Ps-Arist., *Prob.* 3.7 (872a2-9), Athen., *Deipn.* 10.427a-c and 11.499f, and Cass. Dio 51.24.2. Strabo (11.2.2 [493]) also speaks of nomads north of the Black Sea burying wine from Greeks. For Scythians drinking wine unmixed, see section 4.2.3.1 below; oddly, Herodotus (4.79.3 and 4) says that the Scythians reproached the Greeks for following the rites of Bacchus since this leads to madness.

⁵³ Hdt., 4.75.1-2, with Hesych., *Lex.* s.v. κάμναβις (κ673 Latte) and Galen, *De alim. facult.* 1.34.2 and 1.35 (= 6.550 Kühn = *CMG* V.4.2, 259.17-19 and 260.3-4), with Rudenko 1970: 62 and 285, with pl. 62, Brunner 1973, Rolle 1989: 94, and Sherratt 1995: 27.

a wine-drinking tradition and a beer-drinking tradition, each of which was based on geography.⁵⁴ However, it now seems that wine-drinking pushed out beer-drinking at least in Greece.

It is fairly certain that the pre-Greek inhabitants of Crete, or the Minoans, drank barley beer. Though their indigenous language, Linear A, has not been fully deciphered, very recent archaeochemical finds support this.⁵⁵ The earliest possible evidence comes from the Early Minoan settlement of Myrtos in southern Crete, where two storage jars, dating to around 2200 B.C., were found to contain a barley product which could have been beer.⁵⁶ The evidence becomes stronger in Middle Minoan times, since in Apodoulou, Rethymnon, Crete a tripod cooking pot, dating to around 1700 B.C., was found to contain phosphoric acid and dimethyl oxalate, which are consistent with beer-making.⁵⁷ Evans long ago proposed that during Late Minoan times Cretans drank barley and millet beer before drinking wine.⁵⁸ This idea was based on finds of barley and millet,⁵⁹ as well as two small, high-spouted jugs which had depictions of three ears of barley in high relief.⁶⁰ He also suggested that a jug which seemed to have a depiction of oats was used for oat beer.⁶¹

It is generally accepted that Greeks (that is the Mycenaeans) took over Crete from the

⁵⁴ Sherratt 1987: 94.

⁵⁵ For a general overview of the diet of Minoans and Mycenaeans, see Hamilakis in press.

⁵⁶ Tzedakis and Martlew 1999: 159-161.

⁵⁷ Tzedakis and Martlew 1999: 162 and 183.

⁵⁸ See especially Evans 1921: 1:415: "Its usage seems to have preceded that of wine in the island." This is followed by Forbes (1965: 130), who suggested that Cretan beer may have been imported from Egypt. However, Ventris and Chadwick (1973: 131) thought this implausible since no beer-straining vessels were found on Crete and beer was not mentioned by Homer.

⁵⁹ Evans 1936: 4:2, 622.

⁶⁰ Evans 1921: 1:414-415, with figs. 299a-b, and 1936: 4:2:627-628, fig. 618. Hood (1971: 87) says of the jugs that they may have been used "in some religious cult."

⁶¹ Evans 1936: 4:2:629, figs. 620a-b. It should be noted also that ears of barley are found depicted on late Cycladic pottery from Akrotiri (Thera) (Doulas 1983: 112).

Minoans in the fifteenth century B.C. and continued to rule there until the thirteenth century B.C.⁶² There have similarly been finds of barley beer in Crete dating to Mycenaean times, but they may still reflect the drinking practices of the non-Greek populace. Thus, a number of vessels, especially from Chania, Crete, dating roughly from 1600 B.C. to 1200 B.C., and from the cemetery at Armenoi, from the fourteenth century B.C., were found to contain what may have been a mixture of wine, barley beer, and mead.⁶³ There is indeed no evidence for beer in Linear B, the language of the Mycenaeans.⁶⁴ Before Linear B was successfully deciphered, Evans, followed by Hrozný, suggested that a certain “bifid vegetable symbol” in Mycenaean texts represented some type of cereal (perhaps barley or millet), and that when found in conjunction with a bowl (symbolizing liquid) denoted a type of beer.⁶⁵ However, Ventris and Chadwick have shown that this ideogram stood for a unit of olive oil.⁶⁶

It seems fairly certain that the Mycenaeans did not consume beer, at least in any great amount, but also that beer remained a beverage in Crete during their rule. In an Akkadian text from the royal palace of Ugarit (modern Ras Shamra, Syria) dating to the reign of Ammishtamru II (who ruled around 1260-1250 B.C.), *šikaru*, possibly beer (see section 2.2.10 above on this

⁶² See Chadwick 1976: xii and 4-14.

⁶³ Tzedakis and Martlew 1999: 207-208, with 166-173 (Chania) and 174 and 176 (Armenoi). The finds could also point to the successive use of these types of alcohol in the same vessels or to the use of alcoholic beverage made from fermented grapes, barley, and honey. See further Pain 1999.

⁶⁴ Dr. Ruth Palmer has noted to me (in correspondence of March 1, 2001) that in Linear B “all the major ideograms for liquid substances which appear most frequently have been identified already” and that none of these involve beer.

⁶⁵ Evans 1936: 4:2, 624-625 (with the quotation from 624) and Hrozný 1949: 261-264, inscriptions nos. 181-183. See also the cup with the symbol for “two” found with measures for grain and thought to indicate beer (perhaps of barley) at Evans 1936: 4:2, 721-722 and Hrozný 1949: 264-265, inscription no. 184. Hrozný (1949: 201-207, 263-264, 266-270, 344, inscriptions nos. 114-116, 183, [*ra-u*], 186-189 [*ra-i*], 117 [*ru*], and 119-121 [*ri*]) further suggested that the words *ra-u* and *ra-i* (and possibly *ru* and *ri*) placed in conjunction with a symbol for liquid (an urn or amphora), as found on tablets from Knossos, denoted some type of beer (made perhaps of barley or millet).

⁶⁶ Ventris and Chadwick 1973: 217-218, and 303, no. 130. For the actual symbol for wheat, see 213-215, no. 120; for barley, see 215-217, no. 121. For vessel ideograms, see 324, fig. 16. For cereals in general among the Mycenaeans, see Chadwick 1976: 108-119; for wine, 122 and 124.

term), is said to be imported from Crete (*Kabturi*).⁶⁷ And finally, it has also been suggested that residue found in vessels at Thebes, dating to the mid-thirteenth century B.C., point to the use there of barley beer.⁶⁸

Thus we are possibly left with a shift in Crete (and Greece generally), from beer-drinking in pre-Greek, Minoan times, to an at least partial exclusion of beer in Mycenaean times, to a full exclusion of beer in archaic and classical Greece. Greek and Latin authors also seem totally unaware of early Cretan beer.⁶⁹ On the other hand, they also did not think that they had always drunk wine. Beer was either introduced as a divine gift, as pagans believed, or was an invention of man, as Christians apparently believed.⁷⁰ Before wine, it was either thought that there was no alcohol, or else that mead was drunk.⁷¹ Porphyry claimed, on the authority of Orpheus, that Zeus intoxicated Cronus with honey (i.e. mead) since there was no wine at the time.⁷² One source, probably based on Theophrastus's lost work on honey, states that mead, then used by Illyrians, was once made among Greeks but that the recipe had been lost!⁷³ Another source says that the Egyptians discovered beer before wine was discovered (T5), but no surviving author says that Greeks (or Romans) drank beer before wine.

⁶⁷ *Ras Shamra* 16.238, ll. 7 and 10 (edited in Nougayrol 1955: 107-108; see also the information on this inscription in Bordreuil and Pardee 1989: 108). Knapp (1991: 21, 37, and 42) identifies the product here as Cretan beer.

⁶⁸ Tzedakis and Martlew 1999: 184-186. See also the possibility of beer-drinking at Corinth cited in section 3.7 above.

⁶⁹ Champier (1877: 1087) makes a hilarious gaffe when he says of beer that: "En Crète on le nommait κόμμα ου κοῦρμι," citing Dioscorides (T56a). He has obviously translated the ἐκ τῆς κριθῆς in Dioscorides as meaning "from Crete" rather than "out of barley!" Even worse, this mistake is copied uncritically by Peck (1965: 321, s.v. *cervesia*).

⁷⁰ Divine gift: Diodorus Siculus (T30 and 32-33) and see Julius Africanus (T84); see section 4.2.2 below. Invention: Theodoret (T99); Orosius (T113); Jonas (T156); and Johannes Zonaras (T233); and see the discussion in section 3.1 above.

⁷¹ This may in fact be true since μέθυ, which originally meant "mead," came to be used early on as a general word for intoxicants (see section 2.1.2.1 above).

⁷² Orph., fr. 154 Kern (= fr. 114 Abel) in Porph., *De antr. nymph.* 16. For other possible Greek mythological allusions to mead, see Younger 1966: 29-30. Diodorus Siculus (*Hist.* 5.61.3) speaks in a myth of wine having only recently been discovered among mankind.

⁷³ Ps.-Aristot., *Mir. ausc.* 22 (832a6-13), with Sharples 1995: 209-210.

The Greeks it seems rediscovered beer in the seventh century B.C. when they went on colonizing trips to the north, since in our earliest sources they consistently associated it with Thracians (Archilochus [T1],⁷⁴ Aeschylus [T6],⁷⁵ and Hellanicus [T9]; and see the evidence for βρῦτον and πῖνον in sections 2.1.3.1, 2.2.1, and 2.2.8 above) and Pannonians (Hecataeus [T3]) to the north, and the Phrygians to the east (Archilochus [T1]).⁷⁶ By about 500 B.C. it was known that the Egyptians were beer-drinkers (Hecataeus [T2], Aeschylus [T4-5], and Herodotus [T7]).⁷⁷ Ctesias (T11) may have brought knowledge of beer from India, Xenophon (T13) from Armenia, and Pytheas (T15) from the far North. The Greeks must have also been aware of Iberian and Gallic beers from early on (the sixth century B.C. or so), though the former is only first mentioned by Polybius (T22) and the latter by Posidonius (T26-27). It seems to have only been by the first century B.C. that German and British beer-drinking was known.⁷⁸

The great mystery of how Greeks came not to drink beer may not be solvable, at least with the evidence now available, but something can be said about why they, along with Romans, continued to exclude the beverage from their diet. It is certainly not enough to simply state, as

⁷⁴ West (1997: 498-499) argued that Archilochus, comparing a woman performing fellatio to beer being drunk with a straw (for which, see also Gerber 1976, with the alternative reading of Medaglia 1977), may have been influenced by a connection of beer and sex which is found also in Mesopotamian depictions in which a man has *a tergo* sex with a woman who is drinking with a straw.

⁷⁵ This is almost certainly a reference to Thracian beer, since Lycurgus was a Thracian king (see section 2.2.1 above). Note also that Thracian mercenaries were "a familiar sight" in fifth century B.C. Athens (Henderson 1987: 140, on *Ar., Lys.* 563-564).

⁷⁶ Phrygian beer is not elsewhere certainly attested in Greco-Roman sources (though see Hellanicus [T9] with the discussion in sections 2.2.1 and 3.2.6 above), or even in Phrygian literature. For Phrygian barley beer, see the archaeochemical evidence in McGovern *et al.* 1999. It must be a simple coincidence in our evidence that the first certain reference to Scythian beer comes only in the second century A.D. (T68).

⁷⁷ Hecataeus probably influenced Aeschylus as well as Herodotus (Lloyd 1976: 333; and see Lateiner [1989:104] for Herodotus's general use of Hecataeus).

⁷⁸ German beer is only first certainly attested in Tacitus (T58), but Caesar may have brought back knowledge of it; Posidonius (*Hist.* 30, fr. 188 Theiler = fr. 73 Edelstein-Kidd) refers to the Germani drinking unmixed wine (a mistake for beer?). It seems that Posidonius was also the first to mention beer-drinking in Lusitania (T25) and in Liguria (T28). Strabo is the first author to mention Ethiopian beer (T44). Interestingly, Babylonian beer, as I have already noted, is only attested in the Greco-Roman material in Julius Africanus (T83).

has been done recently, that “the Greeks and Romans on the whole clearly disliked beer.”⁷⁹ Most Greco-Roman references to beer are neutral descriptions of the drinking habits of foreign peoples. Some of the allusions, however, are undeniably negative, but for each negative trait imputed to beer there almost invariably exists some further testimony to the contrary. Greeks and Romans describe beer as a sour, foul-smelling, impure, cloudy, harmful, flatulence-causing, unmanly liquid made from rotten cereals, a divine punishment, but also as a sweet, good-tasting, nice-smelling, nutritious, healthful, useful, strong cereal beverage, a divine gift.⁸⁰ The fundamental reason for beer’s general exclusion from the Greek and Roman diet was undoubtedly ideological, and had perhaps often little to do with its intrinsic qualities (such as its actual taste). Often beer was not virulently attacked; it was simply thought that if one had wine there would be no need for drinking beer.

4.2.1.2 Beer as Imitation of and Substitute for Wine:

Beer is given primacy over wine only by a scholiast on Aeschylus who asserts that the Egyptians had invented barley beer before the invention of wine (T5). Everywhere else, however, beer is simply thought of as an imitation of wine⁸¹ and/or a substitute for wine.⁸² For example, Plutarch says (T59) in his explanation of how ivy came to be used as a symbol of

⁷⁹ James and Thorpe 1994: 335. See also, for instance, Yates and Flather 1890: 1:407 (“contempt felt by the Greeks and Romans”), Cornish 1898: 157 (“Beer was despised by the Romans as a barbarian drink”), Forbes 1951: 284 (“beer languished in the disfavor of Greeks and Romans”), and Peck 1965: 321 (“The Greeks and Romans regarded this barbarian drink with contempt”). In all of these works, Julian’s epigram on beer (T91) is immediately marshalled in support (see also Wightman 1970: 187-188 on Julian regarding beer “with scorn”). This poem, however, is hardly vituperative, but rather playful, relying, as it does, on numerous puns. Better evidence perhaps is Pliny’s statement (T51) that rather than continuing his discussion on beer “it is preferable to pass on to a discussion of wine” (*praestat ad vini transire mentionem*). See also, for instance, Arnold 1911: 118: “All the Greek writers ... show but a negative respect for beer.”

⁸⁰ The evidence is dealt with in section 3.12 above and sections 4.2.1.3 and 4.2.2 below.

⁸¹ Vergil (T34); Julius Africanus (T83); and see Tacitus (T58) and Ammianus Marcellinus (T96).

⁸² Herodotus (T7); Dio the Academic (T24); Posidonius (T25-26); Dionysius (T37); Dioscorides (T55); Cassius Dio (T75); and Julian (T91). Oddly, Durkan (1972: 267) claims, citing no evidence, that the “Romans started brewing on a commercial basis to provide a substitute for wine.”

Dionysus that since a wreath of vine leaves could not be made during the winter Dionysus chose the ivy as his symbol during this season “just as lovers of wine use barley drink when the vine is not available, and some mead, and others make date-palm wine” (καθάπερ οἱ φίλοινοι μὴ παρόντος ἀμπελίνου κριθίνῳ χρώνται πόματι, καὶ μηλίτας τινάς, οἱ δὲ φοινικίνους οἶνους ποιοῦσιν). Elsewhere Plutarch is not very positive about such substitutes. He compares the sexual relationship of an adult man with a teenage boy rather than with another adult in a reciprocal relationship, to drinking beer rather than wine: it is a fruitless, unfulfilling “quick fix” (T61).

Beer undoubtedly was usually thought of as a poor substitute for wine. Rarely, however, beer could be considered a perfectly equal alternative, though our evidence shows that it was still only drunk by Greeks and Romans when wine was unavailable (see, for instance, Xenophon [T13]).

4.2.1.3 Beer in Medicine:

As vinocentric as they were, Greeks and Romans were always aware that there were possible negative effects from the consumption of wine.⁸³ Pliny went so far as to write that it was uncertain whether wine was more useful or harmful.⁸⁴ It is only logical that similar questions were asked about beer.⁸⁵ And in fact, even in the sixth century A.D., when beer-

⁸³ For the positive and negative assessments of wine in Greco-Roman antiquity, see McKinlay 1950. For wine in ancient Greek and Roman medicine, see Strübing 1960, Lucia 1963a: 36-78 and 1963b: 161-162 and 163, and Jouanna 1996.

⁸⁴ Pliny, *Hist. nat.* 23.19.31, and see his treatment of the subject at 23.19-26.31-53. Lissarrague (1990: 5) noted that to the Greeks wine was “at once dangerous and beneficial.” Durry (1955) suggested that in early Rome women were not allowed to drink wine, not because it was thought to lead to possible adultery (as had been often thought), but because it was considered to be harmful to conception.

⁸⁵ For beer in Mesopotamian medicine, especially in a tablet from Nippur from c. 2100 B.C., see Keller 1958: 153. For beer in ancient Egyptian medicine, most notably in the Ebers and Hearst papyri dating to c. 1550 B.C., see Arnold 1911: 70-71; Lucia 1963a: 12 and 1963b: 155-156; Helck 1971: 80; and Darby, Ghalioungui, and Grivetti 1977: 548-549. For the general use of beer in ancient medicine, see Cornwall 1939; Keller 1958; Wright-St. Clair 1962; and Dayagi-Mendels 1999: 109-111.

drinking was widespread in Europe, while King Theodoric's physician Anthimus extolled the benefits of beer (T118), his contemporary Fortunatus, Bishop of Poitiers, could speak of its impurity and it causing dropsy (T115).⁸⁶

Beer was sometimes considered by Greeks and Romans as nothing more than fermented, impure water. Pliny, in a discussion of beer, marvels at the idea that even water can be made to intoxicate (T47): "Oh, the wondrous ingenuity of vices!" (*heu mira vitiorum sollertia!*) he exclaims.⁸⁷ Julius Africanus (T81) speaks of peoples without wine who refuse to drink plain water and who thus make beer, and Jerome, who believes that wine has to be avoided just as much as beer (T97), states that (T98): "The Egyptians use beer the most since they do not allow plain water for drinking" (*hoc maxime utuntur Aegyptii, ut non puras aquas bibentibus tribuant*). However, the Roman physician Celsus (T35) claims that beer is more nutritious than water (which he calls *imbecillissima*), because of the cereals from which it is produced.

Furthermore, the fermentation of beer was sometimes spoken of as a form of decomposition (Theophrastus [T16], Dionysius [T37], and Tacitus [T58]; see section 3.6.3 above). Galen (T69) says that because beer "may arise from that which is rotten" (*ἀν ἐκ σηπεδόνοϋ γεγωνώς*) it is bad for the humours (*κακόχυμος*).⁸⁸ On top of that, Galen (T69, copied by Oribasius [T94b] and Aëtius of Amidena [T121]), and Dioscorides (T54a-b) before him, mention that beer causes flatulence (*φυσώδης*); Julian's personal physician Oribasius later would add that this is especially true of the product from Cyrene (T92).⁸⁹

⁸⁶ This of course is no arcane debate; even today physicians do not agree on whether moderate drinking is beneficial or not.

⁸⁷ Leontinus (T220) lists, among intoxicating beverages, wine, different types of beer, and water (according to some fabulous accounts); see section 2.1.1 above.

⁸⁸ This was copied later by Oribasius (T94b), Aëtius of Amidena (T121), and Paulus of Aegina (T132). Dioscorides (T54a-b and 55a-b) had already said that beer was bad for the humours, though without the accompanying explanation.

⁸⁹ Interestingly, in the twelfth century A.D., Petrus Blesensis wrote (*Compend. in Job* 1 [= PL 207.804A]): *cerevisia ventos facit* ("cerevisia causes winds"). Forbes (1956: 140 and 1965: 130) claims that Julian's poem on beer (T91) is a satire "on its tendency to cause flatulence;" this seems to be based on the fact that *βρόμος* can mean both "oats"

Medical authors occasionally remark upon the harmful effects of beer on the head, tonsils, stomach, liver, kidneys, sinews, and membranes.⁹⁰ Beer is also referred to as a diuretic and purgative,⁹¹ traits which could actually be useful depending on one's particular circumstances. Cyril (T97) feels that beer is impure and harmful, that it causes unspecified incurable illnesses, and that it only rouses more thirst when drunk, while wine, as the Psalms note "gladdens man's heart" (a biblical vindication for wine also quoted by Theodoret [T98]).⁹² Oribasius (T93) also praises wine over beer (saying that barley and wheat beers are "weaker" [ἀσθενέστεροί] than wine), but wine is just as often spoken of negatively in the medical literature. Dioscorides (T54a and 56a-b) makes the claim that beer, but also a variety of Cretan wine, produces elephantiasis. In a treatise falsely attributed to Galen, it is said that wine, beer, other intoxicating beverages, and even cold water harm the stomach, liver, and sinews (T73). Aristotle (T14) remarks on the odd effects of wine and a type of beer known as πῖνον (as has already been seen in section 2.2.8 above).

But along with the negative medical views of beer, there are many claims for its benefits. Pliny (T51) states that the froth (*spuma*) of beer (for which, see section 3.6.2 above) "nourishes the skin in the faces of women."⁹³ It is useful to ingest beer (with other ingredients) for good and plentiful breast milk in women according to the second century A.D. Antyllus ([T66], copied by Oribasius [T95] and Aëtius of Amidena [T124]). Beer is good against coughs (when

and also a loud noise.

⁹⁰ Dioscorides (T54a: kidneys, sinews, and membranes [omitted in T54b]; T55a-b: head and sinews); Aretaeus (T62: tonsils); and Pseudo-Galen (T73: stomach, liver, and sinews). Pliny, however, speaks (T52) of the power of "a drink of fruits [i.e. cereal]" (*potus ... frugum*), that is beer, to nourish the sinews. A beery old woman is given as medicine some ground root by a doctor (or Asclepius himself?) in Antiphanes (T12).

⁹¹ Diuretic: Dioscorides (T54a-b). Purgative: Didymus (T23); *Suda* (T227a); and a scholium (T227b). The last two sources may also depend ultimately on Didymus. Interestingly, Egyptian beer (ζῦθος) is said in a text in the Babylonian Talmud to act as a laxative for a constipated person or as an anti-laxative for someone with diarrhoea (*Pesahim* 42b); it is also added that it is dangerous for the sick or pregnant.

⁹² Psalms 104:15: εὐφραίνοντος καρδίαν ἀνθρώπου.

⁹³ Presumably Pliny does not mean that beer froth does not nourish the face of men but rather that it is commonly used by (barbarian?) women on their faces.

drunk warm with salt) (Marcellus Empiricus [T110]), and asp venom (Philumenus [T67], copied by Aëtius of Amidenā [T127]), and it is recommended that it be applied with mustard on arrow wounds (Aëtius of Amidenā [T126]), and used to soak a herbal suppository to expel intestinal worms (Marcellus Empiricus [T111], distorted in Cassius Felix [T114]; and Aëtius of Amidenā [T122-123 and 125]). Beer dregs (*faeces*) mixed with leaves of dane-wort are thought to help against scrofulous tumours (T90).⁹⁴

It may as well be added that Dioscorides wrote that ivory macerated in ζῦθος (here barley beer) could be better worked upon (T55a) while Plutarch (perhaps simply copying Dioscorides) also said that ivory is fashioned once it is made soft and pliable with ζῦθος (T59).⁹⁵

4.2.1.4 Beer in War:

The consumption of alcohol by warriors or soldiers is generally a culturally-approved activity in most societies.⁹⁶ Greek soldiers were given rations of wine, and probably at least occasionally drank this directly before battle,⁹⁷ but when it was not available they certainly drank the local alcoholic product; thus Xenophon and his troops drank beer when they were in Armenia (T13). Similarly, the common Roman soldier in the early Empire would be supplied with wine, usually of low-quality and sour, though occasionally vintage wine was rationed out.⁹⁸ It seems, however, that already in the first century A.D. Roman authorities had come to grips with the fact that many soldiers recruited from non-Roman populaces preferred to drink beer

⁹⁴ For the medical uses of wine lees, see Pliny, *Hist. nat.* 23.31-33.63-68.

⁹⁵ Dioscorides is incorrectly translated into late Latin as (T54b): "From it [i.e. beer] is made ivory" (*ex ipsa fiet helefas*). The use of beer in ivory-working was also mentioned by the eleventh century A.D. Simeon Sethus Interpretes (fr. 119).

⁹⁶ Mandelbaum 1979: 18.

⁹⁷ Hanson 1989: 126-131 (= 2000: 126-131, with 244-245).

⁹⁸ See, most recently, Junkelmann 1997: 176-180 and Roth 1999: 37-40. For the amount of wine and beer typically provided to soldiers from antiquity to modern times, see Erdkamp 1998: 43-45.

rather than wine, and thus allowed beer to be rationed out to troops in the frontier areas. Recent studies of the diet of soldiers have not recognized the extent of this phenomenon, and have even sometimes denied that there was an official rationing out of beer in the Roman army. Thus, for instance, Roth cites one inscription from Trier (E10) as evidence for Roman soldiers drinking beer on the northern frontier, and claims that it was not issued as a regular ration.⁹⁹ Junkelmann says that it was “a distributed drink” (ein verbreitetes Getränk) in the army, citing only the same Trier inscription.¹⁰⁰ Goldsworthy notes that beer was often given as an army ration “in the northern provinces” and Breeze says that “beer also seems to have been drunk” by soldiers, though neither of them cites any evidence.¹⁰¹ Finally, Davies says: “Clearly beer must have been a popular drink for the Roman troops,” but cites only the same Trier inscription and the possible use of beer at the Isca Roman fort in Caerleon, Wales.¹⁰²

There is in fact good evidence that soldiers along the frontiers of the Empire drank, and were even officially supplied with beer. However, the inscription from Trier which is constantly marshaled in support of this is actually rather ambiguous, as I will show (4.2.1.4.1). The best evidence comes from (4.2.1.4.2) Britain (in the Vindolanda tablets), and there is also some evidence from (4.2.1.4.3) Egypt (in papyri). There is also evidence for (4.2.1.4.4) the use in battle of elephants intoxicated with beer.

4.2.1.4.1 Belgian Gaul:

Julius Caesar implies that there was an abundance of grain in northern Gaul, and shows that there were already Roman dealers (*negotiatores*) interested in it in his day.¹⁰³ Strabo,

⁹⁹ Roth 1999: 40. For the problem of barbarian (auxiliary) drunkenness, see 39.

¹⁰⁰ Junkelmann 1997: 180.

¹⁰¹ Goldsworthy 1996: 261 and Breeze 1984: 269.

¹⁰² Davies 1971: 133, reprinted in 1989: 199 and 287.

¹⁰³ Caes., *De bell. gall.* 1.39.1, 7.3.1, 7.42.3-5, and 7.55.5.

probably simply following Caesar, also spoke of the great abundance of grain in northern Gaul as did other authors as well,¹⁰⁴ and surplus wheat cultivation in this area became important for sale to the Roman army.¹⁰⁵ The military markets for *negotiatores* were also of great importance in the Rhineland, and are attested there more than anywhere else in Gaul.¹⁰⁶ There can be little doubt that the Belgian Gauls themselves used this cereal to make beer, as seen especially from the evidence for breweries in Belgian villas (see section 3.11.1 above), and again there is some evidence that Roman troops posted there would sometimes do the same.

An inscription from the Altbachtal sanctuary in Trier (ancient Augusta Treverorum, which was organized under the Emperor Claudius) from the late first century A.D. was set up in fulfillment of a vow by a certain soldier (whose name has not survived) of the German fleet of Domitian (E10). Some scholars assume that he must have been a discharged soldier or veteran, but there is no way of knowing certainly whether or not he was still serving in the army while dealing in beer.¹⁰⁷ Many also further assume that this soldier supplied his beer to fellow-soldiers,¹⁰⁸ which is possible though far from certain. This inscription then is hardly good evidence for soldiers drinking beer in frontier regions as it is usually claimed. However, as I have shown (in section 2.2.5.1 above), there can be no doubt that Trier was an important centre for beer-production in antiquity. and, further, a beer-maker originally from Trier may even have produced beer for the troops at Vindolanda. Therefore, it is quite possible that Roman soldiers in Trier drank beer.

¹⁰⁴ Strabo, 4.1.2 (178), pointing out also that vines do not grow very well there, and see also, for instance, Pomp. Mela, *De situ orbis* (= *Chorogr.*) 3.2.17.

¹⁰⁵ Quick and Simon 1999.

¹⁰⁶ Middleton 1979: 85 (who mentions the wine but not the beer trade).

¹⁰⁷ See, for instance, Wightman 1970: 188 and Bowman and Thomas 1994: 133. Rostovtzeff (1930: 253) pointed out long ago that there is no way of knowing whether he was still serving in the army or not.

¹⁰⁸ See, for instance, Davies 1971: 133 (= 1989: 199 and 287).

4.2.1.4.2 Britain:

Julius Caesar said only that of those who lived in inland Britain (the *interiores*) “most do not sow cereals, but live on milk and meat” (*plerique frumenta non serunt, sed lacte et carne vivunt*).¹⁰⁹ Dioscorides, who was perhaps a military medic,¹¹⁰ wrote around A.D. 70, after speaking of *κοῦρμι*, made from barley and drunk instead of wine, that (T55a) “such drinks [i.e. beers] are also prepared from wheat, as in Iberia and Britain in the West” (*σκευάζεται δε καὶ ἐκ πυρῶν τοιαῦτα πόματα, ὡς ἐν τῇ πρὸς ἑσπέραν Ἰβηρίᾳ καὶ βρεττανίᾳ*). There is good evidence that Roman soldiers in Britain would drink this local wheat beer.¹¹¹

The best evidence comes from the Roman fort of Vindolanda on Hadrian’s Wall. A brewery has been identified there (as seen in section 3.11.3 above) and a number of tablets found there mention beer. One of the most recently published tablets makes it absolutely clear that beer was rationed out to soldiers. In a letter from around A.D. 100, the decurion Masc(u)lus writes to the prefect Flavius Cerialis: “My fellow-soldiers do not have any *cervesa*; I request that you order some to be sent” (*cervesam commilitones non habunt quam rogo iubeas mitti*).¹¹² As I have already shown (in section 2.1.3.3) *cervesa* (and variants) at this time probably denoted Celtic wheat beer, and as I have also shown (in section 3.3.2.4 above), *bracis*, a type of cereal found in Vindolanda, from which the beer was probably made, was probably a type of wheat.

¹⁰⁹ Caes., *De bell. gall.* 5.14.2. Strabo (4.5.2 [200]) also says that the British have milk but do not know the art of agriculture. However, Diodorus Siculus (*Hist.* 5.21.5) and Tacitus (*Agr.* 12.5) speak of cereal being grown in Britain. For the earliest evidence for beer in Britain, see Monckton 1969: 11-13. Dannell argues, from finds of wine amphoras in Britain, that wine was already found there in the second century B.C., though he thinks it unlikely that it replaced beer (1979: esp. 178-179).

¹¹⁰ In the preface of his *Materia medica* Dioscorides speaks of having known a “soldierly life” (*στρατιωτικὸν τὸν βίον*), which may mean that he served in the army.

¹¹¹ Oddly, there is no certain Greco-Roman literary evidence for barley beer in Britain; it is possible that wheat beer was thought superior to barley beer (just as barley was considered a food for horses and wheat a food for men; see section 3.2.1 above). For malting ovens in Britain, see section 3.3.2.3 above.

¹¹² *Tab. Vindol. Suppl.* 3, ll. 13-15.

In one tablet of Vindolanda dating to the late first or early second century A.D., a certain Atrectus the brewer (*cervesar[ius]*) is attested making payments for iron and pork-fat.¹¹³ There is some question as to whether this was a member of the military personnel who made the beer, or a civilian who made and sold the beer to the troops.¹¹⁴ Furthermore, an account from A.D. 111 records one *metrata* (i.e. one *metretes*) of *cer[v]esa* for 8 asses.¹¹⁵ Another, from the late first or early second century A.D. records quantities of both *cervesa* and wine, with much more of the former than the latter.¹¹⁶ Beer (and a beer-maker) is also mentioned in one other account¹¹⁷ and the phrase “from drops of *cervesa*” (*de guttis cervesarum*) is also found in another very fragmentary tablet.¹¹⁸

As Dannell and Wild have pointed out, it seems that beer was more consumed than wine in Vindolanda, and they suspected that the same was also true at the fort at the military works-depot in Longthorpe.¹¹⁹ Dickson similarly suggests that the finds of barley (dating to the mid second century A.D.) from the Bearsden fort on the Antonine Wall in Scotland possibly point

¹¹³ *Tab. Vindol.* II, 182, col. ii, ll. 14-16: “Atrectus the *cervesa*-maker, [owes/has payed] as part of the price of iron [... denarii], for the price of pork fat 11 [denarii, 2 asses]” (*Atrectus cervesar[ius] | ex pretio ferri (denarios) i[...]| pretio exungiae (denarios) xi (asses ii)*).

¹¹⁴ Bowman and Thomas 1994: 27, 30, and 133.

¹¹⁵ *Tab. Vindol.* II, 186, l. 11: “January 1st: 1 *metrata* of *cervesa* for 8 asses” (*[K(alendas) I]ama{ui}rias cer[v]es(a)e | metrata(m) (asses) viii*). See further section 4.2.3.2.3 below.

¹¹⁶ *Tab. Vindol.* II, 190, 4-9 and 17-24 (= I, 4, ll. 10-15 and 23-30): “June 19th: [... pecks] of barley ... [... pecks] of *cervesa* ... June 20th: 4 pecks [...] of barley ... 2 pecks of *cervesa* ... June 23rd: 5 ½ pecks of barley, 1 peck, 14 pints of wine, 3 pecks of *cervesa*. June 24th: 6 pecks of barley ... 3 pecks, [...] pints] of *cervesa*, 1 peck, 12 pints of wine ...” (*xiii K(alendas) Iuli[as] | horde[i] m(odios) ... | cervesa[e] m(odios) ... | x[ii] K(alendas) Iulias | hordei m(odios) iiiii [...] | cervesae m(odios) ii ... viiii K(alendas) Iulias | hordei m(odios) v s(esmissem) | vini m(odium) i (sextarios) xiiii | cervesae m(odios) iii | viii K(alendas) Iulias | hordei m(odios) vi [...] | cervesae m(odios) iii (sextarios [...]) | vini m(odium) i (sextarios) xii | ...*). I should note that here and elsewhere (for instance T201) I translate *modius* as “peck” when it refers to either a dry or a wet measure.

¹¹⁷ *Tab. Vindol. Suppl.* 2, ll. 2-6 and 16-17: “April 11th: the decurions of the 1st ... *cervesa* ... May 16th: from the *cervesa*-maker ... June 10th: ... from the *cervesa*-maker ...” (*iii Idus April[es] | decurion[...]| i cerv[esa]... | xvii K(alendas) Iunia[s] | cervesar[io] ... iiiii Idus Iunias [...] | cervesario [...]*).

¹¹⁸ *Tab. Vindol.* II, 482.

¹¹⁹ Dannell and Wild 1987: 70.

to beer making.¹²⁰ Furthermore, finds of carbonized malted wheat from the first and second centuries A.D. at the Roman fort of Isca in Caerleon, Wales point to the production of beer at that location.¹²¹

Lastly, I have already discussed the inscription to Mars Braciaca (E3) set up by a Roman soldier in Britain (see section 3.3.2.4 above), which need not be linked to beer as is sometimes thought (but may have rather had a simple local association). Anne Ross has explained the equation of Braciaca (which she takes to be a god of malt) with Mars in this inscription as due to the fact that Celtic warriors would drink before going into battle.¹²² However, there is little evidence for this practice of “Dutch courage” as being a regular one among Roman soldiers.¹²³

4.2.1.4.3 Egypt:

In a series of fifty-four ostraca written in Greek from the mid-second to the late second or early third century A.D., nearly all from Pselcis, Egypt, soldiers confirm receipt of wine rations from their *cibariator*.¹²⁴ As is known from another ostrakon, the garrison of Aphis received thirty jars (κεράμια) of an unknown drink (wine or beer?) to be provided for soldiers.¹²⁵ However, the first, and also only certain reference of beer distributed to soldiers in Egypt is from a papyrus from Oxyrhynchus from the fourth century A.D. which is clearly an account of various

¹²⁰ Dickson 1989: 141 (with the finds listed at 138-139), with Dickson and Dickson 2000: 210.

¹²¹ Helbaek 1964. Dickson (1989: 141) notes that the grain here may have sprouted from damp conditions rather than deliberate malting. See also the discussion of such finds at section 3.3.2.2 above.

¹²² Ross 1967: 181. This is taken as fact by Irby-Massie 1999: 309, n. 605.

¹²³ Goldsworthy (1996: 261-262), who cites the drinking of alcohol before battle at Tac., *Ann.* 1.65 and *Hist.* 4.29.

¹²⁴ Fink 1971: 317-329 (no. 78.18-71); there is no evidence for beer rationing to soldiers in Fink's collection (which covers only the early Empire). Note also the accounts of wine supplied to soldiers in two late sixth century A.D. papyri: *P.Oxy.* XVI.1920 and 2046. A *cibariator* in Egypt is also mentioned, for instance, at *O.Flor.* 14, l. 7, 16, l. 6, and probably 19, l. 3. For the supply system for soldiers in Roman Egypt, see Adams 1995 and Alston 1995: 110-112.

¹²⁵ *O.Flor.* 20.

portions of beer (from 49 to 55 litres [λίτραι]) given to Dalmatian soldiers.¹²⁶ There are also some possible mentions of the rationing of beer in two fragmentary papyrus letters from the third century A.D. of unknown provenance. In the first, it is said: “[a measure is missing] of meat and local wine and *zūthos*, and to be given to the soldiers ...” (...) . καὶ κρέως καὶ οἴνου ἐπιχωρίου καὶ ζ[ύ]τους, τοῖς δὲ στρατιώταις δι[δ]οσθαι (...).¹²⁷ It is interesting to find a mention of both wine and beer together (as is found at Vindolanda), but here these products are not directly connected to the soldiers. In the second, the connection is even more tendentious: “... of the army ... of the same *zūthos*” (...)στρατιωτῶν | ...]. αὐτοῦ ζύτους).¹²⁸ If these are in fact official documents relating to the supply of food and drink for Roman soldiers it is possible that these are official requests for provisions from Nicopolis, the legionary fort near Alexandria. One other papyrus (from the late third century A.D.) mentions beer taxation in connection with Nicopolis.¹²⁹

4.2.1.4.4 Intoxicated Elephants in Battle:

Elephants were often purposefully intoxicated in antiquity, either to be generally tamed or else to prepare them for battle.¹³⁰ Pliny (T46) notes of elephants that: “When captured, they are quickly tamed by the juice of barley” (*capti celerrime mitificantur hordei suco*). Similarly, the Byzantine author Manuel Philes (from the thirteenth and fourteenth centuries A.D.), in a

¹²⁶ *P.Oxy.* XII.1513, ll. 1-12: “The 30th of Choiak. To the Dalmatians under the *praepositus* [i.e. superior] Lupianus through the *optio* [i.e. adjutant] at Disora: (1) 55 litres of *zūthos*, (2) 55 litres of *zūthos*, (3) 53 litres of *zūthos*, (4) 50 litres of *zūthos*, (5) 50 litres of *zūthos*, (6) 49 litres of *zūthos*” (χοίακ λ'. Δαλμάταις τοῖς ὑπὸ Λουπιανὸν πραιπόσιτον διὰ Δισορᾶ ὀπτίωνος: α', ζύτου λί[τραι] νε', β', ζύτ[ου] λί[τραι] νε', γ', ζύτ[ου] λί[τραι] νγ', δ', ζύτ[ου] λί[τραι] ν', ε', ζύτ[ου] λί[τραι] ν', ζ', ζύ[του] λί[τραι] μθ'). I do not mean to imply here that the ancient litre was equivalent to the modern one; it was in fact usually used as a dry measure. For Dalmatian beer, see Jerome (T101).

¹²⁷ *P.Alex.* 1, l. 5. I write ζῦτος here and in the next quotation with a long upsilon, where the editors have a short upsilon (see further section 2.2.11 above).

¹²⁸ *P.Alex.* 417, col. i, ll. 18-19. With this translation I assume that ζῦτος here is neuter as it is in the previously cited papyrus.

¹²⁹ *P.Fay.* 104, l. 12.

¹³⁰ I would like to thank Dr. Robert Cousland and Chris Epplert for their input on this section.

poem on the elephant (T238), says that “the juice of barley” (κριθῆς ... χυλός) and other foods “possess good cheer for the subdued herd [of elephants]” (εὐωχίας ἔχουσι τῷ κτήνει κρίσιν). Clearly both authors are indebted to a common source which is probably Ctesias (= T11) or, less likely, Megasthenes (= T18); however, it is not specified here that Indians are involved, and in fact the reference to barley beer may show that African peoples are being referred to.¹³¹ In this case beer is clearly used to tame elephants. According to Athenaeus, Aristotle noted that monkeys and elephants become drunk when they drink wine, while Aelian, evidently also following Aristotle, said that a monkey loses its cunning when drunk on wine and an elephant loses its strength, making them both easy to capture.¹³²

Two further connected passages provide information specifically on intoxicating elephants for battle. Aelian (T76) says: “Water is the drink for the tamed herd elephant, while wine [is the drink] for that [elephant] fighting in war, not [wine] from grapes, since men prepare one from rice and another from reed¹³³” (ἐλέφαντι ἀγελαίῳ μὲν τετιθασευμένῳ γε μὴν ὕδωρ πῶμά ἐστι, τῷ δὲ <τᾷ> ἐς πόλεμον ἀθλοῦντι οἶνος μὲν, οὐ μὴν ὁ τῶν ἀμπέλων, ἐπεὶ τὸν μὲν ἐξ ὀρύζης χειρουργοῦσι, τὸν δὲ ἐκ καλάμου). It is probable that again this reference comes ultimately from Ctesias (= T11), since Ctesias wrote about Indian elephants, and rice beer was an Indian drink.¹³⁴ Manuel Philes writes (T238):

οἶνου δὲ τὸν τοσοῦτον εὐφραίνει κύλιξ,
ὃν ὁ τρυγητὴρ ἐκκενοῖ τῶν βοτρυῶν.
ὀρεκτιῶν δὲ καὶ σφαδάζων εἰς μάχην

¹³¹ For the Indians drinking rice beer rather than barley beer, see section 3.2.4 above, and see below. There was certainly beer in sub-Saharan African: see Strabo (T44) on Ethiopian barley beer and the mention of beer in two Greek steles from Axum, Nubia dating to the fourth or fifth century A.D. (E19a-b).

¹³² Arist., *Symp.* fr. 107 Rose³ in Athen., *Deipn.* 10.429d, with Ael., *Var. Hist.* 2.40.

¹³³ This is a grape wine perfumed with aromatic reeds; see Plaut., *Per.* 87-88 and Pliny, *Hist. nat.* 14.19.107.

¹³⁴ Ctesias on elephants: Scullard 1974: 33-36. Indian rice beer: Strabo (T42) and Pliny (T50); in both of these cases it is said that Indians drink rice beer as opposed to barley beer, and it is probable that again Ctesias's *Indica* is the ultimate source. Interestingly, it is said in Hall (2000: 44): “Elephants love alcohol, particularly the rice wine these people [i.e. Indians] make.” I owe this reference to Dr. Robert Cousland.

τὸν ἀπὸ λωτοῦ καὶ τὸν ἀπὸ φοινίκων
καὶ τῆς ὀρύξης ἐκροφεῖ τῆς ἀγρίας,
ὥς ἂν ὁ θυμὸς ἀκρατῶς ὑποζέων
ἀντιστατικῶς καρδιώττειν ὀτρύνῃ.

A cup of wine gladdens it [i.e. the elephant] so much, which the vine-worker should drain of grapes. It gulps down that [wine] from lotus and from palm dates and from wild rice, lunging and struggling into battle, since its heart uncontrollably somewhat fermenting, rouses it to take courage against the enemy.

In these passages rice beer along with other intoxicants (lotus wine, palm date wine, or reed wine) is said to be used, presumably by Indians, on elephants when leading them into battle. Aelian does not give the reason why this was done and, similarly, in a passage in *I Maccabees* it is simply said that prior to the battle with the Maccabees in 162 B.C., the Seleucids “showed to the elephants the blood of grapes and mulberries to prepare them for battle” (τοῖς ἐλέφασιν ἔδειξαν αἷμα σταφυλῆς καὶ μύρων τοῦ παραστήσαι αὐτοὺς εἰς τὸν πόλεμον).¹³⁵ Manuel Philes, however, says that intoxicating elephants gives them courage, presumably by calming their nerves before the chaos of battle. Scullard has rather claimed that elephants in battle received “on occasion a ration of fermented wine to stimulate their fury.”¹³⁶ This problem about whether elephants were to be tamed or infuriated by alcohol is well exemplified in the apocryphal account of Ptolemy Philopater’s abortive attempt to destroy the Jews in Alexandria in the late third century B.C. He is said to have employed myrrh and unmixed wine in order to drug his elephants enough so that they could be safely led into the city’s hippodrome; however, this wine was also intended to have the opposite effect of enraging the elephants enough so that they would trample the Jews collected in the hippodrome.¹³⁷ In this case, it may be a matter of

¹³⁵ *I Maccabees* 6:34. Presumably grape and mulberry wine are meant; for grape wine being called the “blood of grapes” in ancient Hebrew and Greek, see Brown 1995: 135. For mulberry wine, see section 1.1 above.

¹³⁶ Scullard 1974: 238, and see 187-188; he only cites (281, n. 157) Aelian (also found at 229) and *I Maccabees* and *III Maccabees* (for which, see below). No mention is made of intoxicated elephants in Toynbee 1973: 32-54 (a chapter on elephants). Brookes (1999: 46) speaks of the “inebriated bull elephant” as “that most terrifying of creatures.”

¹³⁷ *III Maccabees* 5:1-2, 10, and 43. Furthermore, Josephus (*Contr. Ap.* 2.53), speaking of elephants, records that Ptolemy VIII “had intoxicated these beasts” (*bestias ipsas inebriasset*).

quantity: a small amount of alcohol could calm an elephant, while more could enrage it.¹³⁸ Another possibility comes to mind. Both Aelian and Manuel Philes say that it is wine which has not been made with grapes that should be used for elephants in battle. It is possible that different intoxicants were thought to have different effects on an elephant. In antiquity it was not understood that the same substance, that is, alcohol, was found in various beverages and Aristotle spoke of the different effects of wine and barley beer on humans (T14, with section 2.2.8 above).

4.2.2 The Spatial Marginality of Beer:

Toynbee has shown that there have been two major essentialist theories for explaining differences between people: the ancient environmental theory and the modern race theory. In the former, human nature is thought to be fundamentally uniform, differing only because of diverse environmental factors; in the latter, human nature itself is thought to be diverse, differing between various groups of people.¹³⁹ The most famous ancient document propounding the environmental theory is the Hippocratic work *On Airs, Waters, Places*, in which geography and climate are assumed to affect not only health and physique but also character.¹⁴⁰ The Scythians, for instance, since they lived in a cold climate were considered stunted, moist and soft, infertile, effeminate, and diseased.¹⁴¹ A distinction is also generally made in this work between the Asians, who are considered gentle because they live in an unchanging climate, and

¹³⁸ Eubulus (fr. 93 Kassel-Austin = fr. 94 Kock in Athen., *Deipn.* 2.36b-c) says that the first wine krater at a party is for health, the second for love and pleasure, the third for sleep, the fourth for violence, the fifth for uproar, etc.

¹³⁹ Toynbee 1935: 250. It should be noted that though the race theory has been almost universally adopted in modern times, the environmental theory was reintroduced in the eighteenth century by Montesquieu in his *The Spirit of the Laws* (see especially 3.14 for his comments about drinking).

¹⁴⁰ See Rives 1999: 16-17 and 129 for numerous examples of this theory in ancient texts, and see also Garnsey 1999: 63 on environmental determinism in relation to diet.

¹⁴¹ Ps.-Hippocr., *Aer.* 8.52-53 and 19.32-33, and see generally 17-22. Diet is nowhere explicitly linked with character in this treatise. There are found simple statements such as that those exposed to the north wind, that is in a very cold climate, were supposedly not big drinkers (4) or that those who obtained their water from springs in high places could stand little wine (7).

the Europeans who are war-like because they live in a harsh and changing climate. As the environmental theory developed it seems that three rather than two major inhabited areas were recognized, a northern one, a southern or eastern one, and a central one, only the last of which was thought to create the people with the best characters. Plato stated that northerners (including Thracians and Scythians) were passionate and spirited, easterners (Phoenicians and Egyptians) loved money, while the Greeks, in the centre, loved knowledge.¹⁴² In the *Timaeus* Plato has Critias report that the priests of Sais in Egypt declared that Athena had chosen the location for the Athenians since she noticed that due to the good climate it would be a place where very wise men would be born.¹⁴³ Similarly, Aristotle said that people from cold climates are courageous, but not very intelligent or skilful nor capable of ruling well. Easterners are intelligent and skilful, but not courageous and not capable of ruling. Greeks however, because of their ideal geographic position, are courageous and intelligent and able to rule all peoples.¹⁴⁴ The Athenian in Plato's *Laws* even goes so far as to say that the nature of the climate in places determines whether better or worse men will be born there, and he says that the type of food produced in a place affects the bodies as well as the souls of men for good or evil.¹⁴⁵ Though beer-drinking is nowhere said specifically to be a cause of a defect in character, it is often associated with those who are in the periphery of the inhabited world, away from the enviable Mediterranean climate.

Herodotus, one of the earliest proponents of the environmental theory,¹⁴⁶ says (T7) that the Egyptians "use wine made of barley since there are no vines in their country" (οἶνον δὲ ἐκ κριθέων πεποιημένον διαχρέωνται· οὐ γάρ σφι εἰσὶ ἐν τῇ χώρῃ ἄμπελοι). The usual approach

¹⁴² Pl., *Rep.* 4 (435e-436a), and see *Legg.* 5 (747c), where he also adds that Egyptians are cunning and crafty.

¹⁴³ Pl., *Tim.* 24c4-d9

¹⁴⁴ Arist., *Pol.* 7.2-4 (1327b23-38). Similar notions continued into Roman times; see, for instance, Vitruvius, 6.1.3-11, who distinguishes between the northerners, the southerners, and the Italians.

¹⁴⁵ Pl., *Legg.* 5 (747d2-5).

¹⁴⁶ Herodotus, for instance, wrote (9.122.3): "soft men come from soft countries" (ἐκ τῶν μαλακῶν χώρων μαλακοὺς ἄνδρας γίνεσθαι).

by commentators on this passage has been either to vindicate Herodotus or to impugn the veracity of his statement. Usually Herodotus is said to be completely wrong, since vines did in fact grow in Egypt.¹⁴⁷ Others excuse him by noting that he never visited the vine-growing districts of the Delta.¹⁴⁸ Yet elsewhere Herodotus speaks of wine being used in Egypt, and he calls it specifically “vine wine” (οἶνος ἀμπέλινος), as if to contrast it with the “barley wine.”¹⁴⁹ Waddell explains the contradiction convincingly by suggesting that Herodotus thought that the grape wine in Egypt was imported.¹⁵⁰ Lloyd has rather suggested that Herodotus did know that vines grew in Egypt, and was simply saying that they did not grow in southern Egypt.¹⁵¹

The prevailing methodology has thus been to compare his text with archaeological or other literary sources in order to attempt to verify the veracity of his account. Hartog, however, has successfully investigated Herodotus’s work on its own as a mirror which both distorts “the other” while mainly reflecting the one looking into it. In this light, the passage in question can be read as conforming simply to its own interior logic, without reference to any outside facts. Though in reality beer-drinkers (from Egypt or elsewhere) on the whole made beer since cereals were readily available, Herodotus’s perspective is rather that one makes beer since vines are unavailable. Herodotus assumes that if one were to have wine there would be no need for beer; therefore if one has beer one does not have wine. That the underlying notion involves the primacy of wine is betrayed by the fact that beer itself is here simply referred to as a type of

¹⁴⁷ Legrand 1963: 36 and 117, n. 6 and Chantraine 1968: 401, s.v. ζῦθος. Diodorus Siculus (*Hist.* 1.36.5) said that regions with vines in Egypt were irrigated and supplied much wine for the inhabitants, and he also mentioned wine-drinking in Egypt in other passages (1.70.11, 72.2, 84.2, and 91.1). For wine and viticulture in Pharaonic Egypt, see Kees 1961: 81-82; Meyer 1986; Meeks 1993; James 1996; Lesko 1996; Bober 1999: 42-46; and Murray, Boulton, and Heron 2000; in Greco-Roman Egypt, see Rathbone 1980; Empereur 1993; and McGovern 1997.

¹⁴⁸ Waddell 1939: 194-195.

¹⁴⁹ Hdt., 2.37.4 and 60.3, and see 39.1 and 4. Cary (1843: s.v.) shows that this is used “in contradistinction to that made from barley.”

¹⁵⁰ Waddell 1939: 194-195. Herodotus mentions that Greek and Phoenician wines are imported to Egypt at 3.6.1.

¹⁵¹ Lloyd 1976: 334. See already Blakesley 1854: 221, n. 201: “There were no vines in that part of Egypt which was overflowed by the Nile.”

wine, and Herodotus is the first author known to have called it such (see further section 2.1.2.2 above).¹⁵²

Herodotus, as vinocentric as he is, does not, at least explicitly, disparage beer, and he explains its use because of a purported fact concerning the environment: that vines do not grow in Egypt. Herodotus elsewhere says that because of the unique Egyptian climate, and the unique nature of the Nile, the Egyptians are the exact opposite of others; thus, for instance, in Egypt women urinate standing, while men squat.¹⁵³ It is not close anthropological observation that lies behind this kind of statement, but rather the assumed close connection between differences in environment and cultural alterity.

Many other authors showed how the environment was able to determine whether one would be a wine-drinker or beer-drinker, without thereby making any relative value judgments between beer and wine. Pytheas (T15) said that those who lived near “the frigid zone” (ἡ κατεψυγμένη ζώνη) in the far North had few domesticated animals and plants, and both prepared food and drink from grain and honey. Strabo (T40) disbelieved Pytheas since he thought that only “the temperate zone” (ἡ εὐκράτος ζώνη) was habitable.¹⁵⁴ In another passage Strabo connected the happiness of peoples in Asia with the niceness of their climate and the quality of the vines grown there, and spoke of the reverse being the case in the north.¹⁵⁵ And indeed Pliny for one says that the presence of wine distinguishes the temperate or “intermediate”

¹⁵² For Dio the Academic’s alternate explanation of why Egyptians drank “barley wine” (T24), see section 4.2.3.2.3 below.

¹⁵³ Hdt., 2.35.2-3. Similarly, Sophocles states (*Oed. Colon.* 339-341) that Egyptian men stay indoors and weave and women work outdoors, while Diodorus Siculus says (*Hist.* 1.27.2) that in Egypt men obey their wives. Strabo (4.4.3 [197]) notes that it is common among a number of barbaric people for the roles of men and women to be reversed.

¹⁵⁴ For the theory of the three zones (“frigid” [κατεψυγμένη], “temperate” [εὐκράτος], and “torrid” [διακεκαυμένη]) see Str., 2.2.1-3.3 (94-98) and 2.5.3 (111). For Strabo’s concept of the habitable world, see 2.5.5-15 (112-120).

¹⁵⁵ Strabo, 2.1.14-16 (72-74). He further noted (1.4.9 [66]) that Asians were not a barbaric people.

(*medius*) zone from the others.¹⁵⁶ Posidonius, who was a great proponent of the idea that climate influences character,¹⁵⁷ explained (T26) that “because excessive cold destroys the climate of the air” (διὰ δὲ τὴν ὑπερβολὴν τοῦ ψυχροῦ διαφθειρομένης τῆς κατὰ τὸν ἀέρα κράσεως) the land of the Gauls “bears neither wine nor oil (i.e. neither vines nor olive trees)” (οὔτ’ οἶνον οὔτ’ ἔλαιον φέρει), forcing the Gauls to drink beer.¹⁵⁸ Dionysius of Halicarnassus (T37), perhaps following Posidonius, also said that the Celts did not have grape wine or olive oil, but used beer instead. Cassius Dio (T75) explained that the Pannonians had barley and millet beer, and only a little bit of bad wine, “since they spend most of the time in a very harsh winter [climate]” (ἄτε ἐν χειμῶνι πικροτάτῳ τὸ πλεῖστον διαιτώμενοι). Isidore (T136), adding to his citation of Orosius (T112), says that beer is found in Hispania since “it is not a place fertile in vines” (*ferax vini locus non est*). In the mid eighth century A.D., Chrodegangus (T171), copied in A.D. 816 by the synod of Aachen (T196-197, and see 194-195), proposed that canons drink different quantities of beer or wine depending on whether or not they lived in a place fertile in vines.¹⁵⁹

All this evidence shows that Greeks and Romans, even if they thought of wine as the primary form of alcohol since that was its status in their societies, could simply consider beer an alternative to wine, and the use of one or the other being dependent on environmental factors rather than a matter of relative quality.¹⁶⁰ This question of environment versus quality is best

¹⁵⁶ Pliny, *Hist. nat.* 23.22.37. Pliny also said (2.80.189-190) that the cold climate makes northerners tall, light-skinned, and savage and the warm climate makes southerners tall, dark-skinned, and wise. In the “intermediate” (*medius*) zone people are just the right size, with just the right colour of skin, and are well-mannered, intelligent, and natural rulers.

¹⁵⁷ See, for instance, Str., 2.3.7 (102-103), who criticises the idea, with 2.5.26 (127) on how a bad climate leads to a war-like and courageous character and a good climate to peacefulness.

¹⁵⁸ The coldness of Gaul is also mentioned by Diodorus Siculus (using Posidonius [= *Hist.* 23, fr. 169 Theiler]) at 5.25.2 and 5. Compare also Dionysius on the Celts not having grape wine or oil (T37), statements perhaps indebted to Posidonius.

¹⁵⁹ Also, when not in a vine-growing region the followers of St. Arnulfus drink beer (T152).

¹⁶⁰ Of all the authors quoted above only Dionysius (T37) speaks explicitly of beer as an inferior substitute for wine in a place with a colder climate.

exemplified in the stories relating to Dionysus's role of god, not only of wine, but of beer.¹⁶¹ According to Diodorus Siculus, there is no one who does not share in the gifts of the god Dionysus/Osiris¹⁶² (T31) since the barbarians, even though vines did not naturally grow in their lands because of the climate, were taught the making of good beer by the god (T29, 31, and 32, copied by Eusebius [T86]).¹⁶³ However, Julius Africanus (T83) explained instead that barbarians had been abandoned by an angry Dionysus, who did not teach them viticulture, "keeping for the Greek farmers alone the triumphs" (μόνοις τὰ ἐπινίκια γεωργοῖς Ἑλλήσι τηρῶν).¹⁶⁴ Both authors begin with the premise that beer is used where vines cannot grow, but whereas Diodorus takes both wine and beer as gifts of the god, differing only in so far as climactic conditions would dictate which was to be made, Julius treats beer as nothing less than

¹⁶¹ Dionysus was clearly a god of intoxication, and there is some amount of debate whether he was originally a god of wine, or else a god of beer or mead. Homer, for instance, does not link Dionysus with wine (see Otto 1965: 145-146), while Julian (T91) considers beer foreign to the real Dionysus. Also beer seems to be antithetical to Dionysus in Aeschylus's *Lycurgus* (T6). Jane Harrison posited that Dionysus was originally a mead god, then became a beer god, and then became entirely a wine god. She based Dionysus's connection to beer on four pieces of evidence: (a) the use of the winnowing-fan in Dionysiac ritual, (b) the purported Thracian origins of Dionysus, (c) the supposed etymologies of two of his titles, and (d) the etymology of the word τραγωδία (Harrison 1903: 323-324 and 1922: 413-425). Harrison believed, as is logical, that (a) the winnowing-fan found in Dionysiac ritual was originally used to winnow grains when Dionysus was still a beer god, and later, when Dionysus became the wine god, changed its function to that of fruit basket. (b) Otto has shown that the evidence that Dionysus came originally from Thrace or Phrygia (beer-drinking locations) was unconvincing, since, though there is certainly much evidence of Dionysus in Thrace, he could have come there from Greece (Otto 1965: 58-59). The name Dionysus has also been found on a tablet from Pylos (Xa06: *di-wo-mu-so-jo*) written in Cretan linear B, which proves that Dionysus must have been already a Greek god by the end of the second millennium B.C. at the latest (Ventris and Chadwick 1973: 127, with Kerényi 1976: xxvi). Harrison further thought (c) that it was probable that Dionysus used to be a beer god because of some of his epithets: βρόμιος which, though the ancients connected it with βρέμω (to make a loud noise), she thought came from βρόμος or "oats" and Βραῖτες which she associated with the Medieval Latin word *braisum* for a type of beer. Finally, Harrison posited that (d) the word τραγωδία originally meant "spelt-song" and not "goat-song," and when Dionysus became a wine god this word was confused with τρυγωδία or "winelees-song." Though some of these suggestions are certainly interesting, it is impossible to know now the antiquity of Dionysus's connection with beer. Graves (1960: 1:108) accepts Harrison's thesis and adds some imaginative thoughts of his own.

¹⁶² Dionysus was already identified with Osiris by Herodotus (2.42.2 and 144.2). See also the sources cited in Diodorus Siculus (*Hist.* 1.11.3, with 1.13.5, 23.7-8, and 25.2).

¹⁶³ Dionysus/Osiris is also said to have discovered wine (T32) and taught its making to mankind (Diod. Sic., *Hist.* 1.15.8). For Ceres's connection to beer, see section 2.2.5 above; for the Corybants, see section 2.2.6 above; for Sabazius's, see section 2.2.9 above; for Mars Braciaca's, see section 3.3.2.4 above; and for Succellus's, see section 3.8.1 above.

¹⁶⁴ Sherratt wrote, citing no evidence (1987: 94): "the god Dionysus was said to have fled to Greece from Mesopotamia in disgust at its inhabitants' liking for beer."

a punishment from Dionysus, while wine is a triumphant product.

Servius provides a somewhat more technical explanation of beer-drinking over wine-drinking. He states (T88), in explaining why Scythians drank beer (*cervesia*), that “wine, because of its natural heat, cannot be made in a cold province” (*vinum, per naturam calidum, in provincia frigida non possit creari*). This brings us to an interesting antithesis between beer and wine which may have been rather widespread, that the former is naturally “cold” (and thus possibly inferior) and that the latter is naturally “hot” (and thus possibly superior). Cyril says that beer is “cold” (ψυχρός [T97a]; *frigidus* [T97b]) and specifically because of this it produces “incurable illnesses” (*morbos insanabiles* [T97b]). Strabo (followed by Macrobius) speaks at length about the popular opinion that wine is by nature hot and argues against it, while Pliny had said that wine warms the inside of the body and cools the outside.¹⁶⁵ Galen (T69, copied by Oribasius T92a-b) also proposes a more complicated scheme when it comes to beer, saying that one type is “warming” (θερμαίνον) and another “cold” (ψυχρόν).

Even as late as the seventh century A.D., when beer was well established in Europe, Jonas explained (T146): “before other nations on earth, especially the Scordisci and Dardani peoples who inhabit Ocean use [beer], that is Gaul, Britain, Ireland, Germany, and the other [places] which are not unfaithful to the customs of these” (*prae caeteris in orbe terrarum gentibus, praeter Scordiscis et Dardanis gentes, quae Oceanum incolunt usitantur, id est Gallia, Brittania, Hibernia, Germania caeteraeque quae ab eorum moribus non desciscunt*). Thus beer was thought to be a drink especially of those who lived on the periphery of the inhabited world (near Ocean, which was thought to encircle the earth).¹⁶⁶ This was certainly not quite true, and

¹⁶⁵ Plut. *Quaest. conv.* 3.5 (= *Mor.* 651f-653b), with Macr., *Saturn.* 7.6.1-14 (and see the commentary of Teodorsson 1989: 1:332), and Pliny, *Hist. nat.* 14.7.58.

¹⁶⁶ I owe this insight to Dr. Harry Edinger. Beer was mentioned in Pytheas’s work on Ocean (T15) and perhaps in Posidonius’s corresponding work (T25). For a lengthy discussion of the idea of Ocean encircling the earth, see Strabo, 1.1.2-9 (2-6), and see also 2.5.18 (121-122). For conceptions of centre and periphery in antiquity, see especially Romm 1992. For a criticism of the use of this concept by modern anthropologists to explain the drinking practices of ancient Gauls, see Dietler 1989.

in fact the Scordisci and Dardani people mentioned at the top of the listing of beer-drinkers were in fact not inhabitants of “Ocean” at all but Illyrian/Thracian tribes living in the Balkans.¹⁶⁷ It seems that a later copyist of Jonas’s text changed the *praeter Scordiscis et Dardanis gentes* to *Scoticas et barbaras gentes*, either not knowing who the Scordisci and Dardani were or else, more likely, logically replacing them with sorts of people who did inhabit “Ocean,” Scots (or Irish) and barbarians.

4.2.3 The Social Marginality of Beer:

Beer was often excluded from the Greek and Roman diet because of its connections (imagined or real) with (4.2.3.1) barbarity, as well as with (4.2.3.2) effeminacy and low social status, or, more accurately, such conceptions ensured that a beer-drinker could not partake in an ideal Greek and Roman identity, rooted as it was in civility, manliness, and high social status.

4.2.3.1 Civility and Barbarity:

One of the major Greco-Roman antitheses between wine and beer is that of civility versus barbarity. Wine was in fact not only considered civilized (the proper drink for those at the centre of the world) but even *civilizing*. As Sherratt has noted: “Wine in the Mediterranean region is practically synonymous with civilization.”¹⁶⁸ For the ancients, this idea is best exemplified in the story of Polyphemus, who at first lives a primitive rural life, herding sheep and making cheese, but in a sense becomes civilized once Odysseus and his men introduce wine

¹⁶⁷ Scordisci: Str., 7.5.12 (318), who says that they were Celts who mixed with Illyrians and Thracians; Dardani: Str., 7.5.7 (316).

¹⁶⁸ Sherratt 1995: 17, with 17-20. Forbes (1956: 131) writes: “It has been claimed that the expansion of Greek civilization in the wake of Alexander the Great’s conquests, which we call Hellenism, was determined by the natural limits of viticulture.”

to him (though their goal is simply to intoxicate him with a magical wine).¹⁶⁹ Beer (and mead), on the other hand, was considered unavoidably barbaric.¹⁷⁰ Barbarity, though it could at best imply simple alterity, could encompass ideas of lack of education and moderation.¹⁷¹ Beer was thus considered the appropriate drink of the dissolute, uncultivated, and uneducated Emperor Valens (a native of Illyricum), and because of his penchant for it he was derided by the inhabitants of Chalcedon whom he was besieging.¹⁷² Beer was also drunk undiluted with water, unlike the manner in which wine was drunk among Greeks and Romans, even though beer could be just as strong as wine (Diodorus Siculus [T28], with section 3.12.4 above).¹⁷³ Another barbaric trait was drinking in large quantities, as opposed to the moderation expected at the symposium,¹⁷⁴ as well as the use of sieved vessels or filtered straws, in order to avoid floating husks and sediment (as seen in section 3.7 above).

¹⁶⁹ Hom., *Od.* 9.105-542 and Eur., *Cycl.* Timotheus (*Cyclops* in Athen., *Deipn.* 11.465c = *PMG* 780) also described Odysseus serving wine to Polyphemus. Interestingly, Strabo (11.4.3 [502]) speaks of the Albanians living “a Cyclopien life” (βίος Κυκλώπειος). In the Old Babylonian version of the *Gilgamesh* epic, beer is rather the marker of civilization, drunk by Enkidu once he turns from wildman into human (see the translation in Kovacs 1989: 16, n.2).

¹⁷⁰ Barbarians have barley beer according to Diodorus (T31). Priscus (T109) says that barbarians (Scythians or others as well?) call barley beer κάμιν while Jerome (T100) says that in the barbaric speech of Dalmatia and Pannonia it is called *sabaium*. Barbarians drink barley and wheat beer according to Jonas (T156 [according to some manuscripts], and see 161) and Leontinus (T220/T222). Plutarch says that barbarians who do not drink wine drink mead (*Quaest. conv.* 4.6 [= *Mor.* 672b]) while Jerome (T99) calls mead barbaric.

¹⁷¹ Lack of education: see, for instance, Diod. Sic., *Hist.* 1.2.6 (though at 2.29.3-6 the barbarians’ lack of formal education is idealized) and Str., 1.4.9 (67).

¹⁷² Dissolute: Ammian. Marc., 26.7.16 (“the dissolute Pannonian” [*Pannonius degener*]); uncultivated and uneducated: 29.1.11, 30.4.2, and 31.14.5, 8; derided: 26.8.2 (= T94). For Ammianus’s treatment of Valens, see Tritle 1994: esp. 142. On the term *sabaiarius* used to deride him, see section 2.2.9 above. Libanius (*Or.* 46.30) called Valens “the Paeonian emperor” (ὁ Παίων βασιλεύς).

¹⁷³ Beer undiluted: Xenophon (T14) with *Suda* s.v. ἄκρατος (T224); Pliny (T48). Wine diluted: first found in Hom., *Od.* 9.203 (discussed in Pliny, *Hist. nat.* 14.6.53-54, Plut., *Quaest. conv.* 5.4 [= *Mor.* 677c-678b], and Athen., *Deipn.* 10.423d-424a), and see, for instance, Plut., *Quaest. conv.* 1.4.2 (= *Mor.* 620e-621a) and Athen., *Deipn.* 10.423b-424a, 424d-e, 425f-427a, 429f-432b, with Gerber 1988: esp. 41, n. 5 and Villard 1988b. Aristotle rightly notes (*Poet.* 1461a27-28): “They call ‘wine’ that which has been mixed [i.e. wine mixed with water]” (τὸν κεκραμένον οἶνον φασιν εἶναι). The barbarians also drank wine undiluted: see, for instance, on the Gauls, Posid., *Hist.* 23, frs. 169 and 170 Theiler (= T28) and Dion. Hal., *Ant. rom.* 14.8.12; on the Germans, Posid., *Hist.* 30, fr. 188 Theiler (= fr. 73 Edelstein-Kidd), which seems to contradict Caes., *De bell. gall.* 4.2.6 (see section 4.2.3.2.2 below); and on the Scythians and Thracians, Pl., *Legg.* 1, 637d-e quoted in Athen., *Deipn.* 10.432a, and see 427a-c.

¹⁷⁴ For heavy-drinking Thracians, see Athen., *Deipn.* 10.442e-f; Indians: 437a. The heavy-drinking Germans would often fight (Tac., *Germ.* 22.2), as discussed in section 4.1.2.3 above.

4.2.3.2 Questions of Age, Gender, and Class:

Scholars have shown that the boundaries formed by ideologies of identity and alterity in terms of drinking alcohol often involve the three concepts of (4.2.3.2.1) age, (4.2.3.2.2) gender, and (4.2.3.2.3) class.¹⁷⁵ Here again, as with the concept of civility versus barbarity, there are often implicit value judgments being made, for instance about the superiority of the manly or of the upper class.

4.2.3.2.1 Age:

It seems that in general age-based differentiations in terms of drinking alcohol did not exist among Greeks or Romans, there being no taboo against youths drinking (though they might be excluded from certain drinking rituals), and thus the age factor would not readily have had a place in defining their drinking ideology.¹⁷⁶ However, Galen (T72) seems to imply that beer is the drink of youths in Alexandria and wine is the drink of the old. It is hard to tell whether he just gives this case as an example, though it seems clear that he makes no value judgment about the respective diets (the old man, in any case, drinks “harsh wine” [οἶνος αὐστηρός]).

4.2.3.2.2 Gender:

Beer and wine could be differentiated in terms of gender-typing, that is, in terms of their relative manliness or effeminacy. This is well exemplified in Aeschylus who speaks of beer not only as unfit for the civilized, but even unfit for men. He has King Pelasgos of Argos in his *Suppliants* sneer to the Egyptian herald (as he leaves), who is specifically said to be a

¹⁷⁵ See Sherratt 1995: 12. For patterns of consumption based on class, gender, and age, see the discussion in Mennell, Murcott, and van Otterloo 1992: 54-60. For the connections of alcohol and gender, see Bacon 1976: 14-17 and Gefou-Madianou 1992: 7-23; Dietler notes that in general, men drink alcohol more than women (1990: 364). There does not appear to have existed any urban/rural antithesis when it came to conceptions about beer among the ancients.

¹⁷⁶ However, Plato wanted to make eighteen the minimum drinking age (*Legg.* 2 [666a], cited in Athen., *Deipn.* 10.440b-c).

“barbarian” (κάρβανος) (T4):¹⁷⁷

ἀλλ’ ἄρσενάς τοι τήσδε γῆς οἰκήτορας
εὐρήσεται, οὐ πίνοντας ἐκ κριθῶν μέθυ.

Truly, you will find that the dwellers of this land are men,
not drinkers of the inebriant [made] of barley.

Tucker rightly noted that this is said with “contempt.”¹⁷⁸ Aeschylus elsewhere says that Greece, on the other hand, is not a land of women.¹⁷⁹ This passage is most often compared with an earlier one in which Aeschylus states that the eating of the fruit of the papyrus plant is far inferior to the consumption of the ear of grain.¹⁸⁰ Thus Aeschylus is saying that the Greeks are better fighters than the Egyptians because of both their food and drink (it is ironic, however, that the food is precisely grain, from which beer is made!).

Sommerstein suggests that Aeschylus further reinforced the notion of beer’s effeminacy by implying that the men who drank it would be performing fellatio.¹⁸¹ This is based on the use of κριθῇ as a *double entendre* meaning “penis,” as attested in Old Comedy (the passages are cited by Sommerstein). Thus οὐ πίνοντας ἐκ κριθῶν μέθυ could be read as “not men who drink the liquid from penises,” or as Sommerstein puts it, “sucking phallus-juice.” It is certainly bold to propose that Aeschylus would use a vulgarity of this sort, but it remains a possibility. Sommerstein further points out that Lycurgus, in Aeschylus’s eponymous satyr play, seems to

¹⁷⁷ Barbarian: Aesch., *Suppl.* 914. Bernal noted that this play is clouded by “Hellenic nationalism” (1987: 90). Aeschylus supposedly wrote his tragedies while drunk (presumably on wine): Plut., *Quaest. conv.* 1.5.1 (= *Mor.* 622e) and 7.10.2 (= *Mor.* 715d-e) and Athen., *Deipn.* 1.22a-b and 10.428e-429a.

¹⁷⁸ Tucker 1889: 178.

¹⁷⁹ Aesch., *Suppl.* 913.

¹⁸⁰ Aesch., *Suppl.* 761 and schol., with Tucker 1889: 178; Rose 1957: 77; and Hall 1989: 133.

¹⁸¹ Sommerstein 1990-1993.

consider himself manly for drinking beer, for which he was certainly ridiculed (T6).¹⁸²

Aeschylus thus closely connected beer-drinking, effeminacy, and barbarity. Julius Caesar, on the other hand, closely connected the exclusion of wine-drinking with manliness and barbarity. He noted:¹⁸³

horum omnium fortissimi sunt Belgae, propterea quod a cultu atque humanitate Provinciae longissime absunt, minimeque ad eos mercatores saepe commeant atque ea quae ad effeminandos animos pertinent important, proximique sunt Germanis, qui trans Rhenum incolunt, quibuscum continenter bellum gerunt.

Of all of these [Gauls] the Belgae are the bravest, because they are furthest removed from the culture and the civilization of the Province [of Gallia Narbonensis] and not often do merchants visit them and introduce the commodities that make for effeminate spirits; and also because they are nearest to the Germans, who dwell beyond the Rhine, with whom they continually wage war.

Very interestingly, Caesar here connects the Belgae's very barbarity, their distance from civilization (and here also their proximity to another barbarous nation), with their great bravery in battle, and seems to admit that Roman commodities can cause a lack of manliness.¹⁸⁴ What exactly these commodities are, Caesar does not explicitly say here, though he later specifies that an item believed by the Belgian Nervii as well as Germani to cause effeminacy was imported wine. He notes: "There was no means of access unto them [i.e. the Nervii] for merchants since they allowed no wine nor any of the other appurtenances of luxury to be imported, because they supposed that their spirits would be enfeebled by these things and their courage slackened. They

¹⁸² Sommerstein 1990-1993: 59 (and see section 3.9 above). As I have already suggested in section 2.2.1 above, Cratinus may have mentioned beer in the context of silky fabrics in his *Softies* (Μαλθακοί), that is to say *Pathics*, as an attack on its effeminacy.

¹⁸³ Caes., *De bell. gall.* 1.1.3. Similarly, later (6.24.5-6) Caesar says that the Gauls in general are less brave than the Germani because of their acquaintance with Roman luxuries.

¹⁸⁴ Strabo (4.4.3 [196]), surely following Caesar, also says that the Belgae are the "bravest" (ἀρίστοι), but without explaining why.

were fierce men of great courage" (*nullum aditum esse ad eos mercatoribus; nihil pati vini reliquarumque rerum inferri, quod eis rebus relanguescere animos eorum et remitti virtutem existimarent: esse homines feros magnaevae virtutis*).¹⁸⁵ And again: "They [i.e. the Germani] do not at all allow wine to be imported among them, since they believe that by it men are made soft and effeminate for the endurance of hardship" (*vinum ad se omnino importari non sinunt, quod ea re ad laborem ferendum remollescere homines atque effeminari arbitrantur*).¹⁸⁶ According to Caesar then, certain northerners in his day considered imported wine unmanly, and, presumably drank beer (or mead) instead,¹⁸⁷ though Caesar nowhere mentions these other beverages.¹⁸⁸ Whatever reason the northern Belgae and Germani had for avoiding wine, the absence of finds of Roman Republican amphoras from these areas tends to confirm that they did not drink it.¹⁸⁹

Some scholars have wished to explain the effeminate/manly antithesis as based on fact. Christopher Lord suggests that, at least in ancient Mesopotamia, beer was associated with the feminine since it was traditionally prepared at home by women, while wine was masculine since

¹⁸⁵ Caes., *De bell. gall.* 2.15.4. Caesar had earlier noted also that the Nervii were taken to be the most fierce among the Belgae (2.4.8). As it turned out the Nervii were one of the most difficult of the Belgian tribes to conquer. When other Belgae had settled a peace with Caesar, they refused and only surrendered after a battle (2.28). However, sometime later, Ambiorix convinced them to join his rebellion against the Romans (5.38.2-4), but again they were conquered (6.3.1-3). Not having learned their lesson, they rebelled again under Vercingetorix (7.75.3). Strabo (4.3.4 [194]) speaks of the Nervii as a German people.

¹⁸⁶ Caes., *De bell. gall.* 4.2.6.

¹⁸⁷ Bronze vessels found in Germanic areas were probably used for mead or beer; see Fitzpatrick 1985: 312.

¹⁸⁸ Some, however, have not only claimed that Caesar mentioned beer, but also that he preferred it to wine, perhaps extrapolating from his statement that wine could make one effeminate; see Appendix III.

¹⁸⁹ Fitzpatrick 1985: esp. 311-312, Peacock and Williams 1986: 26, fig. 8, and Cunliffe 1988: 178-179. Fitzpatrick, trying to explain the absence of finds, suggested that "specific social and/or religious taboos determined the admission of external goods" (312), though he also notes that "the absence of amphorae might be explained by the Germans returning them for the deposit" (332, n. 7). However, Brogan (1936: 218) argued that "the scarcity of amphora-fragments in free Germany is irrelevant" since they used barrels to transport wine, and that (218, n. 125) even if the Suebi discouraged the wine trade other tribes probably did not. For beer generally among the Gauls and Germans, see Map 3 above.

it was usually imported by men.¹⁹⁰ Be that as it may, at least in Ptolemaic Egypt beer-makers were just as often (and even more commonly) men as women.¹⁹¹ As is clear from Caesar, the effeminacy of a drink had little to do with whether or not it had anything to do with women; it was rather an ideological response to the beverage of “others.”

4.2.3.2.3 Class:

Beer could also be considered a lower class drink by Greeks and Romans. Thus Polybius (T22) said that a certain Iberian king could match the luxury of the Homeric Phaeacians except that in his gold and silver vessels there was beer, by implication rather than the wine only to be expected in such containers.¹⁹² Similarly, Athenaeus quoted Hecataeus’s statement that the Egyptians drank beer as evidence for the modesty of their diet (T2a).¹⁹³ In the first century B.C., Dio the Academic attempted to explain why the Egyptians drank beer, “barley wine,” without denying, as Herodotus had (T7), the evident fact that the Egyptians did indeed also have wine, all the while preserving the primacy of wine. He said that wine in Egypt was more expensive, and that the poor were forced to drink beer (T24).¹⁹⁴ As with Herodotus’s statement, this too is factually false.¹⁹⁵ In Pharaonic times, upper class Egyptians, and the pharaohs themselves, are

¹⁹⁰ Lord in Bottéro 1995: 33-34.

¹⁹¹ For instance, in the listing of Ptolemaic beer-makers by Peremans and Van ’t Dack (1977: 3-9), only six possible women beer-makers and beer-sellers are found (four of these are listed by Pomeroy 1984: 209, n. 61; add no. 12513 [from *P.Lille dém.* 6, l. 5] and also the woman mentioned in *P.Stras.* IX.831, l. 3). Pomeroy explains (163) this lack of women as due to the Ptolemaic control over the beer-making industry, which weakened domestic industries. Compare Bennett’s study (1996) of how men gradually took over the making and selling of beer in England after A.D. 1350.

¹⁹² Walbank (2000: 167) points out that in many citations of Polybius by Athenaeus examples of luxury are mentioned “without condemnation and even with admiration.” Incidentally, some would like to restore Sophocles (T10) to read that beer is not even fit for pigs.

¹⁹³ For Posidonius’s statement (T27) about beer being the lower class beverage of the southern Gauls, see section 4.3.1 below.

¹⁹⁴ Dio also calls Egyptians “wine-lovers” (φιλοῖνοι) and “lovers of drinking” (φιλοπόται).

¹⁹⁵ Geller (1992:20) notes that “Athenaeus” (who quotes Dio) was mistaken. On the other hand, Spiller (1955: 87) uncritically wrote of the ancient Egyptians, citing no sources: “The rich got tipsy on wine, and the poor on beer.”

known to have drunk beer.¹⁹⁶ Also, Strabo (T43) says that “the extensive tribe of Alexandrians” (τὸ πολὺ φῦλον ... τῶν Ἀλεξανδρέων) drink Libyan wine and beer, and both wine and beer were found at the riotous chariot races according to Dio Chrysostom (T57).¹⁹⁷ As Garnsey has said, in Egypt “[c]heap wine was for the poor, expensive wine for the rich.”¹⁹⁸

The cost of beer was much less than that of wine, at least as far as we know from Diocletian’s price edict of A.D. 301, in which an Italian sextarius (or pint) of Celtic barley or wheat beer costs four denarii and of Egyptian beer two denarii, as compared to eight denarii for the cheapest wine.¹⁹⁹ This evidence raises an essential question: was the large difference in price between beer and wine prompted simply by the value placed on them through ideological considerations (i.e. vinocentrism), or was it rather due to pragmatic or practical reasons, such as cost of production and availability? The production of beer requires more work than that of wine, since the sugar, water, and yeast are all present in the grape, whereas cereals must be malted (or at least the starch converted to sugar) and water and yeast supplied.²⁰⁰ Yet, the cultivation of grapes is much more time-consuming and expensive than that of cereals, and more

¹⁹⁶ See, for instance, Darby, Ghalioungui, and Grivetti 1977: 532, and also Garnsey 1999: 118. Similarly, the Near-Eastern elite would also drink beer (see Sherratt 1995: 25). In Mesopotamia the ruling class drank wine, but without thereby rejecting beer (see Bottéro 1994: 4, n. 4 [beer] and 1995: 31-32 [wine and beer]).

¹⁹⁷ For this passage from Dio, see Jones 1978: 36-44, with the beer mention at 43 (which he calls “an Egyptian specialty”). Similar evidence for riotous games is to be found in Tert., *De spectac.* 31.4 Meier, who, while condemning the playing of Greek ball games (*episcirus* and *apopudobalia*) in his native Carthage, says that “the drunken crowds keep shouting insultingly and give the finger to the players” (*turbæ ebriæ lusori contumeliose clamitant et digitum infamem* [Meier; MSS: *infantem*] *ostendent*), though here wine is probably involved (see further Meier 1996). Note also that Galen (T75) compares the Alexandrian drinking habits by age (on which, see further in section 4.2.3.2.1 above).

¹⁹⁸ Garnsey 1999: 118.

¹⁹⁹ Diocl., *Ed.* 2.11-12 (beer) (= E16) and 1-10, 13-19 (wine). In a text from A.D. 111 found in Vindolanda, beer is listed at only 8 asses per metretres (*Tab. Vindol.* II.186, ll. 11-12); no price for the wine there has yet been found (see the list of prices in Bowman and Thomas 1996: 306-307). Kenyon, editing *P.Lond.* II.219r, suggested that it concerned a price of beer of 40 drachmas for one pitcher, which to him seemed “very high,” however, the papyrus seems too unclear to be so interpreted.

²⁰⁰ See Serjeant 1964: 59. Darby, Ghalioungui, and Grivetti (1977: 532) rather argue that beer was more popular and wine more of a luxury item since beer is cheaper, because grain is more abundant, and beer is easier to make.

limited geographically.²⁰¹ It is therefore only reasonable that wine would cost more than beer, but the cost of wine does not usually seem to be reasonably proportionately more than beer.²⁰² Diocletian has even unaged wine cost four times the price of beer, while the cheapest aged wine is listed at eight times the price (at 16 denarii).²⁰³ It thus makes sense to posit some ideological reasons behind the differences in prices, and for European beers being thought of more highly than Egyptian ones (on which, see section 2.3 above).

4.3 The Influence of the Greco-Roman Beer Ideology:

As has been seen, the Greco-Roman ideology involving beer was emotionally-laden, and based on the centrality of wine in their conception (what I have called “vinocentrism”). This meant that beer and wine were considered in many ways polar opposites, as exemplified in a whole series of antitheses. For the most part these antitheses were based on deep-set preconceptions and not on fact, and usually (though not invariably) connected with negative value judgments. These antitheses included the notions of dietary staple versus substitute or marginalised product for medicine or the military, original product versus imitation, centrality versus periphery, civility versus barbarity, vehicle of moderation versus vehicle of excess, manliness versus effeminacy, and upper versus lower class. These antitheses were further strengthened by the fact that it was not realized that wine and beer were both simply forms of alcohol and that both were equally affected by yeast.

The Greek and Roman preference for wine has had a great impact on other cultures, first simply in spurring on the introduction of wine as a newly imported product among certain peoples and then through the influence of the ideology which emphasized the primacy of the product. As Dietler has argued, the introduction of a new type of alcohol into a culture need not

²⁰¹ See Purcell 1985: 2.

²⁰² Still today the best beer in the world is relatively undervalued and the best wine overvalued.

²⁰³ Diocl., *Ed.* 2.9. See further the evidence for aged beers in section 3.9 above.

be accompanied by the corresponding ideologies surrounding the beverage. He argued that when Etruscan wines (in the seventh century B.C.) and Greek wines (in the sixth century B.C.) were introduced to Gauls these products were appropriated for native drinking traditions (and were not part of any sort of concerted Hellenization, as often thought), and also did not replace the use of beer and mead.²⁰⁴ Most cultures which drank wine did not normally exclude beer from their diet for ideological reasons as Greeks and Romans did. We similarly find later that the Ligurians drank barley beer (T28/T40) but also made their own wine which was “pitchy” (πιπίτης) and “harsh” (αὔστηρός) and even purchased Italian wine at Genoa in exchange for flocks, pelts, and honey.²⁰⁵ Also the Germani in Tacitus’s day drank beer, and, quite apart from their practice in Caesar’s time (see section 4.2.3.2.2 above), also had a weakness for imported wine (T58). Indeed, as I have already shown (in section 4.2 above), most cultures were not very choosy about their intoxicants.

However, there is clear evidence that by the first century B.C. Greco-Roman vinocentricism was being exported to other cultures along with their wine. I would like to examine the impact of this ideology among (4.3.1) the Gauls, (4.3.2) the Egyptians, and finally, (4.3.3) the Christians of late antique Europe.

4.3.1 Gauls:

Posidonius (T27) explains that in southern Gaul, the upper class (that is, the chieftains) avoid beer and drink wine from Italy and Marseilles.²⁰⁶ Though they still had not fully accepted Roman practice, since, Posidonius explains, they drank the wine unmixed with water or with

²⁰⁴ Dietler 1990: esp. 380-383 and 1996: 109-115. For the older view, see, for instance, Bouloumié 1981 and Laubenheimer 1989: 7. For the spread of wine among Gauls from the sixth century B.C. on, see Chossenot 1988.

²⁰⁵ Str., 4.6.2 (202).

²⁰⁶ Posidonius also points to a hierarchy between beers: honey beers are better than plain beers (see section 3.5.1 above). Before Roman times, upper class Celts may have drunk honey beer or mead and lower class plain beer (Koch forthcoming). For the drinking hierarchies among the Gauls, see Dietler 1992: esp. 406-407.

only a little water, Gauls considered wine an upper class beverage. Posidonius also stated that the Gauls were addicted to “the wine brought in by merchants” (τὸν εἰσαγόμενον ὑπὸ τῶν ἐμπόρων οἶνον), specifically Italian merchants as he goes on to explain, wine which they drank unmixed and in immoderate amounts. He states that it was a luxury item; in fact, he says that Gauls would exchange a slave for one jar (κεράμιον) of Italian wine.²⁰⁷ The great popularity of wine in southern Gaul at this period has also been archaeologically confirmed.²⁰⁸ By the early Empire the peoples around the Rhone are said by Strabo to be no longer barbarians since they accepted Roman ways, which presumably included wine-drinking.²⁰⁹

4.3.2 Egyptians:

The Ptolemies regulated the manufacture and sale of beer in Egypt, making it a state monopoly, in which a fixed quantity of cereals (σύνταξις) was provided to the beer-makers²¹⁰ in state-run or at least state-contracted factories to make a fixed amount of beer, and the production subsequently taxed (see section 2.2.11.3 above for the system of taxation).²¹¹ In Roman times, the government did not so strictly regulate the production of beer, since they leased out concessions to private factories and provided no fixed allotments of cereals, and

²⁰⁷ Posid., *Hist.* 23, fr. 169 Theiler in Diod., *Sic., Hist.* 5.26.3 (directly following his reference to beer [= T26]). Feuvrier-Prévotat (1978: 255) wrongly speaks of a barrel here. Posidonius (*Hist.* 23, fr. 170 Theiler [= fr. 67 Edelstein-Kidd] in Athen., *Deipn.* 4.152d) also mentioned a rich Gaul providing large vessels filled with expensive drink, probably wine.

²⁰⁸ See Feuvrier-Prévotat 1978: 253-255, Tchernia 1983: esp. 92-95, Bats 1986, and Laubenheimer 1989: esp. 7-9. For the general Gallic fondness for wine, see the sources collected in Tchernia 1983: 97, n. 22, and also Eska 1992: 16, with n. 3. Purcell (1985: esp. 13-15) points out that there was also an increase in the consumption of wine in Italy from the second century B.C. on which was brought on by the wide availability of cheap vintages.

²⁰⁹ Str., 4.1.12 (186).

²¹⁰ See *P.Mich.Zen.* I.36 (from 254 B.C.), in which twelve *artabae* of barley were agreed to be provided daily for Païs to turn into beer at the factory in Philadelphia, though Païs pretended that the agreement had been for eleven *artabae*. For further documents about the contracting out of the beer factory in Philadelphia, see *P.Cair.Zen.* II.59199 (= *SB* III.6738), 59202 (= *SB* III.6739), and *P.Col.Zen.* III.34.

²¹¹ See especially Reil 1913: 167-168; Heichelheim 1933: 170-172; Préaux 1939: 152-158; Taubenschlag 1955: 669; and Römer and Gagos 1996: 145.

allowed “home-brewing” to a certain extent, though they still imposed taxes on the product.²¹² There is no reason to interpret these laws as having anything to do with Greek or Roman sentiments about beer particularly since other industries, such as the production of oil, were similarly controlled.

As I have shown (in section 4.2.3.2.3 above), Pharaonic Egyptians, even of the ruling class, did not look down on beer, nor is there evidence in Ptolemaic times for Dio the Academic’s suggestion that beer was the exclusive drink of the poor (T24). Certain classical authors considered that beer and/or wine was first used in Egypt.²¹³ From the first century A.D. onwards, especially in Alexandria, upper class Egyptians took to drinking Italian wines.²¹⁴ Beer continued to be generally drunk at this time, but as has been pointed out by scholars, references to beer become very rare from the fourth century A.D. onwards in Greek and Coptic papyri from Egypt, while there remain numerous references to wine as drunk by middle and upper classes, pointing perhaps to a Hellenization of the Egyptian diet in all strata of the population.²¹⁵ Interestingly, while there is no evidence for beer rationing to troops in early Imperial Roman Egypt, at least one late papyrus involves this, as has been seen (in section 4.2.1.4.3 above). There is a single Greek reference to beer among early Egyptian Christians. One Christian author (from the fifth century A.D. or later) advises that older ascetics should drink wine or beer (except on holy days) to take care of their bodies and not offend God (Pseudo-Augustine [T112]). This seems to show that beer had a place in the eremitic life. From what we know of

²¹² See especially Reil 1913: 168-169; Heichelheim 1933: 196; Wallace 1938: 187; and Taubenschlag 1955: 669-670.

²¹³ Beer: Scholiast on Aeschylus (T5) and Diodorus Siculus (T32), mentioning Osiris; and see Dio the Academic (T24). Wine: Athenaeus (T78 [see T24]).

²¹⁴ See Rathbone 1983, cited by Garnsey 1999: 118.

²¹⁵ Bagnall 1993: 32, and see also Drexhage 1997: 38-39. I count 65 Egyptian papyri/ostraca/tablets mentioning beer in the second century A.D., 40 in the third century, 5 in the fourth century, and only 6 more after that (for uncertainly dated papyri I have conservatively considered them to be dated as late as possible).

the Egyptian cenobitic life, wine was sometimes drunk,²¹⁶ though beer was found among monks in Europe.

4.3.3 European Christians:

While the pagan Greeks and Romans rejected beer as part of their diet, and influenced others to do so, beer gained in importance once again in the Christian West at least by the fifth century A.D. In the third century A.D., the Christian Julius Africanus (T83), as has been seen (in section 4.2.2 above), could still speak of beer as a punishment from Dionysus. In the fourth and fifth centuries A.D., Church fathers (Eusebius [T87], Cyril [T97], Theodoret [T98], and Jerome [T100]), armed with a mistranslated passage of *Isaiah* (T18) in which it is foretold that the Egyptian beer-makers will perish, readily use divine authority to attack beer while praising wine.²¹⁷ However, after the fifth century A.D. general attacks on beer cease,²¹⁸ and only pagan religious rituals involving beer are condemned (see section 4.1.1.1 above).²¹⁹ From this time on references to beer are no longer made by non-beer-drinkers about a foreign product; the writers themselves clearly are drinkers of beer.

There are a number of Christian texts (from the sixth century A.D. on) which discuss fasts or penances in which beer is allowed in small quantities (see David [119], Theodore [T130], copied by Halitgarius [T189], two Irish penitentials [T137 and 161],²²⁰ and Wolfhard

²¹⁶ There is some evidence that the founder of cenobitical monasticism St. Pachomius (from the early fourth century A.D.) allowed wine to be drunk normally and water to be drunk during fasts, though he made no mention of beer (Rousseau 1999: 84-85, n. 43 and 120, n. 8). Jerome says that only the older monks drank wine in Egypt (*Epist.* 22.35 [120] [= *PL* 22.420]).

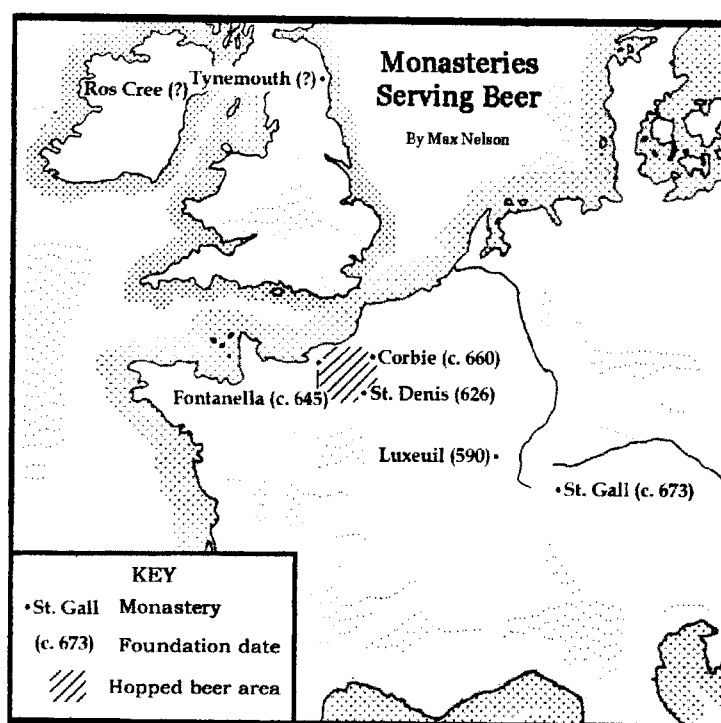
²¹⁷ It may have also been significant that Jesus dealt with wine but never beer in the New Testament.

²¹⁸ The last general attack on beer seems to be that of Fortunatus (T115). However, sometime later, Alcuin complained to his friend Joseph about having to drink sour beer because no wine was available (T174).

²¹⁹ Sourmia (1986: 27) claims, without citing any evidence, that the Church took wine-drinking over beer-drinking as a sign of conversion to Christianity.

²²⁰ There exists also an Old Irish penitential, written no later than the end of the eighth century A.D., in which beer is mentioned a number of times (7, 14, and 15 [= *SLH* V 260 and 261]).

[T219]) or forbidden altogether (for divining [T166] or homicide [T212 and 216]), pointing to the fact that beer was usually drunk. Also, in one text the drinking of beer is not recommended for the months of July and August (T167-169), pointing again to the fact that it was commonly drunk. Already by the time of King Hlotharius II (A.D. 613-622) beer is also found as a tithe for the Church (T138), and in later texts not only is beer found as a tithe for monasteries (T206) but so are hops (T204) and malt and hops (T208). In Charlemagne's day (A.D. 768-814) beer, wine, and many other alcoholic beverages were produced in the imperial villas (T178-181). Finally, it was forbidden to make beer on Sunday (T177), and in one instance God was said to have prevented the tapping of a barrel of beer which had been produced on a Sunday night (T135).



Map 6

INDEX OF SOURCES:

- Ros Cree:** Anonymus, *Vita Sancti Cronani* 23 (after early 7th C. A.D.)
Tynemouth: Beda, *Vita sancti Cuthberti* 35 (in late 7th C. A.D.)
Fontanella: Ansegisus, *Consitutio* 66 (A.D. 823-833)
Corbie: Adalhardus, *Statuta* passim (in A.D. 822)
St. Denis: Hilduinus, *Regula villarum* passim (A.D. 832)
Luxeuil: Jonas, *Vita sancti Columbani* 26 (in late 6th C. A.D.)
St. Gall: Haito (?), *Charta Sancti Galli* passim (in A.D. 820)

Indeed the lay people were certainly not the only beer-drinkers; monks began to drink beer as early as the sixth century A.D., apparently beginning in Britain and Ireland (see Map 6 on the previous page). In the early sixth century, Benedict of Nursia (founder of the Roman and Gallican custom), who had known of those who considered wine not fit for monks, canonized the tradition that wine could be drunk, though sparingly (no more than one half pint [*hemina*] per day).²²¹ Similarly, when beer was involved in monastic rules it was usually to be drunk sparingly, drunkenness being heavily punished.²²² In the sixth century A.D., the British author Gildas (T117) mentions in passing the presence of beer and meat in a monastery.²²³ Slightly later, the Irish Saint Columban (born in Leinster [ancient Lagenorum terra] in A.D. 543), who founded the monasteries of Luxeuil in Burgundy, France and Bobbio in northern Italy (and died in A.D. 615), devised a notoriously strict rule for them, in which, among much else, he punished severely the spilling of beer by monks (T128). It should be noted, however, that he was after all not so strict as to completely forbid the consumption of alcohol, as was the case in some other rules.²²⁴ In fact, Columban, whose rule was followed by many (especially in Gaul), and

²²¹ Bened., *Reg.* 40 (= *PL* 66.641C + 642C); he makes no mention of beer. Theodemar, the abbot of Monte Cassino (founded by Benedict) in the late eighth century A.D., wrote that most of the monks should not drink wine (*plerique etiam nec vinum bibant* [= *MGH-E* II 514]). The important Cistercian Benedictine Bernard of Clairvaux in the twelfth century A.D. supposedly converted pagan soldiers by giving them beer (Guillelmus, *Vita sancti Bernardi* 61 [= *ASS* 38.272B-C]). For further references to beer in medieval Cistercian texts, see Canivez 1933: 1:123, 191, 193, 199, 202, and 505. Benedictine monks today brew beer, most notably those in Belgium, but also in Bavaria, Germany, and in Austria (Jackson 1999: 196-197). For an account of the history of wine making in monasteries (with little scholarly use of ancient sources), see Seward 1979.

²²² Punishments for drunkenness on beer: Theodore (T131), copied by Halitgarius (T188), though he leaves out the specific reference to monks, and see also Pseudo-Cummeanus (T161). Weak beer only was allowed by St. Sturm at a monastery (T176); see further section 3.12.4 above.

²²³ Horn and Born (1979: 2:259) rightly point out that because of the attitudes of Greeks and Romans beer had no place in the early monastic life; however, they wrongly state that the first evidence for it there is in Jonas (T146). Unfortunately, the monastic rule used by Gildas has not survived, though it is thought to have influenced Columban's (see Stevenson 1997: 208). Columban is the first author to mention Gildas (as Giltas), and does so in a letter to Pope Gregory the Great of around A.D. 600 (*Epist.* 1.4 [= *PL* 80.262D-263A]). Gildas even went to Ireland (Gougaud 1932: 70).

²²⁴ In an Old Irish penitential from the late eighth century, it is advised that even those who have vowed not to drink beer should have three sips of it each Easter and Christmas to stay healthy (14 [= *SLH* V 261]). Maelruain, the founder of the monastery of Tallaght (near Dublin, Ireland) who died in A.D. 792, did not allow any beer to be drunk there by the monks, even on feast days, according to an anonymous Old Irish text (Anon., *Monast. Tall.* 6 [edited in Gwynn and Purton 1911: 129-130; and see 40 at 142-143 and also Gwynn 1927 and Gougaud 1932: 97]). In a surviving rule for the monastery of Kilrose, Ireland (purportedly founded by St. Servanus around A.D. 448) it is written

often in conjunction with the Benedictine rules,²²⁵ seems to have spread the Irish practice of beer-drinking in the monasteries in Europe.²²⁶ Perhaps as early as the seventh century A.D. nuns in Ireland were making beer and were allowed a single measure daily (anonymous [T133-134], copied by Benedict [T192-193]). The monastery of St. Gall (himself a follower of St. Columban, from Arbona, Germany) had three breweries on premise as is attested by a surviving map dating from around A.D. 820 (T199, discussed in section 3.11.4 above). In A.D. 822, the monastery of Corbie, populated by monks from Columban's Luxeuil, had more than one malthouse (T202 and 204) and beer, made with hops, was served there to all the monks (T201, 203-205) and to vassals and guests (T200-201). Hopped beers were also found at the monastery of Fontanella (T206) and also, it seems, at St. Denis (T208); see further section 3.5.9 above. Some monasteries served both beer and wine; some served wine only on special days or for special guests, while others only served beer when wine was not available or once it had run out, adhering rather well to the classical notion of beer as inferior to (and more modest than) or as mere substitute for wine.²²⁷

A number of Saints and holy men and women were said to have been involved in a

(Anonymus, *Ordo monast. Kilrosi* [= PL 59.563C]): "For drink they [i.e. the monks] shall have plain water and sometimes mixed with milk, since wine and *cerevisia* will be unknown to them" (*pro potum aquam habuerunt puram et aliquando mixtam lacte, nam vinum et cerevisia illis ignota erant.*). Gougaud (1927: 777, and see 1932: 80-81) has convincingly argued that this rule is not to be dated to the fifth century A.D. (as assumed in the *PL*) but was written after A.D. 1217 when Kilrose was rebuilt. For the various surviving Irish monastic rules, see Gougaud 1908 and 1911.

²²⁵ The various idiosyncratic mixed rules of Benedict and Columban observed in the seventh and eighth centuries A.D. were to be replaced by a universal rule drawn up by Benedict of Aniane (see T192-193); see Rosenwein 1977: 307-312.

²²⁶ For the general influence of the Irish in Europe, see Gougaud 1922. For beer in Irish monasteries, see Bitel 1990: 209-210. For beer in European monasteries, see Rouche 1973: esp. 301-302 and Déccarreaux 1980: 301-303. For beer in medieval English monasteries, see Knowles 1941: 717 (appendix xx).

²²⁷ Both wine and beer for a guest at the monastery at Tynemouth: Bede (T162). Wine served on special days or to special guests: an anonymous Irish rule (T133), copied by Benedict (T192), and Adelhard (T200). Beer served when wine not available (as a general rule): Chrodegangus (T171-172), followed by the synod of Aachen of A.D. 816 (T196-197), for which, see Hartmann 1989: 159, and then by Hlotharius (T198). In the ninth century A.D. wine seems to have been the standard drink at the French abbeys of St.-Germain-des-Prés, St. Denis, and Soissons (see Rouche 1973: 298-299). Both beer and wine were found at St. Gall: see section 3.11.4 above.

variety of beery miracles;²²⁸ the evidence for these in Greek and Latin sources (and not, for instance, in Old Irish or Old English authors) can be found on Table 11 (on the following page). Most appropriate, considering his intolerance for spilled beer, Columban's presence at a monastery purportedly ensured that a jug left unattended under the running tap of a barrel did not overflow (T146).²²⁹ Also, just as Jesus had multiplied loaves and fish, Columban multiplied bread and beer (T147).²³⁰ Similarly, Saint Brigid of Kildare (who died at around the age of seventy in A.D. 523) was not only able to multiply beer (which, it must be said, she had made herself) (T141, and see T164),²³¹ but more than once she was able to transform water into beer, just as Jesus had turned water into wine at the wedding in Cana.²³² Brigid's miracle beer-from-water even once cured her ailing wetnurse (T140 and 164). Furthermore, Brigid is reported to

²²⁸ I wish to present the hagiographical evidence not for its factual content, but simply to demonstrate the attitudes toward beer in late antiquity and the early Middle Ages. For beer in the Irish hagiographies, see Plummer 1910: 1:ci.

²²⁹ The same miracle was attributed by Adso in the tenth century A.D. to St. Bercharius (*Vit. sanct. Berchar.* 1.10 [= ASS 55.1012D-E]). The presence of St. Liudgerus in a monastery ensured that beer could not be spilled over because of a wind (T190). St. Aidanus or Aidus prevents beer from spilling when the wagon he is riding practically crashes into a city's walls (T139). For Columban destroying a vessel of beer sanctified by pagans (T149), see section 4.1.1.1 above.

²³⁰ Here it is explicitly compared with Jesus's feeding of the five thousand (for which, see Matt 14:15-21, Mark 6:35-44, Luke 9:12-17, and John 6:1-13; for the four thousand, see Matt 15:32-38 and Mark 8:1-9). Jonas also claims that the abbess Sadalberga (or Salaberga) multiplied beer on one occasion (T155). Around the same time, a certain farmer from Avernus was able, through prayer, to multiply beer for his thirsty field workers (T129), a story taken as evidence by Stevens (1933: 71) that beer in the south was probably "confined to the lower classes;" note that in an Egyptian papyrus (*P.Lond.* I.131) from the second century B.C. free beer is said to be distributed to field workers. Even after his death in A.D. 640, beer could still be multiplied through the intercession of St. Arnulf (T151-152). See also the miracles of Mochuda (T144) and John of Beverly (T169). There are also stories that Irish Saints could cause a beer to ferment properly, such as that of Cronanus (T153); Plummer (1910: 1:43, n. 13 and 264, n. 9) notes two such stories, of St. Aedus and St. Colmanus, but does not provide the Latin for them.

²³¹ For Old Irish sources on this miracle, see Greene 1954.

²³² Cogitosus (T156), who compares it explicitly with Jesus's miracle (for which, see John 2:1-11). His source was an anonymous hagiographer (T143, copied also at T157-158), where the Cana miracle is not mentioned. In the surviving hymn conventionally ascribed to Broccán the Squinting (from the early seventh century A.D.) it is said (*Nicar Brigit* 36): "a marvel of hers [Brigit's] was the bath; she blesses it about her, it became red ale" (Stokes and Strachan 1903: 337, ll. 8-9). In the Old Irish hymn conventionally ascribed to Ultán (perhaps from as early as the seventh century A.D.) three members of Brigid's community are saved after drinking poisoned beer by praising Brigid (Stokes and Strachan 1903: 323). In the early twelfth century Laurence of Durham also has a version of this story which is much longer (*Vita Sanctae Brigidae* 55 [= ASS 4.179C-D] = 47 in Heist 1965: 20-21). St. John of Beverly's similar miraculous multiplication of beer, mead, and wine (T169) is also compared to the miracle at Cana, though he does not turn water into alcohol.

TABLE 11: BEERY MIRACLES (UP TO A.D. 900)

Miracle	Saint / Holy Person	Circumstance	Method	Festival
Multiplying	Farmer (T129)	Thirsty field workers	Prayer	—
	Brigid (T141)	Easter feast for churches	Production	Feb. 1
	(T164)	Generally	Not mentioned	
	Mochuda (T144)	Stay at a monastery	Presence	May 14
	Noddo (T151)	Funeral of Arnulf	Prayer to Arnulf	July 18
	Goëricus (T152)	Funeral of Arnulf	Prayer to God and Jesus	Sept. 19
	Columban (T147)	Thirsty working monks	Prayer to Jesus	Nov. 21
	Sadal-/Sala-berga (T155)	Visit by Waldebert	Divine Intercession	Sept. 22
	John of Beverly (T169)	Regal feast	Blessing	May 7
Preventing Flowing	Chrysanthus/Daria (T135)	Beer made on Sunday	Posthumous presence	Oct. 25
Preventing Spilling	Aidanus/Aidus (T139)	Near wagon accident	Cross sign	Jan. 31
	Columban (T146)	Tap left running	Presence	Nov. 21
	Liudgerus (T190)	Wind pushing over vessel	Presence	March 26
Transforming Water into beer	Brigid (T140)	Sick wetnurse	Not mentioned	Feb. 1
	(T142)	Feast	Thanksgiving (by accident)	
	(T143)	Thirsty lepers	Not mentioned	
	(T156)	Thirsty lepers	Blessing and faith in Jesus	
	(T157)	Thirsty lepers	Blessing/Divine Intercession	
	(T158)	Thirsty leprous woman	Blessing/Angelic Intercession	
	(T164)	Sick wetnurse	Divine intercession	
	Mochutu (T145)	Poor thirsty man	Blessing	?
Beer into wine	Marcellinus/Petrus (T187)	Gathering in the palace	Posthumous presence	June 2
Destroying Vessels	Columban (T149)	Pagan ritual of the Suebi	Breathing	Nov. 21
	Vedastes (T154)	Pagan beer at regal feast	Cross sign, faith, etc.	Feb. 6
	Vedastus (T175)	Pagan beer at regal feast	Cross sign (by accident)	
Fermenting	Cronanus (T150)	Visit by monks	Divine intercession	?
Preventing Spoilage	Sadal-/Sala-berga (T155)	Visit by Waldebert	Divine intercession	Sept. 22
	Remigius (T217)	Visit by man to his tomb	Posthumous presence	?
Detecting	Guthlacus (T170)	Visit by drunken monks	Clairvoyance	Apr. 11
Incapacitating	Lugidius (T213)	Encounter with bandits	Production and offering	Aug. 4

have once accidentally turned water into beer, when, thinking that she was carrying a vessel of beer rather than water, she thanked God for it (T142); interestingly, in this case it is specifically said that her miraculous product “was immediately made similar to the best wine” (*ad instar vini optimi facta fuit statim*), showing that the standard for excellence even here was considered wine (and Jesus after all had turned water into wine). There were indeed those who were not even satisfied with having beer, let alone water, and who miraculously caused beer to turn into wine (Eginhard [T187]).²³³ This poignantly shows that even when beer was again a widely consumed beverage, it could never be fully accepted after the Greco-Roman verdict on the drink had been cast.

The Greeks and Romans, by the very fact that they did not drink beer, have had a great influence on our thinking about the beverage, even now when beer is the most consumed alcoholic beverage in the world, and the most consumed beverage after water and tea.²³⁴ Though in certain ways we are squarely on the barbaric side of this ideological debate, since we drink beer, and enjoy it straight and even sometimes strong, and think of it as a manly drink, we still consider someone a little less sophisticated for drinking beer. There is little doubt that we have the Greeks and Romans to thank for that.

²³³ The venerable Ida of Louvain, Belgium from the thirteenth century A.D. was also said to have turned beer (*cerevisia*) into wine as Jesus had turned water into wine at Cana (Hugo Confess., *Vita ven. Idae Lovan.* 5.28 [= *ASS* 11.166A-B]). There were also, of course, many Saints and holy persons who followed directly in Jesus's steps in transforming water into wine; see, for instance, the account of St. Cuthbert in Bede (T162).

²³⁴ See Serjeant 1964: 53.

CHAPTER 5

CONCLUSIONS:

I will present here my general conclusions concerning (5.1) ancient beer and (5.2) ancient beer-drinking practices.

5.1 Ancient Beer:

Beer in antiquity was usually made from barley, as today, though some peoples had a secondary beer made either from wheat or millet (and there is also some slight evidence for the use of oats and rye), while rice beer was found in India and maize beer in the New World. After the cereal was malted by steeping it in water, by allowing it to germinate, and then by drying it, the beer could either be made from fermented bread or brewed as today. Beer was probably usually fermented spontaneously, that is with air-borne yeast, though there is some evidence for its deliberate leavening. Because beer would ordinarily be easily contaminated by air-borne bacteria, as well as yeast, it would usually be sour. Beers were sweetened with honey and fruits (whose sugars would further increase the alcohol of the final product) as well as plants, or else bittered with sweet gale or, by the ninth century, hops. Beer was sometimes filtered, and then drunk probably usually from clay, horn, or bronze containers, and sometimes was left unfiltered, in which case it was drunk from sieved-spouted vessels or filtered straws. For the most part beer would have been drunk fresh and only rarely allowed to age. It is impossible to determine the average alcohol content of ancient beers, though it is certain that both weak and strong beers existed.

5.2 Ancient Beer-Drinking Practices:

In antiquity there seem to have been two main cultural practices involving the consumption of alcoholic beverages: in the first, found among most ancient peoples, various intoxicants were rather indiscriminately drunk, and beer was given a role in both secular and sacred drinking rituals; in the second, found principally among Greeks and Romans, grape wine

was almost exclusively the only alcoholic beverage commonly consumed. The first practice can be detected throughout antiquity, while the latter is really restricted in the West to a period roughly between the eighth century B.C. and the sixth century A.D., at either end of which there apparently were major drinking shifts. In the first shift (if we may even call it that), which occurred at sometime roughly between 1250 B.C. and 750 B.C., beer (and also to an extent mead) became marginalised by Greeks in terms of its properly non-dietary functions (as medicine or inciter of courage in battle, as found in later texts), and in terms of the otherness of the beer-drinkers in being foreigners (and living in places where vines did not grow) or else socially "other" (the barbarous, the womanly, and the lower class). At first it was associated especially with Thracians and Egyptians, who were said to drink βρῦτος ("the brewed"?) and ζῦθος/ζῦτος ("the leavened"?), respectively. Later it became associated with numerous foreign peoples, and, in Greek, and later in Latin, beer was usually referred to with foreign terms or periphrases and never acquired its own *vox propria*. This first shift is very difficult to explain, especially with the paucity of our evidence. One reason may have been the fact that beer and wine were not known to be both primarily forms of ethanol produced from the conversion of sugars through the action of yeasts. Beer was thought to be an inferior type of intoxicant since it was (at least often) affected by the corrupting power of yeast and was naturally a "cold" substance, while wine was thought to be unaffected by yeast and to be rather a "hot" substance. The adoption of wine by the elite or in certain important secular or sacred rituals or activities may have spurred on the gradual spread of wine-drinking over beer-drinking among all Greeks. In the second shift, which occurred around the late fifth and early sixth centuries A.D., beer (and mead), at least in western Europe (though not in the Greek East), became an accepted part of the regular diet, though wine remained a higher-status drink. The second drinking shift is due to two main factors. First, after the fall of the Roman Empire the authors of our sources increasingly come from northern Europe where vines were not as extensively (or at all) cultivated and where beer had certainly continued to be drunk by native low classes throughout antiquity. Second, since beer was considered a modest drink (because the Greek and Roman stigma on the beverage still prevailed) it was widely adopted as a regular ration for monks (and therefore, scholars), especially under the influence of Irish missionaries.

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Abbreviations:

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CCM = *Corpus Consuetudinum Monasticarum*, edd. K. Hallinger *et al.* (1963-)
CGL = *Corpus Glossarium Latinorum*, edd. G. Löwe and G. Goetz (1888-1923 [1965])
CMG = *Corpus Medicorum Graecorum* (1908-)
CML = *Corpus Medicorum Latinorum* (1915-)
FGrH = *Fragmente der griechischen Historiker*, edd. F. Jacoby *et al.* (1923-)
GrGr = *Grammatici Graeci*, edd. R. Schneider, G. Uhlig, *et al.* (1867-1902 [1965])
LG = *Lexicographi Graeci*, edd. A. Adler *et al.* (1928-)
MEA = *Monumenta Ecclesiastica Anglicana in Ancient Laws and Institutes of England*, ed. B. Thorpe (1840)
MGH-AA = *Monumenta Germaniae Historica - Auctorum Antiquissimorum*, ed. T. Mommsen (1877-1919 [1961])
MGH-CAC = *Monumenta Germaniae Historica - Concilia Aevi Carolini* (1906-)
MGH-CRF = *Monumenta Germaniae Historica - Capitularia Regum Francorum*, edd. A. Boretius and V. Krause (1883-1893)
MGH-E = *Monumenta Germaniae Historica - Epistolae Merovingici et Carolini Aevi* (1891-)
MGH-L = *Monumenta Germaniae Historica - Leges* (1835-1889 [1965])
MGH-S = *Monumenta Germaniae Historica - Scriptores* (1826-1913)
MGH-SRM = *Monumenta Germaniae Historica - Scriptorum Rerum Merovingicarum*, edd. B. Krusch *et al.* (1885-1920)
PG = *Patrologia Graeca*, edd. J.-P. Migne *et al.* (1857-1868)
PL = *Patrologia Latina*, edd. J.-P. Migne *et al.* (1844-1855)
RGFS = *Rerum Gallicarum et Francicarum Scriptores* (1869-1894)
SCC = *Sacrorum Conciliorum Nova et Amplissima Collectio*, ed. G. D. Mansi (1759-1798 [1960-1961])
SLH = *Scriptores Latini Hiberniae* (1955-)
VSH = *Vitae Sanctorum Hiberniae*, ed. C. Plummer (1910)

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T7. Herodotus, *Historiae* 2.77.4 (c. 430 B.C.)

- T8. Cratinus, *Molles* fr. 103 Kassel and Austin (= fr. 96 Kock) in Hesychius, *Lexicon* s.v. βρῦρῖν (β1273 Latte) (late 5th C. B.C.)
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- T67. Philumenus, *De venenatis animalibus eorumque remediis* 16.8 (= *CMG* X.1.1, 22.21-24) (2nd C. A.D.)
- T68. Anonymous, *Lexicon* s.v. μελύγιον in *P.Oxy.* XV.1802, col. ii, ll. 41-42 (before late 2nd C. A.D.)
- T69-72. Galenus, *De simplicium medicamentorum temperamentis ac facultatibus* 6.6.3 (= 11.882.5-8 Kühn [not in *CMG*]), *In Hippocratis de victu acutorum commentaria* 3.43 and 4.67 (= 15.704.13-705.3 + 15.850.3-6 Kühn = *CMG* V.9.1, 256.29-30 + 257.1-4 + 330.27-331.2), and *In Hippocratis aphorismos commentarii* 2.20 (= 17b.492.14-493.5 Kühn [not in *CMG*]) (late 2nd C. A.D.)
- T73. Pseudo-Galenus, *De affectuum renibus insidentium dignotione et curatione* 7 (= 19.693.3-8 Kühn [not in *CMG*]) (after late 2nd C. A.D.)
- T74. Florus, *Epitome bellorum omnium annorum DCC* 1.34.12 (= 2.18.12) (late 2nd C. A.D.?)
- T75. Cassius Dio, *Historiae Romanae* 49.36.2 + 3 (late 2nd C. A.D. / early 3rd C. A.D.)
- T76. Claudius Aelianus, *De natura animalium* 13.8 (late 2nd C. A.D. / early 3rd C. A.D.)
- T77-82. Athenaeus, *Deipnosophistae* 1.16c (*epitoma*) = Polybius, *Historiae* 34.9.15 Hultsch, 1.34b (*epitoma*), 4.151e + 152c-d (= *RFGS* I 705B-C) from Posidonius, *Historia* 23, fr. 170 Theiler, 10.418e = Hecataeus, *Descriptio* 2, *FGrH* 1F323b, 10.447a-d, and 11.485b from Antiphanes, *Asclepius* fr. 47 Kassel and Austin (c. A.D. 200)
- T83. Sextus Julius Africanus, *Cesti* 1.19.17-23 Vieillefond (25 in older editions) (early 3rd C. A.D.)
- T84. Ulpianus, *Sabinus* 23 in Justinianus, *Digesta* 33.6.9 (early 3rd C. A.D.)

LATE ROMAN EMPIRE (A.D. 286 - 476)

- T85. Methodius, *De castitate* in Photius, *Bibliotheca* 309b3-4 (3rd or 4th C. A.D.)
- T86-87. Eusebius, *Praeparatio evangelica* 2.2.4 (= *PG* 13.711A) and *Commentarius in Isaiam* 1.75 (= *PG* 24.227A-B) (4th C. A.D.)
- T88. Servius Grammaticus, *Commentaria ad Vergilii Georgicam* 3.380 (4th C. A.D.)
- T89. Anonymous (Pseudo-Zosimus Panopolitanus), *De zythorum confectione* in *Collection des anciens alchimistes grecs* 2.372 Berthelot and Ruelle (after c. A.D. 300?)
- T90. Plinius Secundus, *De medicina* 3.6 (= *CML* III, 71.20-21) (early 4th C. A.D.)
- T91. Julianus, *Epigramma* 1 Page (= 168 Bidez = *RGFS* I 734E-735A) in *Anthologia Palatina* 9.368 (mid 4th C. A.D.)
- T92-95. Oribasius, *Collectiones medicae* 3.23.4 (= *CMG* VI.1.1, 83.8 + 13-14), 5.31.12 (151.3-5), 14.10.10 (IV.1.2, 190.11-12), 15.1.6.6 (253.16-19), and 34.6-7 (VI.2.2, 128.24-34) from Antyllus, and *Synopsis ad Eustathium filium* 4.22.4 (VI.3, 136.16 + 22) (mid 4th C. A.D.)
- T96. Ammianus Marcellinus, *Rerum gestarum libri* 26.8.2 (A.D. 395)

BYZANTINE PERIOD / EARLY MIDDLE AGES (A.D. 477 -)

- T97. Cyrillus, *Commentaria in Isaiam* 2.4.287-288 (= *PG* 70.459CD) (4th - 5th C. A.D.)
- T98. Theodoretus, *Commentaria in Isaiam* 6.283-288 (omitted in *PG* 81.351A) (4th - 5th C. A.D.)
- T99-100. Hieronymus, *Epistola ad Nepotianum presbyterum* = *Epistola* 52.11 (266) (= *PL* 22.536-537) and *Commentarium in Isaiam prophetam* 7.19.5-11 (292) (= *PL* 24.252C + 253A) (late 4th or early 5th C. A.D.)
- T101-108. Hesychius, *Lexicon* s.vv. βροῦτος (β1211), βρυτίνη (β1273), βρῦτον (β1275), βρύττιον (β1261), ζῦθιον (ζ201), ζῦθος (ζ202), and κόρμα (κ3591) Latte and σίκερα (σ615) Schmidt (5th C. A.D.)
- T109. Priscus Panites, *Ecloga historiae gothicae* fr. 11.2, ll. 278-280 Blockley (= fr. 8 Müller-Dindorf = p. 183 Niebuhr) in Constantinus Porphyrogenitus, *Excerpta de legationibus* 3 (5th C. A.D.)

- T110-111. Marcellus Empiricus, *De medicamentis* 16.33 (= CML V, 126.40-127.2) and 28.13 (= CML V, 221.23-36) (early 5th C. A.D.)
- T112. Paulus Orosius, *Historiae adversum paganos* 5.7.13-14 (= PL 31.933B + 934A) (early 5th C. A.D.)
- T113. Pseudo-Augustinus, *Ad fratres in eremo sermo* (= PL 40.1286) (early 5th C. A.D. or later)
- T114. Cassius Felix, *De medicina* 72 (= 175, n. Rose) (A.D. 447)
- T115-116. Venantius Fortunatus, *Appendix carminum* 9.15-18 (= MGH-AA IV.1, 281-282 [not in PL]) and *Vita Sanctae Radegundis reginae* 1.15 (= PL 72.657A and 88.504A = MGH-SRM II, 369.24-25) (late 5th C. A.D.)
- T117. Gildas, *De paenitentia* 22 (= MGH-AA XIII, 90 = SLH V, 62.28-31) or 15 (= PL 96.1316D) (late 5th or early 6th C. A.D.)
- T118. Anthimus, *De observatione ciborum epistula ad Theudericum regem Francorum* 15 (= CML VIII.1, 10.6-11 [not in PL]) (early 6th C. A.D.)
- T119. David, *Excerpta* 11 (= SLH V, 70.33 + 72.1-2) or 5 (= PL 96.1318D) (early 6th C. A.D.)
- T120. Justinianus, *Digesta* 33.6.9 from Ulpianus, *Sabinus* 23 (A.D. 533)
- T121-127. Aëtius Amidenus, *Libri medicinales* 1.154, s.v. ζῦθος (= CMG VIII.1, 73.22-23), 1.285, s.v. μυσοσῳτῖς (= CMG VIII.1, 112.16, 17-18), 3.156 (= CMG VIII.1, 326.3, 5-6), 4.6 (= CMG VIII.1, 362.8, 30-363.9) from Antyllus, 9.37 (= 369.31 + 370.15-16), 13.12 (= 268.6-7 + 269.20-21), and 13.22 (= 280.20 + 282.1-3) (mid 6th C. A.D.)
- T128. Sanctus Columbanus, *Regula coenobialis fratrum* 3 (= SLH II, 146.21-29) or 10 (= PL 80.217A [not in CCM]) (late 6th C. A.D.)
- T129. Gregorius Turonensis, *De gloria confessorum* 1 (= PL 71.829BC + 830B = MGH-SRM I.2, 748.25-749.12) (late 6th C. A.D.)
- T130-131. Sanctus Theodorus Cantuariensis, *Liber poenitentialis* 1 (= PL 99.935D + 936D + 937B [not in MEA]) and 26.14 (= MEA 2.32 [not in PL]) (late 6th C. A.D.)
- T132. Paulus Aegineta, *Epitomae medicae* 7.3.6, s.v. ζῦθος (= CMG IX.1, 213.13-15) (7th C. A.D.)
- T133-134. Anonymus, *Regula cuiusdam patris ad virgines* 10 and 12 (= PL 88.1062B-C and 1064B [not in CCM]) (7th C. A.D.?)
- T135. Anonymus, *Translatio reliquiarum Sanctorum Chrysanthi et Dariae* 2.31 (= ASS 59.494B-C) (7th C. A.D. or later?)
- T136. Isidorus, *Etymologiarum sive originum* 20.3.16-18 (= PL 82.713C-714A) (early 7th C. A.D.)
- T137. Anonymus, *Canones Hibernenses* 2.12 (= SLH V, 166.11-13, col. 1 [not in PL]) (early 7th C. A.D.?)
- T138. Hlotharius II, *Lex alamannorum* 22.1 (= MGH-L III, 51.23-24) = Lantfridana, *Lex alamannorum* 20 (= MGH-L III, 96.10-11) = Karolina, *Lex alamannorum* 22 (= MGH-L III, 137.14-15 + 138.1) (between A.D. 613-622)
- T139. Anonymus, *Vita Sancti Aidani sive Maedoci* 2.14 (= ASS 3.729h-i = VSH 2.146) and Anonymus, *Vita Sancti Aidi* 14 (= VSH 2.299 [not in ASS]) (after A.D. 626)
- T140-143. Anonymus, *Vita Sanctae Brigidae* 2.10, 3.18, 3.24, and 16.100 (= ASS 4.120D, 121D, 121F-122A, and 133C) (before mid 7th C. A.D.)
- T144. Anonymus, *Vita Sancti Carthaci sive Mochudae, episcopi Lismoriensis* 48 (= ASS 16.386C-D [not in VSH]) (after A.D. 637)
- T145. Anonymus, *Vita Sancti Carthagi sive Mochutu* 67 (= VSH 1.198 [not in ASS]) (after A.D. 637)
- T146-149. Jonas, *Vita Columbani* 26, 28, 45, and 53 (= PL 87.1026B-1027A, 1028A, 1037B with n. a, and 1040C-1041B) = *Vitae Columbani abbatis discipulorumque eius* 1.16, 17, 22, and 27 (= MGH-SRM IV, 82.3-24, 84.10-19, 97.3, and 102.12-103.2) (not in ASS) (c. A.D. 640)
- T150. Anonymus, *Vita Sancti Cronani* 23 (= VSH 2.29 [not in ASS]) (after early 7th C. A.D.)
- T151. Anonymus, *Vita Sancti Arnulfi episcopi* 2.30 (= MGH-SRM II, 444.1-11 = ASS 31.439F-440A) (after mid 7th C. A.D.)
- T152. Anonymus, *Vita Sancti Goërici sive Abbonis episcopi* 2.23 (= ASS 46.54A) (after mid 7th C. A.D.)
- T153. Jonas, *Vita Burgundofaræ* 12 (= PL 87.1082C) = *Vitae Columbani abbatis discipulorumque eius* 2.22 (= MGH-SRM IV, 142.28-143.1) (mid to late 7th C. A.D.)
- T154. Jonas (?), *Vita Vedastis episcopi Atrebatensis* 7 (= MGH-SRM III, 410.15-411.10) = *De Sancto Vedasto episcopo Atrebatensi* 7 (= ASS 4.802C-D)

- T155. Jonas (?), *Vita Sadalbergae abbatissae Laudunensis* 20 (= MGH-SRM V, 61.8-10) = *Vita Sanctae Salabergae abbatissae* 3.19-20 (= ASS 46.527F-528A [not in PL])
- T156. Cogitosus, *Vita Sanctae Brigidae virginis* 2.11 (= PL 72.780B-C = ASS 4.136E) (c. A.D. 680)
- T157. Anonymus, *Vita Sanctae Brigidae* 10.62 (= ASS 4.169E-F) (after late 7th C. A.D.?)
- T158. Anonymus, *Vita Sanctae Brigidae* 8 Sharpe (not in ASS) (after late 7th C. A.D.?)
- T159. Anonymus, *Excerpta ex libro glossarum* s.v. *cervesia* (= CGL V, 177.24-25) (late 7th or early 8th C. A.D.)
- T160. Anonymus, *Appendix, specimen codicis Cantabriensis Collegii corpi christi* s.v. *bratium* (= CGL V, 403.65) (8th C. A.D.) = Anonymus, *Glossarium Amplonianum primum* s.v. *bratium* (= CGL V, 347.13) (8th or 9th C. A.D.)
- T161. Pseudo-Cummeanus, *Paenitentiale* 1.1 (= SLH V, 110.22-27 + 112.1-2 [not in PL]) (8th C. A.D.)
- T162. Sanctus Beda Venerabilis, *Vita Sancti Cuthberti episcopi Lindisfarnensis* 35 (= PL 94.774C-D) or 53 (= ASS 9.111E) (early 8th C. A.D.)
- T163. Sanctus Beda Venerabilis (?), *Paraenetica* (= PL 94.548B)
- T164. Chilenus Monachus, *Vita Sanctae Brigidae virginis* 1.4-5 (= ASS 4.142B-C) (early 8th C. A.D.)
- T165-166. Sanctus Beda Venerabilis (?), *De remediis peccatorum* (= PL 94.571B and 573D) = Sanctus Egbertus Eboracensis (?), *De remediis peccatorum* 4 (= PL 89.447B + C) and 11 (= PL 89.450D + 451A) (early to mid 8th C. A.D.)
- T167-168. Pseudo- Sanctus Beda, *Didascalia, Ephemeris* (= PL 90.772B and 776B) (after early 8th C. A.D.?)
- T169. Anonymus, *Miracula Sancti Joannis Beverlacensis, archiepiscopi Eboracensis* 2.16-17 (= ASS 15.170B-C) (after A.D. 704)
- T170. Felix, *Vita Sancti Guthlaci anachoretae* 44 Colgrave or 30 (= ASS 11.46B) (c. A.D. 735)
- T171-172. Sanctus Chrodegangus Mettensis, *Regula canonicorum* 8 and 23 (= PL 89.1062C-1063A and 1109D [not in CCM]) (A.D. 756)
- T173. Paulus Diaconus, *Historia miscella* 4.17 (= PL 95.804C) from Paulus Orosius, *Historiae adversum paganos* 5.7.13-14 (c. A.D. 770)
- T174. Alcuinus, *Epistola ad Josephum* = *Epistola* 5 Chase or 8 (MGH-E IV, 33.28-30) (A.D. 790)
- T175. Alcuinus, *Vita Sancti Vedasti* 3.17 (= PL 101.674A-B = ASS 4.806F-807A [not in MGH]) (late 8th or early 9th C. A.D.)
- T176. Eigil Fuldensis, *Vita Sancti Sturmii* 13 (= PL 105.433B-C [not in ASS or MGH]) (late 8th or early 9th C. A.D.)
- T177. Remedius Curiensis, *Capitula* 1 (= MGH-L V, 441.18 + 442.12-13, 14) (late 8th or early 9th C. A.D.)
- T178-181. Carolus Magnus, *Capitulare de villis imperialibus* 34, 45, 61, and 62 (= MGH-CRF I, 32, 86.9-12, 87.16-20, 88.38-39, and 88.40 + 89.9-10 = PL 97.353B-C, 355A, 356C, and 356C + 357A) (c. A.D. 800)
- T182-184. Pseudo-Dositheus, *Hermeneumata Montepessulana* s.vv. ζῆθος, πόματος κριθῶν, and πόματος ἐκ πυρῶν (= CGL III, 315.66-69) (A.D. 9th C.)
- T185. Pseudo-Philoxenus, *Glossae Latino-Graecae* s.v. *curmen* (= CGL II, 119.26) (9th C. A.D.)
- T186. Pseudo-Philoxenus, *Glossae Graeco-Latinae* s.v. ζῆθιον (= CGL II, 322.42) (9th C. A.D.)
- T187. Eginhardus, *Historia translationis beatorum Christi martyrum Marcellini et Petri* 4.44 + 45 (= PL 104.563D-564A + 564C = ASS 21.188D-E + F) = Einhardus, *Translatio et miracula Sanctorum Marcellini et Petri* 4.11 (= MGH-S XV.1, 251.43-53 + 252.2-6) (early 9th C. A.D.)
- T188-189. Halitgarius Cameracensis, *Liber poenitentialis* (= PL 105.700D-701A = 723B and 705A-B + C = 726D + 727A) (early 9th C. A.D.)
- T190. Altfredus, *Vita Sancti Liudgeri* 2.8 (= MGH-S II, 421, col. 1, 56 - col.2, 18) = *Miracula Sancti Ludgeri episcopi Mimigardeford* 2.14 (= ASS 9.653E-F) (after A.D. 809)
- T191. Rihcolfus, *Epistola ad Eginonem* (= MGH-CRF I, 127, 249.16, 23-26) (A.D. 810)
- T192-193. Benedictus Anianensis, *De concordia regularum* 48.10 and 71.5 (= PL 103.1122B and 1342A [not in CCM]) (A.D. 816)
- T194. *Concilium Aquisgranense, acta praeliminaria* 28 (= CCM I, 436.31-33 [not in SCC]) (A.D. 816)
- T195. *Concilium Aquisgranense, decreta authentica* 20 (= CCM I, 463.1-4 [not in SCC]) = Benedictus Levita, *Collectio capitularis* 22 (= CCM I, 547.18-548.2)
- T196. *Concilium Aquisgranense, institutio canonicorum* 122 (= MGH-CAC I.1, 401.10-15, 20-21) or 1.122 (= SCC 14.232B-C) = Amalarius Treverensis, *Regula canonicorum* 122 (= PL 105.917D-918B)

- T197.** *Concilium Aquisgranense, institutio sanctimonialium* 13 (=MGH-CAC I.1, 447.4-10) or 2.13 (SCC 14.270A) (A.D. 816)
- T198.** Hlotharius, *Capitulare monasticum* 22 (=MGH-CRF I, 170, 345.18-19 [not in CCM]) (after A.D. 816)
- T199.** Hatto Basileensis (?), *Charta abbatis Sancti Galli* 9.3.1-2, 10.4 and 6, 30.5.1, and 32.1 and 3 (c. A.D. 820)
- T200-205.** Adalhardus Corbeiensis, *Statuta antiqua abbatis Sancti Petri Corbeiensis* 1.3 (7) (=CCM I, 369.32-370.3) or 1.2 (=PL 105.537B-C), 2 (10) (=CCM I, 373.12-18) or 1.4 (=PL 105.539A-B), 3 (12) (=CCM I, 378.22 + 379.4-5, 7, 8, 19, 21-22) or 1.7 Levillain (=PL 105.542B + C + D), 4 (13) (=CCM I, 381.25-382.2) or 2.1 (=PL 105.544B), 4.3 (24-25) (=CCM I, 400.4-17, 21-401.4) or 2.15 Levillain (omitted in PL 105.550), 6.4 (25) (=CCM I, 401.5 + 6-9) or 1.8 Levillain (omitted in PL 105.543) (A.D. 822)
- T206.** Ansegisus, *Constitutio abbatum Fontanellensium* 66 (=MGH-S II, 300.23 [not in CCM]) (A.D. 823-833)
- T207.** Anonymus, *Tractoria de coniectu missis dando* 1 (=MGH-CRF II.1, 189, 11.4-8) (A.D. 829)
- T208.** Hilduinus, *Regula villarum* 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 25, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, and 44 (not in PL or MGH) (A.D. 832)
- T209-211.** Photius, *Bibliotheca* 309b3-4 from Methodius, *De castitate* and *Lexicon* s.vv. ζῆθος and σικερά (mid to late 9th C. A.D.)
- T212.** *Concilium Moguntinum* 11 (=MGH-CAC III, 26, 248.4, 7-10 =MGH-CRF II.1, 249, 189.14, 17-20 =PL 138.586 [not in SCC]) (A.D. 852)
- T213.** Anonymus, *De Sancto Lugidio sive Luano abbate Chuainfertensi* 1.7 (=ASS 35.345B-C) (A.D. 855-869)
- T214.** Anonymus, *Vita Sancti Lugidi sive Mohuae* 42 (=VSH 2.220 [not in ASS])
- T215.** *Concilium Wormatiense* 13 (=MGH-CAC IV, 25, 268.9, 17-18) or 30 (=SCC 15.875A-B) (A.D. 868)
- T216.** *Additamenta ad capitularia regum Franciae orientalis* 55a, 56, 56a, 58, and 58a (=MGH-CRF II.2, 252, 242.26-27, col. 2, 244.16-17, 18-20, col. 1, 16-18, col. 2, 245.20-21, col. 1, and 19, col. 2) (A.D. 895)
- T217.** Hincmarus, *Vita Remigii episcopi Remensis* 26 (=MGH-SRM III, 322.12-13) (late 9th C. A.D.)
- T218-219.** Wolfhardus Haserensis, *Ex miraculis Sancti Waldburgis Monheimensibus* 3.2 and 9 (=MGH-S XV.1, 549.16-18 and 550.51 + 551.1 [not in ASS]) (late 9th C. A.D.)
- T220.** Leontinus Geoponicus in Cassianus Bassus scholasticus, *De re rustica eclogae* (=Geoponica) 7.34.1 (before 10th C. A.D.?)
- T221.** Anonymus, *Glossae Iuvenalianae* s.v. *celia* (=CGL V, 653.45) (10th C. A.D.)
- T222.** Cassianus Bassus scholasticus, *De re rustica eclogae* (=Geoponica) 7.34.1 from Leontinus Geoponicus (10th C. A.D.)
- T223.** Constantinus Porphyrogenitus, *Excerpta de legationibus* 3 from Priscus Panites, *Ecloga historiae gothicae* fr. 11.2, ll. 278-280 Blockley (10th C. A.D.)
- T224-231.** *Suda* s.vv. ἄκρατος (α964) (=LG I.1, 89.11-12), γόνατον (γ377) (=LG I.1, 535.6-7), ζῆθος (ζ196) (=LG I.2, 517.9), μελανοσυρμαῖον (μ459) (=LG I.3, 351.1-2) with *Scholium in Aristophanis Thesmophoriazusas* 857, μυζεῖ καὶ μύζει (μ1381) (=LG I.3, 423.7-9), σίκερα (σ394) (=LG I.4, 357.22-23), συμμαθόντι (σ1352b) (=LG I.4, 457.20-21), and οἶνος (οι135) (=LG I.4, 624.20-21) (10th C. A.D.)
- T232.** Aynardus, *Excerpta ex glossis* s.v. *braces* (=CGL V, 616.26) (A.D. 969)
- T233.** Michael Psellus, *Versus civiles de grammatica* 436 in *Anecdota graeca* 3.225 Boissonade (11th C. A.D.)
- T234-235.** Eustathius, *Commentaria ad Homeri Iliadem* 11.638 (871.53-58) and 22.283 (1270.11-13) (12th C. A.D.)
- T236.** Johannes Zonaras, *In Canones sanctorum apostolorum* 3 (=PG 137.40C + 41A) (12th C. A.D.)
- T237.** Anonymus, *Hermeneumata Monacensia* s.v. *zitos* (=CGL III, 184.63) (before A.D. 1158)
- T238.** Manuel Philes, *Brevis expositio de elephante* 139-142 and 145-151 (13th-14th C. A.D.)
- T239.** Henricus Stephanus, *Glossae Addenda* s.v. *cilicia* (=CGL III, 468.15) (late 16th C. A.D.)

1.1.2 Editions (see Appendix I for the texts):

I have only listed the editions used for the texts from Appendix I when they are not part of a large collection of texts (such as ASS, CGL, MGH, PG, PL, or SLH). Authors whose fragments have not been collected separately (such as Antyllus, Dio Academicus, or Masurius Sabinus) are not listed. For other authors not in Appendix I I use the editions listed in Berkowitz and Squitier 1990 (Greek) and the OLD (Latin).

- Aelianus, Claudius: *Aelian on the Characteristics of Animals*, ed. A. F. Scholfield (London and Cambridge, Mass. 1959). T76
- Aelius Herodianus: *Herodiani Technici reliquiae* (= GrGr III), ed. A. Lentz (Stuttgart). Vols. 1 (1867) and 2 (1868). T63-65
- Aeschylus: *Aeschylus: the Suppliants*, edd. H. F. Johansen and E. W. Whittle (Copenhagen 1980). T4
Tragicorum Graecorum fragmenta, ed. S. Radt (Göttingen 1985). Vol. 3. T6
- Aëtius Amidenus: *Aëtii Amideni libri medicinales i-iv* (= CMG VIII.1), ed. A. Olivieri (Leipzig and Berlin 1935). T121-124
Iatricorum liber ix, ed. S. Zervos, *Athena* 23 (1911) 273-390. T125
Iatricorum liber xiii, ed. S. Zervos, *Athena* 18 (1905) 264-292. T126-127
- Agatharchides: *Die Fragmente der griechischen Historiker*, ed. F. Jacoby (Berlin 1926). Vol. 2A. T20
- Alcuinus, *Epistola: Two Alcuin Letter-Books*, ed. C. Chase (Toronto 1975). T174
- Ammianus Marcellinus: *Ammien Marcellin Histoire*, edd. M.-A. Marié (Paris 1984). Vol. 5. T96
- Anonymus, *Vita Sanctae Brigidae*: R. Sharpe. *Medieval Irish Saints' Lives: An Introduction to Vitae Sanctorum Hiberniae* (Oxford 1991). 139-208. T158
- Anonymus, *Lexicon: The Oxyrhynchus Papyri*. Egypt Exploration Society in Graeco-Roman Memoirs, ed. B. P. Grenfell and A. S. Hun (London 1922). Vol. XV. T68
- Anthimus: *De observatione ciborum*, ed. M. Grant (Totnes, Devon 1996). T118
- Antiphanes: *Poetae Comic Graeci*, edd. R. Kassel and C. Austin (Berlin and New York 1991). Vol. 2. T12
- Archilochus: *Iambi et Elegi Graeci ante Alexandrum Cantati*, ed. M. L. West (Oxford 1971). T1
- Arethaeus: *Arethaeus* (= CMG II), ed. C. Hude (Leipzig 1923 [1958]). T62
- Aristotle: *Aristotele: i frammenti dei dialoghi*, ed. R. Laurenti (Naples 1987). Vol. 2. T14
- Athenaeus: *Athenaei Naucratis dipnosopistarum libri xv*, ed. G. Kaibel (Stuttgart 1965). Vols 1-3. T77-82
- Beda, *Vita sancti Cuthberti: Two Lives of Saint Cuthbert: A Life by an Anonymous Monk of Lindisfarne and Bede's Prose Life*, ed. B. Colgrave (Cambridge 1940). T162
- Cassianus Bassus scholasticus, *De re rustica eclogae* (= *Geoponica*): *Geoponica sive Cassiani Bassi scholastici de re rustica eclogae*, ed. H. Beckh (Leipzig 1895). T222
- Cassius Dio: *Cassii Dionis Cocceiani historiarum romanarum quae supersunt*, ed. U. P. Boissvain (Berlin 1955). Vol. 2. T75
- Cassius Felix: *Cassii Felicis de medicina*, ed. V. Rose (Leipzig 1879). T114
- Celsus: *Celsus, de medicina*, ed. W. G. Spencer (London and Cambridge, Mass. 1943). Vol. 1. T36
- Columella: *Columelle, de l'agriculture*, ed. E. de Saint-Denis (Paris 1969). Vol. 10. T53

- Cratinus: in *Poetae Comic Graeci*, edd. R. Kassel and C. Austin (Berlin and New York 1983). Vol. 4, 112-337. T8
- Didymus Chalcenterus: *Didymi Chalcenteri grammatici Alexandrini fragmenta quae supersunt omnia*, ed. M. Schmidt (Leipzig 1854 [1964]). T23
- Dio Chrysostomus: *Dio Chrysostom*, edd. J. W. Cohoon and H. Lamar Crosby (London and Cambridge, Mass 1940). Vol. 3. T57
- Diodorus Siculus: *Diodori bibliotheca historica*, ed. F. Vogel (Stuttgart 1964). Voll. 1-2. T29-33
- Dionysius Halicarnassensis: *Dionysii Halicarnasei antiquitatum romanarum quae supersunt*, ed. C. Jacoby (Stuttgart 1967). Vol. 4. T37
- Dionysius Scytobrachion: *Die Fragmente der griechischen Historiker*, ed. F. Jacoby (Leiden 1957). Vol. 1. T21
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- Dioscorides Longobardus: *Dioscorides Longobardus, liber ii*, edd. T. M. Auracher and H. Stadler, *Romanische Forschungen* 10 (1899) 184-247. T54b, 55b
Dioscorides Longobardus, liber v, ed. H. Stadler, *Romansiche Forschungen* 13 (1902) 162-243. T56b
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Eustathii archiepiscopi Thessalonicensis Commentarii ad Homeri Iliadem pertinentes, ed. M. van der Valk (Leiden 1987). Vol. 4. T235
- Felix: *Felix's Life of Saint Guthlac*, ed. B. Colgrave (Cambridge 1956). T170
- Florus: *Florus, Oeuvres*, ed. P. Jal (Paris 1967). Vol. 1. T74
- Fortunatus: due in *Venance Fortunat, poèmes*, ed. M. Reydellet (Paris forthcoming). Vol. 3. T115
- Galen: *Claudii Galeni opera omnia*, ed. C. G. Kühn. (Leipzig 1826 [Hildesheim 1965]). Vol. 11. T69
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- Hellanicus: *Die Fragmente der griechischen Historiker*, ed. F. Jacoby (Berlin 1957). Vol. 1. T9
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Hesychii Alexandrini lexicon, ed. M. Schmidt (Halle 1862 [Amsterdam 1965]). Vol. 4. T108
- Hieronymus: *Saint Jérôme, lettres*, ed. J. Labourt (Paris 1951). Vol. 2. T99
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- Isidore: *Isidori Hispalensis episcopi etymologiarum sive originum*, ed. W. M. Lindsay (Oxford 1911). Vol. 1. T136
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- Julius Africanus, Sextus: *Les "Cestes" de Julius Africanus*, ed. J.-R. Vieillefond (Paris 1970). T83
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- Oribasius: *Oribasii collectionum medicarum reliquiae* (= CMG VI.1.1), ed. I. Raeder (Leipzig 1928). Vol. 1. T92a, 93
Oribasii collectionum medicarum reliquiae (= CMG VI.1.2), ed. I. Raeder (Leipzig 1929). Vol. 2. T94a-b
Oribasii collectionum medicarum reliquiae (= CMG VI.2.2), ed. I. Raeder (Leipzig 1933). Vol. 4. T95
Oribasii synopsis ad Eustathium, libri ad Eunapium (= CMG VI.3), ed. I. Raeder (Leipzig and Berlin 1926). T92b
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Photii Patriarchae Lexicon, ed. S. A. Naber (Leiden 1864 [Amsterdam 1965]). Vol. 1. T210-211
- Plinius: *C. Plini Secundi Naturalis historiae*, ed. C. Mayhoff (Stuttgart 1967). Voll. 2-3. T46-52

- Plinius Secundus: *Physicae quae fertur Plinii Florention-Pragensis Liber Tertius*, ed. G. Schmitz (Frankfurt am Main 1988). T90
- Plutarchus: *Plutarchi moralia*, edd. W. R. Paton, M. Pohlenz, and W. Sieveking (Leipzig 1972). Vol. 3. T59
Plutarchi moralia, ed. C. Hubert (Leipzig 1971). Vol. 4. T60
Plutarque: Dialogue sur l'amour, ed. R. Flacelière (Paris 1953). T61
- Polybius: *Polybii historiae*, ed. T. Büttner-Wobst (Stuttgart 1963). Vol. 4. T22
- Posidonius: *Poseidonios, die Fragmente*, ed. W. Theiler (Berlin and New York 1982). Vol. 1. T25-27
- Priscus Panites: *The Fragmentary Classicising Historians of the Later Roman Empire: Eunapius, Olympiodorus, Priscus and Malchus*, ed. R. C. Blockley (n. p. 1983). T109
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- Pseudo-Zosimus: *Collection des anciens alchimistes grecs*, edd. M. Berthelot and C.-E. Ruelle (Paris 1888 [London 1963 and Osnabrück 1967]). Vol. 2. T89
- Pytheas: *Pytheas of Massalia: On the Ocean*, ed. C. H. Roseman (Chicago 1994). T15
- Scholium in Aeschylum: Scholia Graeca in Aeschylum quae exstant omnia*, ed. O. L. Smith (Leipzig 1976). Vol. 1. T5
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- Strabo: *Strabon, géographie*, ed. F. Lasserre (Paris 1966). Vol. 2. T39-41
The Geography of Strabo, ed. H. L. Jones (London and Cambridge, Mass. 1961). Vols. 7-8. T42-45
- Suda: Suidae lexicon*, ed. A. Adler (Leipzig 1928 [Stuttgart 1971]). Vol. 1. T224-225
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Suidae lexicon, ed. A. Adler (Leipzig 1935 [Stuttgart 1971]). Vol. 4. T229-230
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- Theodoretus: *Théodoret de Cyr, Commentaire sur Isaïe*, ed. J.-N. Guinot (Paris 1982). Vol. 2. T98
- Theophrastus: *De causis plantarum: Theophrasti Eresii opera, quae supersunt, omnia*, ed. F. Wimmer (Paris 1866 [Frankfurt am Main 1964]). T16
Historia plantarum: Theophrastus. Enquiry into Plants, ed. A. Hort (Cambridge, Mass. 1916 [1968]). Vol. 1. T17
- Vergilius: *P. Vergili Maronis opera*, ed. R. A. B. Mynors (Oxford 1972). T34

Xenophon: *Xenophontis expeditio Cyri, Anabasis*, ed. C. Hude, and revised by J. Peters (Leipzig 1972). T13

1.2 Epigraphic Sources (22 inscriptions):

1.2.1 By Languages with Editions (See Appendix II for the texts):

Abbreviations:

AE = *L'Année épigraphique* (1888-)

APF = *Archiv für Papyrusforschung und verwandte Gebiete* (1902-)

BRGK 17 = *Neue Inschriften, 17^{er} Bericht der römisch-germanischen Kommission*, ed. H. Finke (1927)

CIG = *Corpus Inscriptionum Graecarum*, ed. A. Böckh (1828-1877)

CIL = *Corpus Inscriptionum Latinarum* (1863-)

GLG = *Les graffites de La Graufesenque*, ed. R. Marichal (1988)

IG = *Inscriptiones Graecae* (1906-)

IGRR = *Inscriptiones Graecae ad res Romanas pertinentes*, ed. R. Cagnat (1906-1927)

ILTG = *Inscriptions latines des Trois Gaules*, ed. P. Wuilleumier (1963)

OGIS = *Orientis Graeci Inscriptiones selectae*, ed. W. Dittenberger (1903-1905)

RIB I = *The Roman Inscriptions of Britain I. Inscriptions on Stone*, ed. R. G. Collingwood and R. P. Wright (1965)

SB = *Sammelbuch griechischer Urkunden aus Ägypten* (1915-)

SEG = *Supplementum Epigraphicum Graecum* (1923-)

GALLO-LATIN:

E1. *ILTG* 529 (undated)

***E2.** *GLG* 12.13 and 14.11 (mid 1st C. A.D.)

LATIN:

***E3.** *CIL* VII.176 = *RIB* I.278 (undated)

E4. *CIL* XII.372 (undated)

E5. *CIL* XIII.10012.7 (undated)

***E6.** *CIL* XIII.10012.15b (undated)

E7. Vaillant 1885: 219-220 (undated)

E8. *CIL* XIII.10018.7 (undated)

E9. *CIL* XIII.11319 (undated)

E10. *AE* 1928, no. 183 = *BRGK* 17, no. 41 (end of the first century A.D.)

E11. *CIL* XIII.450* (undated)

E12. Unpublished (?) (undated)

E13. *CIL* XIII.11360 = XIII.597* (undated)

E14. Künzl 1991: 171 (early 4th C. A.D.)

***E15.** Ludowici 1905: x (undated)

GRECO-LATIN:

E16. *CIL* III.1, 827, III.2, Suppl. 1916.1.29-30, 1918.1.17-18 (= *IG* VII.3064.17-18), and III.3, Suppl. 2328.58 = Diocletian, *Edictum de pretiis rerum venalium* 2.11-12 (A.D. 301)

GREEK:

E17. *SEG XXXVI*.1398.6-9 (= *APF* 2 [1903] 565, nr. 121 = *IGRR* I.1101 = *SB* V.8797) (A.D. 11-14)

E18. *SEG XLI*.1612.5 (A.D. 324)

E19. *OGIS* 200.1, 6-12, 16-17 (= *CIG* 5128.16 = *SB* III.6949 = *SB* V.8546) and *SEG XXXII*.1601.1, 5-6, 8-9, 12-14 (= *OGIS* 200, Add[1]) (4th-5th C. A.D.)

1.3 Papyrological Sources (318 papyri, ostraca, and tablets):

1.3.1 In Chronological Order:

The abbreviations for editions of papyri are cited below in section 1.2.2.

P.Bour. 45, *P.Cair.Zen.* III.59403 and IV.59791,
P.Lond.Zen. 2153, 2161, 2166, 2170,
P.Paris 67, *P.Stras.* V.424-426, 439-441,
 and 449 (undated)
O.Edfou III.372 (Ptolemaic)
BGU VI.1355, *CPR* XIII.12, *P.Freib.Clar.* 1, 4,
P.Gur. 24, *P.Petr.* III.32, 76, 87, 121, 138,
 and 376 (3rd C. B.C.)
P.Sorb. I.10 (268 B.C.)
SB III.7202 (265/264 or 227/226 B.C.)
P.Hib. I.112-113 (c. 260 B.C.)
P.Zen.Pestm. 63 (= *SB* III.6803) (c. 260-240 B.C.)
P.Rev. fr. 6 (259 B.C.)
P.Petr. III.37 (258 B.C.)
P.Hib. I.94 (258-257 or 257-256 B.C.)
P.Sorb. I.18 (256-250 B.C.)
P.Cair.Zen. II.59176 and 59189 (255 B.C.)
P.Cair.Zen. II.59199 (= *SB* III.6738), 59202 (= *SB* III.6739), *P.Col.Zen.* I.34 and 42, and
P.Mich.Zen. 36 (254 B.C.)
P.Lond.Zen. 1976 (253 B.C.)
O.Wilck. 1277 (253/2 B.C.)
O.Vleem. 11A (mid 3rd C. B.C.)
P.Cair.Zen. II.59297 and *P.Hib.* II.212 (c. 250 B.C.)
P.Hib. I.133 (= *SB* X.10260) (c. 250 or 240 B.C.)
P.Paris 60(bis) (= *UPZ* I.149) and *SB* XII.10860
 (2nd half of 3rd C. B.C.)
P.Lond.Zen. 2002 (c. 249 B.C.)
P.Hib. II.264 (249/248 B.C.)
BGU X.1917 and *P.Hib.* I.142 (247 B.C.)
P.Hib. I.139 (= *SB* XII.10783) (c. 247-246 B.C.)
P.Hib. I.106, 138, and 140 (246 or 245 B.C.)
P.Genova III.113 (245 or 220 B.C.)
P.Hib. I.107, 136-137, and 141 (244 or 243 B.C.)
P.Lille I.3 (241-240 B.C.)
P.Freib.Clar. 2 (237 B.C.)
P.Lille I.59 (236 or 235 B.C.)
P.Tebt. III.701 (235 B.C.)

P.Freib.Clar. 3 (= *SB* III.6094) (230 B.C.)
P.Petr. III.124 (228 B.C.)
P.Austin inv. 34 (227/226 B.C. ?)
P.Sorb. I.36 (= *SB* XVI.12415) (225 B.C.)
SB XVI.12414 (224 B.C.)
P.Petr. III.112 (c. 221-220 B.C.)
P.Gur. 3 (c. 219 B.C.)
P.Gur. 4 (217 B.C.)
P.Köln VI.259, 263, and 264 (213 B.C.)
P.Rain.Cent. 49 (212 B.C.)
P.Tebt. III.884 (210 B.C.)
P.Mich. XVIII.780A (205-204 B.C.)
P.Heid. VI.379 (204 B.C.)
P.Paris 62 (= *UPZ* I.112) (203-202 B.C.)
P.Tebt. III.1067 (reign of Epiphanes ?)
P.Köln VI.268 and VII.315 (2nd half of 3rd C. B.C.)
BGU VI.1244, *O.Cair.* 13 (= *O.Cair.Cat.* 9535),
O.Elkab 7 and 10, and *P.Lond.* II.219 (2nd
 C. B.C.)
O.Leid. 16 (= *SB* X.10394) and *O.Mich.* IV.1128 (= *SB* XIV.11515) (2nd C. B.C. / 1st C. B.C.)
P.Tebt. III.833 (early 2nd C. B.C.)
P.Mich. XVIII.777 (193 B.C.)
P.Mich. XVIII.778 (193/2 B.C.)
P.Fay. 13 (170 B.C. ?)
P.Paris 63 (= *UPZ* I.110) (164 B.C.)
P.Hels. I.9 (163 B.C.)
P.Tebt. III.935 (163 B.C. ?)
P.Hels. I.26 (162 B.C.)
P.Leid. I.C (= *UPZ* I.89) (160-159 B.C.)
SB XVI.12709 (160/159 B.C.)
O.Bodl. I.51 (157 B.C.)
O.Elkab 3 (153/152 or 142/141 B.C.)
BGU VI.1356, *O.Cair.* 11 (= *O.Cair.Cat.* 9503)
 and *O.Stras.* 13 (151 or 140 B.C.)
O.Cair. 12 (= *O.Cair.Cat.* 9533) (146 or 134 B.C.)
SB XVIII.13093 (c. 143-141 B.C.)
BGU VI.1357 (133/132 B.C.)

P.Tebt. III.877 (132 B.C. ?)
P.Tebt. III.701(a) (c. 131 B.C.)
O.Bodl. I.125 (122 B.C.)
BGU VI.1358 (120 B.C.)
P.Tebt. I.5 (118 B.C.)
P.Tebt. I.40 (117 B.C.)
PSI Congr. XVII 22 (114 B.C. ?)
P.Tebt. III.894 (c. 114 B.C.)
BGU XIV.2379 (= *Chrest.Wilck.* 310 = *P.Grenf.* II.39 = *P.Lond.* III.698), *O.Mich.* II.789-795, and *P.Oxy.* IV.784 (1st C. B.C.)
SB VI.9623 (94 or 61 B.C.)
O.Edfou III.365 (91-90 B.C.)
P.Duke inv. 975r (b)
O.Fay. 11 (25 B.C.)
P.Fay. 101 (c. 18 B.C.)
BGU XVI.2670 (c. 14/13 B.C.)
O.Mich. I.119 (11 B.C.)
BGU XVI.2588 (10/9 B.C.)
O.Mich. I.299 (9 B.C. ?)
BGU IV.1126 (8 B.C.)
BGU XVI.2608 (c. 7 B.C.)
O.Mich. II.745, 797-799, III.1003, and 1026 (1st C. B.C. / 1st C. A.D.)
O.Fay. 9 and *O.Mich.* I.362 (= *SB* XIV.11445) and II.796 (late 1st C. B.C. or early 1st C. A.D.)
O.Bodl. I.65 and *O.Mich.* II.800 (1st C. A.D. ?)
P.Flor. I.101, *O.Mich.* III.988, 1027-1028, and IV.1127 (= *SB* XIV.11514), *SB* XVI.12515, and *O.Tebt.* 1 and 5 (1st C. A.D.)
BGU VII.1705, *P.Oxy.Hels.* 33, *P.Rein.* I.42, and *O.Tebt.* 2 (1st or 2nd C. A.D.)
P.Mich. XVIII.783A (1st half of 1st C. A.D.)
O.Fay. 48, *O.Mich.* III.987, and *P.Tebt.* II.401 (early 1st C. A.D.)
P.Oxy. IV.736 (c. A.D. 1)
O.Fay. 8 and *O.Mich.* II.801 (A.D. 5)
P.Ryl. II.127 (A.D. 29)
SB XIV.12170 (A.D. 31/32)
P.Princ. I.13 (c. A.D. 35)
P.Ryl. II.145 (A.D. 38)
P.Fay. 219 (reign of Claudius or Nero)
P.Mich. II.121 (A.D. 42)
P.Mich. II.127 (A.D. 45/46)
P.Mich. II.123 (A.D. 45-47)
P.Mich. V.245 (A.D. 47)
P.Mich. V.326 (A.D. 48)
P.Gen. II.91 (= *SB* VI.9224) (A.D. 50-51)
P.Mich. V.322b (A.D. 51)
P.Mil. I.11 (A.D. 52/6)
P.Gen. II.93 (A.D. 53)

O.Fay. 10 (A.D. 54-68)
P.Stras. IV.185 (A.D. 55)
P.Fay. 47 (A.D. 61)
P.Stras. VI.501 (A.D. 61-62)
SB XVI.12332 (A.D. 66-71)
P.Lond. I.131 (= *SB* VIII.9699) (A.D. 78-79)
P.Mich. VI.382 (A.D. 86-87 or 87-90 and 102/103 ?)
PSI III.181 (A.D. 91)
P.Mich. inv. 5938 (A.D. 94)
P.Fay. 327 (late 1st C. A.D.)
Tab.Vindol. II.482 (late 1st C. or early 2nd C. A.D.)
Tab.Vindol. I.4 (= II.190) and *Tab.Vindol.Suppl.* 2-3 (c. A.D. 100)
BGU XV.2502, *P.Lond.* II.254, *O.Mich.* I.56, *SB* XIV.11561, *P.Mil.Vogl.* II.60, *P.Prag.* II.132, *P.Ross.Georg.* V.14, *SB* I.5982, XIV.12174, *P.Sel.Warga* 10, and *O.Tebt.* 3-4 (2nd C. A.D.)
BGU XIII.2350 (2nd C. A.D. ?)
BGU I.1 (= *Chrest.Wilck.* 92), *O.Berl.* 95-96, *Tab.Mom.Louvre* IV.1204 (= *C.Étiq.Mom.* 1599), and *SB* VI.9028 (2nd or 3rd C. A.D.)
Tab.Vindol. II.182 (early 2nd C. A.D.)
P.Fay. 262 (A.D. 104)
P.Mich. VI.383 (A.D. 106-109 or 108-109)
Tab.Vindol. II.186 (A.D. 111)
P.Lond. III.1177 (= *Chrest.Wilck.* 193) (A.D. 113)
P.Fay. 47(a) (A.D. 114-115)
P.Mil.Vogl. III.188 and *SB* VIII.9653 (A.D. 127 ?)
P.Stras. V.414 (A.D. 127/128)
SB VI.9617 (A.D. 129)
P.Tebt. II.331 (c. A.D. 131)
P.Ryl. II.194 (A.D. 134-136)
SB XVI.12504 (A.D. 135/136)
P.Lond. II.255 (= *Chrest.Wilck.* 272) (A.D. 136)
CPR I.183 (A.D. 138 ?)
BGU XV.2498 (A.D. 143/144 ?)
BGU XV.2497 (A.D. 143-145 ?)
BGU XV.2499 (A.D. 148-156)
P.Berl.Leihg. II.38 and *P.Mil.Vogl.* VI.278 (= *SB* VI.9385) (mid 2nd C. A.D.)
P.Berl.Leihg. II.39, *BGU* X.1908, and *P.Stras.* V.333 (2nd half of 2nd C. A.D.)
BGU XV.2500 and *SB* XIV.11865 (A.D. 155)
BGU IX.1894 and XIII.2283 (A.D. 157)
O.Tebt.Pad. 28 (A.D. 158-159)
P.Col. V.1 (A.D. 160)
P.Mil.Vogl. I.28 and *P.Stras.* IX.831 (A.D. 162-163)
P.Mil.Vogl. VII.303 (A.D. 164)
SB XII.10921 (A.D. 167)
P.Osl. II.29 (A.D. 167)
O.Tebt.Pad. 29 (A.D. 168-169)

- BGU IX.1898* (A.D. 172)
P.Mich. IV.224 and *O.Tebt.Tab. 31* (A.D. 172-173)
P.Fay. 215, *SB XIV.11613*, and *O.Tebt.Pad. 30* (A.D. 173)
P.Mich. IV.361A (A.D. 174 or 173-175)
P.Mich. IV.362 (A.D. 175)
P.Bour. 27 (A.D. 178)
SB VI.9043 (A.D. 179 or 211)
O.Tebt.Pad. 32 (A.D. 180-181 or 212-213)
O.Tebt.Pad. 34 (A.D. 182-183 or 214-215)
P.Amh. II.121 (A.D. 183 or 215)
BGU XV.2501 (A.D. 183-184)
O.Tebt.Pad. 36, 38, and 39 (A.D. 184-185 or 216-217)
O.Tebt.Pad. 40 (A.D. 185-186)
P.Tebt. II.353 (A.D. 192)
O.Tebt.Pad. 42 (A.D. 195-196 or 224-225)
P.Ryl. II.196 (A.D. 196)
P.Rain.Cent. 63 (A.D. 198)
O.Tebt.Pad. 43 and 44 (A.D. 198-199 or 227-228)
P.Fay. 42(a) (late 2nd C. A.D.)
P.Oxy. XV.1802 and *P.Tebt. II.337* (late 2nd or early 3rd C. A.D.)
BGU I.38, *P.Flor. III.366*, *O.Narm. 72*, *O.Mich. I.155* (= *SB VI.9028*), *O.Princ.AM 15960* (4)E, and *O.Tebt.Pad. 52* (2nd or 3rd C. A.D.)
P.Alex. 1 and 417, *BGU I.9*, *CPR XIII.4, 5, 11*, and *13*, *P.Leipz. 15*, *SB VI.9095*, *O.Tebt.Pad. 53*, and *P.Wisc. I.29* (3rd C. A.D.)
P.Prag. II.176 (3rd or 4th C. A.D.)
O.Tebt.Pad. 45 (A.D. 200-201)
O.Osl. 12 and *O.Stras. 165* (A.D. 211)
O.Tebt.Pad. 46 (A.D. 211-212)
BGU XIII.2286 and *O.Princ.AM 15960* (4)B (A.D. 212)
SB XVIII.14008 (A.D. 212/213)
P.Jena 2 (= *SB III.7166*) (A.D. 214 or 214/215)
O.Tebt.Pad. 47 and 48 (A.D. 217-218 or 218-219)
O.Princ.AM 15960 (4)D (A.D. 219)
O.Tebt.Pad. 50 and 51 (A.D. 221-222 or 225-226)
P.Giess.Univ. VI.48 (A.D. 224)
P.Oxy. XII.1433 (A.D. 238)
P.Mich. XI.620 (A.D. 239-240)
BGU IV.1069 (A.D. 243/244)
BGU XIII.2280b (= *BGU IV.1087*) (A.D. 276)
P.Fay. 104 (late 3rd C. A.D.)
PGM IV.908 (4th C. A.D.)
P.Oxy. XII.1513 (4th C. A.D.)
P.Oxy. LXIV.4441 (A.D. 315-316)
P.Oxy. I.85 (= *P.Lond. III.760* = *SB XVI.12648*) (A.D. 338)
SB XII.11003 and *XX.14507* (4th or 5th C. A.D.)
SB XVIII.13889 (6th C. A.D.)
P.Berl.Sarisch. 22 (early 6th C. A.D.)
P.Alex. 239 (6th or 7th C. A.D.)
SB VI.9140 (7th C. A.D.)

1.3.2 Editions:

The following is based for the most part on the abbreviations and editions as found in *Checklist of Greek, Latin and Coptic Papyri, Ostraca and Tablets*, edd. J. F. Oates, R. S. Bagnall, W. H. Willis and J. D. Sosin, with the assistance of T. G. Wilfong and S. J. Clackson, at <http://scriptorium.lib.duke.edu/papyrus/texts/clist.html> (kept current by J. F. Oates and J. D. Sosin).

Abbreviations:

BL = *Berichtigungsliste der Griechischen Papyrusurkunden aus Ägypten*, var. edd. (Berlin/Leipzig; Heidelberg; and Leiden 1922-1998). X vols.

UPZ = *Urkunden der Ptolomäerzeit (ältere Funde)*, ed. U. Wilcken (Berlin 1927-1957). 2 vols.

O.Aberd. = *Catalogue of Greek and Latin Papyri and Ostraca in the Possession of the University of Aberdeen*, ed. E. G. Turner (Aberdeen University Studies 116) (Aberdeen 1939). 75(a) and (b) (with *BL V* and *VII* and O. M. Pearl, O. M. "Varia Papyrologica." *TAPA* 71 (1940) 372-390, at 372-379, rejecting that it refers to beer) and 94

P.Alex. = *Papyrus grecs du Musée Gréco-Romain d'Alexandrie*, ed. A. Świderek and M. Vandoni (Travaux du Centre d'Archéologie Méditerranéenne de l'Académie Polonaise des Sciences, Tome 2) (Warsaw 1964). 1, 239, and 417

- P.Amh.* II = *The Amherst Papyri, Being an Account of the Greek Papyri in the Collection of the Right Hon. Lord Amherst of Hackney, F.S.A. at Didlington Hall, Norfolk: Classical Fragments and Documents of the Ptolemaic, Roman and Byzantine Periods*, edd. B.P. Grenfell and A.S. Hunt (London 1901). 121
- P.Antw.* = *Papyrus d'Anvers*, ed. R. DeKoninck (Antwerp 1913). 4
- P.Austin* inv. 34 = Allen Ross Scaife. "Accounts for Taxes on Beer and Natron. P. Austin inv. 34." *ZPE* 71 (1988) 105-109 [not yet in *SB*].
- P.Berl.Leihg.* II = *Berliner Leihgabe griechischer Papyri, aus dem Nachlass T. Kalens*, ed. A. Tomsin (*Studia Graeca Upsaliensia* XII) (Uppsala 1977). 38-39
- P.Berl.Sarisch.* = *Berliner griechische Papyri, Christliche literarische Texte und Urkunden aus dem 3. bis 8. Jh.n.Chr.*, ed. P. Sarischouli (*Serta Graeca* 3) (Wiesbaden 1995). 22
- O.Berl.* = *Ostraka aus Brussel und Berlin*, ed. P. Viereck (Papyrusinstitut Heidelberg, Schrift IV) (Berlin and Leipzig 1922). 95-96
- BGU* = *Aegyptische Urkunden aus den Königlichen (later Staatlichen) Museen zu Berlin, Griechische Urkunden* (Berlin).
- I (1895). 1 (= *Chrest.Wilck.* 92), 9, and 38
- IV (1912). 1069, 1087 (= *BGU* XIII.2280b), and 1126
- VI, *Papyri und Ostraka der Ptolemäerzeit*, edd. W. Schubart and E. Kühn (1922). 1244 (papyrus) and 1355-1358 (ostraca) (with *BL* IX for 1356)
- VII, *Papyri, Ostraka und Wachstafeln aus Philadelphia im Fayûm*, edd. P. Viereck and F. Zucker (1926). 1705 (ostraca)
- IX, *Steuerlisten römischer Zeit aus Theadelphia*, ed. H. Kortenbeutel (1937). 1894 and 1898
- X, *Papyrusurkunden aus ptolemäischer Zeit*, ed. W. Müller (1970). 1908 and 1917
- XIII, *Greek Papyri from Roman Egypt*, ed. W.M. Brashear (1976). 2280b (= *BGU* IV.1087), 2283, 2286, and 2350
- XIV, *Ptolemäische Urkunden aus Mumienkartonage*, ed. W.M. Brashear (1981). 2379 (= *Chrest.Wilck.* 310 = *P.Grenf.* II.39 = *P.Lond.* III.698)
- XV, *Financial and Administrative Documents from Roman Egypt*, ed. C.A. Nelson (1983). 2497-2502
- XVI, *The Archive of Athenodoros*, ed. W.M. Brashear (1995). 2588, 2608, and 2670
- P.Bodl.* I = *Papyri Bodleianae* I, ed. R.P. Salomons (Amsterdam 1996). 65
- O.Bodl.* I = *Greek Ostraca in the Bodleian Library at Oxford and Various Other Collections*, ed. J.G. Tait (Egypt Exploration Society, *Graeco-Roman Memoirs* 21) (London 1930). 51 and 125
- P.Bour.* = *Les Papyrus Bouriant*, ed. P. Collart (Paris 1926). 27 and 45
- O.Cair.* = *Ostraka greci del Museo Egizio del Cairo*, edd. C. Gallazzi, R. Pintaudi, and K.A. Worp (*Pap. Flor.* XIV) (Florence 1986). 11 (= *O.Cair.Cat.* 9503), 12 (= *O.Cair.Cat.* 9533), and 13 (= *O.Cair.Cat.* 9535)
- O.Cair.Cat.* = *Catalogue général des antiquités égyptiennes du Musée du Caire*, nos. 9501-9711: *Griechische Ostraka*, by U. Wilcken, ed. C. Gallazzi (Cairo 1983). 9503 (= *O.Cair.* 11), 9533 (= *O.Cair.* 12), and 9535 (= *O.Cair.* 13) (described, not edited)

P.Cair.Zen. = *Zenon Papyri, Catalogue général des antiquités égyptiennes du Musée du Caire*, ed. C.C. Edgar (Cairo).

II, (Cat. Vol. 82) (1926). 59176, 59189, 59199 (= *SB* III.6738), 59202 (= *SB* III.6739) (with Eric G. Turner, "The 'Hanging' of a Brewer: *P.Cairo Zenon* II 59202." in *Essays in Honor of C. Bradford Welles* [New Haven, Connecticut 1966]. 79-86), 59295, and 59297

III, (Cat. Vol. 85) (1928). 59403

IV, (Cat. Vol. 90) (1931). 59791

Chrest.Wilck. = L. Mitteis and U. Wilcken. *Grundzüge und Chrestomathie der Papyrskunde*, I Bd. *Historischer Teil*, II Hälfte *Chrestomathie* (Leipzig and Berlin 1912). 92 (= *BGU* I.1), 193 (= *P.Lond.* III.1177), 272 (= *P.Lond.* II.255), and 310 (= *BGU* XIV.2379 = *P.Grenf.* II.39 = *P.Lond.* III.698)

P.Col. V = *Columbia Papyri: Tax Documents from Theadelphia*, edd. J. Day and C.W. Keyes (New York 1956).

I

P.Col.Zen. I = *Columbia Papyri III, Zenon Papyri: Business Papers of the Third Century B.C. dealing with Palestine and Egypt*, vol. I, edd. W.L. Westermann and E.S. Hasenoeherl (New York 1934). 34 and 42

CPR = *Corpus Papyrorum Raineri* (Vienna).

I, *Griechische Texte I, Rechtsurkunden*, ed. K. Wessely (1895). 183

XIII, *Griechische Texte IX*, ed. H. Harrauer (1987). 4, 5, 11, 12, and 13

P.Duke inv. 975r (b) = *Duke Papyrus* described at <http://scriptorium.lib.duke.edu/papyrus/records/975r-b.html>.

O.Edfou III = *Tell Edfou 1939*, edd. K. Michalowski, Ch. Desroches, J. de Linage, J. Manteuffel, and M. Zejmo-Zejmis (Cairo 1950). 365 and 372

O.Elkab = *Elkab III. Les ostraca grecs*, edd. J. Bingen and W. Clarysse (Publications du Comité des Fouilles Belges en Égypte, *Elkab*) (Brussels 1989). 3, 7, and 10

C.Étiq.Mom. = *Corpus des étiquettes de momies grecques*, ed. B. Boyaval (Publications de l'Université de Lille III) (Lille 1976). 1599 (= *T.Mom.Louvre* IV.1204)

P.Fay. = *Fayum Towns and their Papyri*, edd. B.P. Grenfell, A.S. Hunt and D.G. Hogarth (Egypt Exploration Society, Graeco-Roman Memoirs 3) (London 1900). 13, 42(a), 47 (with *BL* I and VIII), 47(a), 101, 104, 215, 219, 262, and 327

O.Fay. = *Fayum Towns and their Papyri*, edd. B.P. Grenfell, A.S. Hunt and D.G. Hogarth (Egypt Exploration Society, Graeco-Roman Memoirs 3) (London 1900). 8-11 (with *BL* VIII for 9-10) and 48

P.Flor. = *Papiri greco-egizii, Papiri Fiorentini* (Supplementi Filologico-Storici ai Monumenti Antichi) (Milan).

I, *Documenti pubblici e privati dell'età romana e bizantina*, ed. G. Vitelli (1906). 101

III, *Documenti e testi letterari dell'età romana e bizantina*, ed. G. Vitelli (1915). 366

- P.Freib.Clar.* = Freiburg papyri, ed. W. Clarysse. "The Financial Problems of the Beer-Seller Ameneus." *Enchoria* 16 (1988) 11-21. 1-2, 3 (= *SB* III.6094), and 4
- P.Gen. II* = *Les Papyrus de Genève II*, ed. C. Wehrli (Geneva 1986). 91 (= *SB* VI.9224) and 93
- P.Genova III* = *Papiri dell'Università di Genova III*, ed. L. Migliardi Zingale (*Pap.Flor.* XX) (Florence 1991). 113
- P.Giess.Univ. VI* = *Mitteilungen aus der Papyrussammlung der Giessener Universitäts-bibliothek. VI: Griechische Verwaltungsurkunden von Tebtynis aus dem Anfang des dritten Jahrhunderts n. Chr.*, ed. G. Rosenberger. (Giessen 1939). 48
- PGM IV* = *Papyri Graecae Magicae: Die griechischen Zauberpapyri*², edd. K. Preisendanz, A. Henrichs, et al. (Stuttgart 1973). 1. 908
- P.Grenf. II* = *New Classical Fragments and Other Greek and Latin Papyri*, edd. B.P. Grenfell and A.S. Hunt (*Greek Papyri, Series II*) (Oxford 1897). 39 (= *BGU* XIV.2379 = *Chrest.Wilck.* 310 = *P.Lond.* III.698)
- P.Gur.* = *Greek Papyri from Gurob*, ed. J.G. Smyly (*Royal Irish Academy, Cunningham Memoirs* 12) (Dublin 1921). 3, 4, and 24
- P.Heid. VI* = *Veröffentlichungen aus der Heidelberger Papyrussammlung VI* (= *Pap.Heid.N.F. VII*): *Ptolemäische Urkunden aus der Heidelberger Papyrussammlung*, ed. R. Duttonhöfer (Heidelberg 1994). 379
- P.Hels. I* = *Papyri Helsingiensis I, Ptolemäische Urkunden*, edd. J. Frösén, P. Hohti, J. Kaimio, M. Kaimio, and H. Zilliacus (*Societas Scientiarum Fennica, Commentationes Humanarum Litterarum* 80) (Helsinki 1986). 9 and 26
- P.Hib.* = *The Hibeh Papyri* (London).
I, edd. B.P. Grenfell and A.S. Hunt (*Egypt Exploration Society, Graeco-Roman Memoirs* 7) (1906). 94, 106-107, 112-113, 133 (= *SB* X.10260), 136-138, 139 (= *SB* XII.10783), 140-142
II, edd. E.G. Turner and M.-Th. Lenger (*Egypt Exploration Society, Graeco-Roman Memoirs* 32) (1955). 212 and 264
- P.Jena* = *Jenaer Papyrus-Urkunden*, edd. F. Zucker and F. Schneider (Jena 1926). 2 (reprinted in *SB* III.7166)
- P.Köln* = *Kölner Papyri* (Cologne and Opladen).
VI, edd. M. Gronewald, B. Kramer, K. Maresch, M. Parca, and C. Römer (*Pap.Colon.* VII, pt. 6) (1987). 259, 263-264, and 268
VII, edd. M. Gronewald and K. Maresch (*Pap.Colon.* VII, pt. 7) (1991). 315
- P.Leid. I* = *Papyri Graeci Musei Antiquarii Lugduni-Batavi*, ed. C. Leemans (Leiden 1843). C (= *UPZ* 1.89)

- O.Leid.* = *Greek Ostraka: a Catalogue of the Greek Ostraka in the National Museum of Antiquities at Leiden, with a Chapter on the Greek Ostraka in the Papyrological Institute of the University of Leiden*, edd. R.S. Bagnall, P.J. Sijpesteijn, and K.A. Worp (Collections of the National Museum of Antiquities at Leiden IV) (Zutphen 1980). 16 (= *SB* X.10394)
- P.Leipz.* = *Die griechischen Papyri der Leipziger Universitätsbibliothek*, ed. K. Wessely (Verhandlungen der königlichen Sächsischen Gesellschaft der Wissenschaften 37) (Leipzig 1885). 15
- P.Lille* = *Papyrus grecs* (Institut Papyrologique de l'Université de Lille) (Lille).
I, fasc. 4, edd. P. Jouguet, P. Collart, J. Lesquier, and M. Xoual (1928) (reprinted in 1929 as part of the *Travaux et mémoires de l'Université de Lille, hors série*). 3 and 59
- P.Lond.* = *Greek Papyri in the British Museum* (London).
I, ed. F.G. Kenyon (1893). 131 (with *SB* VIII.9699)
II, ed. F.G. Kenyon (1898). 219, 254 (with *BL* I), and 255 (= *Chrest. Wilck.* 272)
III, edd. F.G. Kenyon and H.I. Bell (1907). 698 (= *BGU* XIV.2379 = *Chrest. Wilck.* 310 = *P.Grenf.* II.39), 760 (= *P.Oxy.* I.85), and 1177 (= *Chrest. Wilck.* 193)
- P.Lond.Zen.* = *Greek Papyri in the British Museum VII: The Zenon Archive*, ed. T.C. Skeat (1974). 1976 (with P. W. Pestman, *The New Papyrological Primer* [Leiden 1990]. 77-78 and J. Rowlandson, ed. *Women and Society in Greek and Roman Egypt. A Sourcebook* [Cambridge 1998]. 272), 2002, 2153, 2161, 2166, and 2170
- Tab.Mom.Louvre* IV = "Catalogue des étiquettes de momies du Musée du Louvre," edd. F. Baratte and B. Boyaval (*CRIPÉL* vol. 5, pt. 4) (Lille 1979). 1204 (= *C.Étiq.Mom.* 1599)
- P.Mich.* = *Michigan Papyri*.
II, *Papyri from Tebtunis*, Part I, ed. A.E.R. Boak (University of Michigan Studies, Humanistic Series 28) (Ann Arbor 1933). 121, 123, and 127
IV, pt. I, *Tax Rolls from Karanis*, ed. H.C. Youtie (University of Michigan Studies, Humanistic Series 42) (Ann Arbor 1936). 224
IV, pt. II, *Tax Rolls from Karanis*, edd. H.C. Youtie and O.M. Pearl (University of Michigan Studies, Humanistic Series 43) (Ann Arbor 1939). 361A and 362
V, *Papyri from Tebtunis*, Part II, edd. E.M. Husselman, A.E.R. Boak, and W.F. Edgerton (University of Michigan Studies, Humanistic Series 29) (Ann Arbor 1944). 245, 322b, and 326
VI, *Papyri and Ostraca from Karanis*, edd. H.C. Youtie and O.M. Pearl (University of Michigan Studies, Humanistic Series 47) (Ann Arbor 1944). 382-383
XI, *Papyri from the Michigan Collection*, ed. J.C. Shelton (*Am. Stud. Pap.* IX) (Toronto 1971). 620
XVIII, *P.Michigan Koenen: Michigan Texts Published in Honor of Ludwig Koenen*, edd. C. Römer and T. Gagos (*Stud. Amst.* XXXVI) (Amsterdam 1996). 777-778, 780A, and 783A
- P.Mich.* inv. 5938 = P. J. Sijpesteijn. "Receipts from the Michigan Papyrus Collection." *ZPE* 109 (1995) 87-109, at 91-92 [not yet in *SB*]

P.Mich.Zen. = *Michigan Papyri I: Zenon Papyri in the University of Michigan Collection*, ed. C.C. Edgar (University of Michigan Studies, Humanistic Series 24) (Ann Arbor 1931). 36

O.Mich. = *Michigan Ostraca*.

I, *Greek Ostraca in the University of Michigan Collection*, Part I, Texts, ed. L. Amundsen (University of Michigan Studies, Humanistic Series 34) (Ann Arbor 1935). 56, 119, 155 (= *SB* VI.9028), 299 (with H. C. Youtie. "Notes on Papyri and Ostraca." *TAPA* 89 (1958) 383-385), and 362 (= *SB* XIV.11445)

II, *Michigan Papyri VI, Papyri and Ostraca from Karanis*, edd. H.C. Youtie and O.M. Pearl (University of Michigan Studies, Humanistic Series 47) (Ann Arbor 1944). 745 (with *BL* IV) and 789-801

III, *Michigan Papyri VIII, Papyri and Ostraca from Karanis*, Second Series, edd. H.C. Youtie, and J.G. Winter (University of Michigan Studies, Humanistic Series 50) (Ann Arbor 1951). 987-988, 1003, and 1026-1028

IV.1127-1128 = *SB* XIV.11514-11515

P.Mil. I = *Papiri Milanesi I*, fasc. I, ed. A. Calderini (Milan 1928); 2nd ed. S. Daris (Pubblicazioni dell'Università Cattolica del Sacro Cuore, Contributi, Serie Terza, Pubblicazioni di "Aegyptus," I) (Milan 1967). 11 (with *BL* VIII)

P.Mil.Congr.XVIII = *Papiri documentari dell'Università Cattolica di Milano*, var. edd. (Milan 1986) = *Aegyptus* 66 (1986) 1-70. p. 10 (unnumbered) (reprinted in *SB* XVIII.13093)

P.Mil.Vogl. =

I, *Papiri della R. Università di Milano*, ed. A. Vogliano (Milan 1937 [1966]). 28 (= *SB* Beiheft II, nr. 6)

II, *Papiri della Università degli Studi di Milano*, var. edd. (Milan 1961). 60

III, (Milan 1965). 188

VI, (Milan 1977). 278 (= *SB* VI.9385)

VII, *La contabilità di un'azienda agricola nel II sec. d.C.*, ed. D. Foraboschi (Milan 1981). 303

O.Narm. = *Ostraka greci da Narmuthis (OGN I)*, edd. R. Pintaudi and P.J. Sijpesteijn (Quaderni di Medinet Madi 2) (Pisa 1993). 72

P.Oslo II = *Papyri Osloenses*, edd. S. Eitrem and L. Amundsen (Oslo 1931). 29

O.Oslo = *Ostraca Osloënsia, Greek Ostraca in Norwegian Collections*, ed. L. Amundsen (Avhandlingar utgitt av det Norske Videnskaps-Akademi i Oslo, Hist.-Fil. Kl. 1933, No. 2) (Oslo 1933). 12

P.Oxy. = *The Oxyrhynchus Papyri* (Egypt Exploration Society in Graeco-Roman Memoirs) (London).

I, ed. B.P. Grenfell and A.S. Hunt. 1898. 85 (= *P.Lond.* III.760; see R. Coles, "P.Oxy. I 85 Revised." *ZPE* 39 [1980] 115-123, J. G. Keenan, "An Afterthought on the Names Flavius and Aurelius." *ZPE* 53 [1983] 245-250, and *SB* XVI.12648).

IV, edd. B.P. Grenfell and A.S. Hunt (1904). 736 and 784

- XII, edd. B.P. Grenfell and A.S. Hunt (1916). 1433 (with *BL VIII*) and 1513 (with *BL X*)
- XV, edd. B.P. Grenfell and A.S. Hunt (1922). 1802
- LXIV, edd. E.W. Handley and U. Wartenberg (1997). 4441
- P.Oxy.Hels.* = *Fifty Oxyrhynchus Papyri*, edd. H. Ziliacus, J. Frosen, P. Hohti, J. Kaimio, and M. Kaimio (Societas Scientiarum Fennica, *Commentationes Humanarum Litterarum* 63) (Helsinki 1979). 33
- P.Paris* = *Notices et textes des papyrus du Musée du Louvre et de la Bibliothèque Impériale* (Notices et extraits des manuscrits de la Bibliothèque Impériale et autres bibliothèques 18.2), edd. A.J. Letronne, W. Brunet de Presle, and E. Egger (Paris 1865). 60 bis (= *UPZ I.149*), 62 (= *UPZ I.112*), 63 (= *UPZ I.110*), and 67
- P.Petr.* III = *The Flinders Petrie Papyri*, edd. J.P. Mahaffy and J.G. Smyly (Royal Irish Academy, *Cunningham Memoirs XI*) (Dublin 1905). 32, 37, 76, 87, 112, 121, 124, 138, and 376
- P.Prag.* II = *Papyri Graecae Wessely Pragenses*, edd. R. Pintaudi, R. Dostálová, and L. Vidman (*Pap. Flor. XXVI*) (Florence 1995). 132 and 176
- P.Princ.* I = *Papyri in the Princeton University Collections*, edd. A.C. Johnson and H.B. van Hoesen (*The Johns Hopkins University Studies in Archaeology X*) (Baltimore 1931). 13
- O.Princ.* AM 15960 (4)B, D, and E, ed. P. J. Sijpesteijn, "Greek Ostraca from the Arsinoite Nome." *ZPE* 71 (1988) 119-122.
- P.Rain.Cent.* = *Festschrift zum 100-jährigen Bestehen der Papyrussammlung der Österreichischen Nationalbibliothek, Papyrus Erzherzog Rainer*, var. edd. (Vienna 1983). 49 and 63
- P.Rein.* I = *Papyrus grecs et démotiques recueillis en Égypte*, edd. T. Reinach, W. Spiegelberg, and S. de Ricci (Paris 1905). 42
- P.Rev.* = *Revenue Laws of Ptolemy Philadelphus*, ed. B.P. Grenfell (Oxford 1896). fr. 6 (c + h)
- P.Ross.Georg.* V = *Varia*, edd. G. Zereteli and P. Jernstedt. (n.p. 1935). 14
- P.Ryl.* II = *Catalogue of the Greek and Latin Papyri in the John Rylands Library, Manchester: Documents of the Ptolemaic and Roman Periods*, edd. J. de M. Johnson, V. Martin, and A.S. Hunt (Manchester 1915). 127, 145, 194, and 196
- SB* = *Sammelbuch griechischer Urkunden aus Aegypten*, edd. F. Preisigke, F. Bilabel, E. Kiessling, and H.-A. Rupprecht.
- I, (Strassburg and Berlin 1913-1915). 5982 (see K. A. Worp. "Five Vienna Papyri." Reconsidered." *ZPE* 29 [1978] 263-266, at 265-266).
- III, (Berlin and Leipzig 1926-1927). 6094 (= *P.Freib.* no. 130), 6738 (= *P.Cair.Zen.* II.59199), 6739 (= *P.Cair.Zen.* II.59202), 6803 (= *P.Zen.Pestm.* 63), 6949 (= *SB V.8546*; see under epigraphical sources, below), 7166 (= *P.Jena* 2), and 7202
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- XII, (Wiesbaden 1976-1977). 10783 (= *P.Hib.* I.139), 10860, 10921, and 11003
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P.Sel.Warga = *Select Papyri*, ed. R.G. Warga, Jr. Diss. University of Illinois at Urbana-Champaign, 1988. 10

PSI III = *Papiri greci e latini* (Pubblicazioni della Società Italiana per la ricerca dei papiri greci e latini in Egitto), edd. G. Vitelli, M. Norsa, et al. (Florence 1914). 181

PSI Congr.XVII = *Trenta testi greci da papiri letterari e documentari editi in occasione del XVII Congresso Internazionale di Papirologia*, var. edd. (Florence 1983). 22

P.Sorb. I = *Papyrus de la Sorbonne*, ed. H. Cadell (Publications de la Faculté des Lettres et Sciences Humaines de Paris, Série "Textes et Documents," t. X: Travaux de l'Institut de Papyrologie de Paris, fasc. IV) (Paris 1966). 10, 18, and 36 (= *SB* XVI.12415) (with W. Clarysse. "Notes on Some Graeco-Demotic Surety Contracts." *Enchoria* 8.2 [1978] 8)

P.Stras. = *Papyrus grecs de la Bibliothèque Nationale et Universitaire de Strasbourg* (Strasbourg).

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O.Tebt.Pad. = *Ostraka da Tebtynis della Università di Padova* I, ed. C. Gallazzi (Milan 1979). 28-32, 34, 36, 38-40, 42-48, and 50-53

UPZ1 = *Urkunden der Ptolemäerzeit (ältere Funde) I, Papyri aus Unterägypten*, ed. U. Wilcken (Berlin and Leipzig 1927). 89 (= *P.Leid.* I.C), 110 (= *P.Paris* 63), 112 (= *P.Paris* 62), and 149 (= *P.Paris* 60 bis)

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Tab.Vindol.Suppl. = *Supplemental Vindolanda tablets*, edd. A. K. Bowman and J. D. Thomas. "New Writing-Tablets from Vindolanda." *Britannia* 27 (1996) 299-328. 2-3

O.Vleem. = *Ostraka Varia. Tax Receipts and Legal Documents on Demotic, Greek and Greek-Demotic Ostraka, Chiefly of the Early Ptolemaic Period, From Various Collections*, ed. S.P. Vleeming (Pap. Lugd. Bat. XXVI) (Leiden, New York, and Cologne 1994). 11A

O.Wilck. = *Griechische Ostraka aus Aegypten und Nubien*, ed. U. Wilcken (Leipzig-Berlin 1899); reprint with addenda compiled by P.J. Sijpesteijn (Amsterdam 1970). vol. 2. 1277

P.Wisc. I = *The Wisconsin Papyri*, ed. P.J. Sijpesteijn (Leiden 1967). (Pap. Lugd. Bat. XVI). 29

P.Zen.Pestm. = *Greek and Demotic Texts from the Zenon Archive*, edd. P.W. Pestman *et al.* (Pap. Lugd. Bat. XX) (Leiden 1980). 63 (= *SB* III.6803)

2 SECONDARY SOURCES

Abbreviations:

AHB = *Ancient History Bulletin*

AHR = *American Historical Review*

AJ = *Archaeological Journal*

ANRW = *Aufstieg und Niedergang der römischen Welt*

ASAN = *Annales de la société archéologique de Namur*

ASNSP = *Annali della scuola normale superiore di Pisa*

BASBC = *Bulletin of the American Society of Brewing Chemists*

BASOR = *Bulletin of the American Schools of Oriental Research*

BASP = *Bulletin of the American Society of Papyrologists*

BHM = *Bulletin of the History of Medicine*

BICS = *Bulletin of the Institute of Classical Studies*

BO = *Bibliotheca Orientalis*

BT = *Brewing Techniques*

CE = *Chronique d'Égypte*

CJ = *Classical Journal*

CQ = *Classical Quarterly*

CV = *Classical Views*

DAGR = *Dictionnaire des antiquités grecques et romaines*, C. Daremberg, E. Saglio, and E. Pottier (Paris 1877-1919). 5 vols (with one volume of tables)

DHA = *Dialogues d'histoire ancienne*

EA = *Egyptian Archaeology*

EC = *Études celtiques*

IEJ = *Israel Exploration Journal*

JAA = *Journal of Anthropological Archaeology*

JACS = *Journal of the American Chemists' Society*

JBHS = *Journal of the Brewing History Society*

JCS = *Journal of Celtic Studies*

JEA = *Journal of Egyptian Archaeology*

JHS = *Journal of Hellenic Studies*

JIB = *Journal of the Institute of Brewing*

JMRS = *Journal of Medieval and Renaissance Studies*

JRS = *Journal of Roman Studies*

JRSAI = *Journal of the Royal Society of Antiquaries of Ireland*

JSA = *Journal of Studies on Alcohol*

LIMC = *Lexicon Iconographicum Mythologiae Classicae* (Zurich and Munich 1992-)

LSJ = Liddell, H. G., R. Scott, H. S. Jones. *A Greek-English Lexicon*⁹ (Oxford 1996)

OCD = *The Oxford Classical Dictionary*³, edd. S. Hornblower and A. Spawforth (Oxford and New York 1996)

OED = *The Oxford English Dictionary*², ed. J. A. Simpson (Oxford 1989)

OJA = *Oxford Journal of Archaeology*

OLD = *The Oxford Latin Dictionary*, ed. P. G. W. Glare (Oxford 1996 [reprinted with corrections])

PRIA-C = *Proceedings of the Royal Irish Academy - Section C*

QJSA = *Quarterly Journal of Studies on Alcohol*

QUCC = *Quaderni urbinati di cultura classica*

RA = *Revue archéologique*

RB = *Revue Bénédictine*

RC = *Revue celtique*
 RE = *Realencyclopädie der classischen Altertumswissenschaft*, edd. A. F. Pauly, G. Wissowa, *et al.* (Stuttgart 1894-)
 REA = *Revue des études anciennes*
 REG = *Revue des études grecques*
 REL = *Revue des études latines*
 RHE = *Revue d'histoire ecclésiastique*
 SIFC = *Studi italiani di filologia classica*
 TAPA = *Transactions and Proceedings of the American Philological Association*
 TLL = *Thesaurus linguae latinae* (Leipzig 1900-)
 VHA = *Vegetation History and Archaeobotany*
 ZCP = *Zeitschrift für celtische Philologie*
 ZPE = *Zeitschrift für Papyrologie und Epigraphik*

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APPENDIX I: GRECO-ROMAN LITERARY SOURCES ON BEER

I present here every certain reference to beer in Greek and Latin up to A.D. 900 (the first reference to a hopped beer in A.D. 822 being a rough terminus) known to me which survives from a manuscriptural source, as far as possible in chronological order (and then in alphabetical order for roughly contemporary material; see section 1.1.1 of the bibliography for the dates), and in the case of fragments provide an entry for the original author as well as the source. I also include later texts (especially lexicons and commentaries) which illuminate or are based on more ancient material, though otherwise avoid all sources after the ninth century. Texts from inscriptions and from papyri, ostraca, and tablets are not included, except for a citation from a lexicon found only on papyrus (T68). References to drinking or drunkenness in which the beverage is not specifically identified are not included. I use an asterisk (*) to denote a questionable reference to beer.

For each reference, the original text is provided along with a translation of my own. The edition used for each author is to be found in section 1.1.2 of the bibliography. I reproduce only those parts of the editor's *apparatus criticus* which relate directly to beer, or to some matter discussed specifically in this work, and also include different readings if they are not found in the editor, or if I use more than one text. I also usually include the context of the passage and often a brief commentary (though in all cases one must refer to the main body of the essay for further information on each passage).

Abbreviations:

- ASS* = *Acta Sanctorum*, edd. J. Bolland *et al.* (1643-1940)
CCM = *Corpus Consuetudinum Monasticarum*, edd. K. Hallinger *et al.* (1963-)
CGL = *Corpus Glossarium Latinorum*, edd. G. Löwe and G. Goetz (1888-1923 [1965])
CMG = *Corpus Medicorum Graecorum* (1908-)
CML = *Corpus Medicorum Latinorum* (1915-)
FGrH = *Fragmente der griechischen Historiker*, edd. F. Jacoby *et al.* (1923-)
GrGr = *Grammatici Graeci*, edd. R. Schneider, G. Uhlig, *et al.* (1867-1902 [1965])
LG = *Lexicographi Graeci*, edd. A. Adler *et al.* (1928-)
MEA = *Monumenta Ecclesiastica Anglicana in Ancient Laws and Institutes of England*, ed. B. Thorpe (1840)
MGH-AA = *Monumenta Germaniae Historica - Auctorum Antiquissimorum*, ed. T. Mommsen (1877-1919 [1961])
MGH-CAC = *Monumenta Germaniae Historica - Concilia Aevi Carolini* (1906-)
MGH-CRF = *Monumenta Germaniae Historica - Capitularia Regum Francorum*, edd. A. Boretius and V. Krause (1883-1893)
MGH-E = *Monumenta Germaniae Historica - Epistolae Merovingici et Carolini Aevi* (1891-)
MGH-L = *Monumenta Germaniae Historica - Leges* (1835-1889 [1965])
MGH-S = *Monumenta Germaniae Historica - Scriptores* (1826-1913)
MGH-SRM = *Monumenta Germaniae Historica - Scriptorum Rerum Merovingicarum*, edd. B. Krusch *et al.* (1885-1920)
PG = *Patrologia Graeca*, edd. J.-P. Migne *et al.* (1857-1868)
PL = *Patrologia Latina*, edd. J.-P. Migne *et al.* (1844-1855)
RGFS = *Rerum Gallicarum et Francicarum Scriptores* (1869-1894)
SCC = *Sacrorum Conciliorum Nova et Amplissima Collectio*, ed. G. D. Mansi (1759-1798 [1960-1961])
SLH = *Scriptores Latini Hiberniae* (1955-)
VSH = *Vitae Sanctorum Hiberniae*, ed. C. Plummer (1910)

ARCHAIC (700 - 490 B.C.)

T1. Archilochus, fr. 42 West (= fr. 116 Adrados = fr. 32 Bergk = fr. 24 Crusius = fr. 28 Diehl = fr. 46 Lasserre-Bonnard = fr. 29 Tarditi) in Athenaeus, *Deipnosophistae* 10.447b (= T81):

Context: Athenaeus discusses evidence for barley beer and specifically for the use of the terms βρῦτος and βρῦτον.

τὸν δὲ κρίθινον οἶνον καὶ βρῦτόν τινες καλοῦσιν, ὡς Σοφοκλῆς ἐν Τριπτολέμῳ ... καὶ Ἀρχίλοχος·

ᾧ ὥσπερ ἀλῶ βρῦτον ἢ Θρεΐξ ἀνήρ
ἢ Φρυγὲς ἔβρυζε· κύβδα δ' ἦν πονεομένη.

<...> ὥσπερ] <ἢ δ'> ὥσπερ Lattimore, ὥσπερ <γὰρ> Scaliger, ὥσπερ <παρ'> Dindorf, Hermann, ὥσπερ <τῶς> Gallavotti, Medaglia, <πρὸς> ἀλῶν Toup; Θρεΐξ Wilamowitz, Hoffman, Diehl, etc., Θρηΐξ Scaliger, Toup, Adrados, Θρηΐξ codd.; ἔβρυζε] Schneidewin, Tarditi, ἔμυζε Wilamowitz, Diehl, Lasserre-Bonnard, Adrados, West (cf. Hesychius), ἔβρυζε ἢ Φρυγὲς Knox, ἔβρυζεν ἢ Φρυγὲς Page, Snell; ἔβρυζε Medaglia; κύβδα δ' ἦν AB, κύβδ' ἦν PVL, κύβδα δὴν Page; κρύβδα Medaglia; πονεομένη] πωλευμένη Toup.

Some call barley wine also *brūtos* [or *brūton*], as Sophocles in his *Triptolemus*: [T10]. Also Archilochus:

“... [she fellated him] just like a Thracian or Phrygian man sucked *brūtos* [or *brūton*?] through a reed, and she was bent over working hard.”

Commentary: Part of the first line is missing and has been variously restored. It is almost certain that the previous line would have described a woman performing fellatio (see Gerber 1976). This is the only certain ancient literary evidence for Phrygian beer from any language. For Thracian beer, see Aeschylus (T6) and Hellanicus (T9). Archilochus also mentions Thracian (Ismarian) wine elsewhere (fr. 2 West).

CLASSICAL (490 - 323 B.C.)

T2a. Hecataeus, *Descriptio* 2, *FGrH* 1F323b (= fr. 290 Müller) in Athenaeus, *Deipnosophistae* 10.418e (= T80):

Context: Athenaeus speaks of gluttonous individuals (411a-417b), turns to gluttonous peoples, including Boeotians, Pharsalians, and Thessalians (417b-418e), then mentions that the Egyptians are modest eaters, quoting Hecataeus.

Ἑκαταῖος ...

Αἰγυπτίους δὲ Ἑκαταῖος ἀρτοφάγους φησὶν εἶναι κυλλήστιας ἐσθίοντας, τὰς δὲ κριθὰς εἰς ποτὸν καταλέοντας.

Hecataeus says:

“The Egyptians are bread-eaters, eating *cyllēstis*, and grinding barley for a drink.”

Commentary: Herodotus (2.77.4), right before he speaks of Egyptian barley beer (= T7), also says that the Egyptians eat κυλλήστις, and specifies that it is made from ὄλυρα (a type of wheat). Athenaeus also elsewhere (*Deipn.* 3.114c) mentions that Hecataeus (*FGrH* 1F322), Herodotus, Aristophanes (*Danaids* fr. 267 Kassel-Austin), and others discussed Egyptian κυλλήστις. For this type of bread, see also Pollux, *Onom.* 6.73 and Phot., *Lex.* s.v.

T2b. Hecataeus, *Descriptio* 2, *FGrH* 1F323a (= fr. 290 Müller) in Athenaeus, *Deipnosophistae* 10.447d (= T81):

Context: Athenaeus cites a number of sources on beer, including Hecataeus.

Ἑκαταῖος δ' ἐν δευτέρῳ περιηγήσεως εἰπὼν περὶ Αἰγυπτίων ὡς ἄρτοφάγοι εἰσὶν ἐπιφέρει·

τὰς κριθὰς ἐς τὸ πῶμα καταλέουσιν.

τὰς A, τὰς δὲ C.

Hecataeus in the second book of *Sketches*, saying of the Egyptians that they are bread-eaters, claims:

“They [the Egyptians] grind barley for a beverage.”

Commentary: It is quite likely that Hecataeus's description of Egyptian barley beer influenced both Aeschylus (T4) and Herodotus (T7). Hesychius (T105) may have been glossing the original passage of Hecataeus, which would mean that Hecataeus called this beer ζύθιον.

T3. Hecataeus, *Descriptio Europae*, *FGrH* 1F154 (= fr. 123 Müller) in Athenaeus, *Deipnosophistae* 10.447d (= T81):

Context: Same as T1.

ἐν δὲ τῇ τῆς Εὐρώπης περιόδῳ

Παιονιάς φησι πίνειν βρῦτον ἀπὸ τῶν κριθῶν καὶ παραβίην ἀπὸ κέγχρου καὶ κονύζης.

βρῦτον edd., βρύτον codd.; κονύζης Musurus, Müller, Jacoby, κόνυζαν codd., κυρηβίην? Kaibel, ὀρύζης? Nelson.

In his *Tour of Europe* [Hecataeus] says:

“The Paeonians drink *brūtos* [*brūton*?] [made] from barley and *parabiē* [made] from millet and [from] fleabane.”

Commentary: This is the only possible evidence for the use of fleabane in beer. Julius Africanus (T83) later provides yet another name for Paeonian beer, namely κάμων.

T4. Aeschylus, *Supplices* 952-953:

Context: King Pelasgus of Argos has granted protection to the daughters of Danaus, who have come to Argos from

Egypt to escape marriage to their cousins, the sons of Aegyptus. When the sons of Aegyptus land, they send a herald as their representative to force the Danaids to their ships. King Pelasgus sends off the herald with a threat of war and a final sneering remark about Egyptian unmanliness.

BA. ἀλλ' ἄρσενάς τοι τῆσδε γῆς οἰκήτορας
εὐρήσεται, οὐ πίνοντας ἐκ κριθῶν μέθυ.

τοι τῆσδε] καὶ τῆσδε Schütz.

King: “But, truly, you [pl.] will find that the dwellers of this land are men, not drinkers of the inebriant [made] from barley.”

Commentary: The Argives, on the other hand are not women (see 913), and are said to be better fighters because of their food (761), since they eat cereal rather than papyrus as the Egyptians, and also because of their better drink (though cereals are now denigrated). It is probable that Aeschylus was influenced by Hecataeus’s description of Egyptian beer-drinking (T2) (Garvie 1969: 179 and n. 6 and Hall 1989: 133) and Hecataeus had also discussed the story of the Danaids (*FGrH* 1F19-22). Burges suggested adding after these two lines fr. 318 Radt (but see the other attributions listed in Garvie 1969: 231 and n. 5). See further on this passage Sommerstein 1990-1993.

T5. *Scholium in Aeschyli Supplices* 953:

ἐκ κριθῶν μέθυ· πρὸ γὰρ τῆς εὐρέσεως τοῦ οἴνου τοῦτο ἐξεῦρον Αἰγύπτιοι. λέγεται δὲ μεθύσκειν.

“‘of the inebriant [made] from barley’ [= T4]: before the discovery of wine the Egyptians discovered this. And ‘to intoxicate [from barley?]' is said.”

Commentary: The tradition that beer predated wine is found nowhere else. The date of this comment on the text cannot now be determined.

T6. Aeschylus, *Lycurgus* fr. 124 Radt (= fr. 25 Ahrens = fr. 56 Lloyd-Jones = fr. 97 Mette = fr. 124 Nauck² = fr. 124 Sidgwick) in Athenaeus, *Deipnosophistae* 10.447c (= T81):

Context: Same as T1. The *Lycurgus* was the satyr-play in Aeschylus’s tetralogy on Dionysus’s rejection by Lycurgus the king of Thrace (see *Schol. Ar. Thesm.* 134).

τὸν δὲ κρίθινον οἶνον καὶ βρῦτόν τινες καλοῦσιν, ὥς Σοφοκλῆς ἐν Τριπτολέμῳ ... καὶ Ἀρχίλοχος ... μνημονεύει τοῦ πάματος Αἰσχύλος ἐν Λυκούργῳ·

κάκ τῶνδ' ἔπινε βρῦτον ἰσχυαῖνον χρόνῳ
κάσεμνοκόμπει τοῦτ' ἐν ἀνδρείᾳ τιθείς.

τῶνδ' ἔπινε, τῶνδε πίνε M, τῶνδε πίνεις Hartung, τῶνδ' ἔπινες Bothe; βρῦτον Nelson, βρύτον codd.; ἰσχυαῖνον Hartung, ἰσχυαῖνων codd., ἰσχυαῖνω Blaydes, ἰσχυανθὲν Blaydes, Smyth, Lloyd-Jones, ἰσχυαιμον Headlam, ἰσχυανὸν? Dodds, ἰσχυαλέων? Radt; χρόνῳ] χρόα Herwerden, λίνῳ Tucker; καὶ σεμνοκόπτει A, καὶ σεμνοκόπτει sive σεμνοκοπτέι M, κάσεμνοκόμπει Dindorf, Hermann, Radt, καὶ σεμνοκόμπει Lobeck, κάσεμνόκοπτεν Butler,

κάσεμνοκόπτει Deichgräber, <ἐ>σεμνοκόπτει Nauck, καὶ σεμνοκομπεῖς Bothe, Hartung; ἐν ἀνδρείᾳ στέγη A, ἐν ἀνδρείᾳ στέγη Hermann, ἐν ἀνδρείᾳ τιθεῖς Herwerden, ἐν ἀνδρείᾳ μέρει Wecklein, Peppink, Mette, ἐν ἀντραίᾳ στέγη Steffen, ἐν/ἐπ' ἀνδρείας σφαγῇ Conington, ἐν ἀνανδρίαν στέγων Hartung, ἐν ἀνδρείας τύχη Jacobs.

Some call barley wine also *brūtos* [or *brūton*?], as Sophocles in his *Triptolemus*: [T10]. Also Archilochus: [T1]. Aeschylus recalls the drink in his *Lycurgus*:

“And, after these things, he drank *brūtos* weakened [or desiccated?] by time and he boasted haughtily, considering this to be courage.”

Commentary: Lycurgus routs Dionysus successfully in Homer (*Il.* 6.130-143; expanded upon by Nonnus, *Dion.* 20.325-353). Others say that Dionysus killed Lycurgus (for instance, Diod. Sic., *Hist.* 1.20.2). This seems to be a reference to Thracian beer, since Lycurgus was the king of Thrace.

T7. Herodotus, *Historiae* 2.77.4:

Context: Herodotus says that the Egyptians regularly purge themselves (some other authors say with beer, see T23 and T227) and attributes the good health of the Egyptians to the unchanging climate of Egypt (2.77.2). He then mentions their κολλήστις bread (2.77.4, on which, see T2a above) and then their barley beer.

οἶνω δὲ ἐκ κριθέων πεποιημένῳ διαχρέωνται· οὐ γάρ σφι εἰσὶ ἐν τῇ χώρῃ ἄμπελοι.

διαχρέωνται] διαχρέονται PpM.

“They [the Egyptians] use wine made of barley since there are no vines in their country.”

Commentary: Herodotus here clearly assumes the fundamental primacy of wine over other intoxicating drinks; compare the account of Dio the Academic (T24). Since Herodotus mentions Egyptian κολλήστις bread and then barley beer just as Hecataeus did (T2a), there can be little doubt that he is indebted to him here.

T8. Cratinus, *Molles* fr. 103 Kassel and Austin (= fr. 96 Kock) in Hesychius, *Lexicon* s.v. βρυτίνη (β1273 Latte) (= T102):

Context: The original context for this quotation is entirely lost, since Hesychius simply quotes it because of the use of the word βρυτίνη.

ἄμοργιν ἔνδον βρυτίνην νήθειν τινά

ἄμοργιν Meineke, Kassel-Austin, ἀμοργὸν cod., Kock, Edmonds; νήθειν Musurus, νίθειν cod., ῥήθειν Meineke.

“to spin some beery/silky Amorgan fabric within”

Commentary: Amorgus was famous for its silky fabrics as pointed out by Kassel and Austin (1983: 4:173), and Cratinus may have thought of beer as a similarly effeminate product (as Aeschylus had [T4]). See the explanation of the passage by Hesychius (T102).

T9. Hellanicus, *Fundamina*, FGrH 4F66 (= fr. 110 Müller) in Athenaeus, *Deipnosophistae*, 10.447c (= T81):

Context: Same as T1.

Ἑλλάνικος δ' ἐν Κτίσεσι καὶ ἐκ ῥιζῶν, φησί, κατασκευάζεται τὸ βρῦτον, γράφων ὥδε·

<...> πίνουνσι δὲ βρῦτον ἐκ τῶν βριζῶν, καθάπερ οἱ Θράικες ἐκ τῶν κριθῶν.

<...>, Παίονες? Jacoby, Φρύγιοι? Nelson; βρῦτον edd., βρύτον codd., Müller (neut. in Athenaeus); τῶν βριζῶν Nelson, τῶν ῥιζῶν codd., τινῶν ῥιζῶν lemma, τινῶν βριζῶν Wilamowitz.

Hellanicus, in his *Foundations*, also says that *brūton* is prepared from roots [or rye], writing this:

“They drink *brūton* [*brūtos*?] [made] from rye, just as the Thracians from barley.”

Commentary: Athenaeus leaves out the name of the first people in this quotation. Jacoby suggested that Paeonians were meant on the basis of Hecataeus (T3), but there it is specifically said that their drink is made from barley. If we assume that all our texts originally agreed, it is most logical to assign the Phrygians as the drinkers of the rye beer (we know at least from Archilochus [T1] that they drank βρῦτος/βρῦτον).

T10. Sophocles, *Triptolemus* fr. 610 Radt (= fr. 533 Dindorf = fr. 553 Nauck² = fr. 610 Pearson) in Athenaeus, *Deipnosophistae* 10.447b (= T82):

Context: Same as T1.

τὸν δὲ κριθινὸν οἶνον καὶ βρῦτόν τινες καλοῦσιν, ὥς Σοφοκλῆς ἐν Τριπτολέμῳ·

βρῦτον δὲ τὸν χερσαῖον † οὐ δυνεῖν †

βρῦτον Dindorf, etc., βρύτον codd.; χερσαῖον codd., κριθαῖον Herwerden; οὐ δυνεῖν] οὐδιεῖν χάμαι Casaubon, οἶδ' ὑγνίαν Schmidt, οὐ πιεῖν Heath, οὐ <φῦλον> πιεῖν Knaack, οὐ δύνειν Lefebvre de Villebrune, οὐ θύνειν/πιεῖν πρέπει/καλόν? Wagner, οὐχ ἡδὺν πιεῖν Wecklein, Herwerden, οὐδ' ὑσὶν ποτόν Mekler, Pearson, οὐδ' ὑσὶν ποτόν/γλυκύν/φῦλον Tucker, οὐ λύει [sc. πίνειν] Peppink οὐ καλὸν δύνειν Luppe.

Some call barley wine also *brūtos*, [or *brūton*?], as Sophocles in his *Triptolemus*:

“The mainland [or earthy?] *brūtos* ...”

Commentary: Since Athenaeus quotes Sophocles here only to illustrate the word βρῦτος the meaning of the corrupt line as well as its original context are unfortunately lost. Numerous fanciful restorations have been proposed, even including the notion that beer is not fit for pigs.

T11. Ctesias Cnidius, *Indica* (?) (not in *FGrH*) in Strabo, *Geographica* 15.1.53 (709) (= T42), Pliny, *Historia naturalis*, 8.24.8 (= T46) and 18.13.71 (= T50), Claudius Aelianus, *De natura animalium* 13.8 (= T76), and Manuel Philes, *Brevis expositio de elephante* 139-142 and 145-151 (= T238).

Commentary: All five of these passages probably ultimately go back to the same author: note the similarities between T42 and T50 (the use of rice beer rather than barley beer in India), T46 and T238 (barley “juice” calms [African?] elephants), and T76 and T238 (rice beer among other intoxicants is used on [Indian?] elephants in battle). Ctesias’s *Indica* was known to Strabo (*FGrH* 688F49b), Pliny (45dδ, εβ, ο, πα, 47b, 51a, and 52), and Aelian (45g, ια, κβ, λ, m, πγ, q, r, and 46a), the latter of whom even quoted this work with respect to elephants (45b, dβ, and h). Ctesias’s *Indica* was also known as late as the twelfth century A.D., as is evident from Johannes Tzetzes’s citations (45c, pβ, and 51b), and thus could perhaps have still been independently available to Manuel Philes a century or so later. Ctesias also said that it was not possible for the King of the Indians to become intoxicated (50 in Athen., *Deipn.* 10.434d). Another option for the common source for these authors is Megasthenes; see T18.

T12. Antiphanes, *Asclepius* fr. 47 Kassel and Austin (= fr. 45 Kock) in Athenaeus, *Deipnosophistae* 11.485b (= T82):

Context: Athenaeus discusses a certain vessel known as a λεπαστή.

Ἀντιφάνης δὲ ἐν Ἀσκληπιῷ·

τὴν δὲ γραῦν τὴν ἀσθενοῦσαν πάνυ πάλαι τὴν βρυτικήν,
ρίζιον τρίψας τι μικρὸν δελεάσας τε γεννικῇ
τὸ μέγεθος κοίλῃ λεπαστῇ, τοῦτ’ ἐποίησεν ἐκπιεῖν.

δὲ cod. B, Schweighauser, δὴ cod. A; βρυτικήν cod. A, Βρεττικήν Meineke, Βρυττικήν Kock; τι μικρὸν cod. A., πικρὸν τι Naber; γεννικῇ Casaubon, γεννητικῇ cod. A; ἐποίησεν cod. A, ἐποίησ’ Schweighauser, Kock, ἐπεισεν Naber.

Antiphanes in his *Asclepius* [says]:

“He ground some small root and enticing her with the bait of a hollow and deep cup, he made the very long ago weakened, beery old woman drink this down.”

Commentary: The male person referred to may be a physician or else the god Asclepius himself.

T13. Xenophon, *Anabasis* 4.5.26-27:

Context: At one point during their difficult winter march in 401/400 B.C., while fleeing the Persians, Xenophon and his men reach an Armenian village, with underground houses, where they are amiably treated. Xenophon describes in detail the village and its inhabitants (4.5.24-36), and how he ate and drank with the head of the village after first arriving.

ἦσαν δὲ καὶ πυροὶ καὶ κριθαὶ καὶ ὄσπρια καὶ οἶνος κρίθινος ἐν κρατήρσιν. ἐνήσαν δὲ καὶ αὐταὶ αἱ κριθαὶ ἰσοχειλεῖς, καὶ κάλαμοι ἐνέκειντο, οἱ μὲν μείζους οἱ δὲ ἐλάττους, γόνατα οὐκ ἔχοντες | τούτους ἔδει ὅποτε τις διψῶν λαβόντα εἰς τὸ στόμα μύζειν. καὶ πάνυ ἄκρατος ἦν,

εἰ μή τις ὕδωρ ἐπιχέοι· καὶ πάνυ ἡδὺ συμμαθόντι τὸ πῶμα ἦν.

καὶ οἶνος] ἦν δὲ καὶ καὶ οἶνος *Suda*; οἶνος κρίθινος] οἶνος F; ἐν κρατήρσιν] ἐν κρατήρσιν ἦν FMDH; ἰσοχλεῖς C¹; ἐνέκειντο, οἱ μὲν μείζους οἱ δὲ ἐλάττους] ἐνέκειντο ἐν τοῖς κρατήρσιν *Suda*; γόνατα οὐκ ἔχοντες] οὐκ ἔχοντες γόνατα *Suda*; ἔδει Cpr, δ' ἔδει FMBC¹; ὅποτε τις] δέ, εἴ τις *Suda*; μύζειν Cpr, ἀμύζειν FMBC¹; μυζεῖν τοὺς καλάμους *Suda*, μυζεῖν Cobet; καὶ πάνυ ἄκρατος ἦν] πάνυ δὲ ἦν οἶνος ἄκρατος *Suda*; ἄκρατος ἦν, εἰ μή] ἄκρατος ἦν ὁ οἶνος, μὴ *Suda*; πάνυ CBA, μάλα FM; ἡδὺ] ἡδὺς C¹; συμμαθόντι τὸ πῶμα ἦν] ἦν συμμαθόντι τὸ πόμα τὸ ἐκ κριθῶν *Suda*; τὸ πῶμα Nelson, τὸ πόμα codd., *Suda*, πόμα f.

“There was also wheat, barley, pulse, and barley wine in mixing bowls. The barley itself was on top, at lip-level, and in [them] were reeds, some larger and some smaller, that did not have joints [lit. knees]. Whenever someone was thirsty he had to take these in his mouth to suck. And it was very strong [lit. unmixed] unless one poured in water. And the drink was very good to the one used to it.”

Commentary: A number of the words in this passage are glossed in the *Suda* (= T224-225, 228, and 230-231). Shortly after this passage, Xenophon relates (4.5.32) that when one of the Armenians toasted you, he would drag you to the bowl where, lowering your head, you had to drink (what is not specified) like a bullock.

T14a. Aristotle, *Symposium sive de ebrietate* fr. 7b Laurenti (= fr. 101 Rose² = fr. 106 Rose³ = *Symposium*, fr. 7 Rose) in Athenaeus, *Deipnosophistae* 1.34b (*epitoma*) (= T78):

Context: Athenaeus has spoken of wine and beer among Egyptians, and quotes Aristotle on beer.

Ἀριστοτέλης δέ φησιν ὅτι

οἱ μὲν ὑπ' οἴνου μεθυσθέντες ἐπὶ πρόσωπον φέρονται, οἱ δὲ τὸν κρίθινον πεπωκότες ἐξυπτιάζονται τὴν κεφαλὴν· ὁ μὲν γὰρ οἶνος καρηβαρικός, ὁ δὲ κρίθινος καρωτικός.

Aristotle says that:

“Those who become intoxicated from wine fall onto their faces, but those who have drunk the barleyed turn upside down on their heads [i.e. fall flat onto their backs?], because, on the one hand, wine makes one heavy-headed, while, on the other, the barleyed is stupefying.”

Commentary: Though Athenaeus quotes Aristotle after mentioning Egyptian wine and beer there is no reason to think that Aristotle was referring here to Egyptian beer, though, since πίνων is a *hapax legomenon*, it is impossible to say for certain. He may actually be speaking of Macedonian or Thracian beer.

T14b. Aristotle, *Symposium sive de ebrietate* fr. 7a Laurenti (= fr. 671 Gigon = fr. 101 Rose² = fr. 106 Rose³ = *Symposium* fr. 7 Rose) in Athenaeus, *Deipnosophistae* 10.447a-b (= T81):

Context: Same as T2b.

ἀλλ', ὥς φησιν Ἀριστοτέλης ἐν τῷ περὶ μέθης, εἰς τὰ νῶτα καταπίπτουσιν οἱ τὸν κρίθινον πεπωκότες

ὄν πίνον καλοῦσι, λέγων οὕτως·

πλὴν ἰδίον τι συμβαίνει περὶ τὸν ἀπὸ κριθῶν, τὸ καλούμενον πίνον. ὑπὸ μὲν γὰρ τῶν λουπῶν τε καὶ μεθυστικῶν οἱ μεθυσθέντες ἐπὶ πάντα τὰ μέρη πίπτουσι· καὶ γὰρ ἐπὶ τὰ ἀριστερὰ καὶ δεξιὰ καὶ πρηνεῖς καὶ ὕπτιοι. μόνοι δὲ οἱ τῷ πίνῳ μεθυσθέντες εἰς τοῦπίσω καὶ ὕπτιοι κλίνονται.

τὸν ἀπὸ κριθῶν Wilamowitz, τὰς τῶν κριθῶν codd., τὰς τῶν [sc. πόσεις?] κριθῶν Gulick, τὰς τῶν κριθῶν <...> Gigon.

But, as Aristostle says in his *On Intoxication*, those who have drunk the barleyed [drink] which they call *pinon* fall on their backs, speaking as follows:

“But a peculiar thing happens in the case of the [drink made] of barley, the so-called *pinon*. Under the influence of all other intoxicants, those who become intoxicated fall in all directions, sometimes to the left, or to the right, or onto their fronts, or onto their backs. But those who become intoxicated from *pinon* only fall onto their backs and lie flat.”

Commentary: These two passages are somewhat contradictory. A number of scholars take these passages as derogatory toward beer, but there is no evidence for this.

T15. Pytheas Massiliensis, *De Oceano* fr. 7 Roseman (= fr. 6g Mette) in Strabo, *Geographica* 4.5.5 (201) (= T40):

Context: Strabo speaks of Thule, which he considers an uninhabited land furthest in the North, and thinks that what Pytheas had to say about it were lies (2.1.13 [72], and see 2.1.17-18 [74-76], 2.5.8 [114-115], 14 [118-119], and 34 [132]), and states rather that the inhabited country furthest to the North is Ireland (on which, see also 4.5.4 [201]). Pytheas says, based on his own experience (see 2.4.1 [104]), that those who live near “the frigid zone” (ἡ κατεψυγμένη ζώνη), though not specifically Thule, have few domesticated animals and plants, and that they live on millet, herbs, fruits, and roots, and both prepare food and drink from grain and honey.

παρ’ οἷς δὲ σίτος καὶ μέλι γίγνεται, καὶ τὸ πόμα ἐντεῦθεν ἔχειν.

σίτος] σίτος <ὀλίγος> Roseman; ἔχειν] ἔχει ACE, <εὖ> ἔχει Roseman.

“Among those [in the far North] where there is grain and honey, the beverage there also [i.e. along with the food] has it.”

Commentary: Whitaker (1981-1982: 164, n. 103) convincingly suggests that Pytheas was referring here to the inhabitants of northern Scottish islands (and that Pytheas’s Thule was Iceland). Pytheas’s expression involving drinking a cereal is found also in Strabo of the Ethiopians (T44) and Cassius Dio of the Pannonians (T76). There is an ambiguity here: Pytheas could be speaking of beer and mead separately or of a honey beer (for which, see T28-29). For other climatological explanations for the drinking of beer, see Posidonius (T26), Cassius Dio (T76), and Servius (T88).

HELLENISTIC (323 - 27 B.C.)

T16. Theophrastus, *De causis plantarum* 6.11.2:

Context: Theophrastus shows how some flavours are obtained naturally and others by departing from the nature of the substance in question.

τοὺς δὲ καὶ ἐξιστάντες τῆς φύσεως καὶ ὑποσέποντες εἰς χυλοὺς ἄγουσι ποτίμους (οἶον ὡς οἱ τοὺς οἶνους ποιοῦντες ἐκ τῶν κριθῶν καὶ τῶν πυρῶν, καὶ τὸ ἐν Αἰγύπτῳ καλούμενον ζῦθος).-

τὸ ἐν 'Αἰγύπτῳ cod. u, τῷ ἐν 'Αἰγύπτῳ cod. U; ζῦθος Schneider, ζύθος cod. U.

“They even turn into drinkable juices some [products] which they have caused to depart from their nature and have somewhat rotted, such as those who make wines from barley and wheat and the so-called *zūthos* in Egypt.”

Commentary: This is the first extant instance of the word ζῦθος which becomes one of the most common beer terms in Greek.

T17. Theophrastus, *Historia plantarum* 4.8.12:

Context: Theophrastus has dealt with plants found in water and then proceeds to those found in sandy regions near water, beginning with the μαλιναθάλλη.

ἐν δὲ τοῖς ἀμμώδεσι χωρίοις, ἃ ἐστὶν οὐ πόρρω τοῦ ποταμοῦ, φύεται κατὰ γῆς ὃ καλεῖται μαλιναθάλλη, στρογγύλον τῷ σχήματι μέγεθος δὲ ἥλικον μέσπilon ἀπύρηνον δὲ ἄφλοιον· φύλλα δὲ ἀφίησιν ἀπ' αὐτοῦ ὅμοια κυπεύρω· ταῦτα συνάγοντες οἱ κατὰ τὴν χώραν ἔψουσιν ἐν βρυτῷ τῷ ἀπὸ τῶν κριθῶν καὶ γίνεται γλυκέα σφόδρα. χρῶνται δὲ πάντες ὥσπερ τραγήμασι.

οὐ om. Plin.; μαλιναθάλλη codd., *anthalium* Plin., ἀνθάλλιον Salmasius.

“In sandy places which are not far from the river, there grows under the earth that which is called *malinathallē*, round in shape, large like a medlar, without stone, and without bark. It sends out leaves from itself as from a galingale. Those from the country [in Egypt] collect these and boil them in *brūtos* [*brūton*?] [made] from barley, and it becomes very sweet. All use them as confections.”

Commentary: The same plant (as is obvious from its description) is called the *anthalium* by Pliny (*Hist. nat.* 21.52.88). This is the only example of βρυτός/βρυτόν referring to Egyptian beer, and shows that to some extent at least this word could be used generically.

T18. Megasthenes, *Indica* (?) (not in *FGrH*) in Strabo, *Geographica* 15.1.53 (709) (= T42), Pliny, *Historia naturalis*, 8.24.8 (= T46) and 18.13.71 (= T50), Claudius Aelianus, *De natura animalium* 13.8 (= T76), and Manuel Philes, *Brevis expositio de elephante* 139-142 and 145-151 (= T238).

Commentary: All four of these authors seem indebted to the same source, which may be Ctesias (see T11) or Megasthenes. Schwanbeck (1846: 113 and 153) took T42 and T76 to be from Megasthenes (frs. 27 and 52, respectively) but disregarded the other sources, while Timmer (1930: 258-263) makes a long argument that T42 is indebted to Megasthenes. Megasthenes in fact wrote about Indians eating rice (*FGrH* 715F2 in Athen., *Deipn.* 4.153d-e), and his work on India was known to Strabo (6d, 7a, 8, 9b, 10b, 11a, 18b, 19b, 27a, b, 31, 32, 33, and 34a), Pliny (7b, 13d, 26, 28, and 29), and Aelian (24), though there is no evidence for its availability in Byzantine times.

T19. *Isaias (Septuaginta)* 19:9-10:

Context: This passage is part of an oracle concerning the downfall of Egypt (19:1-15): God will make the Egyptians fight among themselves, the Nile will be dried up and fishermen will have nothing to fish, and other workers will suffer as well.

καὶ αἰσχὺνη λήμψεται τοὺς ἐργαζομένους τὸ λίνον τὸ σχιστὸν καὶ τοὺς ἐργαζομένους τὴν βύσσον, | καὶ ἔσονται οἱ διαζόμενοι αὐτὰ ἐν ὀδύνῃ, καὶ πάντες οἱ τὸν ζῦθον ποιοῦντες λυπηθήσονται καὶ τὰς ψυχὰς πονέσουσιν.

διαζόμενοι] ἐργαζόμενοι Eusebius, Theodoretus; οἱ τὸν ζῦθον ποιοῦντες] ζυγὸν S¹, οἱ ποιοῦντες τὸν ζῦθον Eusebius, Theodoretus, οὗτοι ποιοῦσι τὸν ζῦθον Cyrilus; πονέσουσιν] πονήσουσιν Theodoretus, πεσοῦνται Eusebius.

“And shame will seize the workers of split linen and the workers of flax, and those who weave these [split linen and flax] will be in pain, and all who make *zūthos* will be grieved and will be distressed in their souls.”

Commentary: Only the Greek text (and not the Hebrew or Latin, or the standard modern translations) mentions beer-makers. This passage was commented upon by Eusebius (T87), Cyril (T97), Theodoret (T98), and Jerome (T100).

T20a. Agatharchides (?), *FGrH* 86F19 in Diodorus Siculus, *Bibliotheca historica* 1.34.10 (= T30).

T20b-d. Agatharchides (?) (not in *FGrH*) in Diodorus Siculus, *Bibliotheca historica* 1.20.4 (= T29), 3.73.6 (= T31), and 4.2.5 (= T32).

Commentary: See T22 below.

T21a. Dionysius Scytobrachion (?), *FGrH* 32F8 in Diodorus Siculus, *Bibliotheca historica* 3.73.6 (= T31).

T21b-d. Dionysius Scytobrachion (?) (not in *FGrH*) in Diodorus Siculus, *Bibliotheca historica* 1.20.4 (= T29), 1.34.10 (= T30), and 4.2.5 (= T32).

Commentary: It is clear that four passages of Diodorus Siculus (= T29-32) come from the same source, yet Jacoby suggested that the second passage relied on Agatharchides while the third passage relied on Dionysius Scytobrachion.

T22. Polybius, *Historiae* 34.9.15 Hultsch in Athenaeus, *Deipnosophistae* 1.16c (*epitoma*) (= T77):

Context: In a discussion of customs in the Homeric poems, Athenaeus says that Homer knew of all the luxuries of Athenaeus's day.

οἶκων μὲν οὖν λαμπρότατος ὁ Μενελάου. τοιοῦτον δὲ τινα ὑφίσταται τῇ κατασκευῇ καὶ λαμπρότητι οἶανπερ Πολύβιος

Ἰβηρός τινος βασιλέως οἰκίαν, ὃν καὶ ἐξηλωκέναι λέγει τὴν τῶν Φαιάκων τρυφὴν πλὴν τοῦ τοῦς κρατήρας ἐν μέσῳ τῆς οἰκίας ἐστάναι πλήρεις οἴνου κριθίνου, ἀργυροῦς ὄντας καὶ χρυσοῦς.

Of houses, that of Menelaus was indeed the most magnificent. He [Homer] provided it with such splendid equipment, just as Polybius mentions

“the house of a certain Iberian king, who rivaled the luxury of the Phaeacians, except for the fact that the mixing bowls made of silver and gold stood in the middle of the house full of barley wine.”

Commentary: Clearly it is thought incongruous that a lowly beverage such as beer should be found in expensive vessels. This is the first piece of evidence for beer in Iberia, and Polybius is probably recounting a personal experience (for his presence with Scipio at Numantia, see T74). Book 34 of Polybius survives only in citations from other authors (most notably Strabo). Diodorus Siculus claims (*Hist.* 5.34.2) that the Celtiberians purchased wine from merchants and drank it with honey.

T23. Didymus Chalcenterus, fr. 14, no. 55 Schmidt in *Scholium in Aristophanis Pacem* 1254:

Context: Aristophanes (*Pax* 1197-1264 [performed in 421 B.C.]) has Trygaeus rebuff various sellers of arms and armour once he has reinstalled the goddess Peace. When shown helmets (or scabbards, as Olson [1998: 304-305] suggests) he says that they should be sold to Egyptians as convenient “to measure out laxative/purgative” (συρμαίαν μετρεῖν).

συρμαίαν μετρεῖν· οἱ μὲν ἀξιούσι χυλὸν βοτάνης εἶναι τὴν συρμαίαν, ἣ χρώνται Αἰγύπτιοι πρὸς διάρροϊαν, τινὲς δὲ τὸν λεγόμενον ζύθον, ὥς καὶ φησὶ Δίδυμος.

ζύθον Nelson, ζύθον codd.

“‘to measure out laxative/purgative:’ Some esteem the juice of a plant as a laxative/purgative, which the Egyptians use for diarrhea, and others [esteem as a laxative/purgative] so-called *zūthos*, as Didymus says.”

Commentary: Herodotus had remarked on the Egyptian use of such substances (2.77.2, see T7), specifically to purge the stomach of mummies (2.88) and as payment to pyramid-builders along with onions and garlic (2.125.6). In the last instance Herodotus is usually thought to be talking about radishes as the purgative (as Pliny [*Hist. nat.* 36.17.79] clearly thought) but Lloyd (1988: 70) shows that beer, among other things, would also have been part of the wages. Diodorus Siculus (*Hist.* 1.64.3) also imitates Herodotus (speaking of the purgative and vegetables) and

further (*Hist.* 1.82.1-2) speaks of Egyptians fasting and using douches/enemas and emetics. Other types of laxatives/purgatives are given by Hesychius (*Lex.* s.v. [σ2782 Schmidt]) and the *Suda* (s.v. [σ1667]), including a drink of grain and water (beer?), a drink of water and salt, or vegetables like parsley, or a mix of suet and honey. Beer was considered to be one such Egyptian purgative in another section of the *Suda* (T227a) and in another scholium to Aristophanes (T227b), both of which may be ultimately indebted to Didymus.

T24. Dio Academicus, *Symposium* (?) in Athenaeus, *Deipnosophistae* 1.34b (*epitoma*) (= T78):

Context: Athenaeus relates various traditions about the discovery of the vine, that it was first found in Olympia (Theop., *FGrH* 115F277) or in Plinthine in Egypt (Hellan., *FGrH* 4F175). In support of the latter claim he quotes Dio.

διὸ καὶ Δίῳ ὁ ἐξ Ἀκαδημίας

φιλοίνους καὶ φιλοπότας τοὺς Αἰγυπτίους γενέσθαι· εὐρεθῆναι τε βοήθημα παρ' αὐτοῖς ὥστε τοὺς διὰ πενίαν ἀποροῦντας οἴνου τὸν ἐκ τῶν κριθῶν γινόμενον πίνειν· καὶ οὕτως ἦδεσθαι τοὺς τοῦτον προσφερομένους ὥς καὶ ἄδειν καὶ ὀρχεῖσθαι καὶ πάντα ποιεῖν ὅσα τοὺς ἐξοίνους γινομένους.

Therefore Dio from the Academy [says]:

“The Egyptians were wine-lovers and lovers of drinking. An aid was found among them so that those bereft of wine through poverty could drink that made from barley. Those who took it were so happy that they sang and danced and did all the things like those done by people full of wine.”

Commentary: This passage should be contrasted with Herodotus (T7), who claimed that the vine did not grow in Egypt. Plutarch (*Quaest. Conv.* 1 [= *Mor.* 612de]) noted that Dio the Academic, among other authors, wrote a *Symposium*, and it is quite possible that this passage came from that work (it is at least mentioned by Athenaeus [T78] in connection with Aristotle's *Symposium*). The title is absent since this section survives only in the epitome of Athenaeus.

T25. Posidonius, *De Oceano* (?) fr. 22 Theiler in Strabo, *Geographica* 3.3.7 (155) (= T39):

Context: In his book on Iberia Strabo discusses life in the Lusitanian mountains (in modern-day Portugal).

χρῶνται δὲ καὶ ζύθει· οἶνω δὲ σπανίζονται· τὸν δὲ γινόμενον ταχὺ ἀναλίσκουσι κατευωχούμενοι μετὰ τῶν συγγενῶν. ἀντ' ἐλαίου δὲ βουτύρῳ χρῶνται.

οἶνω] οἴνου Jones; γινόμενον] γινόμενον Meineke.

“They [the Lusitanian mountaineers] use *zēthos* and are scarce in wine. They quickly drink up what they have, feasting with kinsfolk. Instead of olive oil they use butter.”

Commentary: Posidonius is the first known author to use ζῦθος generically. In another passage (T26) Posidonius speaks of the Gauls not having their own wine or olive oil. Just before this passage Strabo had said (3.3.7 [154]) that the Lusitanians were “water-drinkers” (ὕδροπόται). He also (3.3.8 [155-156]) associated their remoteness from civilization with their way of life.

T26. Posidonius, *Historia* 23, fr. 169 Theiler (= *FGrH* 87F116) in Diodorus Siculus, *Bibliotheca historica* 5.26.2 (= T33):

Context: This description is included in a discussion of climate in a section on the mores of the Gauls (5.25-32).

διὰ δὲ τὴν ὑπερβολὴν τοῦ ψύχους διαφθειρομένης τῆς κατὰ τὸν ἀέρα κράσεως οὔτ' οἶνον οὔτ' ἔλαιον φέρει. διόπερ τῶν Γαλατῶν οἱ τούτων τῶν καρπῶν στερισκόμενοι πόμα κατασκευάζουσιν ἐκ τῆς κριθῆς τὸ προσαγορευόμενον ζῦθος, καὶ τὰ κηρία πλύνοντες τῷ τούτων ἀποπλύματι χρῶνται.

“Because excessive cold destroys the climate of the air, it [the land] bears neither wine nor olive oil. Therefore those of the Gauls deprived of these fruits [grapes and olives] prepare a drink from barley called *zūthos*. They also use the washings with which they wash their honeycombs.”

Commentary: Posidonius goes on to say that the Gauls are also addicted to imported wine which they drink unmixed and until they fall into a stupor and that they would go so far as to trade a slave for a single jar of Italian wine (5.26.3). Strabo says that Posidonius had been to Marseille (3.4.17 [165] and 4.1.2 [178], and see 4.1.4-5 [179-181] on Marseille) and had seen Gallic head trophies on his visits (4.4.5 [198] = T19 Edelstein-Kidd), but elsewhere (4.4.3 [197]) says only that the Gauls drink milk. Athenaeus also quotes Posidonius explicitly on the Gauls (T27/T79), and that passage is certainly closely linked to this one, though with some important differences. Kidd acknowledges that Diodorus Siculus, *Hist.* 5.25-32 was derived from Posidonius, but leaves it out of his collection of fragments since Posidonius is not mentioned by name (1989: xx, n.3) and also because there may have occurred a certain amount of doctoring on the part of Diodorus (1988: 308-309; 1997: 234). Concerning this very passage he says that Diodorus “approaches conflict” with Posidonius (1988: 308) and he proposes that a full examination of the named fragments and then a detailed study of Diodorus is needed before such passages can be accepted as Posidonian (1986: 28). Marcovich (1986: 292) effectively shows that this passage should not be neglected in studying Posidonius’s Gallic ethnography. For problems posed by this passage, see also Hahm 1989: 1345, n. 34. This passage may also have influenced Dionysius (T37).

T27. Posidonius, *Historia* 23, fr. 170 Theiler (= fr. 67.28-36 Edelstein-Kidd = *FGrH* 87F15 = fr. 25 Müller) in Athenaeus, *Deipnosophistae* 4.151e + 152c-d (= T79):

Context: Athenaeus in book 4 discusses the various types of banquets held by different peoples, including those of the Galatians with meat and wine (150d-f), of the Thracians with wine drunk out of horns (150f-151e), and those of the Celts (151e-152f), following Posidonius.

Ποσειδώνιος ... φησί ...

τὸ δὲ πίνομενόν ἐστι παρὰ μὲν τοῖς πλουτοῦσιν οἶνος ἐξ Ἰταλίας καὶ τῆς Μασσαλιητῶν χώρας παρακομιζόμενος, ἄκρατος δ' οὔτος· ἐνίστε δὲ ὀλίγον ὕδωρ παραμίγνυται· παρὰ δὲ τοῖς ὑποδεεστέροις ζῦθος πύρινον μετὰ μέλιτος ἐσκευασμένον, παρὰ δὲ τοῖς πολλοῖς καθ' αὐτό· καλεῖται δὲ κόρμα. ἀπορροφοῦσι δὲ ἐκ τοῦ αὐτοῦ | ποτηρίου κατὰ μικρόν, οὐ πλεῖον κυάθου· πυκνότερον δὲ τοῦτο ποιοῦσι. περιφέρει δὲ ὁ παῖς ἐπὶ τὰ δεξιὰ καὶ οὐ τὰ λαῖα· οὕτως διακονοῦνται. καὶ τοὺς θεοὺς προσκυνοῦσιν ἐπὶ τὰ δεξιὰ στρεφόμενοι.

ζῦθος Nelson, ζύθος codd.; κόρμα] κόρμι Olck 1899: 462; καὶ οὐ τὰ λαῖα Gulick, καὶ τὰ λαῖα codd.; καθ' αὐτό Eustathius, καὶ αὐτὸ Athenaeus.

Posidonius says:

“That which is drunk among the rich is wine from Italy and the land along Massalia, and this is [drunk] unmixed, though sometimes a little water is mixed in. Among those who are needier there is wheaten *zūthos* prepared with honey, and among the many there is plain [*zūthos*]. It is called *korma*. They swallow from the same cup a little, no more than an ounce. They do this frequently. The slave carries around [the drink] toward the right and not the left; in this way they are served. They also worship the gods turning toward the right.”

Commentary: On Gallic meals, see also Diod. Sic., *Hist.* 5.28.3-5 (= Posid., *Hist.* 23, fr. 169 Theiler).

T28. Posidonius (?) in Strabo, *Geographica* 4.6.2 (202) (= T42):

Context: Strabo speaks of the Ligurians, who lived in the Italian Alps.

κατοικοῦσι δὲ Λίγυες, ζῶντες ἀπὸ θρεμμάτων τὸ πλεόν καὶ γάλακτος καὶ κριθίνου πόματος.

“The Ligurians reside [here], living off of sheep mainly and milk and a barley beverage.”

Commentary: Strabo goes on to say that the Ligurians trade flocks, pelts, and honey in Genoa for Italian olive oil and wine and that they also have a little bit of inferior wine of their own. Posidonius is known from Strabo’s own testimony (3.4.17 [165] = T23 Edelstein-Kidd and fr. 269 Edelstein-Kidd) to have gone to Liguria, but this reference to Ligurian beer has not been attributed to him in the standard editions. I tentatively propose that it comes originally from Posidonius; we know in any case that he took great interest in the drinking habits of foreign peoples (such as Lusitanians [T25], Gauls [T26-27], Germans [see T58], and Persians [see fr. 115 Theiler = fr. 242 Edelstein-Kidd, on their habit of drinking Chalybonian wine; Herodotus (1.70.3) had said that the Persians had no wine]). However, Posidonius only calls beer ζῦθος in the other passages (T25-27) and never κριθίνον πόμα (could this be a change made by Strabo?). Diodorus Siculus (*Hist.* 5.39.4), perhaps also using Posidonius, says that some of the Ligurians simply drink water because of the lack of crops.

T29. Diodorus Siculus, *Bibliotheca historica* 1.20.4:

Context: Diodorus discusses beliefs about Osiris (whom he identifies with Dionysus), including his trips outside of Egypt.

εἰ δέ τις χώρα τὸ φυτὸν τῆς ἀμπέλου μὴ προσδέχοιτο, διδάξαι τὸ ἐκ τῆς κριθῆς κατασκευαζόμενον πόμα, λειπόμενον οὐ πολλὸ τῆς περὶ τὸν οἶνον εὐωδίας τε καὶ δυνάμεως.

“If some country did not admit the growing of the vine, he [Dionysus/Osiris] taught [the making of] the drink prepared from barley, [which is] not much lacking in the good aroma and in the strength characteristic of wine.”

Commentary: This passage may ultimately come from Agatharchides (= T20b) or Dionysius Scytobrachion (= T21b). Diodorus had already said in a previous passage (*Hist.* 1.15.8 [also at 5.75.4 and 79.1]) that Dionysus/Osiris discovered the vine and devised the making of wine which he taught to mankind, and also (1.17.1) that he taught mankind to cultivate wheat and barley as well (though see 5.68-69 and 77.4 on Demeter doing this).

T30. Diodorus Siculus, *Bibliotheca historica* 1.34.10:

Context: Diodorus mentions the food and drink of the Egyptians.

κατασκευάζουσι δὲ καὶ ἐκ τῶν κριθῶν Αἰγύπτιοι πόμα λειπόμενον οὐ πολὺ τῆς περὶ τὸν οἶνον εὐωδίας, ὃ καλοῦσι ζῦθος.

“The Egyptians also prepare a drink from barley not much lacking in the good aroma characteristic of wine, which they call *zūthos*.”

Commentary: This passage may ultimately come from Agatharchides (= T20a) or Dionysius Scytobrachion (= T21c).

T31. Diodorus Siculus, *Bibliotheca historica* 3.73.6:

Context: Diodorus claims that of all the gods, Dionysus is most universally recognized.

οὐδένα γὰρ οὔθ' Ἑλλήνων οὔτε βαρβάρων ἄμοιρον εἶναι τῆς τούτου δωρεᾶς καὶ χάριτος, ἀλλὰ καὶ τοὺς ἀπηγριωμένην ἔχοντας χώραν ἢ πρὸς φυτείαν ἀμπέλου παντελῶς ἀπηλλοτριωμένην μαθεῖν τὸ κατασκευαζόμενον ἐκ τῶν κριθῶν πόμα βραχὺ λειπόμενον τῆς περὶ τὸν οἶνον εὐωδίας.

“There is no one, either among the Greeks or among the barbarians, who does not share in his [Dionysus's] gifts and favour, but he even taught those who possess a land which has become a wilderness or altogether unsuited to the growth of the vine the drink prepared from barley little lacking in the good aroma characteristic of wine.”

Commentary: This passage may ultimately come from Agatharchides (= T20c) or Dionysius Scytobrachion (= T21a).

T32. Diodorus Siculus, *Bibliotheca historica* 4.2.5:

Context: Diodorus says that after Dionysus was reared by the nymphs in Nysa he discovered wine and taught the cultivation of the vine to mankind, but he also discovered beer.

εὐρεῖν δ' αὐτὸν καὶ τὸ ἐκ τῆς κριθῆς κατασκευαζόμενον πόμα, τὸ προσαγορευόμενον μὲν ὑπ' ἐνίων ζῦθος, οὐ πολὺ δὲ λειπόμενον τῆς περὶ τὸν οἶνον εὐωδίας. τοῦτο δὲ διδάξαι τοὺς χώραν ἔχοντας μὴ δυναμένην ἐπιδέχεσθαι τὴν τῆς ἀμπέλου φυτείαν.

“He [Dionysus/Osiris] discovered the drink prepared from barley, which is called by some *zūthos*, and [which is] not much lacking in the good aroma characteristic of wine. He taught this to those possessing a place not able to support the growing of the vine.”

Commentary: This passage may ultimately come from Agatharchides (= T20d) or Dionysius Scytobrachion (= T21d). Eusebius later copied this passage (= T86). Compare also Julius Africanus's account of Dionysus as beer

god (T83). For Dionysus teaching the Indians about wine, see T42.

T33. Didorus Siculus, *Bibliotheca historica* 5.26.2 (= RGFSI 304D) from Posidonius, *Historia* 23, fr. 169 Theiler (= T26).

T34. Vergilius, *Georgica* 3.379-380:

Context: Vergil speaks of life among the Scythians.

*hic noctem ludo docunt, et pocula laeti
frumento atque acidis imitantur vitea sorbis.*

frumento atque Martyn, *frumentoque* γ, *fermento atque* al. codd.

“Here they pass the night in fun and joyfully copy vine drinks with wheat and with sour rowanberries.”

Commentary: Servius (T88) believed that Vergil was here referring to beer (*cervesia*). Vergil could have been speaking of two different drinks, one made of wheat (I accept Martyn’s conjecture) and one with berries, or one drink made of both.

EARLY ROMAN EMPIRE (27 B.C. - A.D. 285)

T35. Erotianus, *Vocum Hippocraticarum collectio* s.v. μυττωτός, 94.11-18 Klein:

οἱ δὲ τὸν λεγόμενον ζῦθον.

“Some [call *muttōtos*] the so-called *zūthos*.”

Commentary: It is not at all clear why ζῦθος was linked to the term μυττωτός, which was generally used to designate a dish made from various ingredients, such as cheese, honey, and garlic. Hippocrates prescribes the use of μυττωτός (specifically “pungent” [δριμύς]) for hydropsia (*Epid.* 2.6.28 [= 5.138 Littré]), for the lowering of the womb (*Loc. pers.* 47 [= 6.344 + 346 Littré]), and for a type of cataracts (*Vid. ac.* 6 [= 9.158 Littré]).

T36. Aulus Cornelius Celsus, *De medicina* 2.18.11-12 (not in CML):

Context: After discussing the merits of various types of food, Celsus turns his attention to drinks.

ex potionibus vero quaecumque ex frumento facta est, itemque lac, mulsum, defrutum, passum, vinum aut dulce aut vehemens aut mustum aut magnae vetustatis valentissimi generis est. at acetum et id vinum, quod paucorum annorum vel austerum vel pingue est, in media materia est; ideoque infirmis numquam generis alterius dari debet. aqua omnium imbecillissima est; firmiorque ex frumento potio est, quo firmitus est ipsum frumentum. firmior ex eo vino, quod bono solo, quam quod tenui; quodque temperato caelo, quam quod aut nimis humido, aut nimis sicco, nimiumque aut frigido, aut calido natum est. | mulsum, quo plus mellis habet; defrutum,

quo magis incoctum; passum, quo ex sicciore uva est, eo valentius est.

“Now the strongest types of drinks are: whatever is made from grain [or wheat?], likewise milk, honey wine [or mead?], concentrated must, raisin wine, wine either sweet or heady or still fermenting or of great age. But vinegar, and that wine which is a few years old, either dry or rich, are intermediate in quality; therefore, to the weak nothing of the other type should be given. Water is of all the weakest, and drink from grain [or wheat?] is more nutritious, since the grain [or wheat?] itself is more nutritious. Wine from good soil is stronger than that from weak [soil], and that born from a temperate climate rather than too moist or too dry or cold or hot. Honey wine [or mead?] [is stronger] by how much more honey it has; concentrated must, the longer it is cooked [i.e. boiled]; raisin wine is stronger by how much drier the grapes are.”

Commentary: For a similar medical discussion of drinks in which beer is positively regarded, see Anthimus (T119).

T37. Dionysius Halicarnassensis, *Antiquitates romanae* 13.11.1:

Context: Dionysius has a long account of the Celtic invasions of Italy in the early fourth century B.C., and pauses to speak of Celtic food and drink.

οἱ δὲ Κελτοὶ οὔτε οἶνον ἀμπέλινον εἰδότες τηνικαῦτα οὔτε ἔλαιον οἶον αἱ παρ' ἡμῖν ἐλαῖα φέρουσιν, ἀλλ' οἶνω μὲν χρώμενοι κριθῆς σαπίσεως ἐν ὕδατι, χυλῶ δυσώδει ...

“The Celts at that time did not know of grape wine nor of oil as olive trees produce among us, but used wine [made] of barley rotted in water, a foul-smelling juice ...”

Commentary: This is one of the most virulent classical attacks on beer. Posidonius (in Diodorus) also says (T26) that the Celts of Gaul do not have wine or oil but barley beer (in that order), thus it is probable that Dionysius's text is related to it. In a later section of his work, Dionysius speaks of the Gallic predilection for unmixed wine during their expedition against Rome (14.8.12), which was also mentioned by Posidonius (T27) with respect to rich Gauls. Cassius Dio (7.25.5 in Zonaras, 7.23) says that the undoing of Gauls attacking Rome was their drunkenness at first tasting wine. Livy (5.33) similarly claims that wine was a “new pleasure” (*nova voluptas*) for the Gauls at this time.

T38. Masurius Sabinus in Ulpianus, *Sabinus* 23 (= T84) in Justinianus, *Digesta* 33.6.9 (= T120):

Context: Ulpian (T84) argues that even though wines and beers were popularly considered *vinum*, they should not legally be so considered as Sabinus suggested.

alioquin Sabinus scribit

omnia vini appellatione contineri, quae vini numero pater familias habuit: igitur et acetum, quod vini numero pater familias habuit, et zythum et camum et cetera, quae pro hominum affectione atque usu vini numero habebuntur.

However, Sabinus writes:

“All [drinks] are included under the designation of wine, which the head of the household held in the category of wine: therefore also the vinegar which the head of the household held in the category of wine, and *zythum* and *camum* and others which are held to be in the category of wine by the reckoning and usage of men.”

T39. Strabo, *Geographica* 3.3.7 (155) from Posidonius, *De Oceano* (?) fr. 22 Theiler (= T25).

T40. Strabo, *Geographica* 4.5.5 (201) from Pytheas Massiliensis, *De Oceano* fr. 7 Roseman (= T14).

T41. Strabo, *Geographica* 4.6.2 (202) from Posidonius (?) (= T28).

T42. Strabo, *Geographica* 15.1.53 (709):

Context: Strabo speaks about the simple way of life among the Indians.

οἶνόν τε γὰρ οὐ πίνειν, ἀλλ' ἐν θυσίαις μόνον, πίνειν δ' ἀπ' ὀρύζης ἀντὶ κριθίνων συντιθέντας. καὶ σιτία δὲ τὸ πλεον ὄρυζαν εἶναι ῥοφητήν.

“They [i.e. the Indians] do not drink wine, except at sacrifices, but drink those [drinks] composed of rice rather than barley. Also their food is mostly rice porridge.”

Commentary: Since Pliny (T50) also says that the Indians drink rice beer rather than barley beer, both may be indebted to a common source such as Ctesias (= T11) or Megasthenes (= T18). Two other sources (also probably indebted to Ctesias or Megasthenes) claim that Dionysus introduced wine to India (Diod. Sic., *Hist.* 2.38.5 and 3.63.3-5 [and see 1.19.7] and Arr., *Ind.* 7.5). Lucian (*Nigr.* 5) says that Indians went crazy when they first tried wine.

T43. Strabo, *Geographica* 17.1.14 (799):

Context: Strabo discusses the coastal towns West of Alexandria.

ἅπασα μὲν ἡ χώρα αὕτη οὐκ εὖοινος, πλείω δεχομένου τοῦ κεράμου θάλατταν ἢ οἶνον, ὃν δὴ καλοῦσι Λιβυκόν, ᾧ δὴ καὶ τῷ ζύθῳ τὸ πολὺ φύλον χρήται τῶν Ἀλεξανδρέων.

ζύθῳ Xylander, ζύγω codd.

“This whole country does not have good wine, since a jar [there] receives more sea-water than wine. They call this ‘Libyan’ [wine], which, along with *zūthos*, the extensive tribe of Alexandrians uses.”

T44. Strabo, *Geographica* 17.2.2 (821) (= FGrH 637F22a):

Context: Strabo speaks of life among the Ethiopians.

ζῶσι τ' ἀπὸ κέγχρου καὶ κριθῆς, ἀφ' ὧν καὶ ποτὸν αὐτοῖς ἐστὶν ...

ποτὸν αὐτοῖς ἐστὶν] ποτὸν ποιοῦσιν αὐτοῖς ἔστιν Meineke.

“They [the Ethiopians] live on millet and barley, from which [pl.] they also have a drink ...”

Commentary: Pliny says (*Hist. nat.* 18.24.100) that the Ethiopians only cultivate millet and barley, and thus both he and Strabo may be indebted to a common source (unless Pliny was simply following Strabo). This section from Strabo is found in *FGrH* (in the appendix to the histories of Ethiopia, and attributed to no specific source), but the section from Pliny is missing.

T45. Strabo, *Geographica* 17.2.5 (824):

Context: Strabo discusses life in Egypt.

τὸ δὲ ζῦθος ἰδίως μὲν σκευάζεται παρ' ἐκείνοις, κοινὸν δ' ἐστὶ πολλοῖς, καὶ παρ' ἐκάστοις δὲ αἱ σκευασίαι διάφοροι.

ζῦθος Nelson, ζύθος codd. Ew, ζύγος al. codd.

“*Zūthos* is prepared in a particular way among them [i.e. the Egyptians]; it is common among many, but the ways of preparing it in different places are different.”

Commentary: Strabo's generic use here of ζῦθος (and possibly also his use of the verb σκευάζω) seems directly influenced by the usage of Posidonius (T27).

T46. Plinius, *Historia naturalis* 8.24.8:

Context: Pliny discusses the elephant.

capti celerrime mitificantur hordei suco.

“When captured, they [i.e. elephants] are quickly tamed by the juice of barley.”

Commentary: Pliny's combination of barley “juice” and tamed elephants is found again in Manuel Philes (T238), thus perhaps pointing to their common use of Ctesias (= T11) or Megasthenes (= T18).

***T47.** Plinius, *Historia naturalis* 14.19.101:

Context: Pliny gives a list of “artificial” (*ficticius*) wines.

proximum fit e milii semine maturi cum ipsa stipula, libra quadrante in congios duos musti, macerato et post septimum mensem transfuso.

“One makes the following [wine] from the grain of mature millet with its stalk, with a pound

and a quarter in two *congi* [i.e. twelve pints] of must, having been steeped and decanted after seven months.”

Commentary: In its present form this recipe seems to be one for millet beer, yet Dioscorides (*Mat. med.* 5.44 Wellmann [= 5.34 Sprengel]) gives the same recipe for betony wine, and thus Pliny seems to have confused κέγγρος (“millet”) and κέστρος (“betony”); see André 1958: 126-127. However, interestingly, Pliny has a recipe for betony wine elsewhere (*Hist. nat.* 25.46.84).

T48. Plinius, *Historia naturalis* 14.29.149 (= *RGFS* I 61B):

Context: Pliny notes that mankind puts more effort into creating intoxicating beverages than anything else (14.28.137-148).

est et Occidentis populis sua ebrietas fruge madida, pluribus modis per Gallias Hispaniaque, nominibus aliis, sed ratione eadem. Hispaniae iam et vetustatem ferre ea genera docuerunt. Aegyptus quoque e fruge sibi potus similes excogitavit, nullaue in parte mundi cessat ebrietas, meros quippe hauriunt tales sucos nec diluendo ut vina mitigant. at Hercules illic tellus fruges parere videbatur. heu mira vitiorum sollertia! inventum est quemadmodum aquae quoque inebriarent.

est et DEFd, *et et* M¹, *est eo* M²; *fruge*] *frugi* D²; *aliis*] *aliis sed* DEFd, *aliud* M; *ratione* MD²Ed, *rationem* D¹F; *hispaniae iam et* Mdd, *hispania etiam* E; *vetustatem*] *vetustate* M; *Aegyptus*] *aegyptos* M; *e fruge* ME, *et fruge* Fd, *et fruges* D; *potus*] *potu* M; *similes* MEd, *similis* DF; *sucos*] *sucus* M; *diluendo*] *diluenda* M; *parere* Md², *parare* D², *patere* D¹EFd¹; *aquae* M, *aqua al.* codd.

“There is a particular intoxication too among western peoples, with soaked grains, [made] in many ways among Gauls and Hispanians, with various names, but the same technique. The Hispanics have even taught the aging of such types [of drinks]. Egypt also has devised similar drinks for themselves [made] from fruit [i.e. cereal], and intoxication is absent in no part of the world, since they drink such juices [from cereal] pure, not weakening it through dilution as with wine. But, Hercules, the earth seemed to produce fruits [i.e. cereals] there. Oh wondrous ingenuity of vices! Such a manner of making even water intoxicating was invented!”

T49. Plinius, *Historia naturalis* 18.12.68 (= *RGFS* I 63C-D):

Context: Pliny discusses the most important varieties of wheat.

Galliae et Hispaniae, frumento in potum resoluto quibus diximus generibus, spuma ita concreta pro fermento utuntur, qua de causa levior illis quam ceteris panis est.

Galliae] *gallia* Ea; *et* F²; *Hispaniae*] *hispania* Ea.

“The Gauls and Hispanians, liquefying wheat into a drink with those types [of wheat] we have mentioned, use instead of yeast the foam that forms in this way [for bread]. For this reason they have lighter bread than others.”

Commentary: Pliny is referring to the foam produced during the fermentation of beer.

T50. Plinius, *Historia naturalis* 18.13.71:

maxime quidem oryza gaudent, ex qua tisanam conficiunt, quam reliqui mortales ex hordeo.

“In fact, they [the Indians] enjoy rice most [among cereals], from which they make the beverage which the rest of mankind [makes] from barley.”

Commentary: Pliny and Strabo (T42) may both be indebted to Ctesias (= T11) or Megasthenes (= T18).

T51. Plinius, *Historia naturalis* 22.82.164 (= *RGFS* I 65A-B):

Context: Pliny concludes his book 22 with a look at cereals and beer.

ex iisdem fiunt et potus, zythum in Aegypto, caelia et cerea in Hispania, cervesia et plura genera in Gallia aliisque provinciis, quorum omnium spuma cutem feminarum in facie nutrit. nam quod ad potum ipsum attinet praestat ad vini transire mentionem ...

cervesia] *cerevisia* pl. codd.

“From them [i.e. cereals] they also make beverages, *zythum* in Egypt, *caelia* and *cerea* in Hispania, *cervesia* and many [other] types in Gaul and other provinces. The foam of all of these nourishes the skin in the faces of women. But as for what concerns the drink itself, it is preferable to pass on to a discussion of wine ...”

T52. Plinius, *Historia naturalis* 23.22.37:

Context: Pliny speaks of the beneficial qualities of wine, and then of those of milk, beer, and water.

lactis potus ossa alit, frugum nervos, aqua carnes.

“A drink of milk nourishes the bones, [a drink] of fruits [i.e. cereals] sinews, [and] water flesh.”

Commentary: This contradicts what Dioscorides (T54, and see T53a) and Pseudo-Galen (T73) say about the effect of beer on the sinews.

T53. Columella, *Rei rustica scriptores* 10.114-116:

Context: Columella speaks of various plants which can be cultivated in the garden.

*iam siser, Assyrioque venit quae semine radix,
sectaque praebetur madido sociata lupino,
ut Pelusiaci proritet pocula zythi.*

“Now skirwort and the root which came from an Assyrian seed [i.e. radish?], is sliced and served along with soaked lupines, to provoke the thirst for a cup of Pelusian *zythum* [or *zythus*].”

Commentary: Columella seems to mean that these plants are served with beer rather than in it as is sometimes thought. “Pelusian” here may simply mean “Egyptian” broadly.

T54a. Dioscorides Pedanius, *Materia medica* 2.87 Wellmann (= 2.109 Sprengel):

Context: Dioscorides discusses the merits of various cereals (2.85-101 Wellmann = 2.107-123 Sprengel), and after his entry on barley mentions two types of barley beer, ζύθος and κοῦρμι (T55).

περὶ ζύθου.

ζύθος σκευάζεται ἐκ τῆς κριθῆς. ἔστι δὲ διουρητικὸς καὶ νεφρῶν καὶ νεύρων ἀπτικὸς, καὶ μάλιστα μηνίγγων κακωτικὸς, πνευματωτικὸς τε καὶ γεννητικὸς κακοχυμίων καὶ ἐλεφαντιάσεως ποιητικὸς. εὐεργῆς δὲ καὶ ὁ ἐλέφας γίνεται βρεχόμενος αὐτῷ.

ζύθος Nelson, ζύθος codd.

“On *zūthos*.

“*Zūthos* is prepared from barley. It is a diuretic and acts on the kidneys and sinews and is especially harmful to the membranes. It induces flatulence, causes bad humours, and produces elephantiasis. But ivory steeped in it becomes good to work with.”

Commentary: Plutarch (T59) may have been indebted to Dioscorides’s description of beer used to soften ivory, and this use of beer is also mentioned by the eleventh century A.D. Simeon Sethus Interpres (fr. 119). Later Galen (T69) may have also made use of this passage.

T54b. Dioscorides Longobardus, *Materia medica* 2.70:

de furta.

furta fiet de ordeo, que est diuretica, plus meningis, ventrem inflat, humores viscidos nutrit. ex ipsa fiet helefus.

“On *furta*.

“*Furta* is made from barley and it is a diuretic, [that is, it causes] more urination, swells the stomach, nourishes bad humours. From it is made ivory.”

Commentary: This late Latin translation (from the sixth century A.D.) leaves out the mentions of the kidneys, sinews, and membranes as well as the possibility of producing elephantiasis, and evidently misunderstands the connection between beer and ivory. The *hapax legomenon furta*, evidently taken from this text, is glossed in the anonymous *Hermeneumata Monacensia* (T237) as *zitos*.

T55a. Dioscorides Pedanius, *Materia medica* 2.88 Wellmann (= 2.110 Sprengel):

Context: See T54.

περὶ κούρμιθος.

καὶ τὸ καλούμενον δὲ κούρμι, σκευαζόμενον δ' ἐκ τῆς κριθῆς, ᾧ καὶ ἀντὶ οἴνου πόματι πολλάκις χρῶνται, κεφαλαλγές ἐστι καὶ κακόχυμον καὶ τοῦ νευρώδους βλαπτικόν· σκευάζεται δὲ καὶ ἐκ πυρῶν τοιαῦτα πόματα, ὡς ἐν τῇ πρὸς ἐσπέραν Ἰβερία καὶ βρεττανία.

κούρμιθος] κούρμενος Olck 1899: 462.

“On *kourmi*.

“That which is called *kourmi* is also prepared from barley, and they often use it as a drink instead of wine. It causes headaches and bad humours and is harmful to the sinews. Such drinks are also prepared from wheat, as in Iberia and Britain in the West.”

Commentary: The word κούρμι is probably related to the κόρμα in Hesychius (T107).

T55b. Dioscorides Longobardus, *Materia medica* 2.70:

quae dicitur ordeo infuso, quem aliqui camum vocant, quem pro vino multi utuntur, dolorem capitis commobet, cacocymu est, nervis contrarius. de tridico vero faciuntur suci tales, maxime in Iveria et in Brittania.

faciuntur Nelson, *non faciuntur* cod.

“That which is called [*furta*] from the soaking [or pouring out (*infusus*)] of barley, which others call *camum*, which many use instead of wine, can cause headaches, is bad for the humours, and harmful to sinews. Truly from wheat such juices are made, especially in Iberia and in Britain.”

Commentary: Dioscorides's κούρμι is translated here as *camum*.

T56a. Dioscorides Pedanius, *Materia medica* 5.32.2 Wellmann (= 5.41 Sprengel):

Context: Dioscorides discusses various types of wine, including Cretan fig wine which he compares to barley beer.

ὁ τροχίτης ... καὶ ἐλεφαντιάσεως ποιητικός ἐστιν ὡς καὶ τὸ ζύθος.

ζύθος Nelson, ζύθος codd.

“*Trochitēs* [Cretan fig wine] ... also produces elephantiasis just as *zūthos* [does] too.”

T56b. Dioscorides Longobardus, *Materia medica* 5.54:

elefantiacos facit sicut zutus.

“It [Cretan fig wine] produces elephantiasis just as *zutus*.”

T57. Dio Chrysostomus, *Oratio* 32.82:

Context: Dio, in his Alexandrian oration, which mainly attacks the local enthusiasm for citharode shows and charioteering, presents (82-85) a poem made from a combination of disparate hexameter lines of Homer (this is the first Greek example of the Homeric pastiche or “cento”) which he ascribes to an inferior anonymous Alexandrian poet (81), though it was probably in fact written by himself. The poem describes the spectators of the hippodrome as intoxicated, swearing, fighting, and even throwing their clothes at the contestants and leaving the stadium naked.

ἡὔτε περ κλαγγῇ γεράνων πέλει ἢ κολοιῶν,
αἴτ’ ἐπεὶ οὖν ζῦθόν τ’ ἔπιον καὶ ἀθέσφατον οἶνον,
κλαγγῇ καὶ γε πέτονται ἐπὶ σταδίοιο κελεύθου.

“Just as the shout of cranes and the cry of daws arises, when they [i.e. the spectators] have drunk much *zūthos* and wine they fly with a shout to reach the racecourse.”

T58. Tacitus, *De origine et situ Germanorum* (= *Germania*) 23.1:

Context: Among much information on the Germans, Tacitus says that their land is fertile in cereals (5.1), that they love to feast and are very hospitable (21.2-3), that they often drink the whole day rather than work, and then often fight (22.1-4), and, after he mentions that they drink beer, he says that the Germans could be defeated by bringing drink to them (23.2).

potui humor ex hordeo aut frumento, in quandam similitudinem vini corruptus; proximi ripae et vinum mercantur.

“For drink [among the Germans there is] a liquid from barley or wheat, which, once rotted, has a certain resemblance to wine. Those near the shore also buy wine.”

Commentary: This is the earliest literary reference to beer among the Germans. Tacitus also spoke of Germans drinking wine at *Hist.* 4.79.2 (and see also App., *De bell. civ.* 2.64) and further said (*Ann.* 11.16.4) that they sought wine-drinking and pleasures “dear to barbarians” (*grata barbaris*). Posidonius had said that they drank unmixed wine (*Hist.* 30, fr. 188 Theiler = fr. 73 Edelstein-Kidd), though Julius Caesar, shortly after, claimed that the Germans refused to drink wine (*De bell. gall.* 4.2.6). In the tenth century A.D. one monastic rule states (Anon., *Consuet. Floriac. antiqu.* 14 [= *CCM* I, 26.10-11]): “There is not as much *cervisia* in Germany as there is wine in Gaul” (*neque enim tantum cervisia in Germania quantum habundat vinum in Gallia*). For further references to German beer-drinking, see T146 and 149, and the commentary at T112.

T59. Plutarchus, *An vitiositas ad infelicitatem sufficiat* 4 (= *Moralia* 499e):

Context: Plutarch gives an analogy between how vice softens men and beer softens ivory.

... τὸν ἐλέφαντα τῷ ζύθει μαλακὸν γενόμενον καὶ χαλῶντα κάμπτουσι καὶ διασχηματίζουσιν
...

“... they bend and shape ivory made tender and softened in *zūthos* ...”

Commentary: Plutarch's source may have been Dioscorides (T53), though Dioscorides uses ζῦθος in the masculine while Plutarch uses it in the neuter.

T60. Plutarchus, *Quaestiones convivales* 3.2 (= *Moralia* 648e):

Context: In Plutarch's discussion about whether ivy is naturally hot or cold a character explains how ivy (which thrived in the cold) came to be a substitute for the vine (which thrived in the heat) in Dionysiac symbolism.

ὅθεν ὁ φίλτατος Διώνυσος οὐχ ὡς βοηθὸν ἐπὶ τὴν μέθην οὐδ' ὡς πολέμιον τῷ οἴνῳ τὸν κιττὸν ἐπήγαγεν, ὅς γε τὸν ἄκρατον ἀντικρυς 'μέθυ' καὶ 'μεθυμναῖον' αὐτὸς αὐτὸν ὠνόμασεν· ἀλλὰ μοι δοκεῖ, καθάπερ οἱ φύλοινοι μὴ παρόντος ἀμπελίνου κριθίνῳ χρώνται πόματι, καὶ μηλίτας τινάς, οἱ δὲ φοινικίνους οἶνους ποιοῦσιν, οὕτω καὶ ὁ ποθὼν χειμῶνος ὥρα τὸν ἀπὸ τῆς ἀμπέλου στέφανον, ὡς ἐκείνην ἑώρα γυμνήν καὶ ἄφυλλον, ἀγαπήσαι τὴν ὁμοιότητα τοῦ κιττοῦ.

ὁ ποθὼν] ὁδὶ ποθὼν Reiske, ὁ θεὸς ποθὼν Pohlenz; χειμῶνος ὥρα] μιμούμενος ὥρας Basel ed.

"Therefore the most dear Dionysus did not introduce ivy as an aid against intoxication nor as something inimical to wine, Dionysus who frankly named unmixed [wine] 'intoxicant' and himself 'intoxicator.' But it seems to me that just as lovers of wine use barley drink when the vine is not available, and some mead, and others make date-palm wine, so too he [i.e. Dionysus], desiring a wreath [made] from a vine in the winter season, as he saw that it [i.e. the vine] was bare and leafless, he welcomed the very similarity of the ivy."

Commentary: Plutarch also says elsewhere in the same work (*Quaest. conv.* 4.6 [= *Mor.* 672b]): "still now those of the barbarians who do not make wine drink mead" (μέχρι νῦν τῶν τε βαρβάρων οἱ μὴ ποιοῦντες οἶνον μελίτειον πίνουσιν).

T61. Plutarchus, *Amatorius* 5 (= *Moralia* 752b):

Context: It is suggested, against the classical Athenian notion, that even in a pederastic relationship there should be sexual partnership or equality.

εἰ δ' ἔστι τις Ἔρως χωρὶς Ἀφροδίτης, ὥσπερ μέθη χωρὶς οἴνου πρὸς σύκινον πόμα καὶ κρίθινον, ἄκαρπον αὐτοῦ καὶ ἀτελὲς τὸ ταρακτικόν ἐστι καὶ πλήσμιον καὶ ἀψίκορον.

σύκινον] προσίκινον BE.

"If there is a certain Eros [i.e. lust] without Aphrodite [i.e. sexual partnership], it is like intoxication without wine, by fig and barley drink: it is fruitless, the disturbance is unfulfilled, it is a surfeit, and quickly sated."

T62. Aelius Aretaeus, *De causis et signis acutorum morborum* 1.9.4 (= *CMG* II, 11.24-26):

Context: In a section on ulcerations on the tonsils, Aretaeus explains that these occur when one swallows harsh

substances, such as the thick drink of Egypt.

... ποτὸν παχὺ, ὕδωρ μὲν ὁ Νεῖλος, δριμὺ δὲ τὸ ἀπὸ τῶν κριθέων καὶ τὸ τῶν βρυτέων πόμα.

δὲ τὸ ἀπὸ τῶν κριθέων καὶ τὸ τῶν βρυτέων] δὲ τὸ ἀπὸ τῶν κνηθέων καὶ τὸ τῶν βρυτέων abH¹V, δὲ καὶ τὸ τῶν βρυτέων Ermerins; δὲ τὸ ἀπὸ τῶν κριθέων τὸ τῶν βρυτέων Adams.

“... thick drink: the water of the Nile, and the pungent drink made from barley and that from grapes.”

Commentary: It makes more sense to think that Aretaeus here mentions two distinct drinks rather than one.

T63. Aelius Herodianus, *De prosodia catholica* 6, s.v. ζῦθος (= *GrGr* III.1, 145.14):

Context: Herodian discusses two syllable words which end in -θος (νόθος, πόθος, ψόθος, ῥόθος, μόθος, Κόθος, λίθος, πίθος, Πίθος, ζῦθος, γνύθος, and βυθός).

ζῦθος· ὁ ἐκ κριθῆς οἶνος.

ζῦθος Nelson, ζύθος codd.

“*Zūthos*, wine [made] from barley.”

Commentary: See the similar definitions in Hesychius (T106), Photius (T210), and the *Suda* (T226).

T64. Aelius Herodianus, *De orthographia* s.v. βρῦτον (= *GrGr* III.2, 484.14):

Context: A lexicon of unusual words.

βρῦτον· πᾶν τὸ ἐκ κριθῆς πόμα

“*Brūton*: every drink made from barley.”

Commentary: Nearly the same definition is provided by Hesychius (T103).

T65. Aelius Herodianus, *De orthographia* s.v. βρύττιον (= *GrGr* III.2, 484.14):

Context: Same as T64.

βρύττιον· πόμα ἐκ κριθῆς.

“*Bruttion*: a drink made from barley.”

Commentary: The same definition is given by Hesychius (T104).

T66a. Antyllus in Oribasius, *Collectiones medicae* 34.6-7 (= CMG VI.2.2, 128.28-35) (= T95):

Context: Antyllus provides medical advice for the lactating woman.

... ἡ σήσαμον ὥμὸν μετὰ φοινίκων πατητῶν ἴσα λεάνας δίδου ἐσθίειν, καὶ πινέτω μαράθρου ζωμοῦ ἢ μελαντηρίας· καὶ γὰρ αὐθεμερὸν πλησθήσονται οἱ μασθοὶ τοῦ γάλακτος. δόξει δ' ἡ γυνὴ ἅμα τῷ λαμβάνειν τὸ πότμα πάντα ἐαυτῆς τὰ μέλη παραλεύσθαι, ἄχρι γοῦν γένηται ἐν τοῖς μασθοῖς τὸ γάλα. ἡ ἔλμινθας <ἀλιέων> τὰς εὕρισκομένας ἐν τῇ ἰλύϊ τοῦ ποταμοῦ, ἃ καλεῖται γῆς ἔντερα, λειοτριβήσας ὅσον ε' ἢ ζ' ἐπιβάλλε φοίνικας πατητοὺς καὶ ἅμα λεάνας δὸς ἐν ζύθῳ πίνειν, προλούσας τὴν γυναῖκα, λέγω δὲ νῆστιν, ἐφ' ἡμέρας ι', καὶ θαυμάσεις τὸ γάλα ὥς πολὺ καὶ καλόν· | βέλτιον δὲ καὶ τὸ πρὸ τούτου ὁμοίως συλλααίνειν τῷ ζύθῳ καὶ διδόναι πίνειν.

φοινίκων πατητῶν] φοίνικος πατητοῦ Aëtius; δ' ἢ] δὲ ἡ Aëtius; μαράθρου ζωμοῦ ἢ μελαντηρίας· καὶ γὰρ codd., ζύθον καὶ Aëtius; δόξει δ'] δόξει δὲ Aëtius; μέλη Nelson, μέλη codd., Aëtius; ἄχρι γοῦν] ἄχρις οὐ Aëtius; ἔλμινθας <ἀλιέων> Nelson, ἔλμινθας codd., ἔλμινθας ἀλιέων Aëtius; ἰλύϊ] ἰλύϊ Aëtius; λέγω δὲ νῆστιν, ἐφ' ἡμέρας] νῆστιν ἐπὶ ἡμέρας Aëtius; συλλααίνειν] συλααίνειν Aëtius.

“... Or give [to the woman] to eat the unripe fruit of the sesame tree with trampled palm dates, evenly crushed, and let her drink a soup of fennel or black pigment. And on that very day the breasts will be filled with milk. Now, at the same time as she has taken the drink, the woman will seem to have been paralysed in all her limbs until there may be milk in the breasts. Or throw as many as five or seven crushed worms of fishermen found in the mud of a river which are called ‘the guts of earth’ into trampled palm dates and at the same time place them crushed into *zūthos* to drink, having washed beforehand the woman (I mean that she has fasted, for ten days) and you will be amazed at such plentiful and good milk. It is also better for the [recipe mentioned] before this [one] likewise to crush together in *zūthos* and to give [it] to drink.”

T66b. Antyllus in Aëtius Amidenus, *Libri medicinales* 4.6 (= CMG VIII.1, 362.8,30-363.9) (= T125):

δαίαιτα τιτθῆς· ...

... ἡ σήσαμον ὥμᾶν μετὰ φοίνικος πατητοῦ ἴσα λεάνας δίδου ἐσθίειν καὶ πινέτω ζύθον καὶ αὐθεμερὸν πλησθήσονται οἱ μαστοὶ τοῦ γάλακτος· δόξει δὲ ἡ γυνὴ ἅμα τῷ λαμβάνειν τὸ πότμα πάντα ἐαυτῆς τὰ μέλη παραλεύσθαι, ἄχρις οὐ γένηται ἐν τοῖς μαστοῖς τὸ γάλα· ἡ ἔλμινθας ἀλιέων τὰς εὕρισκομένας ἐν τῇ ἰλύϊ τοῦ ποταμοῦ ἃ καλεῖται γῆς ἔντερα, λειοτριβήσας ὅσον ε' ἢ ζ' ἐπιβάλλε φοίνικας πατητοὺς καὶ ἅμα λεάνας δὸς ἐν ζύθῳ πίνειν, προλούσας τὴν γυναῖκα νῆστιν ἐφ' ἡμέρας ι' καὶ θαυμάσεις τὸ γάλα ὥς πολὺ καὶ καλόν· βέλτιον δὲ καὶ τὸ πρὸ τούτου ὁμοίως συλλααίνειν τῷ ζύθῳ καὶ διδόναι πίνειν.

φοίνικος πατητοῦ] φοινίκων πατητῶν Oribasius; δὲ ἢ] δ' ἡ Oribasius; ζύθον καὶ Nelson, ζύθον καὶ codd., μαράθρου ζωμοῦ ἢ μελαντηρίας· καὶ γὰρ Oribasius; δόξει δὲ] δόξει δ' Oribasius; μέλη Nelson, μέλη codd., Oribasius; ἄχρι γοῦν Oribasius, Nelson, ἄχρις οὐ codd.; ἔλμινθας ἀλιέων] ἔλμινθας Oribasius; ἰλύϊ Oribasius, Nelson, ἰλύϊ codd.; νῆστιν ἐφ' ἡμέρας Nelson, νῆστιν ἐπὶ ἡμέρας codd., λέγω δὲ νῆστιν, ἐφ' ἡμέρας Oribasius; συλλααίνειν Oribasius, Nelson, συλααίνειν codd.

“On the state of the breast: ...

“... Or give [to the woman] to eat the unripe fruit of the sesame tree with a trampled palm date, evenly crushed, and let her drink *zūthos* and on that very day the breasts will be filled with milk. Now, at the same time as she has taken the drink, the woman will seem to have been paralysed in all her limbs until there may be milk in the breasts. Or throw as many as five or seven crushed worms of fishermen found in the mud of a river which are called ‘the guts of earth’ into trampled palm dates and at the same time place them crushed into *zūthos* to drink, having washed beforehand the woman, who has fasted for ten days, and you will be amazed at such plentiful and good milk. It is also better for the [recipe mentioned] before this [one] likewise to crush together in *zūthos* and to give [it] to drink.”

T67. Philumenus, *De venenatis animalibus eorumque remediis* 16.8 (= CMG X.1.1, 22.21-24):

Context: Philumenus speaks of the asp and the remedy for someone bitten by it.

εἰς δὲ τὸ καλῶς ἀπεμέσαι τὴν ἐκ τῆς ἀναδόσεως τοῦ ἰοῦ φαυλότητα καὶ τροπὴν τὴν ἐν τῷ στομάχῳ, σκόρδα λεάνας δίδου μετὰ ζύθου, ἕως ὑποναύσιος γένηται, ἢ ὀποπάνακα δίδου ἐν κράματι, καὶ παραχρῆμα ἐνεργήσῃ.

εἰς ... στομάχῳ, Nelson, εἰς δὲ τὸ καλῶς ἀπεμέσαι τὴν ἐκ τῆς ἀναδόσεως τοῦ ἰοῦ φαυλότητα Aëtius, εἰς δὲ τὸ ἀπερᾶσαι τὴν ἐκ τῆς ἀντιδόσεως φαυλότητα καὶ τροπὴν τὴν ἐν τῷ στομάχῳ codd.; ὑποναύσιος] ὑπόναυτος Aëtius.

“For the proper throwing up of the very little from that given forth of the venom [of the asp], and for the turning over in the stomach, give crushed garlic with *zūthos* until he [i.e. the one bitten by the asp] is slightly nauseated or give woundwort in mixed wine; it will work right away.”

Commentary: This passage was copied by Aëtius of Amidena (T128).

T68. Anonymous, *Lexicon* s.v. μελύγιον in *P.Oxy.* XV.1802, col. ii, ll. 41-42:

Context: The following is found in a lexicon under the entry for a type of Scythian honey drink (μελύγιον).

... αὐτῶν ἡ χώρα πολὺ τὸ μέλι ἔτι δὲ καὶ τὸ ζῦτος ὃ ποιοῦσιν ἐκ τῆς κέγχρου.

accent. Nelson.

“... their [the Scythians’] land [has] much honey and, what is more, *zūthos*, which they make from millet.”

T69. Galenus, *De simplicium medicamentorum temperamentis ac facultatibus* 6.6.3 (= 11.882.5-8 Kühn [not in CMG]):

Context: Galen goes alphabetically through various medical simples, and mentions ζῦθος in the ζ section.

ζύθος δριμύτερός ἐστι τῶν κριθῶν οὐ σμικρῷ, κακόχυμος, ὡς ἂν ἐκ σπηεδόνος γεγενημένος, ἔστι δὲ καὶ φουσώδης, καὶ τὸ μὲν τι δριμὺ καὶ θερμαῖνον ἔχων, τὸ πλεῖστον δὲ ψυχρὸν ὕδατῶδες ὀξύ.

ζύθος Nelson, ζύθος codd.; οὐ σμικρῷ] οὐ μικρῷ Oribasius, οὐ σμικρῶς καὶ Aëtius; κακόχυμος, ὡς ἂν] δριμὺς ὡς ἂν Paulus Aegineta; γεγενημένος] γεγονώς Oribasius, Aëtius; δὲ καὶ φουσώδης] δὲ φουσώδης Aëtius; θερμαῖνον] θερμὸν Oribasius; ἔχων Oribasius, Aëtius, Nelson; ἔχων codd., Kühn, ἔχει Oribasius.

“Zythos is very pungent, [made] of barley (not with a little), is bad for the humours since it may arise from that which is rotten, and also causes flatulence; some is pungent and warming while the rest is cold, watery, [and] sour.”

Commentary: Galen seems to have been at least partly indebted to Dioscorides (T54). This passage was later copied by Oribasius (T92a-b), Aëtius of Amidena (T121), and Paulus of Aegina (T132).

T70. Galenus, *In Hippocratis de victu acutorum commentaria* 3.43 (= 15.704.13-705.3 Kühn = CMG V.9.1, 256.29-30 + 257.1-4):

κατὰ ταῦτα δὲ καὶ περὶ τῶν ἄλλων ποτῶν, οἷον τὸ κρίθινον καὶ τὰ ἀπὸ χλοῖης ποιεύμενα καὶ τὰ ἀπὸ σταφίδος καὶ στεμφύλων καὶ πυρῶν καὶ κνήκου καὶ μύρτων καὶ ροιῆς τῶν ἄλλων, ὅταν τινὸς αὐτῶν καιρὸς ἦ χρήσθαι, γεγράφεται παρ’ αὐτῷ τῷ νοσήματι, ὅκωσπερ καὶ τᾶλλα συνθέτων φαρμάκων.

ποιεύμενα CMG, ποιείμενα Kühn; κνήκου CMG, κήκου Kühn.

“About these and also concerning other drinks, such as the barleyed [drink] and those made from young shoots and those from raisins and pressed olives and wheat and safflower and myrtles and pomegranate and other things, whenever it may be the time for one of them to be used, this will be written beside that disease, and likewise the other matters of the complex drugs.”

Commentary: In the original treatise on which Galen is commenting, Hippocrates discusses various types of wine and vinegar and mead (*De vict. acut.* 14-16 [= 2.332-358 Littré]) but not beer.

T71. Galenus, *In Hippocratis de victu acutorum commentaria* 4.67 (= 15.850.3-6 Kühn = CMG V.9.1, 330.27-331.2):

ἦν δὲ διψώδεις σφόδρα ἔωσι, τοῦ κριθίνου ὕδατος.
ὅτι μὲν ὡς ἄδελπον πόμα, εὐδηλὸν ἐστίν· ἄμεινον δ’ ἦν εἰρήσθαι πρὸς αὐτοῦ, πῶς χρή σκευάσαι τὰς κριθὰς, πότερον ἀποβρέξαντας ἀπλῶς ἢ ὡς οἱ νῦν ἐξ αὐτῶν τὸν ζύθον ποιοῦντες ἢ κατ’ ἄλλον τινὰ τρόπον.

μὲν ὡς] μὲν οὖν CR; τὰς κριθὰς] τὰς τυχίας M, τὰς τυχίας cod. V, om. BT; ἀποβρέξαντας] ἀποβρέξαντες BT, δ’ ἀποβρέξαντες AS, ἀποβρέξαντος M; τὸν ζύθον Mewaldt, Helmreich, Westenberger, τῶν ζυθῶν M, τὸν ζυθὸν al. codd.

“Whether they may be very thirsty, with regard to barley water.

“That the drink thus takes away thirst is manifest. And it was better said before this, how it is necessary to prepare barley, whether simply have been soaked or as those who now make *zūthos* or according to some other way.”

Commentary: See T70 above.

T72. Galenus, *In Hippocratis aphorismos commentarii* 2.20 (= 17b.492.14-493.5 Kühn [not in *CMG*]):

Context: Galen discusses Hippocrates’s statement (*Aphor.* 2.20 [= 4.476 Littré]) that the level of moistness of the bowels inevitably changes as one gets older.

εἰ γάρ τις ἐν μὲν τῇ νεότητι τῇ τῶν Ἀλεξανδρέων χρῆται διαίτῃ, ταρίχη τε καὶ πράσα ἐσθίων, ἐπιτίνων τε ζύθον, ἐν δὲ τῷ γήρᾳ μηδὲν τούτων προσφέρηται, φακὴν δὲ ἐσθίει καὶ οἶνον αὐστηρὸν ἔτι πίνει, πῶς ἂν φαίμεν ὑπερλάχθαι τούτῳ τὰ διαχωρήματα τῷ λόγῳ τῆς ἡλικίας;

ζύθον Nelson, ζυθὸν codd.

“If someone among the youth of Alexandria follows a diet of both eating pickles and leeks and drinking *zūthos*, while [someone] among the old is not nourished by these but eats lentils and still drinks harsh wine, how can we explain how to change the excrement by such a consideration of age?”

Commentary: In the commentary on Hippocrates’s aphorisms by Stephanus of Athens (from the sixth or early seventh century A.D.) nothing is said of beer in the corresponding section (2.20 [= *CMG* XI.1.3.1, 176.23-182.32]).

T73. Pseudo-Galenus, *De affectuum renibus insidentium dignotione et curatione* 7 (= 19.693.3-8 Kühn [not in *CMG*]):

Context: Pseudo-Galen provides a discussion of how various food and drink affects the kidneys and other organs.

κεφαλῆς γὰρ ἄπτεται οἶνος, ὕδατος εὐκράτου πρότερον μεταλαμβάνων. οὐκοῦν οὐδὲ τοῦ ψυχροῦ ὕδατος ἢ οἶνου ἢ ζύθου ἢ ἑτέρας σικέρας πόσις ἀβλαβὴς ἐστὶ. βλάπτουσι γὰρ καὶ αὐτὰ σαφῶς τὴν τε γαστέρα καὶ τὸ ἥπαρ καὶ τὰ νεύρα, ἣν οὐ τῇ κράσει, ἀλλὰ τῇ θίξει.

“Wine affects the head, having partaken earlier of well-mixed water. Neither then is a drink of cold water or of wine or of *zūthos* or of another *sikera* harmless, since these actually harm the stomach and the liver and the sinews, not if in mixture, but by contact.”

T74. Florus, *Epitome bellorum omnium annorum* DCC 1.34.12 (= 2.18.12):

Context: After numerous failed attempts to conquer the Celtiberians at Numantia, Publius Cornelius Scipio Aemilianus was made consul of Hispania Citerior in 134 B.C. He successfully besieged Numantia, until its inhabitants surrendered to him in 133 B.C.

sed cum Scipio veram vellet et sine exceptione victoriam, eo necessitatum compulsi primum ut destinata morte in proelium ruerent, cum se prius epulis quasi inferiis implevissent carnis semicrudae et celiae; sic vocant indigenam ex frumento potionem.

“But when Scipio wanted a real victory, and one without compromise, they [i.e. the Numantians] were compelled by this so that they first rushed into battle for their destined death, after having filled themselves first in feasts like mortuary dinners, on half-raw meat and *celia* (thus they call a local drink [made] from wheat).”

Commentary: It is known that the historian Polybius accompanied Scipio during this campaign and wrote an account of it (see 38.20 and Cicero, *Epist. ad fam.* 5.12.2), and he also mentioned Iberian barley beer (T22). But Florus may be indebted to Livy here (see *Epit.* 59.1 on the starving Numantians killing each other at the end of the siege; similarly in Valer. Max. 3.2 ext. 7). Appian says that the starving Numantians became cannibalistic, and, when they finally surrendered, some killed themselves while others came out to Scipio (6.15.96-97). The detail of the beer in Florus is also found in Orosius (T112), but in much more detail.

T75. Cassius Dio, *Historiae Romanae* 49.36.2 + 3:

Context: Cassius Dio mentions Augustus’s campaign against the Pannonians in 35 B.C., and describes these people.

οἱ δὲ δὴ Παννόνιοι ... οὐκ οἶνον, πλὴν ἐλαχίστου καὶ τούτου κακίστου, γεωργοῦσιν, ἅτε ἐν χειμῶνι πικροτάτῳ τὸ πλεῖστον διαιτῶμενοι, ἀλλὰ τὰς τε κριθᾶς καὶ τοὺς κέγχρους καὶ ἐσθίουσιν ὁμοίως καὶ πίνουσιν ...

“The Pannonians ... do not cultivate [i.e. make] wine, except for a little bit which is bad, since they spend most of the time in a very harsh winter [climate], but rather eat and drink both barley and millet ...”

T76. Claudius Aelianus, *De natura animalium* 13.8:

Context: Aelian discusses the elephant.

ἐλέφαντι ἀγελαίῳ μὲν τετιθασευμένῳ γε μὴν ὕδωρ πῶμά ἐστι, τῷ δὲ <τᾷ> ἐς πόλεμον ἀθλοῦντι οἶνος μὲν, οὐ μὴν ὁ τῶν ἀμπέλων, ἐπεὶ τὸν μὲν ἐξ ὀρύζης χειρουργοῦσι, τὸν δὲ ἐκ καλάμου.

“Water is the drink for the tamed herd elephant, while wine [is the drink] for that [elephant] fighting in war, not [wine] from grapes, since men prepare one from rice and another from reeds.”

Commentary: Manuel Philes (T238) also speaks of elephants being incited in battle by wine, but that made from rice (or other ingredients) rather than grapes. He and Aelian may both be indebted here to Ctesias (= T11) or Megasthenes (= T18).

T77. Athenaeus, *Deipnosophistae* 1.16c (*epitoma*) = Polybius, *Historiae* 34.9.15 Hultsch (= T22):

T78. Athenaeus, *Deipnosophistae* 1.34b (*epitoma*):

Context: See T24.

διὸ καὶ Δίων ὁ ἐξ Ἀκαδημίας ... Ἀριστοτέλης δέ φησιν ὅτι ...

“Therefore Dio from the Academy [says] [T24]. Aristotle says that [T14a].”

T79. Athenaeus, *Deipnosophistae* 4.151e + 152c-d (= *RGFS* I 705B-C) from Posidonius, *Historia* 23, fr. 170 Theiler (= T27).

Commentary: This passage was copied from Athenaeus by Eustathius (T234).

T80. Athenaeus, *Deipnosophistae* 10.418e = Hecataeus, *Descriptio* 2, *FGrH* 1F323b (= T2a).

T81. Athenaeus, *Deipnosophistae* 10.447a-d:

Context: Athenaeus discusses various traditions and anecdotes involving mixing, ladling, pouring, toasting with, drinking and becoming intoxicated from wine, then briefly turns his attention to beer.

ἀλλ', ὥς φησιν Ἀριστοτέλης ἐν τῷ περὶ μέθης, εἰς τὰ νῶτα καταπίπτουσιν οἱ τὸν κριθινὸν πεπωκότες ὃν πίνον καλοῦσι, λέγων οὕτως· ... | τὸν δὲ κριθινὸν οἶνον καὶ βρῦτόν τινας καλοῦσιν, ὥς Σοφοκλῆς ἐν Τριπτολέμῳ· ... καὶ Ἀρχύλοχος· ... μνημονεύει τοῦ πάματος | Αἰσχύλος ἐν Λυκούργῳ· ... Ἑλλάνικος δ' ἐν Κτίσεσι καὶ ἐκ ῥιζῶν, φησί, κατασκευάζεται τὸ βρῦτον, γράφων ὧδε· ... Ἑκαταῖος δ' ἐν δευτέρῳ περιηγήσεως εἰπὼν περὶ Αἰγυπτίων ὥς ἄρτοφάγοι εἰσὶν ἐπιφέρει· ... | ἐν δὲ τῇ τῆς Εὐρώπης περιόδῳ ... φησι ...

βρῦτον edd., βρύτον codd.; Αἰσχύλος] καὶ Αἰσχύλος Schweighauser; ῥιζῶν] βριζῶν Wilamowitz, κατασκευάζεται codd., κατασκευάζεσθαι? Jacoby.

“But, as Aristotle says in his *On Intoxication*, those who have drunk the barleyed [drink] which they call *pinon* fall onto their backs, speaking as follows: [T14b]. Some call barley wine also *brūtos* [or *brūton*?], as Sophocles in his *Triptolemus*: [T10]. Also Archilochus: [T1]. Aeschylus recalls the drink in his *Lycurgus*: [T6]. Hellanicus, in his *Foundations*, also says that *brūton* is prepared from roots [or rye], writing this: [T9]. Hecataeus in the second book of *Sketches*, saying of the Egyptians that they are bread-eaters, claims: [T2b]. In his *Tour of Europe* he says: [T3].”

Commentary: This passage was copied from Athenaeus two different times by Eustathius (T234-235).

T82. Athenaeus, *Deipnosophistae* 11.485b from Antiphanes, *Asclepius* fr. 47 Kassel and Austin (= T12).

T83. Sextus Julius Africanus, *Cesti* 1.19.17-23 Vieillefond (25 in older editions):

Context: Julius Africanus has a section on “wonders of agriculture” (γεωργίας παράδοξα) in which he discusses various types of wine and beer.

ὅσοι δὲ ἀμπέλους οὐκ ἔχουσιν, οὐδὲ τὸν ἀπὸ τῶνδε τῶν φυτῶν εὐτυχήκασιν καρπὸν, ἐμιμήσαντο οἶνον ἐτέρων ἢ σπερμάτων ἢ ἀκροδρύων σκευασίᾳ ἢ ῥιζῶν συνθέσει, τὴν καθαροῦ ὕδατος πόσιν παραιτούμενοι. πίνουσι γοῦν ζῦθον Αἰγύπτιοι, κάμον Παιόνες, Κέλτοὶ κερβησίαν, σίκερα Βαβυλώνιοι. Διόνυσος γὰρ αὐτοὺς κατέλιπεν ὠργισμένος καὶ οὐδὲν ἐκείνοις ἀμπελουργίας ἐδωρήσατο, μόνοις τὰ ἐπινίκια γεωργοῖς Ἑλλήσι τηρῶν.

“Those who do not possess vines, and are not able to profit from the fruit of this plant, have imitated wine from other things, either from seeds [i.e. cereals?] or by a preparation from fruits or by a combination of roots, since they refuse to drink pure water. The Egyptians drink *zūthos*, the Paeonians *kamon* [or *kamos*?], the Celts *kerbēsia*, the Babylonians *sikera*. For Dionysus, being angry, abandoned them and did not give them the art of viticulture, reserving for the Greek farmers alone the triumphs.”

Commentary: Compare Diodorus’s accounts of Dionysus as beer god (T29 and 31-32). This passage includes the only Greco-Latin reference to Babylonian beer.

T84. Ulpianus, *Sabinus* 23 in Justinianus, *Digesta* 33.6.9 (= T120):

si quis vinum legaverit, omne continetur, quod ex vinea natum vinum permansit. sed si mulsum sit factum, vini appellatione non continebitur proprie, nisi forte pater familias etiam de hoc sensit. certe zythum quod in quibusdam provinciis ex tritico vel ex hordeo vel ex panico conficitur, non continebitur: simili modo nec camum nec cervesia continebitur nec hydromeli. quid conditum? nec hoc puto, nisi alia mens testantis fuit. oenomeli plane id est dulcissimum vinum continebitur: et passum, nisi contraria sit mens, continebitur: defrutum non continebitur, quod potius conditurae loco fuit. acinaticium plane vino continebitur. cydoneum et si qua alia sunt, quae non ex vinea fiunt, vini appellatione non continebuntur. item acetum vini appellatione non continebitur. haec omnia ita demum vini nomine non continentur, si modo vini numero a testatore non sunt habita. alioquin Sabinus scribit ...

mulsum] *mulcum* F; *panico* Cujas, *panico*? Mommsen, *pane* codd. et pl. edd.; *dulcissimum*] *mulcissimum* F^a; *loco fuit*] *loco fit*? Mommsen.

“If someone bequeaths wine, everything is included which remains wine, having originated from the vine. But if mead [*mulsum*] has been made, it will not properly be included under the designation of wine, unless perhaps the head of the household also considered it. Certainly, *zythum*, which is made in some provinces from wheat or from barley or from millet, is not

included: in a similar way, neither *camum* nor *cervesia* nor mead [*hydromel*] will be included. What about spiced wine? I think not, unless the intention of the testator was otherwise. Clearly honey wine, that is the sweetest wine will be included, and raisin wine will be included unless the intention [of the testator] might be otherwise. Concentrated must will not be included, because it was in the heading of preservative. Clearly dried-grape wine will be included as wine. Quince wine and whichever other [drinks] there are which are not made from the vine, will not be included under the designation of wine. Similarly, vinegar will not be included under the designation of wine. Finally, in this way, all these [drinks] will not be included under the name of wine, as long as they were not considered as wine by the testator. However, Sabinus writes [T38].”

LATE ROMAN EMPIRE (A.D. 286 - 476)

T85. Methodius, *De castitate* in Photius, *Bibliotheca* 309b3-4 (= T209):

ὅτι σικερά φησι πᾶν τὸ μέθην φέρον μετὰ τὸν οἶνον τὸν ἐξ ἀμπέλων.

“He [Methodius] says that *sikera* is everything which brings on intoxication except for wine [made] from vines.”

Commentary: For further definitions of the term, see Jerome (T99) with Isidore (T136), Hesychius (T108), Photius (T211), the *Suda* (T229), and Johannes Zonaras (T236).

T86. Eusebius, *Praeparatio evangelica* 2.2.4 (= PG 13.711A):

Context: Eusebius mentions Cadmus founding Thebes and giving birth to Semele, who in turn gave birth to Dionysus who discovered wine and beer.

εὐρεῖν δὲ καὶ τὸ ἐκ τῆς κριθῆς κατασκευαζόμενον πόμα, τὸ καλούμενον ζῦθον.

δὲ καὶ, δ’ αὐτὸν καὶ Diodorus Siculus; τὸ καλούμενον ζῦθον, τὸ προσαγορευόμενον μὲν ὑπ’ ἐνίων ζῦθος Diodorus Siculus.

“He [Dionysus] discovered the drink prepared from barley, the so-called *zūthos*.”

Commentary: Eusebius is indebted here to Diodorus (T32).

T87. Eusebius, *Commentarius in Isaiam* 1.75 (= PG 24.227A-B):

στενάξειν δὲ πάντας φησὶ τοὺς ποιῶντας οὐ τὸν ἐξ ἀμπέλου οἶνον, ἀλλὰ τὸν Αἰγυπτιακὸν ζῦθον· ὃς καὶ αὐτὸς νόθος ἦν καὶ τεθλωμένος· ᾧ ἐκέχρητο ἀντὶ ποτοῦ πρὶν αὐτοῖς ἐπιδημήσαι τὸν Κύριον οἱ Αἰγύπτιοι. καὶ τούτου δὲ ἐκκλίνοντος, εἰκότως στενάξειν λέγονται καὶ τὰς ψυχὰς ἀλγήσειν οἱ τούτου ποιηταί. ταῦτα μὲν οὖν πείσεσθαι τοὺς τῆς Αἰγύπτου σοφιστὰς ἀπειλεῖ, ζυθοποιούς τινας καὶ λίνου σχίστοῦ καὶ βύσσου ἐργάτας, ἰχθύων τε θηρευτὰς, τὸν ποταμὸν τὸν Αἰγυπτιακὸν περιέποντας, καὶ τὸν τῆς Αἰγυπτιακῆς σοφίας λόγον.

οἱ ποιοῦντες τὸν ζῦθον] οἱ τὸν ζῦθον ποιοῦντες LX; πεσοῦνται] πονέσουσιν LX; ζῦθον Nelson, ζύθον codd.

“He [i.e. Isaiah] says that all makers, not of the wine from the vine, but of Egyptian *zūthos* will groan [= T18]. This was both adulterated and made cloudy. The Egyptians used it as a drink, before the Lord lived among them. And when this [i.e. beer] is shunned, those who make this are said to probably groan and to feel pain in their souls. But he [i.e. Isaiah] boasts that the craftsmen of the Egyptians will not be persuaded of these things, those *zūthos*-makers and the workers of split linen and flax, and the hunters of fish, the tenders of the Egyptian river, and the word of Egyptian wisdom.”

Commentary: See the similar commentaries by Cyril (T97), Theodoret (T98), and Jerome (T100).

T88. Servius Grammaticus, *Commentaria ad Vergilii Georgicam* 3.380:

... *potionis genus est, quod cervesia nominatur. et consequens est quod dicit, ut vinum, per naturam calidum, in provincia frigida non possit creari.*

“[T34]. This is a type of drink which is called *cervesia*. What he [i.e. Vergil] says follows from the fact that wine, because of its natural heat, cannot be made in a cold province.”

Commentary: Since *cervesia* at this time probably referred to wheat beer specifically (see especially T183 with 159b), Servius's text of Vergil probably had *frumento* (see T34). For this type of climatological explanation for the use of beer, see Pytheas (T15), Posidonius (T26), and Cassius Dio (T76).

T89. Anonymus (Pseudo-Zosimus Panopolitanus), *De zythorum confectione* in *Collection des anciens alchimistes grecs* 2.372 Berthelot and Ruelle:

περὶ ζύθων ποιήσεως·

λαβὼν κριθὴν λευκὴν, καθαρίαν, καλὴν, βρέξον ἡμέραν α', καὶ ἀνάσπασον ἢ καὶ κοίτασον ἐν ἀνειμένῳ τόπῳ ἕως πρωῒ· καὶ πάλιν βρέξον ὥρας ε'· ἐπίβαλε εἰς βραχιώνιον ἀγγεῖον ἡθμοειδές, καὶ βρέχε. προαναζήρανε ἕως οὗ γένηται ὡς τύλη· καὶ ὅτε γένηται, ψύξον ἐν ἡλίῳ ἕως οὗ πέσῃ· τὸ μαλίον γὰρ πικρόν. λοιπὸν ἄλεσον καὶ ποίησον ἄρτους προσβάλλον ζύμην ὥσπερ ἄρτου· καὶ ὅπτα ὠμότερον· καὶ ὅτ' ἂν ἐπανθώσιν, διάλυε ὕδατι γλυκεῖ καὶ ἡθμίζε διὰ ἡθμοῦ ἢ κοσκίνου λεπτοῦ. ἄλλοι δὲ ὀπτῶντες ἄρτους βάλλουσιν εἰς κλουβὸν μετὰ ὕδατος, καὶ ἐψοῦσι μικρὸν, ἵνα μὴ κοχλάσῃ, μήτε ἢ χλιαρὸν, καὶ ἀνασπῶσι καὶ ἡθμίζουσιν· καὶ περισκεπάσαντες, θερμαίνουσι καὶ ἀνακλίνουσιν.

ἀνειμένῳ Olck 1899: 459, ἀνημένῳ cod.; ζύμην ὥσπερ ἄρτου cod., ζύμην ὥσπερ <πρὸς> ἄρτον Olck; περισκεπάσαντες cod., περισκευάσαντες Lesart in Olck; ἀνακλίνουσιν Olck, ἀνακρίνουσιν cod.

“On the making of *zūthoi*:

“Take nice, clean, white barley, soak [it in water] for one day, take [it] up [out of the water], and lay it out in a windless place until early [the following day], and soak it again for five hours. Throw it into a shallow, strainer-like bowl, soak [it in water], making it dry up before until it

becomes like a lump, and, being so, dry it in the sunlight until it falls apart, since the little hairs are bitter. Grind the remainder and make [it] into loaves, adding yeast as that for bread. Heat [the loaves] more strongly [than bread], and when they rise, crumble them into fresh water and strain them through a strainer or fine sieve. Others bake the loaves and cast them in a vat with water and they heat it slightly, so that it does not boil nor become lukewarm, then take up [the loaves from the water] and strain [the water], and they cover [it] around, heat [it], and lay [it] out.”

Commentary: It is clear from the manuscript tradition, that this recipe was added by a later scribe to Zosimus’s work.

T90. Plinius Secundus, *De medicina* 3.6 (= *CML* III, 71.20-21):

Context: Plinius discusses cures for scrofulous tumors (*strumae*).

ebuli folia conteruntur et mixta cum faece cervisiae super additis foliis eiusdem ebuli in linteolo alligantur.

faece] *fece* ed.; *cervisiae* rb, *CML*, *cervisie* ed., *cervise* GVL, gd, *cervisae* V, Rose; *super additis*] *superadditis* ed.; *in linteolo*] *illita* ed.

“Leaves of danewort are ground and mixed with the dregs of *cervisa*; on top of added leaves of the same danewort it is tied in linen.”

Commentary: This is a unique instance in which the dregs of beer are used medically. Jonas (T153) describes a woman who eats the dregs from beer.

T91. Julianus, *Epigramma* 1 Page (= 168 Bidez = *RGFS* I 734E-735A) in *Anthologia Palatina* 9.368:

εἰς οἶνον ἀπὸ κριθῆς·
τίς πόθεν εἰς Διόνυσε; μὰ γὰρ τὸν ἀληθέα Βάκχον,
οὐ σ' ἐπιγινώσκω τὸν Διὸς οἶδα μόνον.
κεῖνος νέκταρ ὄδωδε· σύ δὲ τράγον. ἦ ῥά σε Κελτοὶ
τῇ πενίῃ βοτρυῶν τεύξαν ἀπ' ἀσταχύων;
τῷ σε χρὴ καλέειν Δημήτριον, οὐ Διόνυσον,
πυρογενῇ μᾶλλον καὶ Βρόμον, οὐ Βρόμιον.

εἰς οἶνον ἀπὸ κριθῆς· lemma A; εἰς Plan., εἰς P; τράγον Reiske, Page, τράγου codd.; ῥά Plan., ῥα νύ P; τῇ πενίῃ codd., ἥπανίῃ Stadtmüller, Page; τῷ Plan., τῷ P; πυρογενῇ Plan., πυρογενῇ P; Βρόμιον Plan., Βρωμίον P (ante correct.).

“On wine [made] from barley:

“Who and from where are you Dionysus? Since, by the true Bacchus, I do not recognize you; I know only the son of Zeus. While he smells like nectar, you smell like a billy-goat [or spelt].

Can it be then that the Celts because of a lack of grapes made you from cereals? Therefore one should call you Demetrius [i.e. born of Demeter or born of two mothers], not Dionysus, rather wheat-born [than fire-born] and Bromus [i.e. oats], not Bromius [i.e. roarer or of the thunder].”

Commentary: This poem is regularly cited as the epitome of the negative view of beer in Greco-Roman antiquity; however, Julian is being very playful in his use of punning.

T92a-b. Oribasius, *Collectiones medicae* 3.23.4 (= CMG VI.1.1, 83.8 + 13-14) = *Synopsis ad Eustathium filium* 4.22.4 (= CMG VI.3, 136.16 + 22):

ὅσα φυσώδη.

... ζῦθος, ὅποι πάντες, καὶ μάλλον ὁ Κυρηναϊκός ...

ζῦθος Nelson, ζύθος codd.

“All that causes flatulence: ... *Zūthos*, every sort, and especially the Cyrenaic [type].”

Commentary: Since all of the works of Oribasius (who was the Emperor Julian’s personal physician) are composed of passages culled from other authors, this section must also come from an earlier medical source, though one which cannot now be identified. Dioscorides (T54) and Galen (T69) (the latter passage being known to Oribasius [T94]), both say that ζῦθος causes flatulence, but neither makes any mention of the Libyan city of Cyrene in this regard.

T93. Oribasius, *Collectiones medicae* 5.31.12 (= CMG VI.1.1, 151.3-5):

οἱ δ’ οἶνοι οἱ μύρτινοι τε καὶ ἀπὸ τῶν κηρίων καὶ πυρῶν καὶ κριθῆς γινόμενοι οὐδὲν ἀσθενέστεροί εἰσι τῶν ἀπὸ τῆς σταφυλῆς, ἀλλὰ πολλῶ βραδύτεροί τε καὶ χείρους.

“Myrtle wines and [wines] arising from honeycombs and wheat and barley are weaker than those from the grape cluster, but are much slower [to make?] and are worse.”

Commentary: It is difficult to tell why exactly Oribasius (or, more accurately, his anonymous source) considers myrtle wine, mead, and wheat and barley beers inferior to grape wine (in terms of taste or health?).

T94a. Oribasius, *Collectiones medicae* 14.10.10 (= CMG IV.1.2, 190.11-12):

ζῦθος τὸ μὲν τι δριμύ καὶ θερμὸν ἔχει, τὸ πλεῖστον δὲ ψυχρὸν ὑδατώδες ὀξύ.

ζῦθος Nelson, ζύθος codd; θερμὸν] θερμαῖνον Galen; ἔχει] ἔχον Galen, ἔχων Oribasius (T94b).

“*Zūthos* is either something which is pungent and warming, while the rest is cold, watery, [and] sour.”

T94b. Oribasius, *Collectiones medicae* 15.1.6.6 (= CMG IV.1.2, 253.16-19):

ζῦθος δριμύτερός ἐστι τῶν κριθῶν οὐ μικρῶ καὶ κακόχυμος, ὥς ἂν ἐκ σπηεδόνος γεγονώς, ἔστι

δὲ φουσώδης, καὶ τὸ μὲν τι δριμύ καὶ θερμαῖνον ἔχων, τὸ πλεῖστον δὲ ψυχρὸν ὑδατώδες ὀξύ.

ζῦθος Nelson, ζύθος codd; οὐ μικρῶ οὐ συμικρῶ Galen; γεγονώς] γεγεννημένος Galen; ἔχων] ἔχον Galen, ἔχει Oribasius (T94a).

“*Zūthos* is very pungent, [made] of barley (not with a little), is bad for the humours since it may arise from that which is rotten, and also causes flatulence; some is pungent and warming while the rest is cold, watery, [and] sour.”

Commentary: Both of these passages are copied from Galen (T69).

T95. Oribasius, *Collectiones medicae* 34.6-7 (= CMG VI.2.2, 128.24-34) from Antyllus (= T65a).

T96. Ammianus Marcellinus, *Rerum gestarum libri* 26.8.2:

Context: During the campaigns of A.D. 365, Rumitalca seized Nicaea with Vodomarius while the Emperor Valens (who ruled from A.D. 364 to 378) went on to Nicomedia.

exindeque profectus, oppugnationi Chalcedonis magnis viribus insistebat, cuius e muris probra in eum iaciebantur, et iniuriose compellabatur ut Sabaiaarius. est autem sabaia ex hordeo vel frumento, in liquorem conversis, paupertinus in Illyrico potus.

iniuriose WBG, *iniuria* se V¹E, *iniuriosa* V²V³, *inrisive* Novák; *Sabaiaarius*] *Sabaiaarius* Mayer; *hordeo*] *ordeo* Rolfe; *conversis* V et al., *conversus* V.

“Having left from there [i.e. Nicomedia], he pursued the siege of Chalcedon with a great many men; from its walls insults were thrown at him, and he was derisively addressed as *Sabaiaarius*. Now *sabaia* is a drink of the poorer in Illyricum, made from barley or wheat, turned into a liquid.”

Commentary: For the term *sabaia*, see Jerome (T100). Ammianus also elsewhere (15.12.4) says that the Gauls are “a race fond of wine, disposed to numerous drinks resembling wine” (*vini avidum genus, affectans ad vini similitudinem multiplices potus*), which probably is to include beer.

BYZANTINE PERIOD / EARLY MIDDLE AGES (A.D. 477 -)

T97a-b. Cyrillus, *Commentaria in Isaiam* 2.4.287-288 (= PG 70.459CD):

‘οὔτοι ποιοῦσι τὸν ζῦθον·’ οὐ γὰρ οἶνον προσάγουσι τὸν ‘εὐφραίνοντα καρδίαν ἀνθρώπου,’ ἀλλὰ νόθην τινὰ καὶ ἄχρηστον διδασκαλίαν, καὶ τοῖς ἰσχυοῖς αὐτὴν ὥσπερ οὖν οἶονται κατασεμνύνοντες λόγοις. ὑπαινίττεται γὰρ, οἶμαι, τουτὶ τὸ βύσσον λέγειν αὐτοὺς ἐργάζεσθαι, τὴν ἰσχυοτάτην ἄγαν. καὶ λῖνον δὲ τὸ σχιστόν. σκινδάλαμοι γὰρ ὥσπερ ἰσχυομυθίας τὰ παρ’ αὐτοῖς· πλὴν ἀνόνητα παντελῶς, καὶ ψυχρῶν θεωρημάτων ἀναπλιμπλάντα. ψυχρὸς γὰρ ὁ ζῦθος. <....>

ζῦθος Nelson, ζύθον codd.; ζῦθος Nelson, ζύθος codd.

'hi faciunt zythum: non enim vinum offerunt quod hominis cor exhilarat, sed spuriam quamdam et inutilem doctrinam, eamque verbis subtilibus et elimatis, ut quidem putant, efferunt. hoc enim, ut opinor, byssus significat, ut dicat eos nimium subtilitati et argutiis studere. et linum fissile. minutiae enim apud eos subtiliter ac tenuiter disseruntur, verum prorsus frivola, et frigidis speculationibus referta. frigidus enim zythus. est autem Aegyptiorum quidam potus, sed frigidus et turbidus, talis siquidem est eorum oratio, et tales sunt doctrinae, quae sitim non sedant imbibitae, sed inflammant potius, et insuaves sunt bibentibus, et ob vehementem frigiditatem morbos insanabiles pariunt.

“Those who make *zūthos* [or *zythus*] [= T19]: for they do not provide wine, which ‘gladdens man’s heart’ [= Psalms 104:15], but some adulterated and useless teaching, and they produce it with subtle and polished words, as indeed they think. In fact, as I believe, flax refers to this since he says that they favour too much subtlety and cunning. Also split linen [refers to the same thing]. In fact trifles are treated among them subtly and poorly, truly utterly useless things, and filled with cold observations. *Zūthos* [or *zythus*] is also cold. It is, however, a certain drink of the Egyptians, but cold and cloudy, in as much as this is their speech, and as these are [their] teachings, which do not slake thirst when drunk, but rouse it more, and they are disagreeable from drinking, and because of great cooling produce incurable illnesses.”

Commentary: Here a Latin version of Cyril provides more of the text than the original Greek. See the similar commentaries by Eusebius (T87), Theodoret (T98) (who quotes the same line from Psalms), and Jerome (T100).

T98. Theodoretus, *Commentaria in Isaiam* 6.283-288 Guinot (omitted in PG 81.351A):

... πόμα ἐστὶν ὁ ζῦθος ἐπινενοημένον, οὐ φυσικόν· καὶ αὐτὸ δὲ ὀξῶδες τε καὶ δυσώδες καὶ βλάβην, οὐκ ὄνησιν ἐργαζόμενον. τοιαῦτα δὲ καὶ τῆς ἀσεβείας τὰ δόγματα, οὐκ οἶνω προσεοικότα τῷ εὐφραίνοντι καρδίαν ἀνθρώπου.

“[T19]. *Zūthos* is an invented beverage, not a natural one. It is vinegary and foul-smelling and harmful, nor does it produce any enjoyment. Such are the lessons of impiety, not like wine which ‘gladdens man’s heart’ [= Psalms 104:15].”

Commentary: See the similar commentaries by Eusebius (T87), Cyril (T97) (who quotes the same line from Psalms), and Jerome (T100).

T99. Hieronymus, *Epistola ad Nepotianum presbyterum* = *Epistola* 52.11 (266) (= PL 22.536-537):

sicera Hebraeo sermone omnis potio nuncupatur, quae inebriare potest sive illa, quae frumento conficitur, sive pomorum succo, aut cum favo decoquuntur in dulcem et barbaram potionem, aut palmaram fructus exprimuntur in liquorem, coctisque frugibus aquae pinguior coloratur. quidquid inebriat, et statum mentis evertit, fuge similiter ut vinum.

coloratur] colatur de Labourt 1951.

“Every drink is called *sicera* in the Hebrew language, which is able to intoxicate, either that which is made from cereal [or wheat?], or from the juice of apples, or boiled with honey into a sweet and barbaric drink, or the palm fruit squeezed into a liquid, and with boiled fruits coloured more densely than water. Whatever intoxicates, and overturns the state of mind, avoid just like wine.”

Commentary: This passage is copied by Isidore of Seville (T136). Jerome says elsewhere (*Comm. Is.* 2.5 [= *PL* 24.81]) that *sicera* “means every drink which can intoxicate” (*omnem significat potionem, quae inebriare potest*) and (*Comm. Is.* 8.24 [= *PL* 24.280]) “every drink which changes one’s state of mind ... *sicera* as it is called in Hebrew, that is an ‘intoxicant’” (*omnis potio ... ut Hebraice dicitur, sicera, id est, ebrietas, quae statum mentis evertit*). He also considers it the Hebrew word for *ebrietas* (*Lib. de nomin. hebr.* s.v. *sicera* [= *PL* 23.874]). Jerome also often repeats the biblical prohibition against drinking *vinum et sicera*. Augustine noted that Jerome himself had been a teetotaler for forty years, using the same expression (*De magnif. beat. Hier.* [= *PL* 22.282]): “for forty years in no way did he ever taste wine or *sicera*” (*quingenta annis ... vinum et siceram aliquantulum non gustavit*). For further definitions of the term σικέρα / *sicera*, see Methodius (T85), Hesychius (T108), Photius (T213), the *Suda* (T229), and Johannes Zonaras (T236).

T100. Hieronymus, *Commentarium in Isaiam prophetam* 7.19.5-11 (292) (= *PL* 24.252C + 253A):

‘et erunt irrigua eius flaccientia, omnes qui faciebant lacunas ad capiendos pisces,’ hoc significat, quod omnes insidiae Aegypti piscatorum destruantur, et pereant. pro lacunis quae fiebant ad capiendos pisces, quod nos iuxta sensum interpretati sumus, et in Hebraico, et in cunctis interpretibus, in loco piscium ponuntur animae, ut ab historia trahamur ad tropologiam, quod videlicet isti piscatores, qui faciebant lacunas, et foveas, ad hoc fecerint, ut animas in eis deciperent. notandum quod pro lacunis LXX ζύθος transtulerunt, quod genus est potionis ex frugibus aquaque confectum et vulgo in Dalmatiae Pannoniaeque provinciis gentili barbaroque sermone appellatur sabaïum. hoc maxime utuntur Aegyptii, ut non puras aquas bibentibus tribuant, sed turbidus, et commixtarum fecium similes, ut per huiusmodi potionem haereticae pravitas doctrina monstretur.

ζύθος Nelson, ζύθος codd.

“‘and his soaked things will be flaccid, and all who made ponds for captured fish:’ this means that all Egyptian traps for fishermen will be destroyed, and will vanish. Instead of ‘ponds’ which were made to capture fish, which we have interpreted in accordance with sense, both in Hebrew and among all interpreters, souls are placed in the place of fish, so that by this account I am drawn to allegory, that evidently these fishermen, who would make ponds and pits, have made [them] for this, so that they may entrap souls in them. It should be noted that instead of ‘ponds’ the *Septuagint* translated *zūthos* [= T19], which is a kind of beverage made from fruits [i.e. cereal] and water and in the local vernacular and barbaric speech in the provinces of Dalmatia and Pannonia it is called *sabaïum*. The Egyptians use this [beer] the most since they do not allow plain water for drinking, but cloudy, and as if mixed with excrement, so that

through a beverage of such a kind, the perverse teaching of heresy is denounced.”

Commentary: See the similar commentaries by Eusebius (T87), Cyril (T97), and Theodoret (T98). For *sabaium*, see Ammianus’s *sabaia* (T96).

T101. Hesychius, *Lexicon* s.v. βρούτος (β1211 Latte):

βρούτος· ἐκ κριθῶν πόμα.

βρούτος] βρύτος? Nelson (cf. Sophocles).

“*Broūtos*: a drink made from barley.”

T102. Hesychius, *Lexicon* s.v. βρυτίνη (β1273 Latte):

βρυτίνη· ἐν Μαλθακοῖς· ... ἔπαιξε πρὸς τὸ πόμα τὸ βρύτινον. ἔστι δὲ καὶ ζῶον βρύτον ὅμοιον καθάρῳ, καὶ τὸ ἀπ’ αὐτοῦ βρύτινον πήνισμα, ὅπερ ὑπ’ ἐνίων βομβύκτινον λέγεται.

ἔπαιξε Latte, ἔπαξε cod.; πήνισμα Musurus, πένυσμα cod.

“*Brutinē*: in the *Softies* [of Cratinus]: [T8]. He was joking with the *bruton*-like (*brutininon*) drink. The *bruton* is a creature like a beetle, and the thread from it is *brutininon*, which is called by some *bombukininon*.”

T103. Hesychius, *Lexicon* s.v. βρύτον (β1275 Latte):

βρύτον· πᾶν τὸ ἐκ κριθῆς ποτόν.

βρύτον Meineke, βρυττόν codd.; κριθῆς Schrevel., τρυφῆς codd., τρύγης Meineke.

“*Brūton*: every drink made from barley.”

Commentary: Nearly the same definition is found in Herodian (T64).

T104. Hesychius, *Lexicon* s.v. βρύττιον (β1261 Latte):

βρύττιον· πόμα ἐκ κριθῆς.

“*Bruttion*: a drink made from barley.”

Commentary: The same definition is given by Herodian (T65).

T105. Hesychius, *Lexicon* s.v. ζύθιον (ζ201 Latte):

ζύθιον · ἡ ἐξ ἀλφίτου πόσις.

ἡ ἐξ ἀλφίτου Reitzenstein in *LSJ*, <ἐξ> ἀλφίτου Latte, ἀλφίτου codd.

“*Zuthion*: A drink made from barley meal.”

Commentary: It is possible that this is a gloss on the original text of Hecataeus (T2), in the fragments of which mention is made of Egyptian beer being produced from ground barley (that is, barley meal). Note the different definition of this term in a glossary (T186).

T106. Hesychius, *Lexicon* s.v. ζύθος (ζ202 Latte):

ζύθος· οἶνος ἀπὸ κριθῆς γινόμενος.

ζύθος Nelson, ζύθος codd.

“*Zūthos*: a wine arising from barley.”

Commentary: This same definition is found in the *Suda* (T226), and similar ones are found in Herodian (T62) and Photius (T211).

T107. Hesychius, *Lexicon* s.v. κόρμα (κ3591 Latte):

κόρμα· ἡ τοῦ κόρματος καὶ κορυβαντίας αἰτία.

“*Korma*: the [etymological] source of *kormatos* [i.e. the genitive of *korma*] and of Corybant.”

Commentary: The word κόρμα is probably related to the κοῦρμι in Dioscorides (T55a).

T108. Hesychius, *Lexicon* s.v. σίκερα (σ615 Schmidt):

σίκερα· οἶνος συμμιγὲς ἡδύσμασιν, ἢ πᾶν πόμα ἐμποιοῦν μέθην, μὴ ἐξ ἀμπέλου δέ, σκευαστόν, σύνθετον.

“*Sikera*: wine mixed with sweeteners or every drink which causes intoxication but not prepared from, nor composed of, the vine.”

Commentary: For further definitions of the term, see Methodius (T85), Jerome (T99) with Isidore (T136), Photius (T211), the *Suda* (T229), and Johannes Zonaras (T236).

T109. Priscus Panites, *Ecloga historiae gothicae* fr. 11.2, ll. 278-280 Blockley (= fr. 8 Müller-Dindorf = p. 183 Niebuhr) in Constantinus Porphyrogenitus, *Excerpta de legationibus* 3 (= T223):

Context: Priscus travels in a Greek delegation with Scythians on his way to meet Attila the Hun.

ἐχορηγοῦντο δὲ ἡμῖν κατὰ κώμας τροφαί, ἀντὶ μὲν σίτου κέγχρος, ἀντὶ δὲ οἴνου ὁ μέδος ἐπιχωρίως καλούμενος. ἐκομίζοντο δὲ καὶ οἱ ἐπόμενοι ἡμῖν ὑπηρεταὶ κέγχρον καὶ τὸ ἐκ κριθῶν χορηγοῦ-μενον πόμα· κάμον οἱ βάρβαροι καλοῦσιν αὐτό.

χορηγοῦμενον] σκευαζόμενον? Nelson (cf. ἐχορηγοῦντο supra).

“At the villages victuals were supplied for us: millet rather than wheat, and that which is locally called *medos* [i.e. mead] rather than wine. The attendants following us carried millet and the drink supplied from barley. The barbarians call it *kamon*.”

T110. Marcellus Empiricus, *De medicamentis* 16.33 (= CML V, 126.40-127.2):

Context: Marcellus provides cures for coughing.

salis quantum intra palmam tenere potest qui tussiet in potionem cervesae aut curmi mittat et calidum bibat, cum dormitum vadit, neque postea loquatur, sed tacitus somnum capiat; cito sanabitur, si hoc vel triduo fecerit.

cervisae Cornarius, Niedermann. *loquetur* codd.; *loquatur* Helmreich. *capeat* codd.; *capiat* Helmreich.

“Let the one who coughs throw into a drink of *cervesa* or *curmi* as much salt as he is able to hold in the palm [of his hand] and drink it hot; when he goes to sleep, he should not speak afterwards but obtain sleep while quiet. He will get better quickly, if he has done this perhaps for three days.”

T111. Marcellus Empiricus, *De medicamentis* 28.13 (= CML V, 221.23-36):

ad lumbricos et tineas eiciendas remedium potens sic: ervi, filiciculae radices purgatas ad uncias singulas seorsum tundes bene in pila lignea, deinde adicies inulae radices ϕ octo, ammoniaci unciam et coriandri seminis manum plenam et euforbi denarios tres. has omnes species seorsum conteres bene usque ad summam levitatem et, si viridis fuerit radix filiciculae, quomodo illam tundes, sucum eius exprimes et ipsum admiscebis. facies pilulas magnitudine ea, qua ano inici possint, ipsasque factas infundes in cervesiae novae sextariis duobus et mellis cyatho. quod si in ea provincia faciendum fuerit hoc medicamentum, in qua cervisia non est, ex aqua dabis, in qua myrta cocta sit, ad sextarios duos aut cum sapae mixtae sextariis duobus atque ex eo temperabis potionem et dabis bibendam; intra horas quattuor deiciat oportet vermiculos vel tineas. ante triduum sane iubebis eum cibari alio et pane per se et tantummodo poscam bibere.

filiculae Helmreich, *filiciculae* codd.; *radices*] *radicis* Helmreich; *octo* Nelson, VIII codd.; *denarios tres* Nelson, X III codd.; *quando* Helmreich, *quomodo* codd.; *cervesiae novae* Helmreich, *cervesiae nova* codd.; *horas quattuor* Nelson, *horas IIII* codd.

“For expelled worms [*lumbrici* and *tineae*] a powerful remedy is this: you should pound cleaned roots of pulse or small ferns separately into single twelfths in a wooden mortar, then you should throw in eight measures (?) of elecampane root, one ounce of ammoniac and a handful of coriander seeds and three denarii worth of spurge. You should grind well all of these types separately until totally smooth, and if the root of pulse was green when you pounded it, you should squeeze out its juice and you will mix it in. You should make pills with the bulk of it, as far as they could be in an uneven ring, and you should pour these formed [pills] into two pints of new *cervesia* and one [Greek] ounce of honey. And yet, if this medication was being made in a province in which there is no *cervisia*, you will administer [it] from water, in which myrtle is to be boiled, up to two pints, or with two pints of mixed must, and from this you will mix the beverage and you will give it to be drunk. Within four hours it ought to drive out the little worms or *tinaea*. Before the third day you will certainly order him to eat something else and bread in and of itself and to drink only vinegar water.”

Commentary: This passage is distorted in Cassius Felix (T114). For other cures for worms using beer, see Aëtius of Amidenā (T122-123 and 125).

T112. Paulus Orosius, *Historiae adversum paganos* 5.7.13-14 (= PL 31.933B + 934A):

Context: Same as T74.

ultime omnes duabus subito portis eruperunt, larga prius potione usi non vini, cuius ferax is locus non est, sed suco tritici per artem confecto, quem sucum a calefaciendo caeliam vocant. | suscitatur enim igne illa vis germinis madefactae frugis ac deinde siccatur et post in farinam redacta molli suco admiscetur; quo fermentato sapor austeritatis et calor ebrietatis adicitur. hac igitur potione post longam famem recalescentes bello sese obtulerunt.

ultime] ultimo PL, Paulus; *duabus subito*] subito duabus Paulus; *portis*] fortis D; *eruperunt*, *erumpunt* Paulus; *potione*] ponicione F, putione D, posione P¹; *suco*] succo Paulus; *sucum*] succum Paulus; *igne*] ignea pl. codd., Paulus; *illa vis*] vis illa Paulus; *vis*] vir D; *suco*] succo Paulus; *admiscetur*] miscetur F, ammiscetur U; *quo*] cui FH; *fermentato* pl. codd. Isidori, Nelson, *fermento* codd.; *adicitur*] adiicitur Paulus.

“In the end, they [i.e. the Numantians] all rushed suddenly from their two gates, having before made great use of a drink which was not wine (of which this fertile land is deprived), but with the juice of wheat made through skill, which juice they call *caelia* from being heated [*calefacio*]. In fact the potency of the grain of the soaked fruit [i.e. cereal] is activated by this fire and then it is dried, and after being reduced to flour is mixed with soft juice. With this fermentation, a flavour of harshness and heat of intoxication is conferred. Therefore, warming themselves up again with this drink after a long famine, they presented themselves for war.”

Commentary: Orosius (like Florus [T74]) may have been indebted to Livy’s account of the siege of Numantia (all of which survives is *Epit.* 59.1) or possibly that of Polybius. Orosius’s passage was copied by Gregory of Tours (T119), Isidore of Seville (T136), and Paul the Deacon (T173), and perhaps was also glossed (T221). Furthermore, the first part of this passage is also found in the abbreviated Old English translation of Orosius by an anonymous scholar during the last years of King Alfred’s reign (A.D. 871-899) (for the authorship and date, see Bately 1980:

lxxiii-xciii). There the word *ealo* ("ale") is used to translate *caelia* (5.3 [edited in Bately 1980: 117]). Interestingly, the translator leaves off from Orosius's account of northern Europe at 1.2.53 and goes on to describe the area in his own day (apparently under the influence of the traveller Wulfstan), saying for one: "No ale at all is brewed among the Ests" (*naenig ealo gebrowen mid Estum* [1.1 (edited in Bately 1980: 17)]). However, further on in the same passage he mentions vessels of ale (Bately 1980: 17-18), showing that the statement that the Ests were not brewers may be a mistake (see Bately 1980: 199 and 200). The Ests, who live by the Baltic Sea, may be the same as Tacitus's *Aestii* (*Germ.* 45.2) who are said to live near the Suebic (that is, the Baltic) Sea, and whose customs are said to be like those of the Suebi but whose language is said (certainly incorrectly) to be like that of the British. For the Suebi as beer-drinkers, see T149.

T113. Pseudo-Augustinus, *Ad fratres in eremo sermo* (= PL 40.1286):

Context: In instructions for monks living in the desert, it is warned that the body needs food and drink.

nam cum videam inter vos quosdam sexagenarios, quosdam septuagenarios, quosdam centenarios, videns eos Dei amore ferventes, corpora eorum crucifigentes, vinum etiam non bibentes, timeo ne potius Deum offendant quam placent. talibus in Christi nomine praecipio, ut saltem diebus dominicis et solemnibus vinum vel cervisiam bibant.

"For whenever I see those among you who are in their sixties, seventies, hundreds, seeing that they are fervent for the love of God, crucifying their bodies, even not drinking wine, I fear lest they offend all the more God whom they should please. Because of this, I admonish in the name of Christ, that they drink wine or *cervisia* save on the Lord's days and holy days."

Commentary: This treatise is preserved in Augustine's work but is by a later author. Jerome had earlier said that only the older monks drank wine in Egypt (*Epist.* 22.35 [120] [= PL 22.420]).

T114. Cassius Felix, *De medicina* 72 (= 175, n. Rose):

ad lumbricos.

... eas factas infundes in cervisae novae sextariis duobus. si inventa non fuerit ex aqua calida dabis ...

infundes Nelson (cf. Marcellus), *infundis* cod.; *cervisae novae* Nelson (cf. Marcellus), *cervisa nova* cod.

"For worms:

"... you should pour these formed [pills] into six pints of new *cervisa*. If it was not found, you should administer [it] from hot water ..."

Commentary: This passage is a distortion of Marcellus (T111).

T115. Venantius Fortunatus, *Appendix carminum* 9.15-18 (= MGH-AA IV.1, 281-282 [not in PL]):

sed Dagaulfum haec rumpat cervesia tristis,

*faece lagunari turbida, tendat hydrops:
faucibus in stupidis talem bibat ille liquorem,
tam male sinceram qui vitiavit aquas.*

lagunari] *lacunari* codd.

“But this sorrowful *cervesia* broke Degaulfus, with the muddy dregs of the flask, and offered dropsy. He himself drank such a liquid in his foolish throat, which so evilly infected pure waters.”

Commentary: This may be the last extant ancient Western source entirely denigrating beer.

T116. Venantius Fortunatus, *Vita Sanctae Radegundis reginae* 1.15 (= *PL* 72.657A and 88.504A = *MGH-SRM* II, 369.24-25):

Context: The restraint of St. Radegundis (who died in A.D. 587) is described.

vini vero puritatem aut medi decoctionem cervisaeque turbidinem non contigit.

“Truly she did not seize the purity of wine or the boiling-down of mead and the cloudiness of *cervisa*.”

Commentary: Beer is not mentioned in the life of St. Radegundis written by Baudonivia (= *MGH-SRM* II, 377-395).

T117. Gildas, *De paenitentia* 22 (= *MGH-AA* XIII, 90 = *SLH* V, 62.28-31) or 15 (= *PL* 96.1316D):

qui voluntate obsceno liquore maculatus fuerit dormiendo, si cervisa et carne habundat coenubium, III noctis horis stando vigilet, si sane virtutis est. si vero pauperem victum habet, XXVIII aut XXX psalmos canat stando suplex, aut opere extraordinario pendat.

“He who has been polluted during sleep willingly by indecent liquid, if the monastery abounds in *cervisa* and meat, he should keep awake standing for three hours of the night, if his health is strong. If in fact it [i.e. the monastery] has poor fare, as a suppliant he should sing twenty-eight or thirty psalms while standing, or pay with extra work.”

Commentary: Gildas wrote a monastic rule which no longer survives, but which probably allowed the drinking of beer and which also influenced Columban (T128).

T118. Anthimus, *De observatione ciborum epistula ad Theudericum regem Francorum* 15 (= *CML* VIII.1, 10.6-11 [not in *PL*]):

Context: Anthimus suggested to King Theuderic which drinks were healthy.

cervisa bibendo vel medus vel aloxinum quam maxime omnibus congruum est ex toto, quia cervisa quae bene facta fuerit beneficium praestat et rationem habet et sicut tisana quam nos facimus alio genere. tamen generaliter frigida est. similiter et medus bene factum ut mel bene habeat, multum iuvat.

vel medus vel Nelson, vel metus et A, et medus vel B, et medonem et l, vel met et P, vel medo vel p, et medus vel ed., Rose, vel medus et Weber; ex toto, quia cervisa Nelson, ex toto. quia cervisa Abg, Rose, et tota quidem cervisa P, [ex toto], quia cervisa Weber; quae bene Rose, quae bene gPlp, quia bene A, qui bene CML, Weber; beneficium praestat et rationem habet Nelson, beneficium praestat et rationem habet B, beneficium habet et rationem praestat ed., beneficium praestat et rationem habet CML, Weber, rationem habet et beneficium praestat AgP, Rose; et sicut] sicut et ed.; tisana Rose, tesanae CML, te(i)sane G, ette sani A; etthesane B, et tipsanas P, pthipsina l, et tysana p, et tysse g, tisane Weber, et tisana Holder; quam nos facimus alio genere Rose, quae nos facimus alio genere CML, quae nos facimus [alio genere] Weber, quod nos facimus alio genere P; norum nos g. quae (que) facimus alio genere Ag, norum nos g. quae (que) facimus GB, quam nos facimus p; tamen generaliter frigida est. GBp, (tamen generaliter frigida est). Weber (om. ed., Rose); medus Nelson, de medus Bg, CML, de medo ed., Rose, dem&us G, de medis A, de mezo P, medum l, de medone p, de metus Weber; factum CML, facto al.; iuvat. <aloxinum ...>? Nelson.

“It is on the whole extremely suitable for all to drink *cervisa* or mead or spiced mead, since *cervisa* which has been well made is excellent in terms of benefits and is reasonable, just like the barley soup which we make in another way. However it is usually cold. Similarly also mead made well, as long as the honey it has is good, helps a lot.”

Commentary: Compare Celsus’s positive medical assessment of beer and his statement that the mead with the most honey is best (T36).

T119. David, *Excerpta* 11 (= *SLH* V, 70.33 + 72.1-2) or 5 (= *PL* 96.1318D):

Context: David listed the options for penance for a presbyter, deacon, subdeacon, or virgin who sinned, or for anyone who committed homicide, bestiality, slept with his sister or another’s wife, or planned to kill someone with poisons.

alia est paenitentia III annis, sed himina de cervissa vel lacte cum pane saleque altera duabus noctibus cum prandii ratione.

cervissa] *cervisia* *PL*.

“Another penance is for three years, but with half a pint of *cervissa* or milk with bread and salt every second night with a ration of dinner.”

Commentary: A little beer is also allowed when fasting in an Irish penitential (T137), while Theodore allows plain beer during fasts but not honey beer (with which, see T212 and 216), and beer is also allowed during a meat fast in Wolfhard (T219). Beer is not allowed at all in one penance for divining (T166). There also exists an Old Irish penitential from the late eighth century in which beer is mentioned (7, 14, and 15 [= *SLH* V 260 + 261]); see further T161. Under Charlemagne, beer was to be abstained from by all on certain days of the year (T191).

T120. Justinianus, *Digesta* 33.6.9 from Ulpianus, *Sabinus* 23 (= T84).

T121. Aëtius Amidenus, *Libri medicinales* 1.154, s.v. ζύθος (= CMG VIII.1, 73.22-23):

ζύθος δριμύτερός ἐστι τῶν κριθῶν οὐ σμικρῶς καὶ κακόχυμος, ὥς ἂν ἐκ σηπεδόνης γεννώμενος, ἔστι δὲ καὶ φυσώδης.

ζύθος Nelson, ζύθος codd.; οὐ σμικρῶς καὶ] οὐ σμικρῶ Galen, οὐ μικρῶ Oribasius; γεγωνός codd. et Oribasius, γεγενημένος Galen; δὲ φυσώδης] δὲ καὶ φυσώδης Galen; ἔχων codd. et Oribasius, ἔχον Galen, ἔχει Oribasius,

“*Zūthos* is very pungent, [made] of barley (not with a little), is bad for the humours since it may arise from that which is rotten, and also causes flatulence.”

Commentary: Aëtius is indebted here to Galen (T69).

T122. Aëtius Amidenus, *Libri medicinales* 1.285, s.v. μυοσωτίς (= CMG VIII.1, 112.16, 17-18):

μυοσωτίς ... ὁ δὲ χυλὸς αὐτῆς ὅσον κύαθος μετὰ ζύθου πινόμενος τὴν πλατεῖαν ἔλμινθα ἀπαραβάτως ἐκτινιάσσει.

“Madwort: ... Its juice, as much as an ounce drunk with *zūthos*, shakes out the flat worm without transgressing [i.e. without the use of an invasive procedure].”

Commentary: For this use of madwort juice and beer, see also T123 and 125. Compare the cure in Marcellus (T111) copied by Cassius Felix (T114).

T123. Aëtius Amidenus, *Libri medicinales* 3.156 (= CMG VIII.1, 326.3, 5-6):

ἐλμίνθων κενωτικά· ... μυοσώτιδος ὁ χυλὸς μετὰ ζύθου πινόμενος ...

μυοσώτιδος Nelson, μυώτιδος codd.

“Expellers of worms ... the juice of madwort drunk with *zūthos* ...”

Commentary: See T122.

T124. Aëtius Amidenus, *Libri medicinales* 4.6 (= CMG VIII.1, 362.8, 30-363.9) from Antyllus (= T65b).

T125. Aëtius Amidenus, *Libri medicinales* 9.37 (= CMG VIII.1, 369.31 + 370.15-16):

περὶ πλατείας ἔλμινθος·

... ὁ τῆς μυοσώτιδος χυλὸς, ὅσον κύαθοι δύο, μετὰ κύαθου ἐνὸς ζύθου πινόμενος.

μυοσωτίδος Nelson, μυωτίδος ed.

“On the flat worm: ... drinking the juice of madwort, as much as two ounces, with one ounce of *zūthos*.”

Commentary: See T123.

T126. Aëtius Amidenus, *Libri medicinales* 13.12 (= *CMG* VIII.1, 268.6-7 + 269.20-21):

κοινὰ βοηθήματα πρὸς τὰς τῶν ἰοβόλων πληγὰς·
... σίνηπι λείον μετὰ ζύθου ἐπιτίθει.

“Common aids against arrow wounds:

“... apply [on the wound] crushed mustard with *zūthos*.”

Commentary: Such a recipe involving beer is attested nowhere else.

T127. Aëtius Amidenus, *Libri medicinales* 13.22 (= *CMG* VIII.1, 280.20 + 282.1-3):

περὶ ἀσπιδοθήκτων· ...

εἰς δὲ τὸ καλῶς ἀπεμέσαι τὴν ἐκ τῆς ἀναδόσεως τοῦ ἰοῦ φαυλότητα, σκόρδα λεάνας δίδου μετὰ ζύθου ἕως ὑπόναυτος γένηται.

καλῶς ἀπεμέσαι] ἀπερᾶσαι Philumenus; ἀναδόσεως] ἀντιδόσεως Philumenus; τοῦ ἰοῦ φαυλότητα] φαυλότητα Philumenus; φαυλότητα, σκόρδα] σκόροδα ed., φαυλότητα καὶ τροπὴν τὴν ἐν τῷ στομάχῳ σκόρδα Philumenus; ὑπόναυτος] ὑποναύσιος Philumenus.

“On being bitten by an asp:

“For the proper throwing up of the very little from that given forth of the venom [of the asp], give crushed garlic with *zūthos* until he [i.e. the one bitten by the asp] is slightly nauseated.”

Commentary: This is evidently copied from Philumenus (T67).

T128. Sanctus Columbanus, *Regula coenobialis fratrum* 3 (= *SLH* II, 146.21-29) or 10 (= *PL* 80.217A [not in *CCM*]):

Context: The following forms part of the section on the punishments of monks for sins and offenses.

quod si ex negligentia vel oblivione seu transgressione securitatis tam in liquidis quam in aridis amplius solito perdiderit, longa venia in ecclesia dum duodecim psalmos ad duodecimam canunt prostratus nullum membrum movens paeniteat. vel certe si multum est quod effudit, quantos metranos de cervisa aut mensuras qualiumcumque rerum intercidente negligentia effundens perdidit, supputans tot diebus illud quod in sumptus proprios rite accipere consueverat, sibi ea perdidisse sciat, ut pro cervisa aquam bibat. de effuso super mensam decidenteque extra eam veniam in discubitu petere dicimus sufficere.

quod si ex negligentia SLH, si negligentia PL; vel oblivione SLH, aut oblivione PL; quantos metranos SLH, quadranos PL; intercedente SLH, intercedente PL; supputans SLH, supputatis PL; proprios rite SLH, proprios vitae PL; sibi ea SLH, sibi eam PL; de effuso SLH, diffuso PL; discubitu petere dicimus sufficere SLH, discubito sufficere PL.

“But if because of negligence or distraction or mistake in care he has lost more than usual in liquids or solids, let him do penance with a long pardon in church while they sing twelve psalms at twelve while he is prostrate and moving no limb. Or if indeed what he spilled was much, as many measures of *cervisa* or portions of whatever things he lost by spilling in the event of neglect, let him supply for that number of days what he was used to receiving lawfully for his own, and let him know that he lost it for himself, so that he will drink water rather than *cervisa*. Concerning what is spilled on the table and runs off, we say it is enough to seek pardon in his place.”

Commentary: Columban’s rule, considered quite strict, is the earliest surviving Latin Irish monastic rule. Columban may have been indebted to Gildas’s lost rule (see T117). Columban’s *Regula monachorum* also has a section (3) on food and drink, but no mention is made there of beer, nor is beer mentioned in his penitential (PL 80.223-230), which was based on that of Theodore, in which beer is mentioned (see T130-131). For miracles involving beer attributed to Columban, see T146-147 and 149.

T129. Gregorius Turonensis, *De gloria confessorum* 1 (= PL 71.829BC + 830B = MGH-SRM I.2, 748.25-749.12):

Context: Gregory wrote works on miracles of various Saints, and this is his eighth book, “On the glory of the confessors,” a compilation of miracles not yet recorded by others, some of which he claimed to have seen himself and others he claimed to have learned from trustworthy sources. He begs forgiveness for his lowly style and begins his work with this miracle.

de virtutibus angelorum.

igitur dum in Averno territorio commorarer, vir mihi fidelis retulit, et scio quia vera narravit, quia evidenter cognovi gesta fuisse quae dixit. iubet, inquit, fieri, ex annonis aqua infusis atque decoctis, messoribus poculum praeparari. hanc autem coctionem Orosius a coquendo cealiam vocari narravit. quod cum praeparatum fuisset, et in vase reconditum, atque ille apud urbem moras innecteret, ut mos servorum est, maxima parte exhausta, exiguum dominicis usibus reliquerunt. ille quoque fidus de iussione invitare messorum iubet, ut eo ab urbe redeunte hos segetem decidere reperiret. quo facto iam operariis in segete collocatis circiter septuaginta, advenit dominus fundi, perscrutansque qualitatem quantitatemque potus, perparum reperit. tunc pudore confusus, et sibi factum ad verecundiam reputans, ne potus deficeret operariis, quod, ut ipse arbitrabatur, super quinque modiorum mensuram non erat, quid ageret, quo se verteret, in ambiguo dependebat. tandem inspirante Domino, conversus ad vasculum, nomina angelorum sanctorum, quae sacrae docent lectiones, super aditum eius devote invocat, orans ut virtus eorum parvitatem hanc in abundantiam convertere dignaretur, ne operariis deficeret quod haurirent. mirum dictu! tota die ab hoc extractum nunquam defuit bibentibus; se usquequo nox finem operandi fecit, omnibus fuit in abundantia ministratum.

coquendo] calefaciendo? Nelson (cf. Orosius); *ceriam* cod. Laud., PL, *caeliam* cet. codd., *coctiam* edd.; *narravit. quod* Nelson, *narravit: quod*. Migne.

“On the powers of angels.

“While I was living in the territory of Avernus, a trustworthy man talked to me, and I know that he recounted true things because I knew clearly that what he said had happened. He said that he ordered a drink to be prepared for the reapers, to be made from cereals soaked and boiled in water. Orosius, moreover, related that this brew was called *caelia* from being cooked [= T113]. When it had been prepared and stored in a vessel, and the man got entangled in delays in the city, as is habitual for the slaves, the most part was drunk and they [i.e. the slaves] left a little for the uses of the lord. The man, trusting in his order, ordered the reapers to be invited, so that when he returned from the city he would find them cutting his cereals. With this done, already seventy workers were gathered around in the cereal field. The lord of the estate arrived, and inspecting the quality and the quantity of the drink, found only a little. Then disturbed by shame, thinking that it was done to him to embarrass him so that there would be drink wanting for workers, since, as he himself determined, there was not more than five pecks in measure [left]. He hung in uncertainty about what he should do, where he should turn. Finally, with the inspiration of the Lord, he turned to the small vessel and over its opening piously called the names of the holy angels which the holy readings teach, praying that their power might deem it worthy to change this small amount into an abundance, so that there would not be wanting something for the workers to drink. What a marvel to report! For the whole day there was never lacking [drink] to draw out from it [i.e. the vessel] for the drinkers; until night put an end to work, there was provision in abundance for all.”

Commentary: Other authors mention miracles involving the multiplication of beer (see concerning St. Brigid [T141 and 164], St. Mochuda [T144], the body of St. Arnulf [T151-152], St. Columban [T147], the abbess Sadalberga [T155], and St. John of Beverly [T169]). Gregory speaks elsewhere of a temple in Agrippina (Cologne) in which libations of vomited up food and drink (perhaps beer) were made (*Vit. patr.* 6.2 [= PL 71.1031A = MGH-SRM 1.2, 231.15-16]).

T130. Sanctus Theodorus Cantuariensis, *Liber poenitentialis* 1 (= PL 99.935D + 936D + 937B [not in MEA]):

Context: This is the beginning of the penitential of Theodore of Tarsus, Cilicia (who moved to Canterbury, Britain in A.D. 669), addressed to British Catholics and meant to replace Irish traditions with Roman ones.

poenitentia illius anni unius: qui in pane et aqua jejunandus est, talis esse debet: in unaquaque hebdomada tres dies, id est tertiam feriam, quintam et sabbatum a vino, medone, mellita cervisia, a carne, et sagimine, et caseo, et ovis, et abdomine, et omni pingui pisce se abstineat. manducet autem minutos pisciculos, si habere potest; si habere non potest, tantum unius generis piscem, legumina, et olera, et poma, si vult, comedat, et cervisiam bibat. ... poenitentia istius anni talis esse debet ... cervisiam bibat, sed sobrie.

tertiā feriam, quitam Nelson; *feriam quitam* PL; *mellita cervisia* Nelson; *mellita et cervisia* PL; *omni pingui pisce* PL; *pinguibus piscibus* Halitgarius; *si habere non potest, tantum* PL; *sin autem*, Halitgarius; *si vult* PL; *om.*

Halitgarius.

“The penance of that [the first] single year [for] whoever is to be fasting on bread and water should be as follows: for three days for each week, that is, on the third holiday, the fifth, and the Sabbath he is to abstain from wine, mead, honeyed *cervisia*, from meat and herbs, and cheese, and eggs, and belly, and any fat fish. However, he may eat small little fish, if he can obtain it; if he does not have it, he may consume as much as he wants of one kind of fish, vegetables, and oil, and fruit, and he may drink *cervisia*. ...

“The penance of this [the second] year should be as follows: ... he may drink *cervisia*, but soberly.”

Commentary: This passage is copied in the following century by Halitgarius (T189) and in the eleventh century A.D. by Burchard of Worms (*Decretum* 19.9 [= *PL* 140.980C-D], and see 6.2 [= 765B], 6.40 [= 774D + 775A], and 10 [= 981A-B]) and Ivo of Chartres (*Decretum* 189 [= *PL* 161.897A]). For the allowance of beer during fasts, see David (T119). For honeyed beer being forbidden in penances for homicide, see T212, 215, and 216.

T131. Sanctus Theodorus Cantuariensis, *Liber poenitentialis* 26.14 (= *MEA* 2.32 [not in *PL*]):

Context: The following passage occurs in Theodore’s section “On intoxication and vomiting” (*De ebrietate et vomitu*).

qui vero inebriantur vino vel cervisia, contra praeceptum Domini Salvatoris ac apostolorum eius, (hoc est ebriositas, quando status mentis mutant, et linguae balbutiunt, et oculi turbantur, et vertigo erit capitis, et ventris distensio, ac dolor sequitur). laicus ebdomadam unam cum pane et aqua poeniteat, clericus ebdomadas duas, subdiaconus † XV † dies, diaconus et monachus ebdomadas tres, presbiter quattuor, episcopus quinque.

status Nelson, *statum* codd.; *unam* Nelson, I codd.; *duas* Nelson, II codd.; *tres* Nelson, III codd.; *quattuor* Nelson, III codd.; *quinque* Nelson, V codd.

“Whoever truly is intoxicated on wine or *cervisia*, [does so] against the order of the Lord Saviour and his apostles (now intoxication is [the condition] when states of mind change and tongues stammer and eyes roll and there will be dizziness of the head and the swelling of the stomach and pain follows [i.e. a hangover]); a lay person [who has done this] should repent for one week with bread and water, a priest two weeks, a sub-deacon fifteen [?] days, a deacon and monk three weeks, an elder four, a bishop five.”

Commentary: The beginning of this passage is found in an Irish penitential (T161) and was copied from here by Halitgarius (T188).

T132. Paulus Aegineta, *Epitomae medicae* 7.3.6, s.v. ζῦθος (= *CMG* IX.1, 213.13-15):

ζῦθος σύνθετός ἐστι τὴν οὐσίαν· καὶ γὰρ δριμύς ὥς ἂν ἐκ σηπεδόνης γεγενημένος καὶ ψυχρὸς ἐκ τῆς ὀξώδους ποιότητος· δι’ ὃ καὶ κακόχυμος.

ζύθος Nelson, ζύθος cod; δριμύς ὡς ἄν] κακόχυμος, ὡς ἄν Galen.

“*Zūthos* is a man-made [or compound] substance. It is pungent since it may arise from that which is rotten, and it causes cold because of its sourness. Therefore it is bad for the humours.”

Commentary: The source for the first part of this passage is unknown; the second part is taken from Galen (T69).

T133. Anonymus, *Regula cuiusdam patris ad virgines* 10 (= PL 88.1062B-C [not in CCM]):

Context: This passage and the following are form a rule for Irish nuns.

potus vero sicerae liquoris, id est cervisiae, mensura solita tribuatur. si voluntas abbatissae fuerit, vel labor, vel festus dies, vel hospitis adventus pia precatio exagitaverit, vino potio augenda est.

potus vero codd., *potus vero si* Benedict.; *si voluntas abbatissae* codd., *si voluntas* Benedict.; *vel labor* Benedict., *si labor* codd.

“Truly, as a drink, a single measure of liquid *sicera*, that is of *cervisia*, is allotted. If there will be a choice by the abbess, or work, or a feast day, or the holy prayer of a guest who has arrived has incited it, wine is to be offered as a drink.”

Commentary: This passage was later copied by Benedict (T192) who applied it to monks rather than nuns.

T134. Anonymus, *Regula cuiusdam patris ad virgines* 12 (= PL 88.1064B [not in CCM]):

similiter et quae in braxatorium ad cervisiam faciendam inhabitaverint, unus ex eis senior praeposita quae secundum regulam pistricis omnia custodiat.

quae codd., *qui* Benedict.; *braxatorium* codd., *brachisitorium* Benedict.; *senior* Benedict., *senior sit* codd.; *praeposita quae* codd., *praepositus* Benedict.; *pistricis* codd., *pistoris* Benedict.

“Similarly also those women who had inhabited the *braxatorium* [i.e. brewery] for the making of *cervisia*, one of them, the older one appointed, is to keep watch over all, according to the rule of the miller.”

Commentary: This rule was also copied by Benedict (T192).

T135. Anonymus, *Translatio reliquiarum Sanctorum Chrysanthi et Dariae* 2.31 (= ASS 59.494B-C):

Context: Saint Chrysanthus and Saint Daria were martyred in the late third or early fourth century A.D.

villa quaedam est non longe a monasterii possessione, quae Wisa vocatur. huius igitur habitatores condixerant sibi omnes pariter ad locum contendere, et ut non vacua viderentur

venire manu, conlatione facta vas, quod cupa dicitur, cervisia impleverant, ut etiam dono muneris Deo et sanctis martyribus vota persolverent. cum igitur iam properare disponent, consilio habito qualitatem prius tentare voluerunt potus, antequam iter arriperent. cuniculo itaque facto, nec parva quidem eo digeri potuit gutta. verum a ministro segniter hoc putantes peractum, alio delecto succedere fecerunt, ut terebrato cupae fundo potum educeret. huic aliis succedentibus, cum omnis eorum penitus frustraretur labor, ad semet reversi cognoverunt, eundem potum ea nocte, quae Dominica dicitur, confectum. agnoscentes itaque reatum, poenitudinem piaculi gerentes, votum Deo ac beatis vovere martyribus, se nil ulterius tale in ea pertentaturos nocte, ipsumque potum egenis ac pauperibus erogaturos. mox voto peracto, omnibus egressus foraminibus potus largissime coepit effluere. hoc pro voto egenis distributo, alioque confecto, sicut disposuerant, ad memoriam venientes Sanctorum, ibique proprii reatus confitentes culpam, votisque persolutis ad propria sunt reversi.

“There is a certain village which is not far from the possession of the monastery [of Chrysanthus and Daria] which is called Wisa. Therefore all its inhabitants promised them likewise to hurry to the place, and so as not to seem to be arriving empty-handed, having made a collection, they filled with *cervisia* a vessel which is called a *cupa* [i.e. a barrel], so that they could also offer vows for the giving of a present to God and the holy martyrs [i.e. Chrysanthus and Daria]. When therefore they already arranged to hurry, conforming to the usual plan, they had not wanted to test beforehand the quality of the drink before they set out on their journey. Thus with the rabbit-hole made, not even a small drop was able to be dispersed from it. Reckoning that this had been accomplished lazily by the attendant, they had [him] replaced by a another picked man, so that they he would draw up the drink from the perforated bottom of the *cupa* [i.e. barrel]. After others had also replaced him [and] the work was completed in vain with all of them, they returned to it and [finally] understood [why this was happening], since this drink had been made on the night which is called the Lord’s day [i.e. Sunday]. Thus not ignorant [any longer] of their fault, they carried out the penitence of appeasing, pledging a vow to God and the blessed martyrs [i.e. Chrysanthus and Daria] that nothing further would be attempted by them in this way on that night [i.e. on Sunday nights], and that they would distribute this drink to those in want and to paupers. Once the vow was made, the drink again began to flow out mightily, leaving through all the openings. In conformity to their vow this was given to those in want, and they similarly disposed of other [beer] that was made, going in the remembrance of the Saints, and when each of those at fault had confessed their guilt, and the vow was accomplished, things returned to normal.”

Commentary: This hagiography relates a story that happened long after the two martyred Saints died and, because of the reference to a monastery and to beer in barrels (which is similar to that in Jonas [T149]), I assume that it was written no earlier than the seventh century A.D. In the late eighth or early ninth century, Remedius wrote that beer was not to be made on Sundays (T177).

T136. Isidorus, *Etymologiarum sive originum* 20.3.16-18 (= PL 82.713C-714A):

Context: At the beginning of book 20, Isidore discusses kitchen items, including tables (1), food (2), drink (3), including beer briefly, and then dishes, vessels, and utensils (4-9).

sicera est omnis potio quae extra vinum inebriare potest. cuius licet nomen Hebraeum est, tamen Latinum sonat pro eo quod ex suco frumenti vel pomorum conficiatur, aut palmarum fructus in liquorem exprimantur, coctisque frugibus aqua pinguior, quasi sucus, colatur, et ipsa potio sicera nuncupatur. | cervisia a Cerere, id est fruge vocata; est enim potio ex seminibus frumenti vario modo confecta. | caelia a calefaciendo appellata; est enim potio ex suco tritici per artem confecta. suscitatur enim igne illa vis germinis madefactae frugis ac deinde siccatur et post in farinam redacta molli suco admiscetur; quo fermentato sapor austeritatis et calor ebrietatis adicitur. quae fit in his partibus Hispaniae cuius ferax vini locus non est. fex dicta, quod sese vasis emergendo adfigat.

licet] libet B¹; *Hebraeum est* C, *Hebraeum sit* BK, *Hebraeum si* T; *frumenti]* frumentorum K, *fermenti* BT; *vel pomorum]* et pomorum K; *aut]* ut T; *exprimantur]* exprimatur K; *aqua]* aquae Jerome; *sucus]* sucas B¹; *sicera]* sicere B; *cervisia]* cervisa BCT; *a Cerere]* a cere B1; *caelia]* celia BCTU, *celea* KN; *per artem]* perarte B; *enim igne]* enim ignea BTU, *enim* KN; *frugis]* fruges B; *siccatur]* siccata C; *suco]* sucu K; *quo]* quod KT; *fermentato]* fermenta B¹, *fermento* Orosius; *sapor]* Orosius, *sapore* B; *partibus Hispaniae]* Hispaniae partibus C.

“*Sicera* is [the name for] every beverage which is able to intoxicate apart from wine. Although its name is Hebrew, Latin signifies by it that which is made from the juice of cereal or of apples, or the fruit of palms squeezed into a liquid, and with boiled fruits water is coloured more densely, like the juice, and this drink is called *sicera*. [= T99] | *Cervisia* is named from Ceres, that is from fruit [i.e. cereal]; it is in effect a drink made in different ways from the seeds of cereal [or wheat?]. | *Caelia* is [so] called from being heated when made [*calefacio*]; it is in effect a drink made from the juice of wheat through skill. In fact the potency of the grain of the soaked fruit [i.e. cereal] is activated by this fire and then it is dried, and after being reduced to flour is mixed with soft juice. With this fermentation, a flavour of harshness and a heat of intoxication is conferred [= T112]. These [drinks] may be in those parts of Hispania which is not a place fertile in vines. That which is gathered from the overflowing vessels is called *fex* [i.e. the dregs].”

Commentary: The origins of the first and third parts of this passage can be traced, but it impossible to know the source of the second part (on *cervisia*) (this connection with Ceres is found nowhere else) or the last line concerning dregs.

T137. Anonymus, *Canones Hibernenses* 2.12 (= *SLH* V, 166.11-13, col. 1 [not in *PL*]):

Context: A number of fasts as penitence for various sins have been mentioned in this collection of Irish canons for ecclesiastical use.

haec omnia jejunia sine carne et vino nisi parvum de herbisa in cella aliena per tempus.

“All these fasts are without meat and wine, except for a small amount of *herbisa* in another church at times.”

Commentary: The word *herbisa* here seems to be equivalent to *cervisa* (or *cerbisa* [for which see T177]). For beer being allowed during fasts, see David (T119), with the further references cited there.

T138a-c. Hlotharius II, *Lex alamannorum* 22.1 (= MGH-L III, 51.23-24) = Lantfridana, *Lex alamannorum* 20 (= MGH-L III, 96.10-11) = Karolina, *Lex alamannorum* 22 (= MGH-L III, 137.14-15 + 138.1):

qualiter servi eccelsiae tributa solvere debeant:

servi enim ecclesiae tributa sua legitime reddant, quindecim siclas de cervisa, de porco valente tremissem unum, pane ia dua, pullos quinque, ova viginti.

qualiter ... debeat Karolina; *cervisa*] *cervisia* B2 et D3, *cirvisa* Lind.; *de porco valente* Nelson, *porco valente* Hlotharius, *porcum valentem* al.; *tremissem unum* Nelson, *tremisse uno* al.; *de pane* Nelson, *pane* Hlotharius et Lantfridana, *panem* Karolina.

“As much tribute as the serfs owe as payment to the Church:

“The serfs, according to law, should give back as their tribute to the Church fifteen jars of *cervisa*, one *tremissis* of [i.e. worth one third of an as] a healthy pig, two pecks of bread, five chickens, twenty eggs.”

Commentary: This is the earliest evidence for beer as part of a tithe to the Church (here in Germany). See also the tithe of hopped beer in Ansegis (T206) and the tithes of hops mentioned by Adalhard (T204) and of malt and hops in Hilduin (T208).

T139a. Anonymus, *Vita Sancti Aidani sive Maedoci* 2.14 (= ASS 3.729h-i = VSH 2.146):

Context: St. Maedoc or Maedhog (or Aidanus) from Connaught, Ireland, bishop of Ferna, died in A.D. 626.

quodam die missus est S[anctus] Maedhog, ut adduceret plaustrum cum cerevisia ad monasterium. sed cum pervenisset ad quamdam vallem, plaustrum cum bobus per casum de silice in declivio cecidit. sed signans vir Dei signum crucis contra casum, nihil fractum est de plaustro, nihil periit de cerevisia, nec nocuit animalibus. adhuc per hoc signum nomen Dei magnificatum est per S[anctum] Maedhog.

cerevisia ASS, *cervisia* VSH; *sed cum pervenisset* ASS, *set cum venisset* VSH; *nihil* ASS, *nichil* VSH; *cerevisia* ASS, *cervisia* VSH.

“On a certain day, Saint Maedhog was sent that he might drive a wagon with *cerevisia* to the monastery. But when he had arrived at the walls the wagon with the oxen broke down by accident because of a rock on the slope. However, once the man of God made the sign of the cross against the accident, nothing was broken on the wagon and none of the *cerevisia* was lost, nor did harm come to the animals. So far through this sign God was magnificent, through Saint Maedhog.”

T139b. Anonymus, *Vita Sancti Aidi* 14 (= VSH 2.299 [not in ASS]):

alio autem die sanctus puer Aidus portavit vas tributi plenum de cervisia ad suam civitatem. cum vero venisset ad aliud iter difficile iuxta vallem, cecidit plaustrum cum vase in vallem et

cum bobus. puer autem sanctus signavit vas et boves, et non perit etiam una gutta de vase, donec pervenit plastrum incolume ad terram planam.

cervisia] *cervisa* pl. codd.

“However, on another day, the holy boy Aidus carried as tribute a vessel full of *cervisia* to his city. When truly he had arrived at another difficult [i.e. sloping] path next to the wall, the wagon fell toward the wall with the vessel and oxen. However, the holy boy made the sign [of the cross] over the vessel and oxen, and not one drop was lost from the vessel, and the wagon arrived without incident to level ground.”

T140. Anonymus, *Vita Sanctae Brigidae* 2.10 (= ASS 4.120D):

Context: Brigid of Kildare, Ireland (c. A.D. 450s to 520s) performs numerous miracles.

nutrix autem eius dolens misit S[anctam] Brigidam et aliam puellam cum ea ad domum cuiusdam viri, ut postularent potum cerevisiae aegrotanti; et nihil inde sumentes ad propriam domum reversae sunt. tunc S[ancta] Brigida declinavit ad puteum, et implevit vasculum suum aqua, et facta est cerevisia optima: et cum gustasset nutrix sua, surrexit sana.

“Her wetnurse, suffering, sent Saint Brigid and another girl with her to the home of her husband, to ask for a drink of *cerevisia* for the illness. But obtaining nothing from there they returned to their own house. Then Saint Brigid turned aside toward a well, and filled up her own vessel with water and it became the best *cerevisia*; and when her wetnurse had tasted it, she regained her health.”

Commentary: This miracle is also found in the verse life of Chilianus (T164) and in the very similar Old Irish life of St. Brigid from the early ninth C. A.D. (*Bethu Brigte* 8 [in O’Brien 1938: 123]), which may have relied on a source also used by this author (see Sharpe 1982: 95-96). The author of this life (which is the earliest surviving Irish hagiography in Latin), or perhaps of his source, may be Aileranus or Ultán (for which, see T143) (see McCone 1982: esp. 136, Sharpe 1982: 92, 94, and 101 and 1991: 15 [unwilling to guess the author], and Howlett 1998: esp. 19-22). For further Old Irish sources on Brigid’s beery miracles, see Henken 1987: 325. For miracles of water turning into beer, see also that of St. Mochutu (T145). For water turning into wine, see that of St. Cuthbert (T162).

T141. Anonymus, *Vita Sanctae Brigidae* 3.18 (= ASS 4.121D):

cum autem dies Paschae appropinquaret, voluit S[ancta] Brigida coenam facere omnibus ecclesiis, quae circa se in circuitu oppidorum Medi fuerant. illa tamen materiam coenae non habuit, nisi unum modium tantum, quia penuria panis illis temporibus in illa regione erat. fecit autem cerevisiam de illo modio in duabus pelvibus: alia enim vasa non habebat. divisa est ergo illa cerevisia per modios, et portata est a Brigida decem et octo ecclesiis, quae in circuitu eius erant; et de his in coena Domini et in Pascha, et in septimana usque ad clausulam paschae sufficienter omnibus abundavit.

“When the days of Easter were approaching, Saint Brigid wanted to have a dinner for all the

churches, which were around in the environs of Medus. However, she did not have the supplies for a dinner, except for one peck [of cereals] since there was a shortage of bread in those times in that region. However, she made *cerevisia* from that peck in two basins since she did not have any other vessels. Therefore that *cerevisia* was separated into pecks, and was brought by Brigid for eighteen churches, which were in her environs. And with this at the Lord's dinner and on Easter, and until the seventh day after the end of Easter, she had abundantly enough for all."

Commentary: This account is also found in an Old Irish life of St. Brigid (*Bethu Brigte* 23 [in O'Brien 1938: 126]) and is alluded to in an eleventh century Old Irish poem ascribed to St. Brigid (Greene 1954). A longer version of it in Latin is also found in the early twelfth century Laurence of Durham (*Vita Sanctae Brigidae* 56 [= ASS 4.179D-E] = 48 in Heist 1965: 21-22). Chilenus (T164) noted that Brigid had the power to multiply beer as well as other foodstuffs. Other authors mention miracles involving the multiplication of beer (see T129 with the further references cited there).

T142. Anonymus, *Vita Sanctae Brigidae* 3.24 (= ASS 4.121F-122A):

Context: Some nuns bring water in for Low Sunday and Brigid believes that beer has been brought instead.

at vero Brigida putans, quod cerevisia esset in vase, ait: Deo gratias agimus, qui dedit cerevisiam istam episcopo nostro. et sic conversa est aqua illa in cerevisiam, ad instar vini optimi facta fuit statim.

"But truly, Brigid, believing that there was *cerevisia* in the vessel, said: 'We give thanks to God, who gave this *cerevisia* to our bishop.' And thus this water was turned into *cerevisia*, it was immediately made similar to the best wine."

Commentary: Brigid accidentally does here what she does purposely in other accounts (see T140, 143, 156, and 164). This miracle is also found in an Old Irish Life of St. Brigit (*Bethu Brigte* 30 [in O'Brien 1938: 128]).

T143. Anonymus, *Vita Sanctae Brigidae* 16.100 (= ASS 4.133C):

quodam namque tempore leprosi a b[eatissima] Brigida cerevisiam postulaverunt. illa vero videns quia non haberet cerevisiam, aquam ad balneum portatam benedicens, in optimam cerevisiam convertit, et abundanter sitientibus porrexit.

"On one occasion, lepers asked the most blessed Brigid for *cerevisia*. She seeing that she did not have *cerevisia*, blessed water carried from a bath, turned it into the best *cerevisia*, and provided abundantly for the thirsty."

Commentary: This section was copied by Cogitosus (T156) and other anonymous hagiographers (T157-159). In the surviving hymn conventionally ascribed to Broccán the Squinting (from the early seventh century A.D.) it is said (*Nicar Brigit* 36): "a marvel of hers [Brigit's] was the bath; she blesses it about her, it became red ale" (Stokes and Strachan 1903: 337, ll. 8-9). Further on in the hymn she seems to turn water into mead (84 = 347, ll. 10-11 and 348, ll. 11-14), a feat also supposedly performed by the tenth century A.D. St. Dunstan (Anon., *Vita Sancti Dunstani* 10 [= ASS 17.349A]) as well as his student St. Ethelwold (Wolstan, *Vita Sancti Ethelwoldi*. 12 [= PL 137.89A-B]). In the Old Irish hymn conventionally ascribed to Ultán (perhaps from as early as the seventh century A.D.) three members of Brigid's community are saved after drinking poisoned beer by praising Brigid (Stokes and Strachan 1903:

323). In the early twelfth century Laurence of Durham also has a version of this story which is much longer (*Vita Sanctae Brigidae* 55 [= ASS 4.179C-D] = 47 in Heist 1965: 20-21).

T144. Anonymus, *Vita Sancti Carthaci sive Mochudae, episcopi Lismoriensis* 48 (= ASS 16.386C-D) [not in VSH]:

Context: St. Mochuda, bishop of Rathen and Lismore in the early seventh century A.D. (who died in A.D. 637), arrives at the sanctuary of Ceallchochayr.

in qua quidem de genere non plus erat potandi, quam unum medium dolium cervisiae: mansitque ibi S[anctus] Mochuda cum omni populo tribus diebus tribusque noctibus. et ipse sanctus Abbas Mochua Miannain propinabat cervisiam de dolio ministris in crateribus sufficienter omni populo, et plenum adhuc dolium erat cervisia: crescebat enim liquor sicut oleum sanctum benedictione Heliae. ... incipiens S[anctus] Mochuda de illo loco exire, statim in isto dolio cervisia usque ad faeces decrescit.

“In this place there was no kind of drink except for one medium jar of *cervisia*. Saint Mochuda remained there with all the people for three days and three nights. And the holy abbot Mochua Miannain served the *cervisia* from the jar into bowls, enough for all the people, and then the jar was still full of *cervisia*. In fact the liquid multiplied like the holy oil in the blessing of Helia. ... When Saint Mochuda began to leave this place, immediately the *cervisia* in this jar decreased to dregs.”

Commentary: A similar miracle is ascribed to the same Saint in a different life (T145). For miracles in which beer is multiplied, see Gregory (T129), with the further references cited there. This miracle is unique in adding the extra detail that the beer also decreased once the Saint left.

T145. Anonymus, *Vita Sancti Carthagi sive Mochutu* 67 (= VSH 1.198 [not in ASS]):

alio die quidam homo pauper postulavit a Sancto Mochutu indiscrete lac et cervisiam <et vinum>. tunc erat sanctus senex iuxta fontem, et benedixit fontem <quem fons de Mochutu nuncupatur>; et statim motus est fons in lac, deinde in cervisiam, postea in vinum. et iussit illi homini, ut tolleret quantum vellet. itaque mansit fons, donec postea Sanctus Mochutu per <orationem suam, fontem in pristinum statum restituit. veniensque angelus> Domini de celo, dixit ad S[anctum] Mochutu: 'usque ad diem iudicii virtutibus> fons iste plenus erit.' et <manet fons iste usque hodie in> asylo civitatis Liss Mor. et in om<ni fonte, quem Sanctus bene> dixit, gratia sanandi languores apperi<tur>.

<et vinum> suppl. Nelson; <quem ... nuncupatur> suppl. Nelson ab vit. hibern.; <orationem ... etc.> suppl. Plummer ab vit. hibern.

“On another day a certain poor man asked Saint Mochutu unknowingly for milk and *cervisia* and wine. At that time the holy old man [i.e. Mochutu] was next to a spring and he blessed the spring (which is now called the spring of Mochutu), and immediately the spring was turned into milk, then into *cervisia*, [and] after into wine. And he ordered this man to take as much as he

wanted. And thus the spring remained until after Saint Mochutu, through his prayer, returned the spring to its original condition. An angel of the Lord, coming from heaven, said to Saint Mochutu: 'Until the day of judgment this spring will be full of powers.' And this spring remains to this day in the protection of the city of Lismore. And in every spring which the Saint blessed, healing to the sick is provided."

Commentary: Carthagus/Mochutu here is the same as Carthacus/Mochuda above (T144). This life was later translated into Old Irish (Power 1914: 142-145, and see 194), and it is from this version that the defective original Latin life can be reconstructed (see Plummer 1910: 1:xlvi and xlviii). In another abbreviated version of this life in Old Irish (text: Plummer 1922: 1:299 [and see xxxviii]; translation: Plummer 1922: 2:290) the poor man asks for beer, milk, and wine, in that order, and thus it is likely that *et vinum* has dropped out of the original Latin text (and even before it was translated into the first Old Irish version, since wine is not mentioned there). St. Brigid could also turn water into beer (Cogitosus [T156], an anonymous hagiographer [T140 and 143], and Chilenus [T164]).

T146a-b. Jonas, *Vita Columbani* 26 (= PL 87.1026B-1027A) = *Vitae Columbani abbatis discipulorumque eius* 1.16 (= MGH-SRM IV, 82.3-24 [not in ASS]):

Context: Jonas of Susa, Italy joined the monastery of Bobbio, founded by St. Columban, three years after the latter's death in A.D. 615 and learned from others about the famous holy man. The following miracle purportedly occurred at the monastery of Luxeuil, France, which had been founded by St. Columban in A.D. 590.

patratum deinceps aliud miraculum, quod per b[eatum] Columbanum et eius cellerario factum fuit referam. cum hora refectionis appropinquaret, et minister refecturi cervisiam administrare conaretur (quae ex frumenti vel hordei succo excoquitur, quamque prae caeteris in orbe terrarum gentibus, praeter Scordiscis et Dardanis gentes, quae Oceanum incolunt usitantur, id est Gallia, Brittania, Hibernia, Germania caeteraeque quae ab eorum moribus non disciscunt), vas quod tiprum nuncupant, minister ad cellarium deportat, et ante vase quo cervisia condita erat apponit: tractoque serraculo meatu in tiprum currere sinit. quem subito Patris imperio alius e fratribus vocavit. at ille obedientiae igne ardens, oblitus maetum obserare, pernici cursu ad beatum pergit virum, serraculum quod duciculum vocant, manu deferto. postquam sibi vir Dei quae voverat imperata deprompsit, recordatus negligentiae, celer ad cellarium rediit, coniciens nihil in vase de quo cervisia decurrebat remansisse. intuitus supra tiprum cervisiam crevisse, et nec minimam stillam foris cecidisse, ut crederes in longitudine tiprum geminatum esse, ut quali et quanta rotunditas infra tipra inerat corona, talis in altum crevisset urna. quantus imperantis meritis! quanta obedientia obsequentis! ut sic utriusque tristitiam Dominus voluisset avertere; ne si fratrum substantiam et imperantis et obedientis ardor diminuisset, ambo se a licitis alimentis abdicassent. sicque aequus Arbiter occurrit, ut utrorumque culpas ablueret, quas illi si casu veniente et Domino permittente fuisset patratum, ambo suis noxis evenisse asservissent.

patratum deinceps ed., MGH, *patratum est* PL; *quod ... referam* [quod ... referam] ed.; *cellerario* ed., MGH, *cellerarium* Jonas; *hora* ed., PL, *hora iam* MGH; *refecturi* ed., *refectorii* PL, *refecturii* MGH; *cervisiam* PL, MGH, *cervisam* ed.; *succo* PL, MGH, *sucos* ed.; *excoquitur* PL, *equoquitur* ed., MGH; *Scordiscis et Dardanis* ed., MGH, *Scoticas et barbaras* PL; *quae ab* PL, MGH, *ab* ed.; *disciscunt* ed., MGH, *desciscunt* PL; *tiprum* ed., MGH, *tybrum* PL; *minister* PL, om. ed., MGH; *vase* ed., MGH, *vas* PL; *cervisia* PL, MGH, *cervisa* ed.; *meati* ed., MGH, *meatum* PL; *tiprum* ed., MGH, *tybrum* PL; *oblitua meatum* ed., PL, *oblitus meatum* MGH; *quod duciculum* PL, *queam*

duciculum ed., *quem duciculum* MGH; *deferto* ed., *deferens* PL, MGH; *cervisia* PL, MGH, *cervisa* ed.; *intuitus supra tiprum* ed., MGH, *intuitusque supra tybrum* PL; *cervisiam* PL, MGH, *cervisam* ed.; *nec* ed., PL, *ne* MGH; *longitudine tiprum* ed., MGH, *longitudinem tybrum* PL; *ut quali* ed., MGH, *ut qualis* PL; *infra tipri inerat corona* ed., MGH, *infra tybrum inerat coronae* PL; *urna* PL, MGH, *orna* ed.; *quantus imperantis meritis* ed., MGH, *quantum fuit imperantis meritum* PL; *obsequentis* ed., MGH, *subsequentis* PL; *occurit* ed., PL, *occoret* MGH; *ut utrorumque* ed., PL, *ut utrorum* MGH; *si casu veniente vel* ed., MGH, *se casu eveniente et* PL.

“I will relate another miracle was brought to pass in succession, which was wrought by the blessed Columban and through his cellarer. When the hour for dinner had come, and the steward of the refectory was undertaking to take care of the *cervisia* (which is boiled from the juice of wheat or barley, and which, before other nations on earth, especially the Scordisci and Dardani peoples who inhabit Ocean use, that is Gaul, Britain, Ireland, Germany, and the other [places] which are not unfaithful to the customs of these), the steward carried to the cellar a vessel which they call a *tiprum* and placed it in front of that in which the *cervisia* was placed. Once the plug was pulled, he allowed it to flow its way into the *tiprum*. Suddenly another one of the brothers called him by order of the Father [i.e. Columban]. And he [i.e. the steward], burning with the fire of obedience, forgetting to block the way [of the *cervisia*], he rushed to the blessed man in a swift course, carrying in his hand the plug which they call a *duciculum*. After he had accomplished the commands which the man of God [i.e. Columban] determined for him, realizing his carelessness, he quickly returned to the cellar, thinking that nothing would be left in the vessel from which the *cervisia* flowed. And he saw that the *cervisia* had filled over the jar and that not even the least drop fell outside, so that you would have thought that the *tiprum* had doubled in size to determine whether the *cervisia* [spilled] over the *tiprum*, so that of what sort and how great the roundness was contained within the *tiprum* at the edge, just so the urn had filled to the top. Great was the merit of the commander [i.e. Columban]! Great was the obedience of the follower [i.e. the cellarer]! Thus the Lord wished to avert sadness for both of them, so that if his zeal for orders and obedience had diminished the substance of the brothers, both would not have to resign without needful food. Thus the just Judge hurried so that he could wash away the guilt of both which had occurred by accident and with the Lord’s permission, while both would assert occurred through their own faults.”

Commentary: A similar miracle was recounted of the seventh century St. Bercharius by the tenth century Adso (*Vita Sancti Bercharii* 1.10 [= ASS 55.1012D-E]); compare also the miracle reported by Altfredus involving the presence of St. Liudgerus at a monastery (T190). Interestingly, Columban punished severely the spilling of beer in his monastic rule (T128).

T147a-b. Jonas, *Vita Columbani* 28 (= PL 87.1028A) = *Vitae Columbani abbatis discipulorumque eius* 1.17 (= MGH-SRM IV, 84.10-19 [not in ASS]):

Context: Jonas at the monastery of Fontaines sees sixty monks working in the fields.

ait: “sit vobis, o fratres, a Domino collata refectio.” quo audito, minister ait: “Pater, crede mihi, non sunt nobis amplius quam duo panes et paulolum cervisiae.” ille, “vade,” inquit, “et defer hic.” concito ille gradu perrexit, duosque panes et parum cervisiae detulit. intuens in caelos Columbanus ait: “Christe Jesu, unica spes orbis, tu hos panes et hunc potum multiplica,

qui de quinque panibus quinque millis hominum satiasti in eremo.” mira fides! satiati sunt omnes, potuque austu prout voluntas cuique fuit, dupla minister fragminum spolia recollexit, potusque duplicavit mensura; sicque intellexit plus merere fidem digna divini muneris lucra, quam disperationem, quae solet diminuere etiam collata.

crede mihi PL, mi ed., MGH; paulolum ed., MGH, paululum PL; cervisiae PL, MGH, cervisiae ed.; defer hic ed., MGH, defer huc PL; gradu ed., MGH, grado PL; cervisiae PL, MGH, cervisiae ed.; Columbanus] Columba pl. codd, ed.; millis hominum satiasti PL, satiasti milia ed., MGH; austu ed., MGH, hausto PL; recollexit ed., MGH, revexit PL; mensura ed., MGH, mensuram PL; merere ed., MGH, mereri PL; disperationem ed., MGH, desperationem PL.

“He [i.e. Columban] said: ‘May there be a feast for you, oh brothers, prepared by the Lord.’ Hearing this, the steward said: ‘Father, believe me, we do not have more than two loaves and a little bit of *cervisia*.’ He answered, ‘Go and bring that here.’ He went with a quick step, and brought back the two loaves and the little *cervisia*. Columban, looking toward the heavens, said: ‘Christ Jesus, single hope of the world, multiply these loaves and this drink, you who with five loaves satisfied five thousand men in the desert [= Matt 14:15-21, Mark 6:35-44, Luke 9:12-17, and John 6:1-13].’ Wondrous faith! All were satisfied, and there was to drink and consume as much as the want of each. The steward collected again twice as much in fragments, and doubled the measure of drink. Thus he realized that faith is more deserving of the divine gifts than the opposite, which tends to diminish even what has been gathered [i.e. what one has].”

Commentary: Other authors mention miracles involving the multiplication of beer (see T129 with the further references cited there), but this is the only place in which comparison to Jesus’s similar miracle is made.

T148a-b. Jonas, *Vita Columbani* 45 (= PL 87.1037B with n. a) = *Vitae Columbani abbatis discipulorumque eius* 1.22 (= MGH-SRM IV, 97.3 [not in ASS]):

Context: Near Nantes, Columban and his followers, starving, are visited by a man who says that food will be coming from his mistress Procula.

... dicebat ... se ideo praevenisse ut vasa quo reciperent praepararent; centum modios esse vini, ducentosque frumenti, sed et braci unde cervisiam faciunt centum modios ...

praepararent PL, pararent MGH; modios PL, modia MGH; ducentosque PL, ducentaque MGH; braci unde cervisiam faciunt centum modios PL n. a, braces centum idemque modia MGH, braxis centum modios PL.

“... [Procula] told ... him to warn [them] that they should make ready vessels in which they could receive it; and that there was one hundred pecks of wine, two hundred of wheat [or cereal?], and enough emmer [or malt?] from which they could make one hundred pecks of *cervisia* [or one hundred pecks of emmer (or malt?)] ...”

T149a-b. Jonas, *Vita Columbani* 53 (= PL 87.1040C-1041B) = *Vitae Columbani abbatis discipulorumque eius* 1.27 (= MGH-SRM IV, 102.12-103.2 [not in ASS]):

Context: Columban and his followers arrive in the Suevi (i.e. Suebi) territory at the town of Brigantia (modern

Bregenz, Austria).

ad destinatum deinde perveniunt ad locum, quem peragrans vir Dei non suis placere animis ait, sed tamen ob fidem in gentibus serendam inibi paulisper moraturum se spondit. sunt etenim inibi vicinae nationes Suevorum. quo cum moraretur, et inter habitatores loci illius progredieretur, reperit eos sacrificium profanum litare velle, vasque magnum, quod vulgo cupam vocant, quod viginti et sex modia amplius minusve capiebat, cervisia plenum in medio habebant positum. ad quod vir Dei accessit, et sciscisatur quid de illo fieri vellent. illi aiunt Deo suo Vodano, quem Mercurium vocant alii, se velle litare. ille pestiferum opus audiens, vas eminus insufflat, miroque modo vas cum fragore dissolvitur, et in frustra dividitur, visque rapida cum fragore cervisiae prorumpit: manifestoque datur intelligi diabolum in eo vase fuisse occultatum, qui per profanum litatorem caperet animas sacrificantium. videntes barbari obstupefacti aiunt magnum virum Dei habere anhelitum, qui sic possit dissolvere vas ligaminibus munitum: castigatosque dictis evangelicis, ut ab his segregarentur sacrificiis, domibus redire imperat. multi ergo eorum tunc per beati viri suasum ad doctrinam et ad Christi fidem conversi, baptismum consecuti sunt; aliosque etiam, quos iam lavacro ablutos error detinebat profanus, ad cultum evangelicae doctrinae monitis suis ut bonus pastor Ecclesiae seminibus reducebat sparsis.

ait PL, MGH, aiet ed.; in gentibus ed., in eis PL, MGH; spondit ed., spondit PL, MGH; Suevorum PL, MGH, Sueavorum ed.; quod PL, MGH, qui ed.; cervisia PL, MGH, cervisa ed., cervisam B1a; habebant om. ed.; quod PL, MGH, quem ed.; vellent PL, MGH, vellint ed.; Vodano PL, MGH, Vodano nomine ed.; vocant alii, se PL, MGH, ut alii aiunt, autumant ed.; insufflat ed., sufflat PL, MGH; et in frustra PL, MGH, et per frustra ed.; fragore PL, MGH, ligore ed.; cervisiae PL, MGH, cervisae ed.; manifestoque PL, MGH, manifesteque ed.; litatorem PL, MGH, ligorem ed.; sacrificantium] sacrificantum ed.; ob stupefacti] stupefacti ed.; castigatosque] castigatusque ed.; dictis evangelicis] evangelicis dictis ed.; multi ergo] multique ed.; ad doctrinam et ad Christi] vel doctrinam ad Christi ed.; consecuti sunt] sunt consecuti ed.; ablutos] ablutus ed.; seminibus] sinibus ed.; sparsis] om. ed.

“Finally they arrived at the predetermined place, which the wandering man of God [i.e. Columban] said did not please his soul. However, in order to spread faith to the peoples in that place he decided to stay for a little while. Indeed in that place were the neighbouring peoples of the Suevi. Once, as he was delaying and walking among the inhabitants of the place, he discovered that they were intending to offer a heathen sacrifice. They had placed in their midst a large vessel, which they commonly call a *cupa* [i.e. a barrel], that held more or less twenty-six measures, filled with *cervisia*. When the man of God approached and asked what they intended to do with it, they said that they intended to make an offering to their god Wodan, whom others call Mercury. Hearing of this abominable deed, at a distance he breathed upon the vessel, and through a miracle the vessel was shattered into pieces, and broke into bits, and the swift force blew out the *cervisia* with the pieces. It was clear that the devil had been hidden in this vessel, and he would have captured the souls of the participants through the heathen offering. The barbarians, seeing this, were stunned, and said that the great man had the breath of God, since he was thus safely able to shatter the vessel into pieces. He ordered them to return to their homes, after they had been reproached with gospel sayings so that they would cease from these offerings. Therefore many of them were converted then to the learning and faith of Christ because of the blessed man’s preaching, and they pursued baptism. And the others, who already

had been purified by cleansing, but whom the heathen error held back, [converted] to the devotion of the gospel doctrine through his counsel, so that the good shepherd of the Church had brought back scattered seeds.”

Commentary: Vessels of beer which have been consecrated by pagans are also shattered by St. Vedastes (or Vedastus) at T154 and 175.

T150. Anonymus, *Vita Sancti Cronani* 23 (= VSH 2.29 [not in ASS]):

Context: Visitors came to the abbey of Ros Cree, whose abbot is St. Cronanus.

quadam die hospites ad Sanctum venerunt Cronanum, et ipse iussit ut cibum et cervisiam darent eis fratres. cui quidam frater ait: 'nostra, pater, cervisia, quam modo habemus, certe non est adhuc fermentata, nec possumus inferius effundere.' cui Sanctus Cronanus ait: 'labia superiora dolei certe laciore sunt foramine inferiori. potum ergo Christi hospiti tollite ex dolio; potens est iam Dominus vim ilico in liquore dare.' tunc vas repletum est cervisia sursum ex doleo et statim divino nutu liquor magnus fermentatus est. et bibentes hospites ipsam cervisiam valde inebriati sunt. caritas enim viri Dei cervisiam, quae erat sine fermento, fecit cicius vi repletam, et homines inebriare. et qui hoc sciebant, Christo laudes dederunt.

fermentatus] infirmentatus T; *quae* Nelson, *que* VSH.

“On a certain day guests came to Saint Cronanus and he ordered that the brothers give them food and *cervisia*. One brother said to him: ‘Father, our *cervisia*, which is the only one we have, has surely not yet [completely] fermented, and we cannot pour out from the bottom.’ Saint Cronanus said to him: ‘The upper lips of the jar surely were hidden from the opening of the bottom. Therefore draw the drink of the hospitable Christ from the jar. Now the Lord is able to give his power into this liquid.’ Then the vessel was filled with *cervisia* from below in the jar and immediately, through a divine nod, the great liquid was fermented. And drinking this *cervisia* the guests became nicely intoxicated. In fact, the charity of the man of God swiftly made *cervisia* (of which there was some without fermentation) fill up with power and intoxicated men. And those who knew this gave praise to Christ.”

Commentary: St. Colmanus was also reputed to have caused beer to ferment properly (Plummer 1910: 1:264, n. 9) and shavings from the cross from which St. Aedus was killed also purportedly had the same effect (Plummer 1910: 1:43, n. 13). Unfortunately, as far as I know, the Latin of these two passages has not been transcribed from the codices.

T151. Anonymus, *Vita Sancti Arnulfi episcopi* 2.30 (= MGH-SRM II, 444.1-11 = ASS 31.439F-440A):

Contest: Even after his death in around A.D. 640, St. Arnulfus, bishop of Metz, continues to perform miracles among his community of believers who transport his body.

tunc Noddo dux, qui unus erat ex euntibus, ait: 'videtis, quia terram incestuosi huius ingredi

despiciit. est autem procul villa mea; sed nox ante nos inclaudet, quam illuc venire veleamus. sed et deest mihi inibi potus vel apparatus, quo hanc multitudinem reficere possim; nisi tantummodo in imo vasculi modicum quiddam cervisae. quibus auditis, universus populus iter retorquens, in tanta velocitate pergunt, ut potius geruli semet ipsos portari, quam portare sentirent; atque diei adhuc lucem habentes, ad destinatum pervenerunt locum. tunc Noddo ait: 'nunc igitur beatus dominus Arnulfus pascit nos nocte ista quoniam quod deest nobis, ipso intercedente, adesse potest.' statim in tanta exuberantia accrevit modicitas potus illius, ut omnibus affatim satiatis, adhuc in crastinum superesset.

qui unus erat ex euntibus MGH-SRM, qui erat ex euntibus unus ASS; videtis, vidistis MGH-SRM ed.; incestuosi ASS, incestuose MGH-SRM; autem ASS, enim valde MGH-SRM; quam illuc ASS, quam MGH-SRM; apparatus ASS, paratos MGH-SRM; quo hanc multitudinem reficere possim ASS, quod tot multitudinem reficere possum MGH-SRM; in imo vasculi ASS, ut comperi ad Immo iudice MGH-SRM; geruli ASS, geroli MGH-SRM; beatus dominus MGH-SRM, beatus ASS; quoniam quod deest nobis ASS, quod deest vobis MGH-SRM; modicitas ASS, medietas MGH-SRM; ut omnibus affatim satiatis ASS, ut omnes ad facultatem saciatis MGH-SRM.

"Then the leader Noddo, who was of them, said: 'You see, he despises to advance because of the unchaste of his land. However, it is far from my city. But night encloses before us, which we wish comes here. But in that place there lacks to me drink or implements, by which I would be able to reinvigorate this crowd. Unless there is merely a certain trifle of *cervisa* in the bottom of a small vessel.' Having heard this, the whole group, changing course, hastened with great speed, so that the porters felt rather that they themselves were being carried by them rather than carrying [them]. And still having the light of day, they arrived at the predetermined location. Then Noddo said: 'Now therefore blessed lord Arnulfus feeds us in this night because what is lacking for us, by his intercession, it can be at hand.' Immediately in great elation, there arose a quantity of his drink, so that all were abundantly satisfied, and still in the morning it [i.e. the drink] abounded."

Commentary: Another version of this miracle is found in a life of St. Goëricus (T152). Other authors mention miracles involving the multiplication of beer (see T129 with the further references cited there).

T152. Anonymus, *Vita Sancti Goërici sive Abbonis episcopi* 2.23 (= ASS 46.54A):

Context: The same event as in the account above (T151) is also recounted in a life of St. Goëricus, the bishop of Metz in the early seventh century A.D., who was present when Noddo (here Notho) and other followers were bringing St. Arnulfus's corpse for burial.

perveniunt igitur ad villam, quae ex nomine possessoris Nothonis Curtis vocabatur et vocatur, et quis viniferax omnino patria non est. cervisiae parum se habere idem dux, ministeris referentibus comperit. sed item fide repletus Sancti Goërici precibus et meritis id committit. Sanctus Goëricus nota praesidia petens, ut Deus et Christus eius orationibus Sancti Arnulfi populi necessitati subveniret, exposcit. non diu oratum est, sub celeritate subventum est, et tanta populi multitudo ex parvo liquore, quod vix credibile est, abundantissime satiata est.

"Then they arrived at a city which was and is called Notho Curtis from the name of its owner, and which is not in a vine-growing region. The same leader [i.e. Notho] learned from his

returning attendants that he had too little *cervisia*. Moreover, in faith he entrusted the refilling to the prayers and favors of Saint Goëricus. Saint Goëricus, seeking eminent assistance, entreated that God and Christ intervene through his words for the needs of the people of Saint Arnulfus. He had not spoken long when quickly it occurred and such a multitude of the people was most abundantly satisfied from the small amount of liquor that it was scarcely believable.”

Commentary: Here Goëricus prays to multiply the beer, whereas Notho does so in the other version (T151).

T153a-b. Jonas, *Vita Burgundofarae* 12 (= PL 87.1082C) = *Vitae Columbani abbatis discipulorumque eius* 2.22 (= MGH-SRM IV, 142.28-143.1):

Context: Jonas describes the sustenance provided to a woman by the devil.

permansit ergo cibus per vertentis anni metam, nec prorsus aliud edebat quam furfures frondesque arborum aut herbarum agrestia et fecis quae ex cervisiae reliquiis proiciuntur.

agrestia MGH, *agrestium* PL; *cervisiae* PL, *cervisiae* MGH, *proiciuntur* MGH, *proicitur* PL.

“Therefore the food lasted through a period to the following year, nor did she in fact eat anything else than bran and the wild leaves of trees or grass and the remaining dregs thrown out from *cervisia*.”

T154a-b. Jonas (?), *Vita Vedastis episcopi Atrebatensis* 7 (= MGH-SRM III, 410.15-411.10) = *De Sancto Vedasto episcopo Atrebatensi* 7 (= ASS 4.802C-D):

Context: The Frank Hozinus (or Hocinus) holds a dinner for King Clotharius I (King of Soissons from A.D. 511 and of all the Franks from A.D. 558 to 561) to which the missionary bishop Vedastes (who died in A.D. 540) is invited.

... cumque ergo adtonitus ad prandium vocatus venisset, domum introiens, conspicit gentile ritu vasa plena cervisiae domi adstare. quod ille sciscitans, quid sibi vasa in medio domi posita vellent, inquirerit, responsum est, se alia Christianis, alia vero paganis opposita ac gentile ritu sacrificata. cumque ita sibi denuntiatur fuisse, omnia vasa de industria signo crucis sacravit, ac omnipotentis Dei nomine invocato, cum fidei adminiculum, caelitum auxiliante dono, benedixit. cumque benedictionem cum crucis signo super vasa, quae gentili fuerant ritu sacrificata, premisisset, mox soluta legaminibus, cunctum cervisiae liquorem quem capiebant in pavementum dejecerunt. unde rex miraculo percussus ac omnes procerum caterva sciscitare, qui gestae rei causa fuerit, et sibi in propatulo narraret. cui venerandus vir Vedastus summusque pontifex ait: ‘o rex, tuorum decus Francorum, cernere potes, quanta sit diabolicae fraudis astutia ad animas hominum decipiendas. nam quam putas hic demonum fuisse conjecturam, quae per hunc liquorem cervisiae corda infidelium, praevaricationem suffocata, aeternae mortis subdere studerent, sed nunc virtute divina pulsata ac effugata demonis arte? scire cunctis necessarium est, qualiter ad salubria medicamenta vere fidei Christiani descendant confugire et has superstitiones gentilium omni nisu studeant pretermittere.’

cumque PL, cum ASS; adtonitus PL, Beatus ille ASS; cervisiae PL, cervisiae ASS; in medio domi PL, in medio ASS; inquirerit PL, om. ASS; se alia PL, alia ASS; alia vero PL, alia ASS; opposita PL, apposita ASS; cumque PL, cum ASS; de industria PL, om. ASS; nomine ASS, nomen PL; cum crucis PL, crucis ASS; legaminibus PL, ligaminibus ASS; cervisiae ASS, cervisiae PL; ac omnes PL, ab omni ASS; sciscitare PL, sciscitaretur ASS; qui gestare PL, quae gestae ASS; causa PL, caussa ASS; et sibi PL, ut ASS; cui venerandus PL, venerandus ASS; summusque pontifex ASS, om. PL; cernere ASS, caernere PL; nam quam PL, numquam ASS; demonum PL, daemonum ASS; liquorem ASS, ligorem PL; cervisiae PL, om. ASS; infidelium PL, nominum Dei per ASS; aeterna mortis PL, morti aeternae ASS; studerent PL, studebant ASS; ac effugam PL, et effugam ASS; demonis PL, daemonis ASS; vere PL, verae ASS; Christinani descendant confugire PL, Christinae queant confugere ASS; et has PL, et ASS; pretermittere PL, pratermittere ASS.

“... having been invited to dinner, he [i.e. Vedastes] went, and entering the house, he perceived that, by native ritual, vessels full of *cervisia* were at hand in the house. Having inquired how they would pick for him the vessels placed in the middle of the house, it was answered that some were sacrificed by Christians and others truly by pagans contrarily and by native ritual. And when he had accordingly made a denunciation to him, through his diligence he sanctified all of the vessels with the sign of the cross, invoking the name of Almighty God, with the support of faith, heavenly by the helping gift, he gave a blessing. With the blessing and the sign of the cross over the vessels, those which had been sacrificed by native ritual, he had pressed, and soon broke into pieces, and all the liquid of *cervisia* which they had carried spilled onto the floor. The king [i.e. Chlotharius I], disheartened by the miracle, and the whole crowd of nobles inquired who had been the cause of the occurrence and he recounted to him in the court. The venerable man and great priest Vedastes said to him: ‘Oh king, glory of your Franks, you were able to see how to what extent can exist the cunning of a devilish fraud because of the deceived minds of men. For what do you reckon was this devilish appearance [and] which hearts choked by duplicity were zealous to eternally submit to death through this heathen liquid of *cervisia* only now being beaten through the power of the divine and expelled by the art of the devil? It is necessary to know everything, just as they truly run to take refuge in the healthy medicines of the Christian faith and all are in no way zealous to permit these superstitions of pagans.’”

Commentary: Alcuin (T175) gives a slightly different account of the same miracle (calling the Saint Vedastus rather than Vedastes).

T155a-b. Jonas (?), *Vita Sadalbergae abbatisae Laudunensis* 20 (= MGH-SRM V, 61.8-10) = *Vita Sanctae Salabergae abbatisae* 3.19-20 (= ASS 46.527F-528A [not in PL]):

Context: The presence of the abbess Sadalberga (or Salaberga), who died around A.D. 665-670, ensures that beer will not run out or be spoiled.

quodam vero tempore, dum beati viri Waldeberti praestolaretur adventus et falerni copia deesset, ius tritici vel ordeï, quod cervisam nuncupant et arte conficitur humana, quo occidentalium pleraeque nationes utuntur, iussit facere; quae cum in vas quod lingua vulgari tunnam vocant missa fuisset, cum vas adplene refertum ex poti liquore non esset, famula Christi, cui obedientiae causa eodem anno iuxta tenorem regulae ad cellarium custodiendum sororibusque ministrandum ordo evenerat, ad venerabilem matrem summa cum humilitate veniens, ait: “domna,” inquit, “mater, quid faciemus, quia vas non est plenum ex sicera et aer

aestuat? si sanctus vir abba in veniendo moras innexuerit, vereor, ne poti liquor in acerbitatem aceti acescat.” *Ad quam illa ait: “vade et quod subsequens ex liquore est confectum funde in vase.” at illa non dubia celeri cursu pergens, ut iussionem sanctae matris implemet, repperit vas plenum, quod paululum pridem semivacuum reliquerat, ac sic omnipotentis Dei misericordia actum est, ut dum matris fides armatur, obedientiae vigor in discipula roboratur, virtusque divina protinus panditur, potum quod exiguum erat in maius augetur; remeansque Dei famula cum alacritate et humilitate sanctae matri narravit miraculum. illa summo rerum creatori Iesu Christo gratias referens, qui servientibus sibi in veritate cito adesse consuevit.*

adventus MGH, adventum ASS; ordeï MGH, hordii ASS; cervisam ASS, cervesam MGH; quae ... fuisset MGH, quam in vas, quod lingua communi tonnam vocant, mittere iussit. sed ASS; matrem summa MGH, matrem ASS.

“Truly at that time, when she [Sadalberga/Salaberga] was expecting the arrival of the holy man Waldebert and an abundance of Falernian [wine] was lacking, she ordered that the juice of wheat or barley be made, that which they call *cervisa* and which is made by the skill of man, and which most nations of the West use. What was in a vessel, which they call a *tunna* [i.e. a barrel] in the common language, was brought, and when the vessel was found not to be full with a liquid to drink, the handmaiden of Christ, because of her obedience in that year to the tenor of the rule (the order had it that the cellar be guarded and attended by sisters), going with great humility to the venerable mother, said: ‘Lady, mother, what should we do, since the vessel is not full of *sicera* and the air is burning? If the holy abbot will have contrived delays in coming, I fear that the liquid to drink will turn sour into the sourness of vinegar.’ She said to her: ‘Go and what was made from the liquid pour into a vessel.’ And she, hastening on her swift course without hesitation, just as the order was given by the holy mother, she found the vessel full, which only a little time earlier she had left half empty, and thus it was done by the compassion of the all-knowing God so that the faith of the mother was armed, the vigor of obedience was strengthened in the disciples, and the divine power was extended forward, that from the little there was drink multiplied into a lot. And the handmaiden of Christ, returning with swiftness and modest to the holy mother, recounted the miracle. She gave thanks to the highest of all created things, Jesus Christ, who was in the habit of coming to his servants with true speed.”

Commentary: It is uncertain if this work was written by Jonas. Note, however, the somewhat similar definition of beer in Jonas’s life of St. Columban (T146). Other authors mention miracles involving the multiplication of beer (see T129 with the further references cited there).

T156. *Cogitosus, Vita Sanctae Brigidae virginis* 2.11 (= PL 72.780B-C = ASS 4.136E):

Context: St. Brigid becomes famous for her miracles.

mirabili quoque eventu ab hac venerabili Brigida leprosi cervisiam petentes, cum non haberet illa videns aquam ad balnea paratam, cum virtute fidei benedicens, in optimam convertit cervisiam, et abundanter sitientibus exhaustit. ille enim, qui in Cana Galilaeae aquam convertit in vinum, per huius quoque beatissimae feminae fidem aquam mutavit in cervisiam.

cervisiam PL, cerevisiam ASS; petentes PL, flagitantes ASS; cervisiam PL, cerevisiam ASS; feminae PL, om. ASS; cervisiam PL, cerevisiam ASS.

“And after this miraculous event, lepers sought *cervisia* from the venerable Brigid; when she did not have it, seeing water prepared for the bath and blessing it with the power of faith, she turned it into the best *cervisia* and it was copiously drunk by the thirsty. In fact he [i.e. Jesus] who in Cana of Galilee turned water into wine [= John 2:1-11], through him and the saintly woman’s faith, changed water into *cervisia*.”

Commentary: Cogitosus was approached by the monastic community of Kildare to write a history of the foundress Brigid. He used in part an earlier Latin life of Brigid and from it (see T143) took this miracle to which he added the comparison to Jesus’s miracle.

T157. Anonymus, *Vita Sanctae Brigidae* 10.62 (= ASS 4.169E-F):

quodam die quidam leprosi sitientes de via cerevisiam anxie a b[eatissima] Brigida postulaverunt. Christi autem ancilla, videns quia tunc illico non poterat invenire cerevisiam, aquam ad balneum portatam benedixit, et in optimam cerevisiam conversa est a Deo, et abundanter sitientibus propinata est.

“One day some thirsty lepers from the road had anxiously asked saintly Brigid for *cerevisia*. However, the handmaiden of Christ, because she looked for it then and had not be able to find *cerevisia*, blessed water carried from a bath. It was then turned into the best *cerevisia* by God, and it was drunk copiously by the those who were thirsty.”

Commentary: This seems to have been based on the early anonymous life of Brigid (T143).

T158. Anonymus, *Vita Sanctae Brigidae* 8 Sharpe (not in ASS):

Context: St. Brigid herself speaks about her miraculous transformation of water into any liquid.

quodam autem tempore rogavit me quedam mulier leprosa et infirma ut ei aquam deferrem et ut in ceteris necessariis misericorditer ministrarem. vas itaque plenum aqua benedixi et dedi ei dicens: ‘pone istud inter te et parietem ne aliquis preter te solam tangat illud donec revertar.’ angelus vero benedixit illam aquam in presentia mea et conversa est in quemcumque saporem leprosa volebat. nam quando volebat vel concupiscebat illa mel, saporem mellis, quando iam vinum sive cerevisiam vel lac vel alios liquores, in eadem aqua habebat, et per eius voluntatem vicissim vertebatur.

“However at one time a certain leprous and weak woman asked me that I bring water to her and serve [her] mercifully in terms of other necessities. And thus I blessed a vessel full of water and gave it to her saying: ‘Place this with you and I should have it come about unless someone other than you alone touches it before I transform [it].’ Truly an angel blessed that water in my presence and it was transformed into whatever flavour the leprous woman wanted. For when she wanted or desired this [to be] honey, in that water there was the flavour of honey, when

indeed [she wanted] wine or *cerevisia* or milk or other liquids [there was that flavour in the water], and through her will it was changed in turn.”

Commentary: This account seems ultimately indebted to the early anonymous Latin life of Brigid (T143) (see Sharpe 1991: 120-121).

T159a. Anonymus, *Excerpta ex libro glossarum* s.v. *cervesia* (= CGL V, 177.24):

cervesia genus potionis

potionis Holder, *potius* cod.

“*Cervesia*: a type of drink.”

T159b. Anonymus, *Excerpta ex libro glossarum* s.v. *cervesia* (= CGL V, 177.25):

cervesia vini genus ex frumento

“*Cervesia*: a type of wine [made] from cereal [or wheat?].”

Commentary: Comparison with another glossary (T184) makes it probable that “wheat” is here meant.

T160a-b. Anonymus, *Appendix, specimen codicis Cantabriensis Collegii corpi christi* s.v. *bratium* (= CGL V, 403.65) = Anonymus, *Glossarium Amplonianum primum* s.v. *bratium* (= CGL V, 347.13):

bratium malt

“*Bratium*: malt.”

Commentary: This is from one of the oldest surviving Old English glossaries.

T161. Pseudo-Cummeanus, *Paenitentiale* 1.1 (= SLH V, 110.22-27 + 112.1-2 [not in PL]):

Context This penitential is a collection from various other penitentials, including that of Gildas (T117), Theodore (T131 [which is very similar to the beginning of this passage]), and Columban (see T128).

incipit de gula:

inebriati igitur vino sive cervisa contra interdictum Salvatoris, ut dicitur, apostolique, si votum sanctiatis habuerint, quadringinta diebus cum pane et aqua culpam deluant, laici vero septem diebus.

quadringinta Nelson, *XL* codd.; *septem* Nelson, *VII* codd.

“Here begins ‘On gluttony.’”

“Those who are intoxicated on wine or *cervisa* against the prohibition of the Saviour, as it is said [in Luke 21:34-35], and [the prohibition] of the Apostle [Paul, *Ephes.* 5:18], if they have taken the vow of sanctity, they will expiate the fault for forty days with bread and water; [if they are] laymen, however, for seven days.”

Commentary: This passage is similar to a section in Halitgarius (T188) and also to an Old Irish penitential from the late eighth century (7 [= *SLH* V 260]), in which also a lighter penance of thirty days is given if a monk simply vomits up beer, presumably without having been intoxicated (15 [= *SLH* V 261]). For a penance for laymen who have vomited because of intoxication, see the text cited at T166.

T162. Sanctus Beda Venerabilis, *Vita Sancti Cuthberti episcopi Lindisfarnensis* 35 (= *PL* 94.774C-D) or 53 (= *ASS* 9.111E):

Context: Cuthbert, bishop of Lindisfarne (who died in A.D. 687) at a convent near the mouth of the Tyne river (probably at South Shields) turns water into wine just by tasting it.

postquam de meridiana quiete surrexerunt, sitire se dicens, ut biberet rogavit. quaerebant quid bibere vellet, rogantes ut vinum sive cervisiam afferri liceret. “aquam,” inquit, “date mihi.” qui haustam de fonte aquam obtulerunt ei. at ille, data benedictione, ubi paululum gustavit, dedit adstanti presbytero suo, qui reddidit ministro. et minister, accepto poculo, “licet,” inquit, “mihi bibere de potu de quo bibit episcopus?” respondit, “etiam. quare non licet?” erat autem et ille presbyter eiusdem monasterii. bibit ergo, et visa est ei aqua quasi in saporem vini conversa; tantique sibi testem volens adhibere miraculi fratrem qui proxime adstabat, porrexit ei poculum. qui cum et ipse biberet, eius quoque palato pro aqua vinum sapiebat.

rogantes PL, rogabantque ASS; cervisiam O3, 04, PL, ASS, cervisam al. codd., ed.; paululum PL, ed., paululum ASS; adstanti ASS, astanti ed., PL; bibere de potu ed., PL, de potu bibere ASS; in saporem vini conversa ed., PL, in vini conversa saporem ASS; adstabat ASS, astabat ed., PL.

“After they had risen from the after-dinner rest, he [i.e. Cuthbert] said that he felt thirsty and asked if he could drink. They inquired about what he wanted to drink, asking whether it was permitted to bring wine or *cervisia*. He said, ‘Give me water.’ They brought to him water taken from a spring. But he, after having made a blessing, when he tasted a little, he gave it to his elder standing nearby, who returned it to the steward. And the steward, taking the cup, asked: ‘Is it permitted for me to drink from a drink from which a bishop has drunk?’ He responded, ‘Yes, why would it not be permitted?’ However, there was present also the elder of his own monastery. Therefore he drank, and it seemed to him that the water had practically turned into the flavour of wine. Wishing to gain as witness to such a miracle the brother who stood nearby, he gave him the cup. When he had drunk, he tasted on his palate wine rather than water.”

Commentary: Bede goes on to say that he heard this story directly from one of the people present, whom he knew from the monastery at Monkwearmouth (which had been founded by St. Cuthbert in A.D. 664). This miracle is also briefly related in the earlier anonymous *Vita Sancti Cuthberti* 18 (= *ASS* 9.124B), though with no mention of beer.

T163. Sanctus Beda Venerabilis (?), *Paraenetica* (= PL 94.548B):

Context: A strange vision is described.

primus baptizavit Moyses in nube et in mari, et in typo, et in figura. habuit enim mare formam baptismi, nubes vero Spiritus sancti, manna panis vitae. Christus namque in Spiritu sancto baptizavit. vidi unum hospitem stantem super pedem, corpus eius de terra, sanguis eius de cervisia.

“First he [i.e. Jesus] baptized Moses in a cloud and in the sea, both in form and in figure. Indeed he had the shape of the baptizing sea. Truly the clouds were the Holy Spirit, the manna bread of life. For Christ baptized in the Holy Spirit. I saw one enemy standing above his foot, his body [made] of earth, his blood of *cervisia*.”

T164. Chilenus Monachus, *Vita Sanctae Brigidae virginis* 1.4-5 (= ASS 4.142B-C):

*tempore in hoc nutrix recubans cum febribus aegra,
illius ac teneros vastabat pestifer ignis
artus, perturbat vitalia viscera morbus.
faucibus ex siccis dixit, vix verba sonabat:
'quaerite cervisiam; mihi medo magna voluptas.'
Brigida tunc fuerat invenis et pulchra puella,
mittitur ad vicos; quaerendo quippe liquorem,
virgo Dei properans una comitante sorore.
quidam cervisiam, quamvis celabat, habebat,
virginibus sacris stultus donare negabat.
cum repedare domum coeperunt, Brigida fontem
conspexit, liquidis calicem compleverat undis.
nam quia saepe Deus praesens est numine Sanctis
qui latices gelidos celiae convertit in undas;
virginis ob meritum species mutatur aquarum;
in siceram versa est. porrexit virgo dolenti.
inscia mirifici biberat cum faemina facti
potum, tunc penitus discessit frigida febris.
saepe etiam pueris infirmis atque puellis,
haustum qui lactis quaerebant, illa petenti
frigida donabat de fontis pocula rore:
sed Deus ipse suum naturam vertit aquarum
in lactis gustum, siceram vel forte Lyaeum. |
cervisiam si forte suis cernebat ocellis,
aut lactis modicum tetigisset, sive butyrum,
crescebat nimium, turbae superare nequibant.*

celiae Nelson, *caellae* ASS.

“At this time [Brigid’s] wetnurse was lying down sick with a fever, and a destructive fire was devastating her tender limbs, [and] a disease was disturbing her vital innards. She said with her dry throat, scarcely sounding out the words: ‘Fetch me *cervisia*: it is a great[er] pleasure for me rather than mead.’ Brigid then was a kind and beautiful girl, [and] she was sent to the village. Naturally looking for the liquid, the virgin of God hastened with a fellow sister. A stupid man had some *cervisia* which he hid and refused to give to the holy virgin. When they began to return home, Brigid saw a spring and she filled a cup with the liquid waves. For always was God present through the will of the Saint who transformed the cold fluids into waves of *celia*. Through the kindness of the virgin a type of water was changed, it was turned into *sicera*. The virgin offered it to the one in pain. Not knowing that she had drunk the drink with the woman who had made it through a miracle, her cold fever from within left. Often in fact for sick boys and girls, those looking to draw milk, she gave cold cups from the drops of the fountain to the one seeking: but God himself turned his natural taste of water into milk, or perhaps the Deliverer’s [i.e. Dionysus’s] *sicera*. If perhaps she saw *cervisia* with her eyes, or she touched a bit of milk or butter, it multiplied not a little, [and] crowds were not able to exhaust it.”

Commentary: An anonymous hagiographer (T140) has another version of the story of Brigid’s nurse, while Brigid’s power to multiply beer is also found in the same source (T141).

T165. Sanctus Beda Venerabilis (?), *De remediis peccatorum* (= PL 94.571B) = Sanctus Egbertus Eboracensis (?), *De remediis peccatorum* 4 (= PL 89.447B + C):

de immunda carne:

qui manducat carnem immundam aut dilaceratam a bestiis, quadringinta dies poeniteat. si necessitate famis cogente, multo levius. mus si ceciderit in liquorem, tollatur inde, et aspergatur liquor ille aqua benedicta; si vero mortuus sit, abjiciatur totus liquor, nec ab hominibus sumatur, sive lac sit, sive cerevisia, vel aliquid huiusmodi.

sine cervisia PL, *sine cerevisia* Holder 1907: 3:1208.

“On impure meat:

“He who eats meat which is impure or torn up by animals must repent for forty days. If [he eats it] out of necessity to drive away hunger, [he must repent for] much less [time]. If a mouse had fallen into the liquid and it is taken out from it, and that liquid is sprinkled as holy water, if truly [the mouse] is dead all of the liquid is to be thrown out, nor is it to be consumed by men, whether [the liquid] be milk or *cerevisia* or anything else of this sort.”

Commentary: It is uncertain if this work was originally written by Bede or by Egbert of York. For more hygienic advice involving beer, see T178.

T166. Sanctus Beda Venerabilis (?), *De remediis peccatorum* (= PL 94.573D) = Sanctus Egbertus Eboracensis (?), *De remediis peccatorum* 11 (PL 89.450D + 451A):

de auguriis vel divinationibus: ...

caragios et divinos praecantatores, laici tres dies sine cervisia vel vino et carne, alii duodecim dies.

tres ... duodecim Egbertus, *iii ... xii* Beda.

“On augury and divination:

“Tricksters and reciters of divine spells, [if they are] laymen [must repent] for three days without *cervisia* or wine or meat; others for twelve days.”

Commentary: For other penances forbidding beer, see Theodore (T130), with further references cited there. In the eleventh century A.D., Burchard of Worms (*Decretum* 14.14 [= PL 140.892C]) wrote: “A layman, if he produces vomit because of intoxication, is to abstain from meat, and wine, and *cervisia* for three [days]” (*laicus, si per ebrietatem vomitum facit, tres <dies> [Nelson] a carne, et vino, et cervisia abstineat*).

T167. Pseudo- Sanctus Beda, *Didascalia, Ephemeris* (= PL 90.772B):

mense Julio omnibus diebus mane jejuni, plenum calicem de aqua frigida bibant. cervisiam, sive medum, non bibant.

“In the month of July, they fast in the morning on every day; they should drink a full cup of cold water. They should not drink *cervisia* or mead.”

Commentary: This passage and the following one include recommendations for diet during different months in a work which survives in Bede’s corpus but which is usually thought to have been written by someone else.

T168. Pseudo- Sanctus Beda, *Didascalia, Ephemeris* (= PL 90.776B):

mense Augusto caules et malvas non comedant; agramina comedant; cervisiam minime bibant, et met.

“In the month of August they should not eat cabbages or mallows; they should eat products of the soil; they should drink little *cervisia* and mead.”

T169. Anonymus, *Miracula Sancti Joannis Beverlacensis, archiepiscopi Eboracensis* 2.16-17 (= ASS 15.170B-C):

Context: St. John of Beverly, bishop of York, is invited to a dinner by King Osred (who ruled from A.D. 704 to 716) and performs a miracle.

‘implete,’ ait S[anctus] Joannes pincernis suis, ‘implete tres hydrias, unam vino, aliam mulso, tertiam cervisia.’ quibus impletis usque ad summum, Joannes, qui <benedictus> est gratia Dei, extensa manu benedixit et propinari praecepit. hauriunt pincernae crescentia hydriarum fluentia foecundis calicibus, et per laetos convivas propinando redeunt frequentius. hauriunt inexhauste, nihilque in hydriis apparet toties hausisse, nam semper redundant ad summum

usque. potantes ipsi stupent renovato nectare, quodque bibunt mirantur crescere.

<benedictus> est (?) Nelson, et ASS.

“Saint John told his attendants: ‘Fill up, fill up three jugs, one with wine, another with mead, and a third with *cervisia*.’ When they were filled to the brim, John, who was blessed (?) by the grace of God, made a blessing with his outstretched hand and took it to be drunk. The attendants drew the overflow from the jugs into abundant cups, and returned frequently with a serving for the joyful guests. They drew without end, and it appeared as if nothing at all had been drawn from the jugs, for they continually overflowed right over the brim. Those drinking were stunned to drink again, and what they drank they were amazed multiplied.”

Commentary: In what follows the miracle is compared to that of Jesus at Cana and King Osred goes on to praise St. John. For similar miracles involving the multiplication of beer, see Gregory (T131), with the further references cited there.

T170. Felix, *Vita Sancti Guthlaci anachoretae* 44 Colgrave or 30 (= ASS 11.46B):

Context: The monk Felix was commissioned to write a life of St. Guthlacus (who died in A.D. 714) by King Aelfwald of East Anglia (who ruled from c. A.D. 713 to 749), who may have been the patron of the poet of *Beowulf*. In one section of the life two brothers come to visit St. Guthlacus at his monastery.

deinde cum insulam devenissent, habentes secum binas flasculas celia impletas, facto consilio illas in via sub quodam palustri sablone absconderunt, ut iterum revertentes iter suum illa annona relevarent.

“Then when they had arrived at the island, having with them two little flasks, each filled with *celia*, having made a decision, they hid them on the way under a certain sandy part of marsh so that when they returned again on their journey this supply would ease it [i.e. their journey].”

Commentary: St. Guthlacus goes on to praeternaturally realize what the brothers have done and he chastises them. This story is based on one told by Pope Gregory the Great (*Dial.* 2.11 = *Vit. Sanct. Bened.* 18 [= PL 66.170A-B]) of a boy sent to St. Benedict of Nursia with two flasks of wine, one of which he hid by the road. St. Benedict knew about the hidden flask and when the boy returned to it he found a snake in it. There also exists an Anglo-Saxon translation of Felix’s life, in which mention is made of “two flasks filled with ale” (*twa flaxan mid aelað gefylde*) (15 [in Gonser 1909: 151, l. 3]).

T171. Sanctus Chrodegangus Mettensis, *Regula canonicorum* 8 (= PL 89.1062C-1063A [not in CCM]):

Context: Chrodegangus provides a set of rules as to the distribution of beverages for canons depending on the availability of grapes for the production of wine.

et si eadem regio vinifera fuerit, accipiant per singulos dies quinque libras vini; si tamen sterilitas impedimentum non fecerit temporis. si vero vinifera plena non fuerit, tres libras vini, et tres cervisiae, et caveant ebrietatem. si vero contigerit quod vinum minus fuerit, et istam

mensuram episcopus, vel qui sub eo est, implere non potest, iuxta quod praeualet impleat de cervisia, et eis consolationem faciant; et illis qui se a vino abstinent praevideat episcopus, vel qui sub eo est, ut tantum habeant de cervisia quantum de vino habere debuerant. quando vero Ecclesiae facultas non suppetit, aut sterilitas terrae exstiterit, sicut crebro, peccatis nostris praepedientibus, evenire solet, et praelati quantum debent dare vinum, aut siceram, seu cervisiam, canones nequiverint, praevideant eis potum ex diversis materiis confectum; non autem murmurent, sed magis cum gratiarum actione quod dari sibi potest accipiant, animadvertentes Joannem Baptistam, qui nec vinum, nec siceram, nec quid aliud quod potest inebriari bibit, quia ubi ebrietas fit, ibi flagitium atque peccatum est; et hoc admonemus, ut clerus sobriam semper ducat vitam.

et si] si concilium aquisgranense; vinifera] vini ferax concilium aquisgranense; impedimentum non fecerit] impedimento non fuerit concilium aquisgranense; et caveant ebrietatem] om. concilium aquisgranense.

“And if this region were vine-growing, they should take five litres of wine each day; if, however, infertility is a hindrance, it should not be made at the time. If it was not wholly vine-producing [they should take] three litres of wine and three of *cervisia*, and should beware of intoxication. And if it happens that the wine is less, and the bishop or the one who is under him is not able to fill this measure, equally what is stronger he should fill up from *cervisia*, and they should make consolation to them. And the bishop or the one who is under him should foresee for those who abstain from wine, so that as much as they have of *cervisia* he will have owed them as much wine. When truly the finances of the Church are not available, or the infertility of the ground will occur, as often with our hindering sins it is wont to occur, and the prelates are not able [to follow] the rules [above], they should give some wine, or *sicera*, or *cervisia*. They should foresee that drink be made for them from various ingredients. However, they should not mutter but should rather accept with a sign of thanks what it is possible for them to be given, calling to mind John the Baptist, who did not drink wine or *sicera* or anything which can intoxicate [= Luke 1:15]: this is now [considered simply] an ‘intoxicant’ but then was an outrage and sin. And we urge this, that the clergy should always lead a sober life.”

Commentary: This rule was made official Church policy at the synod of Aachen in A.D. 816 (T196-197).

T172. Sanctus Chrodegangus Mettensis, *Regula canonicorum* 23 (= PL 89.1109D [not in CCM]):

Context: See T171.

et illis qui se a vino abstinent praevideat episcopus, vel qui sub eo est, ut tantum habeant de cervisia, quantum de vino habere debuerant; et si episcopus voluerit ad suprascriptam mensuram aliquid potus addere, in eius potestate consistat, et de cervisia eis consolationem faciat.

“And the bishop foresees those who abstain from wine, or he who is under him, that as much *cervisia* that they may have, they should have as much wine. And if the bishop wished to add

any drink to the appointed measure, it should take place through his power, and he should make a consolation for them of *cervisia*.”

T173. Paulus Diaconus, *Historia miscella* 4.17 (= PL 95.804C) from Paulus Orosius, *Historiae adversum paganos* 5.7.13-14 (= T112).

T174. Alcuinus, *Epistola ad Josephum* = *Epistula* 5 Chase or 8 (MGH-E IV, 33.28-30):

Context: Alcuin complains in a letter to his friend Joseph about having to drink sour beer because of a lack of wine.

ve, ve, mors in olla, o homo Dei; quia vinum defecit in sitharchiis nostris et celia acerba furit in ventriculis nostris. et quia nos non habemus, tu bibe pro nostro nomine.

ve, ve] *vae, vae* MGH; *sitharchiis]* *sitharchis* codd.

“Alas, alas, death in a pot, oh man of God! Because wine was lacking among our provisions and sour *celia* rages in our little stomachs. And because we do not have [wine], you, drink to our name!”

T175. Alcuinus, *Vita Sancti Vedasti* 3.17 (= PL 101.674A-B = ASS 4.806F-807A [not in MGH]):

Context: King Clotharius I invites the bishop Vedastus to a party.

rogatus quoque est Sanctus ad convivium Vedastus. qui domum intrans, more sibi solito, dextera extenta, omnia sanctae crucis vexillo signavit. quaedam vero vascula ibi cervisia adstabant plena, sed male gentili errore daemoniis incantationibus infecta. quae mox ob potentiam sanctae crucis destructa crepuerunt, et quidquid liquoris habuerunt, in terram effuderunt. territus vero rex et optimates illius huius visione miraculi, sciscitabatur pontificem causam repentini prodigii. cui sanctus respondit episcopus: “per quasdam maleficorum incantationes, ad decipiendas convivarum animas, diabolica in his latuit liquoribus potentia: sed virtute crucis Christi territa, sic invisibiliter de domo effugit ista, sicut visibiliter considerastis liquorem effundi in terram.”

quidquid PL, *quicquid* ASS; *causam* PL, *causam* ASS.

“Saint Vedastus was once asked to a party. As he entered the home, as was his custom, he made the sign of the holy cross with his extended right hand. Truly nearby there were certain vessels which stood that were full of *cervisia*, but they had been infected by demonic incantations through evil pagan error. Immediately these burst and were destroyed by the power of the holy cross and whatever liquid which they held was spilled onto the ground. Truly the King [i.e. Chlotharius I] was frightened and so where his nobles by the appearance of this miracle and he inquired from the priest about the cause of the sudden prodigy. The holy bishop answered him: ‘Because of these incantations of wicked peoples, because of the deceived minds of guests, a devilish power was hidden in this liquid. But it was frightened by the vigour of Christ’s cross,

and thus it fled from the house unseen, while you observed the liquid visibly pouring onto the ground.””

Commentary: Jonas (T154) gives a slightly different account of the same miracle.

T176. Eigil Fuldensis, *Vita Sancti Sturmii* 13 (= PL 105.433B-C [not in ASS or MGH]):

Context: St. Sturm of Germany (A.D. 715-779) proposes that monks abstain from wine and only drink weak beer.

qui cum fratribus sacras exposuisset Scripturas, et quod nusquam vinum monachorum legeret esse; consensu omnium decretum est, ut apud illos nulla potio fortis quae inebriare possit, sed tenuis cervisia, biberetur.

“He had set forth the sacred Scriptures with the brothers, and he read that there should on no occasion be wine in the monasteries. It was decided by all unanimously, that among them there should be no strong drink which could intoxicate, but that weak *cervisia* should be drunk.”

Commentary: For penances for holy men drinking beer to intoxication, see T161 and 188.

T177. Remedius Curiensis, *Capitula* 1 (= MGH-L V, 441.18 + 442.12-13, 14):

Context: Remedius establishes what sort of activities are allowed on certain days.

de Dominicis diebus et reliquis festivitibus Sanctorum: ... de opera vero, quae abstinere decrevimus, iste sunt: ... cerbisa facere ...

“Concerning the days of the Lord [i.e. Sundays] and remaining festivals of the Saints: the works which we decree should be abstained from are: ... making *cerbisa* ...”

Commentary: In one hagiography (T135), beer which is made on Sunday miraculously cannot flow out of the barrel, despite numerous holes bored into it.

T178. Carolus Magnus, *Capitulare de villis imperialibus* 34 (= MGH-CRF I, 32, 86.9-12 = PL 97.353B-C):

Context: Charlemagne (who ruled from A.D. 768 to 814) provides here and in the following passages (T179-181) regulations for the imperial estates, where beer was evidently produced and drunk.

omnino praevidendum est cum omni diligentia, ut quicquid manibus laboraverint aut fecerint, id est lardum, siccamen, sulcia, niusaltus, vinum, acetum, moratum, vinum coctum, garum, sinape, formaticum, butirum, bracios, cervisas, medum, mel, ceram, farinam, omnia cum summo nitore sint facta vel parata.

“Everything is to be prepared with complete care, when they work at or make anything with

their hands, that is bacon, smoked meat, sausage, partially salted meat, wine, vinegar, mulberry wine, cooked wine, fish sauce, mustard, cheese, butter, malt, *cervisa*, mead, honey, wax, flour. All [of these] should be made or prepared with the greatest cleanliness.”

Commentary: This is a unique call for hygienic production of beer, though Bede (?) common-sensically says that one should not drink a beer in which there has been a dead mouse (T165).

T179. Carolus Magnus, *Capitulare de villis imperialibus* 45 (= MGH-CRF I, 32, 87.16-20 = PL 97.355A):

ut unusquisque iudex in suo ministerio bonos habeat artifices, id est fabros ferrarios et aurifices vel argentarios, sutores, tornatores, carpentarios, scutarios, piscatores, aucipites, id est aucellatores, saponarios, siceratores, id est qui cervisam vel pomatium sive piratium vel aliud quodcumque liquamen ad bibendum aptum fuerit facere sciant, pistores, ...

“That each steward should have good workmen in his district, that is blacksmiths and goldsmiths or silversmiths, shoemakers, turners, carpenters, shield-makers, fishermen, fowlers (that is, bird-catchers), soap-makers, makers of *sicera* (that is who know how to make *cervisa* or cider or perry or another sort of liquor fit for drinking), bakers, ...”

T180. Carolus Magnus, *Capitulare de villis imperialibus* 61 (= MGH-CRF I, 32, 88.38-39 = PL 97.356C):

ut unusquisque iudex quando servierit suos bracios ad palatium ducere faciat, et simul veniant magistri qui cervisam bonam ibidem facere debeant.

“That each steward, when he is serving, does so that his malt [or wheat?] be brought to the palace, and with him there come masters who are used to making good *cervisa* there.”

T181. Carolus Magnus, *Capitulare de villis imperialibus* 62 (= MGH-CRF I, 32, 88.40 + 89.9-10 = PL 97.356C + 357A):

ut unusquisque iudex per singulos annos ex omni conlaboratione nostra ... quid de morato, vino cocto, medo et aceto, quid de cervisa, de vino novo et vetere ...

“That each steward for each year [make a record] of all our income ... that from mulberry wine, boiled wine, mead, and vinegar; that from *cervisa*, from new and old wine ...”

T182a. Pseudo-Dositheus, *Hermeneumata Montepessulana* s.v. ζῦθος (= CGL III, 315.66):

ζῦθος *zithum*

ζῦθος Nelson, ζυθος cod.

“*Zūthos*: *zithum*.”

T182b. Pseudo-Dositheus, *Hermeneumata Montepessulana* s.v. ζῦθος (= CGL III, 315.67):

ζῦθος *turbulentum*

ζῦθος Nelson, ζυθος cod.; *turbulentum* <genus potius>/<vini genus>/<fermentum>? Nelson.

“*Zūthos*: [a] cloudy [fermented drink].”

Commentary: In this case *turbulentum* may be, but is not necessarily, a Latin synonym for ζῦθος rather than simply a descriptive term for it.

T183. Pseudo-Dositheus, *Hermeneumata Montepessulana* s.v. πόματος κριθῶν (= CGL III, 315.68):

πόματος κριθῶν *camum*

πόματος κριθῶν Nelson, ποματος κριθων cod., πόμα τὸ ἐκ κριθῶν Boucherie.

“Of a drink of barley: *camum*.”

Commentary: Boucherie’s emendation may certainly be right, yet it remains possible that πόματος κριθῶν is a lemma lifted directly from a text which has not independently survived.

T184. Pseudo-Dositheus, *Hermeneumata Montepessulana* s.v. πόματος ἐκ πυρῶν (= CGL III, 315.69):

πόματος ἐκ πυρῶν *cerbesia*

πόματος ἐκ πυρῶν Nelson, ποματος εκ πυρων cod., πόμα τὸ ἐκ πυρῶν ? Nelson.

“Of a drink [made] from wheat: *cerbesia*.”

Commentary: Compare T159b.

T185. Pseudo-Philoxenus, *Glossae Latino-Graecae* s.v. *curmen* (= CGL II, 119.26):

curmen ζῦθος ἀπὸ σίτου

ζῦθος ἀπὸ σίτου Nelson, ζύθος ἀπὸ σίτου Goetz, ζυθος αποσιτου cod.

“*Curmen*: *zūthos* [made] from cereal [or wheat?].”

T186. Pseudo-Philoxenus, *Glossae Graeco-Latinae* s.v. ζύθιον (= CGL II, 322.42):

ζύθιον *fermentum*

ζύθιον Nelson (cf. Hesychius [T106]), ζύθιον cod.

“Zuthion: that which is fermented [or ferments].”

Commentary: Note the different definition of this term in Hesychius (T105).

T187. Eginhardus, *Historia translationis beatorum Christi martyrum Marcellini et Petri* 4.44 + 45 (= PL 104.563D-564A + 564C = ASS 21.188D-E + F) = Einhardus, *Translatio et miracula Sanctorum Marcellini et Petri* 4.11 (= MGH-S XV.1, 251.43-53 + 252.2-6):

Context: Marcellinus (Pope from A.D. 296 to 304) and Petrus, Saints martyred under Diocletian, still perform miracles in death.

ubi cum cervisiam ministris petentibus distribuere coepissemus, supervenit puer missus a quodam conservo nostro, flasconem ferens, quem sibi impleri flagitabat. qui cum esset impletus, petiit ut etiam sibi de eadem cervisia quantulumcumque daretur ad bibendum. datum est in vase, quod casu vacuum supra cupam, in qua cervisia erat, positum fuerat. sed ubi hoc hausturus ori admovit, cum ingenti admiratione, vinum hoc, non cervisiam esse, clamavit. cumque eum is, qui et flasconem impleverat et id ipsum, quod illi datum fuit, de eodem foramine traxerat, mendacii coepisset arguere: “sume,” inquit, “et gusta; et tunc me non falsum, sed potius verum dixisse probabis.” sumpsit ille atque gustavit, sibique similiter vinum hoc, non cervisiam sapere testatus est. tunc tertius et quartus, caeterique qui aderant, singillatim gustando et mirando, totum quod in vase fuerat ebiberunt. quotquot autem inde gustaverunt, meri, non cervisiae id saporem habuisse, testati sunt. ... coepi mecum multa volvendo tractare atque mirari, quidnam sibi vellet, quidve portendere posset illa cervisia in vinum, id est deterioris potionis in meliorem facta mutatio; aut cur in eo loco, id est, in regia domo, ac non potius in eo, ubi beatorum martyrum, qui haec prodigia per virtutem Christi fecerunt, sacratissima corpora recondita sunt, huiusce modi miraculum evenisset?

cum cervisiam PL, ASS, *cum cervesam* MGH-S ms., *cum cervisam* MGH-S ed.; *cervisia* PL, ASS, *cervisa* MGH-S; *cervisiam* PL, ASS, *cervisam* MGH-S; *cervisiae* PL, ASS, *cervisae* MGH-S; *saporem id* PL, ASS, *id saporem* MGH-S; *cervisia in vinum* PL ed., ASS, *cervisiae in vinum* PL cod.; *cervisia in vinum* PL, ASS, *cervisae in vinum* MGH-S.

“Then, when we began to distribute the *cervisia*, after the stewards had been asked, a boy came upon us sent from some fellow servant of ours, bearing a flask which he entreated to him to fill. Once it had been filled, he asked how much *cervisia* he should be given from it to drink. It was said that in the vessel there had been placed what by chance was more than the empty *cupa* [i.e. barrel] in which the *cervisia* was. But when he had moved up this drink to his mouth, with great wonderment, he exclaimed that it was wine, not *cervisia*. And when he who both had filled up the flask and had brought to him from this opening that which was given to him, began to accuse

him of lying: 'Take up,' he said, 'and taste. And you will esteem that I speak not falsely, but rather truly.' And he took up [the drink] and tasted, and to him it was evident that it tasted similar to wine, not *cervisia*. Then a third time and a fourth, and others who approach, one by one tasted and wondered, and all that had been in the vessel was drunk. But however many had tasted from it, the pure things were evident to not have the taste of *cervisia*. ... I began to discuss and wonder, why he wanted this, or what in that *cervisia* was able to indicate wine, that is the transformation made from a worse beverage into a better one, or how, in this place, that is in the royal house a miracle of this sort had happened, and not rather in that [place] where the very sacred bodies of the blessed martyrs [i.e. Marcellinus and Petrus], who had performed these prodigies through the virtue of Christ, were put away."

Commentary: There is no other ancient evidence for the miraculous turning of beer into wine, though another author speaks of beer miraculously tasting as good as the best wine (T142). However, in the thirteenth century A.D., the venerable Ida of Louvain purportedly turned beer (*cerevisia*) into wine, a miracle compared with that of Jesus at Cana (Anonymus, *Vita venerabilis Idae Lovanensis* 5.28 [= ASS 11.166A-B]).

T188. Halitgarius Cameracensis, *Liber poenitentialis* (= PL 105.700D-701A = 723B):

inebriatur quis a vino, sive cervisia, contra interdictum Salvatoris et apostolorum eius. quod si votum habuerit sanctitatis, quadringinta diebus in pane et aqua culpam diluat: laicus vero septem diebus poeniteat.

quadringinta Nelson, XL codd.; *septem* Nelson, VII codd.

"Whoever is intoxicated on wine or *cervisia*, [does so] against the prohibition of the Saviour and his apostles. So that if he has taken the vow of sanctity he will expiate the fault for forty days on bread and water; [if he is] a lay person, however, he will repent for seven days."

Commentary: The beginning of this penance is clearly taken from Theodore of Canterbury (T131) while the end of it is the same as that given in Irish texts (see T161).

T189. Halitgarius Cameracensis, *Liber poenitentialis* (= PL 105.705A-B + C = 726D + 727A):

poenitentia unius anni, qui in pane et aqua jejunandus est, talis esse debet: in unaquaque hebdomada tres dies, id est, tertiam feriam, quintam et sabbatum a vino, medone, mellita cervisia, a carne, et sagimine, et caseo, et ovis, et abdomine, et pinguibus piscibus se abstineat. manducet autem minutos pisciculos, si habere potest; sin autem, unius generis piscem, legumina, et olera, et poma comedat, et cervisiam bibat. poenitentia illius anni talis esse debet: ... cervisiam bibat, sed sobrie.

mellita cervisia Nelson; *mellita, cervisia* PL.

"The penance of a single year ([for] whoever is to be fasting on bread and water) should be as follows: for three days for each week, that is, on the third holiday, the fifth, and the Sabbath he is to abstain from wine, mead, honeyed *cervisia*, from meat and herbs, and cheese, and eggs, and

belly, and fat fish. However, he may eat small little fish, if he may have it; otherwise, he may consume one kind of fish, vegetables, and oil, and fruit, and he may drink *cervisia*.
“The penance of that [the second] year should be as follows: ... and he may drink *cervisia*, but soberly.”

Commentary: This section is copied from Theodorus (T130) with some minor changes.

T190a-b. Altfridus, *Vita Sancti Liudgeri* 2.8 (= MGH-S II, 421, col. 1, 56 - col.2, 18) =
Miracula Sancti Ludgeri episcopi Mimigardeford 2.14 (= ASS 9.653E-F):

Context: Altfridus recalls a visit by the German St. Liudgerus (or Ludgerus) (c. A.D. 742-809) to his monastery in A.D. 785 which was attended by some miraculous events.

... ad nostrum monasterium venire et beati viri memoriam frequentare, et aliquot diebus cum nostris manere consuevit. sed ne crebrior eius accessus fratres gravaret, suos cum annona homines, qui suis suorumque usibus necessaria pararent, praemittere solebat. quod dum quodam etiam tempore secundum consuetudinem suam fecisset, contigit natalitium Sancti confessoris diem supervenire. et quia hoc in primis dormitionis eius annis erat, necdum sacrosancta eius sollemnitas feriabatur. proinde, cum die eodem illi quos adhuc praemissos esse diximus cervisia paranda instarent, ligna quae in ignem missa fuerant, instar stipularum in momento consumpta sunt. deferebantur alia post alia, sed igni immisa, durare aliquandiu nequibant. iam prope erat, ut se sine effectu laborare videntes labori succumbere, et opus intermittere cogerentur. perstabant tamen donec cervisiae utcumque confectio cocta, in alia esset vasa transponenda. cumque ad hoc ventum esset, ut in vase ad hoc parato aqua super spargi deberet, primo quidem omnino nihil decurrere quivit. deinde, cum iam non manu, ut assolet, sed situlis aqua superfunderetur, raris stillis parum aliquid stillare coepit. hoc quoque ipsum, quod ita collectum est, gustu amarum, et omnino ad nihil utile foras eiectionum est.

sollemnitas MGH, sollemitas ASS. cervisia paranda Nelson, cervisa paranda MGH, cervisiae parandae ASS, cervisiae ASS, cervisae MGH; esset ASS, essent MGH; hoc quoque MGH, hoc ASS.

“... he [i.e. Liudgerus] was accustomed to come to our monastery and observe the memory of the saintly man, and to remain with us several days. But his frequent visits did not annoy the brothers, [since] he used to send ahead his men with provisions, which satisfied his needs and their own. When at one time then he made his next habitual visit, he happened to come on the birthday of the confessor Saint. Because this was in the first years of his [i.e. the confessor Saint's] sleep, his holy ritual observance was not celebrated. Therefore, with that day, those whom we said to be sent forward approached the prepared *cervisa*. The logs which had been thrown in the fire, like pieces of straw were consumed in an instant. One after another was removed, but they incited the fire, and they were not able to continue for some time. It was already near [nightfall] when the laborers, seeing that their work was without effect, gave up and decided to put off the work. However, they remained until whenever the composition of *cervisa* was cooked and it was transferred into other vessels. And when there was a wind [blowing] toward it, so that the prepared water should spill over, indeed at first nothing at all could flow

out. Now the water remained in the urn not because of a hand, as is usual, but began to drip few drops inconsequently. An this, which had been collected, had a bitter taste, and nothing at all useful was thrown out of doors.”

Commentary: Compare the story of beer miraculously not overflowing because of the presence of St. Columban in the monastery (in Jonas [T146]). Bitterness in a beer is also considered unenviable in a later life (T212) while sourness is so considered in Jonas (?) (T155).

T191. Rihcolfus, *Epistola ad Eginonem* (= MGH-CRF I, 127, 249.16, 23-26):

Context: Rihcolfus, bishop of Moguntiacum (Mainz), writes to Eginones, bishop of Constantina, in A.D. 810, on the authority of Charlemagne, that on certain days fasts must take place.

... domnus imperator nos admonuit ... ut V Idus Decembres, IV Idus et III Idus, quod evenit secunda feria ... ut omnes, quos senectus vel infirmitas sive infantia non prohibet, jejument usque ad horam ... abstineant se a carne et vino et a cervisa, milschida et medo ...

“... the lord Emperor [Charlemagne] commands us ... that on the fifth day before the Ides of December, on the fourth and third days before the Ides, that [day] which happens to be a following feast day ... that everyone (the old, the sick, and children are not prohibited) fast until the hour ... they are to abstain from meat and wine and from *cervisa*, spiced mead, and mead ...”

Commentary: This letter has only survived in a fragmentary state (though I leave out much of it here). For the abstention of (certain types of) beer during fasts, see David (T119) with the further references cited there.

T192. Benedictus Anianensis, *De concordia regularum* 48.10 (= PL 103.1122B [not in CCM]):

Context: Benedict collected rules from numerous sources (including Columban [see T128]), while working in A.D. 816 on the monastic reforms under King Louis the Pious (who ruled from A.D. 814 to 840) to give standards for all monasteries in the Empire (based mainly on Benedict of Nursia's rule), which were standardized in the synods of Aachen (T194-197).

potus vero sicerae liquoris, id est cervisiae, mensura solita tribuatur. si voluntas fuerit, vel labor, vel festus dies, vel hospitis adventus pia precatio exagitaverit, vino potio augenda est.

potus vero PL, potus vero si codd.; si voluntas Benedictus, si voluntas abbatissae Anon.; vel labor Benedictus, si labor Anon.

“Truly, as a drink, a single measure of liquid *sicera*, that is of *cervisia*, is allotted. If there will be a choice [by the abbot], or work, or a feast day, or the holy prayer of a guest who has arrived has incited it, wine is to be offered as a drink.”

Commentary: This passage is taken, with a few changes, from an anonymous Irish rule for nuns (T133). Bede recounts a story in which a guest (St. Cuthbert) at a monastery is allowed to chose between beer and wine (T162).

T193. Benedictus Anianensis, *De concordia regularum* 71.5 (= PL 103.1342A [not in CCM]):

Context: See T192.

similiter et qui in brachisitorium ad cervisiam faciendam inhabitaverint, unus ex eis senior praepositus secundum regulam pistoris omnia custodiat.

qui PL, quae Anon.; brachisitorium PL, braxatorium Anon.; senior PL, senior sit codd., Anon.; praepositus PL, praeposita quae Anon.; pistoris PL, pistricis Anon.

“Similarly also those who had inhabited the *brachisitorium* [i.e. brewery] for the making of *cervisia*, one of them, the older one appointed, is to keep watch of all, according to the rule of the miller.”

Commentary: This again is taken from an anonymous Irish rule for nuns (T134), and the feminine endings are changed into masculine ones.

T194. *Concilium Aquisgranense, acta praeliminaria* 28 (= CCM I, 436.31-33 [not in SCC]):

Context: The two synods of Aachen (in A.D. 816 and 817), supported by Benedict of Aniane (see T192-193), established universal rules for monks which were followed in the scheme of the plan of St. Gall (T199) as well as by the abbot Adalhard (T200-205) and others. At the first synod, in August, A.D. 816, the following rules (T194-197) concerning beer were decided upon.

ut emina vini per diem sufficiat et insuper augeat ita ut non usque ad ebrietatem sicut regula dicit. si vinum defuerit, duplum de cervisa restituat.

“That one half pint of wine each day should be adequate and should increase so as not to the point of intoxication, as the rule states. If wine is lacking, twice as much of *cervisa* is to be provided.”

Commentary: This decision (also in T195) was copied by Hlotharius (T198).

T195. *Concilium Aquisgranense, decreta authentica* 20 (= CCM I, 463.1-4 [not in SCC]) = Benedictus Levita, *Collectio capitularis* 22 (= CCM I, 547.18-548.2):

ubi autem vinum non est unde emina detur duplicem eminae mensuram de cervisa bona, et quaecumque praeter haec regula iubet singuli eorum cum necessitas expostolaverit absque dilatione accipiant.

eminae] om. Benedictus; *eorum*] om. Benedictus.

“Where, however, there is no wine from which one half pint is to be given [daily], a double measure of one half pint of good *cervisa* [is to be given], and whatever is beyond what this rule orders, each of them should accept without delay when necessity will have demanded it.”

T196a-b. *Concilium Aquisgranense, institutio canonicorum* 122 (= MGH-CAC I.1, 401.10-15, 20-21) or 1.122 (= SCC 14.232B-C) = Amalarius Treverensis, *Regula canonicorum* 122 (= PL 105.917D-918B):

Context: The following rule for canons was decided upon in the section “On the measure of food and drink” (*de mensura cibi et potus*).

in locis vero ubi maiores facultates sunt Ecclesiae, verbi gratia, tria aut quatuor, aut certe octo, et eo amplius millia mansi, si eadem regio vini ferax fuerit, accipiant per singulos dies quinque libras vini; si tamen sterilitas impedimento non fuerit temporis. si vero vinifera plene non fuerit, tres libras vini et tres cervisiae. et si penitus vini ferax non fuerit, accipiant libram vini et quique libras cervisiae. ... et si eadem regio, ut iam dictum est, vineis caruerit, tribuantur eis tres librae cervisiae, et si facultas suppetit, libra vini.

si] et si Chrodegangus; vini ferax] vinifera Chrodegangus; impedimento non fuerit] impedimentum non fecerit Chrodegangus; cervisiae SCC, cervisiae MGH, cervisiae C, cervisiae et caveant ebrietatem Chrodegangus, cervisiae Amalarius; cervisiae Amalarius, SCC, cervisiae MGH.

“In places where there are the greatest finances for the Church, for the sake of a word, [regions which contain] three or four [churches], or actually eight, and in it more than one thousand abide, if this region were fertile in vines, they should take five litres of wine each day; not, however, if it was infertile by a hindrance at the time. If it was truly not wholly vine-producing, [they should take] three litres of wine and three of *cervisa*. And if it was completely not fertile in wines, they should take one litre of wine and five litres of *cervisa*. ... And if this region lacked vines (as it has already been said), three litres of *cervisa* is to be assigned to them, and if the means are available, one of wine.”

Commentary: This is based on St. Chrodegangus’s rule for canons (T171).

T197. *Concilium Aquisgranense, institutio sanctimonialium* 13 (= MGH-CAC I.1, 447.4-10) or 2.13 (SCC 14.270A):

Context: The following rule for monks was decided upon at the synod of Aachen in August, A.D. 816.

... singulae sanctimoniales per dies singulos tres libras panis accipiant et, in his regionibus quae viniferae sunt, tres libras vini, si sterilitas temporis non impedierit, si autem plene eadem regio vini ferax non fuerit, duas libras vini et duas cervisiae et, si minime vini ferax fuerit, tres libras cervisiae et, si facultas permiserit, libram vini. in locis vero minoribus accipiant duas libras vini et, si eadem regio, ut praemissum est, vini ferax non fuerit, duas libras cervisiae et, si facultas suppetit, libram vini.

cervisiae S, SCC, cervisiae MGH; viniferae SCC, vinifere MGH.

“... each holy person each day should take three pounds of bread and, in those regions which are vine-producing, three litres of wine, if it was not hindered by infertility at the time. If, however,

the this region was completely not vine-producing, [they should take] two litres of wine and two of *cervisa* and, if it was very little vine-producing, [they should take] three litres of *cervisa* and, if finances allow it, a litre of wine. In the fewer places they should take two litres of wine and, if this region, as it has been related, is not vine-producing, two litres of beer and, if the finances are available, a litre of wine.”

Commentary: This is also copied from St. Chrodegangus’s rule for canons (T171), but in this case is applied to clergy generally. In a version of the synod’s decision in one codex from the Vatican only wine is mentioned without any mention of beer (SCC 14.296E-297B).

T198. Hlotharius, *Capitulare monasticum* 22 (= MGH-CRF I, 170, 345.18-19 [not in CCM]):

Context: Beer is to be served in a monastery when wine is not available.

ubi autem vini non est, unde emina detur, duplicem eminae mensuram de cervisa bona.

“Where, however, there is no wine, one half pint is to be given of it [wine], [and] a double measure of a half pint of good *cervisa*.”

Commentary: This rule is based on that established at the synod of Aachen of A.D. 816 (T194-195, and see 197).

T199a. Hatto Baselensis (?), *Charta abbatae Sancti Galli* 9.3.1-2:

Context: The plan of the abbey of St. Gall was based on the monastic scheme decided upon at the two synods of Aachen in A.D. 816 and 817 (see T194-197).

hic fratribus conficiatur cervisa

hic coletur celia

“Here the *cervisa* is to be made for the brothers.”

“Here the *celia* is to be strained.”

T199b. Hatto Baselensis (?), *Charta abbatae Sancti Galli* 10.4 and 6:

domus conficiendae celiae

hic refrigeratur cervisa

“House for the making of *celia* [for the house of the distinguished guests].”

“Here the *cervisa* is cooled.”

T199c. Haito Baselensis (?), *Charta abbatiae Sancti Galli* 30.5.1:

granarium ubi mundatu frumentum servetur et quod ad cervisam praeparatur

“Granary where the cleansed cereal [or wheat?] is kept and [also] that [cereal which is used] for *cervisa* [i.e. malt] is prepared.”

T199d. Haito Baselensis (?), *Charta abbatiae Sancti Galli* 32.1 and 3:

bracitorium

ad refrigerandam cervisam

“Brewery [for the house of pilgrims and paupers].”

“For the cooling *cervisa*.”

T200. Adalhardus Corbeiensis, *Statuta antiqua abbatiae Sancti Petri Corbeiensis* 1.3 (7) (= CCM I, 369.32-370.3) or 1.2 (= PL 105.537B-C):

Context: This passage and the following five (T201-205) form part of Adalhard’s rule for the abbey of St. Peter and St. Stephen at Corbie, France, following the precepts for monks established in the synods of Aachen in A.D. 816 and 817 (see T194-197). The abbey at Corbie was founded around A.D. 660 by Queen Balthilda and populated by monks from Luxeuil (founded by St. Columban; see the miracle said to have occurred there at T146).

isti autem sunt dies tredecim in quibus eis, propter amorem Dei et horum sanctorum dierum, excepto provenda sua, si non amplius, vel talis consolatio danda est; id est, inter duos, panis unus vasallorum talis qui fiunt ex modio uno triginta et unicuique cuiuslibet generis pulmenti media libra et unicuique plenus calix, si fuerit unde, de vino; sin autem, de cervisa fratrum.

horum CCM, honorem PL.

“However there are thirteen days in which, because of the love of God and of hours of sacred days, there is an exemption of their [usual] sustenance, if not more, either such an alleviation is given: that is, among two, one [loaf of the] bread of vassals, as much as they made from thirty-one pecks [of cereal], and, for each one, a moderate amount of pounds of whatever type of food and, for each one, a full cup, of wine if there was some there; however, if not, of the *cervisa* of the brothers.”

Commentary: Beer is the normal daily drink of the monks (see T201) but wine, if available, is given on thirteen special days of the year, namely (as the text goes on to mention), Christmas, the Theophany, St. Balthilda’s day, the Annunciation, the fortieth Sunday, the day of the Last Supper, Easter, the Ascension, Pentecost, St. John the Baptist’s day, St. Peter’s day, St. Martinus’s day, and St. Andrea’s day. In one passage of the statutes it is stated that certain lay people are to be given “two pints of beer or one pint of wine” (*duo sextaria cervisae aut unum sextarium vini*) on Christmas and Easter (*additio* 1 [= CCM I, 418.17-419.1] = 2.4 Levillain); however, it has been

shown that this is an interpolation to the text dating to after A.D. 1123 (Verhulst and Semmler 1962: 97-98).

T201. Adalhardus Corbeiensis, *Statuta antiqua abbatae Sancti Petri Corbeiensis* 2 (10) (= CCMI, 373.12-18) or 1.4 (= PL 105.539A-B):

de potu autem detur cotidie cervisae modius dimidius id est sextarii octo de quibus dividuntur sextarii quattuor inter illos duodecim suprascriptos, ita ut unusquisque accipiat calices duos. ex aliis quoque quattuor sextariis, datur clericis quibus pedes lavantur a fratribus unicuique calix unus, et Vuilleramno servitori calix unus. quod residuum fuerit, in arbitrio ospitalarii relinquimus quomodo illud sive infirmis, sive aliis pauperibus dividat.

detur cotidie CCM, quotidie detur PL; cervisae CCM, cervisia[e] Levillain, om. PL; octo CCM, VIII PL; quattuor CCM, IV PL; duodecim CCM, XIII PL; quattuor CCM, IV PL, duos CCM, II PL; Vuilleramno CCM, Vuilleranno PL; ospitalarii CCM, hospitalarii PL.

“However, concerning drink, a half peck of *cervisia* is given daily, that is eight pints from which four pints are to be divided among those aforementioned twelve [i.e. the twelve paupers who stay with the monks each night], so that each receives two cups. From the remaining four pints, one cup is given to each clergyman, and one cup to Vuillerannus the servant. What is left we shall leave to the master of the guests so that it may be divided in some way either among the sick or the other paupers.”

T202. Adalhardus Corbeiensis, *Statuta antiqua abbatae Sancti Petri Corbeiensis* 3 (12) (= CCMI, 378.22 + 379.4-5, 7, 8, 19, 21-22) or 1.7 Levillain (= PL 105.542B + C + D):

de molinis vel cambis, talis volumus ut sit ratio. ... et ideo nolumus ut ullum alium servitium ... nec braces faciendo, nec humlonem, nec ligna solvendo ... sed tantum sibi et suo molino serviat. ... volumus etiam ut ... haec modia quantum eis convenit, sic solvant in antea eorum censum, sive de annona sive de brace.

humlonem] humionem PL; in antea] in antea PL.

“What we want the rule to be for the mills and malthouses. ... And therefore we do not want [the miller to have] any other duty .. neither to make malt, nor to collect hops or wood ... but that he should take care as much as possible of himself and his mill. We also want that ... as many pecks as arrive to them [i.e. the millers], whether of [unmalted] cereal or of malt, they complete their inventory beforehand [i.e. before milling the cereal or malt].”

Commentary: This section is introduced with a caption about the rules for both the mills and malthouses, but unfortunately the section on the malthouses has not survived (see Lesne 1925: 400-401 and Verhulst and Semmler 1962: 107, n. 76 and 110), though see the brief mention of them at T204 below. It is virtually certain that it is for the production of beer that the hops are to be collected and the malt is to be made and ground (see further T204 below).

T203. Adalhardus Corbeiensis, *Statuta antiqua abbatae Sancti Petri Corbeiensis* 4 (13) (= CCM I, 381.25-382.2) or 2.1 (= PL 105.544B):

sic distribuat dispensator illi ipsum panem donec numerus, si necesse fuerit ortolano, completus fiat. detur etiam unicuique ortolano a cellerario, de cervisa modius unus.

ortolano CCM, hortolano PL; modius unus CCM, modium I PL.

“Thus the steward should distribute this bread until the amount, whatever is necessary for the gardener, be reached. One peck of *cervisa* is also to be given by the cellarer to each gardener.”

T204. Adalhardus Corbeiensis, *Statuta antiqua abbatae Sancti Petri Corbeiensis* 4.3 (24-25) (= CCM I, 400.4-17, 21-401.4) or 2.15 Levillain (omitted in PL 105.550):

de cambis quoque et bracibus, quae de cambis fiunt, similiter volumus ut decimus modius de bracibus, postquam facte fuerint, portario dandus, priusquam monasterio deducantur separetur; et si forte tantum non restat unde illa servita dominica plena sit nec de ipsis cambis impleri possit, de annona dominica quae decimata est compleatur, et inde portario decima non detur. portarius autem, ut supra dictum est, de malatura braces suas per suam sollicitudinem ad se venire faciat. si vero ibi satis non habuerit ipse sibi scientem hominem conducat qui tantum ei braces faciat quantum sufficiat.

de humlone quoque, postquam ad monasterium venerit decima, ei portio ... detur. si vero hoc ei non sufficit, ipse, vel comparando vel quolibet alio modo, sibi atquirat unde ad cervisas suas faciendas sufficienter habeat. ... similiter ad omnes cervisas bratsare bratsatores dominici. portarius autem annonam et braces de suo dare debet, et quotiens aut in cervisa aut in panibus numerus eius quem dedit consumptus fuerit, iterum alium augeat ut semper de suo et non de dominico fiat.

supra dictum CCM, supradictum Levillain; atquirat CCM, adquirat Levillain; faciendas CCM, faciendo Levillain; annonam CCM, anonom Levillain.

“Concerning the malthouses and the malt which come from the malthouses, we want similarly that a tenth of a peck of the malt, after it has been made, be given to the porter, before it is taken away and divided for the monastery. And if by chance that much does not remain from that which the lord’s duty may be filled, nor is it possible to fill [enough] for the same breweries, it should be filled up from the lord’s cereal which was given as a tithe, and therefore a tenth will not be given to the porter. The porter, however, as was said above, should make it his own concern whether his malt arrives to him from the cereal to be milled. If truly there will not be enough there he should employ for himself a knowledgeable man [i.e. a maltster] who should make for him as much malt as necessary.

“Also concerning hops, after the tithe has come to the monastery, a portion is given to him [i.e. the porter] ... If it is really not enough for him, he, either by comparison or by whatever other means, may acquire for himself as much as necessary from which to make his own *cervisa*. ...

Similarly [just as the bakers of the lord should make all of the bread] the *bratsatores* [i.e. brewers] of the lord [should] brew the *cervisa* for everyone. However, the porter should give [unmalted] cereal and malt from his own [supply], and as many times as the amount which he gave which will be consumed either in [the form of] *cervisa* or in [the form of] bread, again he should increase the other [amount that much] so that always it may be from his own [supply] and not from the lord.”

Commentary: This is the first certain reference to the use of hops in beer (see also the mention to picking hops in T202 above). It seems to have been often neglected because of its omission in *PL*. The next reference to hopped beer comes only one year later, also in the context of them being given as a tithe (T206). For the tithe of hops see also the account of the abbot Hilduin of St. Denis (T208). For bitter beer making men sick, see T214.

T205. Adalhardus Corbeiensis, *Statuta antiqua abbatae Sancti Petri Corbeiensis* 6.4 (25) (= CCM I, 401.5 + 6-9) or 1.8 Levillain (omitted in *PL* 105.543):

de pane autem et cervisa ista erit consideratio. <...>

<de lignis adducendis. ...> ut, sicut ipsi portarii de decimis quae eis dantur annonam et braces de suo dant ita quoque ligni similiter dent<ur>, iuxta quod in utroque ad suum opus preparandum ipsi cum ceteris ministris consideraverint necessarium esse.

<de lignis adducendis. ...> suppl. CCM; dant CCM, dantur Levillain; ligni CCM, ligna Levillain; dent<ur> CCM, dent Levillain; preperandum CCM, preparandi Levillain.

“However, concerning the bread and *cervisa* there will be this consideration: <...>

“<Concerning the collection of wood. ...> that just as these porters give provisions from the tithes which are given to them and they give malt from their own [supply] (just as wood is similarly given), beside this on both sides they should consider what is necessary for their work of preparing these with other ministers.”

Commentary: The rest of this section simply involves provisions of wood.

T206. Ansegisus, *Constitutio abbatum Fontanellensium* 66 (= *MGH-S II*, 300.23 [not in CCM]):

Context: The following is an item from a list of various tithes which was made by Ansegis the abbot of Fontanella, a monastery located near the mouth of the Seine River which was founded by St. Wandrille around A.D. 645.

sicera <ex> humolone quantum necessitas exposcit.

<ex> Nelson, cf. *sicera ex lupolo* *MGH n.*

“*Sicera* [made from] hops, as much as is required for necessities.”

Commentary: This is clearly a reference to hopped beer (see T204 for the first reference to it). It is uncertain which region was to give this as a tithe (the name has dropped out, though it is suggested in Horn and Born [1979: 3:126] that it was Burgundy). For a tithe of beer, see also T138.

T207. Anonymus, *Tractoria de coniectu missis dando* 1 (= MGH-CRF II.1, 189, 11.4-8):

volumus, ut tale coniectum missi nostri accipiant, quando per missaticum suum perrexerint: hoc est, ut unusquisque accipiat panes quadraginta, friskingas duas, porcellum aut agnum unum, pullos quatuor, ova viginti, vino sextarios octo, cervisa [or sicera] modios duos, annona modios duos; et quando prope sunt de illorum domibus, nullum accipiant coniectum.

ut unusquisque] unusquisque 4; *friskingas* Boretius, Krause, *friskingas* 6, *frixingas* 1, *frixingas* 8, *frisingas* 2, 4; *pullos ... duos* om. 6; *cervisa]* *sicera* 1, 9.

“We wish that they accept such a dispatch of our sending, when they had hastened through their delivery. That is, that each should accept forty loaves, two boars, a piglet or one lamb, four chickens, twenty eggs, eight pints for wine, two pecks [of cereal] for *cervisa* [or *sicera*], two pecks for provisions. And when they are near our homes, that they accept no dispatch.”

T208. Hilduinus, *Regula villarum* 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 25, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, and 44 (not in *PL* or *MGH*):

Context: Hilduin, the abbot of St. Denis in the early to mid ninth century A.D., established what each neighbouring village owed as a tithe to the abbey (which was founded in A.D. 626 by King Dagobert I), including annual measures of what is more than likely malt (from 5 to 30 pecks) and of hops (from 1 to 12 pecks), doubtlessly to be used in the production of beer.

de Clipiaco super Sequanam et Rubrido: ... de braciis m(odii) x ...

de Vivario: ... de brac(iis) m(odii) vii ...

de Cormiliis: ... de brac(iis) m(odii) x ...

de Taberniaco: ... de brac(iis) m(odii) x ...

de Cersilla: ... de brac(iis) m(odii) v ...

de [Fon]tanido: ... de brac(iis) m(odii) v ...

de [Gu]nsa[nevi]lla: ... de brac(iis) m(odii) x ...

de Gaunissa: ... de brac(iis) m(odii) x ...

de Lusarcis: ... de brac(iis) m(odii) x ...

de Cava: ... de brac(iis) m(odii) x ...

de [Vitr]iaco [?]: ... de brac(iis) m(odii) vi ...

de Latiniaco: ... de brac(iis) m(odii) v ...

de Nantogilo et [Latuero?]: ... de brac(iis) m(odii) x ...

de [.....] in monte: ... de brac(iis) m(odii) v ...

[de] et Avisnis: ... de brac(iis) m(odii) x ... de umlone m(odii) xii ...

[de]o: ... de brac(iis) m(odii) vi ...

[de]o: ... de brac(iis) [m(odii) .] ...

[de ...]: ... de bra[c(iis) m(odii) .] ...

de Belna: de brac[(iis) m(odii) .] ...

de Noviente: ... de brac(iis) m(odii) viii ...

de Madriaco et Faberolis: ... de [brac(iis)] m(odii) xv ... de umlone mod(ii) viii ...

de Campania: ... de braciis m(odii) xxx, de umlone m(odii) iii ...
de Alvernus: ... de brac(iis) m(odii) xx, de umlone m(odii) ii ...
de Mairiu: de brac(iis) m(odii) xx, de umlone m(odii) ii ...
de [Curtis?]: ... de brac(iis) m(odii) xx, de umlone m(odii) ii ...
de Leudonecurte: ... de brac(iis) m(odii) xx, de umlone m(odii) ii ...
de Novavilla: ... de braciis m(odii) x, de umlone m(odii) i ...
de Stirpiniaco: ... de brac(iis) m(odii) xxx, de umlone m(odii) iii ...
de Campiniaco: de brac(iis) m(odii) x, de umlone m(odii) i ...
de Braogilo: ... de brac(iis) m(odii) xv, de umlone m(odii) i et d(imidium) ...
de Blanziano ... de brac(iis) m(odii) xv, de umlone m(odii) i et d(imidium) ...
de Alnido: ... de brac(iis) m(odii) xx, de umlone m(odii) ii ...
de Melniaco: ... de braciis m(odii) xii, de umlone m(odii) i ...
de [.....]iaco: ... de brac(iis) m(odii) xiii, de umlone m(odii) i ...
de Marca: ... de brac(iis) m(odii) xv, de umlone m(odii) i et d(imidium) ...

"From Clichy-sur-Seine and Rouvray (?): ... 10 pecks of malt ...
 From Vivario (?): ... 7 pecks of malt ...
 From Corneilles en Parisis: ... 10 pecks of malt ...
 From Taverny: ... 10 pecks of malt ...
 From Sarcelles: ... 5 pecks of malt ...
 From Fontenay-lès-Louvres: ... 5 pecks of malt ...
 From Goussainville: ... 10 pecks of malt ...
 From Gonesse: ... 10 pecks of malt ...
 From Luzarches: ... 10 pecks of malt ...
 From Cava (?): ... 10 pecks of malt ...
 From Vitriaco (?): ... 6 pecks of malt ...
 From Lagny-sur-Marne: ... 5 pecks of malt ...
 From Nanteuil-sur-Marne and Latuero (?): ... 10 pecks of malt ...
 From [.....] on the hill: ... 5 pecks of malt ...
 [From] and Avesnes: ... 10 pecks of malt ... 12 pecks of hops ...
 [From]o: ... 6 pecks of malt ...
 [From]o: ... [? pecks] of malt ...
 [From]: ... [? pecks] of malt ...
 From Beaune-la-Rolande: ... [? pecks] of malt ...
 From Nogent-sur-Seine: ... 8 pecks of malt ...
 From Madriaco (?) and Faverolles: ... 15 pecks of malt ... 8 pecks of hops ...
 From Champagne: ... 20 pecks of malt, 3 pecks of hops ...
 From Auvers-sur-Oise: ... 20 pecks of malt, 2 pecks of hops ...
 From Méru: 20 pecks of malt, 2 pecks of hops ...
 From Concevreux (?): ... 20 pecks of malt, 2 pecks of hops ...
 From Liancourt: ... 20 pecks of malt, 2 pecks of hops ...
 From Neuville-en-Hez (?): ... 10 pecks of malt, 1 peck of hops ...
 From Etrépigny: ... 30 pecks of malt, 3 pecks of hops ...

From Campigny-sur-Marne: 10 pecks of malt, 1 peck of hops ...
 From Le Bréau: ... 15 pecks of malt, 1 and a half pecks of hops ...
 From Blandy: ... 15 pecks of malt, 1 and a half pecks of hops ...
 From Aunay-sous-Auneau: ... 20 pecks of malt, 2 pecks of hops ...
 From Mauny: ... 12 pecks of malt, 1 peck of hops ...
 From [....]iaco (?): ... 13 pecks of malt, 1 peck of hops ...
 From Marca (?): ... 15 pecks of malt, and 1 and a half pecks of hops ...”

Commentary: Lines 21 and 22, which are almost entirely illegible, probably also made mention of measures of malt. For the tithe of hops for a monastery, see also Adaldhard (T204).

T209. Photius, *Bibliotheca* 309b3-4 from Methodius, *De castitate* (= T86).

T210. Photius, *Lexicon* s.v. ζῦθος:

ζῦθος· οἶνος ἀπὸ κριθῆς.

κριθῆς <γινόμενος>? Nelson (cf. Hesychius [T106] et *Suda* [T226]).

“*Zūthos*: a wine [arising] from barley.”

Commentary: This definition is very similar to the one found in Herodian (T62) and the one in Hesychius (T106) and the *Suda* (T226).

T211. Photius, *Lexicon* s.v. σικερά:

σικερά· σκευαστὸν πόμα.

“*Sikera*: a prepared drink.”

Commentary: For further definitions of the term, see Methodius (T85), Jerome (T99) with Isidore (T136), Hesychius (T108), the *Suda* (T230), and Johannes Zonaras (T236).

T212. *Concilium Moguntinum* 11 (= *MGH-CAC* III, 26, 248.4, 7-10 = *MGH-CRF* II.1, 249, 189.14, 17-20 = *PL* 138.586 [not in *SCC*]):

Context: At the Church Council at Mainz on October 3, A.D. 852 the following penance was decreed.

de homicidio. ... proximos dies XL peniteat in pane et aqua et leguminibus et oleribus, absteineat se ab uxore et ingressu ecclesie, deinde III annos absteineat se a carne, vino, medone et cervisa mellita, exceptis festis diebus et gravi infirmitate ...

“On homicide. ... He should repent for the next forty days with bread and water and vegetables and oils, he should abstain from his wife and entering a church. For three years thereafter he is

to abstain from meat, wine, mead, and honeyed *cervisa*, except on festival days and in case of serious injury ...”

Commentary: For honey beer being forbidden in penitential fasts, see Theodorus (T130), copied by Halitgarius (T189). The penance for homicide here seems to have been copied in the *Additamenta ad capitularia regum Franciae orientalis* (T216). At the Council of Worms of A.D. 868 (T215) a similar prohibition was decreed in the case of patricide and fratricide specifically .

T213. Anonymus, *De Sancto Lugidio sive Luano abbate Cluainfertensi* 1.7 (= ASS 35.345B-C):

Context: The Irish St. Lugidius (or Luanus) (who died in A.D. 609) was a beer-maker.

alia autem die erat Lugidius cum ceteris pueris in quodam loco ludentes, feceruntque sibi cerevisiam de succis mororum, sicut ludentibus pueris mos est. et puer Lugidius, bonus cerevisor, liquorem simul et aquam in unum vas commiscuit, et vinum factum est, et de isto liquore inebriati sunt. in illa hora filius regis Felanus, filius Dimma, cum suo latrunculo per eandem viam venit, qui cum vidissent laetos pueros et liquorem cum bono odore coram eis, postulaverunt ut de liquore isto poculum biberent. et puer Lugidius cum gaudio dedit eis, et statim laici inebriati sunt, et somnus cecidit super eos.

Dimma] *Dimmae*? Nelson.

“However, on another day, Lugidius was playing in a certain place with other boys and they made *cerevisia* from the juices of mulberries, as is the habit with playful boys. And the boy Lugidius, a good *cerevisor*, mixed at the time in one vessel the liquid and water, and wine was made, and they were intoxicated by this liquid. At the time, Felanus, the son of the King, the son of Dimma, came with his bandit along the same way. When they saw the happy boys and the liquid with a nice odour next to them they demanded to drink a cup from this liquid in the vessel. And the boy Lugidius in joy gave [some of the liquid] to them and immediately the lay people were intoxicated and sleep fell upon them.”

Commentary: It seems here that mulberry wine is being referred to as a type of *cerevisia* made by a *cerevisor*, usages unattested elsewhere in the ancient sources. In another version of this miracle, no mention is made to these words usually associated with beer (Anonymus, *Vita Sancti Lugidi sive Moluae* 10 [= VSH 2.209]): *et sanctus puer Molua commiscuit aquam in illo liquore modico mororum, et benedicens cepit propinare aliis pueris. set Dei nutu vis et dulcedo vini in succo mororum cum aqua mixta apparuit, et inebriati sunt inde pueri* (“And the holy boy Molua mixed water in this measure of liquid of mulberries and blessing it he took it to bring to other boys. But with a nod from God, the force also prepared [it] into the sweetness of wine in the juice of mulberries with mixed water and the boys were intoxicated by it”).

T214. Anonymus, *Vita Sancti Lugidi sive Moluae* 42 (= VSH 2.220 [not in ASS]):

Berachus, dux Laighys, de quo superius diximus, cenam magnam regi Laginensium paravit. set cervisia, quae parata erat ad illam cenam, amara contigit fuisse, et gustantes eam homines ilico vomebant.

quae Nelson, *que* codd.

“Berachus, the leader of Laighys, of whom we spoke above, prepared a big dinner for the King of Laginensium. But the *cervisia* which had been prepared for this dinner had become bitter, and the men tasting it threw it up.”

Commentary: Bitterness in a beer is considered unenviable also by Altfriðus (T190). It is interesting that this is the attitude here considering the contemporary use of hops (see T204, 206, and 208).

T215. *Concilium Wormatiense* 13 (= MGH-CAC IV, 25, 268.17-18) or 30 (= SCC 15.875A-B):

Context: At the Council of Worms in May A.D. 868 the following penance was decreed for patricide and fratricide.

abstineat a vino, medone atque cervisa mellita, tres dies per ebdomadam.

cervisa MGH, *cervisia* SCC, pl. codd., *mellita* MGH, *millita* SCC; *ebdomadam* MGH, *hebdomadum* SCC.

“He [the person guilty of killing his father or brother] is to abstain from wine, mead, and honeyed *cervisa* for three days a week.”

Commentary: This penance is similar to that of Theodore (T130), copied by Halitgarius (T189), for sins generally, and that of the Council of Mainz (T212) for homicide.

T216a. *Additamenta ad capitularia regum Franciae orientalis* 55a (= MGH-CRF II.2, 252, 242.26-27, col. 2):

Context: The following set of rules all involve the abstinence from intoxicants for someone who has committed homicide (presumably following the Council of Mainz [T212]).

dehinc per totum annum abstineat a carne et vino, medone et mellita cervisa.

“From this time, for the whole year, he is to abstain from meat and wine, mead and honeyed *cervisa*.”

T216b. *Additamenta ad capitularia regum Franciae orientalis* 56 (= MGH-CRF II.2, 252, 244.16-17, 18-20, col. 1):

post illos XL dies unum annum integrum ... abstineat se a carne et caseo, a vino et medone ac mellita cervisia ...

“After these 40 days, for one solid year ... he is to abstain from meat and cheese, from wine and mead and honeyed *cervisia* ...”

T216c. *Additamenta ad capitularia regum Franciae orientalis* 56a (= MGH-CRF II.2, 252, 244.16-18, col. 2):

in primo anno post XL dies totum illum annum a vino, a medone, a mellita cervisa, a carne, a caseo abstineat ...

“In the first year after the 40 days, for this whole year, he is to abstain from wine, from mead, from honeyed *cervisa*, from meat, from cheese ...”

T216d. *Additamenta ad capitularia regum Franciae orientalis* 58 (= MGH-CRF II.2, 252, 245.20-21, col. 1):

... ante pascha Domini a caseo et pinguibus piscibus, a vino et medone ac mellita cervisia ...

“... after the Easter of the Lord [he is to abstain] from cheese and fat fish, from wine and mead and honeyed *cervisia* ...”

T216e. *Additamenta ad capitularia regum Franciae orientalis* 58a (= MGH-CRF II.2, 252, 245.19, col. 2):

... ante pascha cum ceteris christianis abstinendo de vino, medone, mellita cervisa, caseo et de piscibus pinguibus ...

“... after Easter, by abstaining along with other Christians from wine, mead, honeyed *cervisa*, cheese and from fat fish ...”

T217. Hincmarus, *Vita Remigii episcopi Remensis* 26 (= MGH-SRM III, 322.12-13):

Context: A superstitious man believes in the powers of bishop Remigius's body to help him.

nam coxit panes et carnes et accepit cervisam in vasculis, prout potuit; quae omnia in vase quod vulgo benna dicitur collocavit et carro superposuit, sicque iunctis bubus, cum candela in manu ad basilicam Sancti Remigii properavit. quo perveniens, de pane et carne ac cervisa matricularios pavit, candelam ad sepulchrum Sancti posuit et eius auxilium contra opprimentes se fiscalinos expeciit. pulverem quoque de pavimento ecclesiae, quantum valuit, collegit et in panno ligavit ac in predictam bennam misit et desuper linteum, sicut supra corpus mortui affectari solet, composuit et cum carro suo ad propria remeavit.

cervisam] *potum* 4b; *ecclesiae* Nelson, *aeclesiae* codd.

“For he cooked bread and meat and he received *cervisa* in small vessels, as much as he could. He collected all of it in a vessel, which is called a *benna* by the masses, and he placed it on the wagon, and having yoked the oxen, he hastened to the basilica of Saint Remigius with a candle in his hand. Having arrived there, he feared the spoiling of the bread and meat and *cervisa*. He

placed the candle on the Saint's tomb and he pled for his help against his overwhelming financial burdens. He collected the dust from the floor of the church, as much as he was able, and he gathered it in a rag and placed it in the aforesaid *benna* and put it on top of the linen [shroud], just as above the body of the deceased [i.e. Saint Remigius] one is accustomed to be buried, and he returned with his wagon to his own place."

T218. Wolfhardus Haserensis, *Ex miraculis Sancti Waldburgis Monheimensibus* 3.2 (= MGH-S XV.1, 549.16-18 [not in ASS]):

Context: In an account of the miracles of St. Waldburg (A.D. 710-779) a baby is weighed at birth on a scale with bread and beer.

cumque votiva simul cum infantulo aequilibrae imponent munera, librato cum uno ex panibus eisdem et cervisa puerulo, panis alter qui excessit in pondere ablatus est et in sinu camerario devectoris statim repositus.

"And when they placed the votive gifts on the balance at the same time as with the little baby, once the little boy was level with one of the breads and the *cervisa*, the other bread which exceeded in weight was set aside and placed immediately in the lap of the chamberlain."

T219. Wolfhardus Haserensis, *Ex miraculis Sancti Waldburgis Monheimensibus* 3.9 (= MGH-S XV.1, 550.51 + 551.1 [not in ASS]):

Context: Beer is allowed during a time of abstention from meat.

erat enim tempus abstinendi a carne, et idcirco ea quae manus largientis invenerat, secum animo devoto tulere, scilicet panem, caseum atque cervisam.

"It was in fact the time for abstention from meat, and for that reason that group found gifts, brought with a devoted soul, that is bread, cheese, and *cervisa*."

Commentary: For the use of beer during fasts, see David (T119) with the further references cited there.

T220. Leontinus Geoponicus in Cassianus Bassus scholasticus, *De re rustica eclogae* (= *Geoponica*) 7.34.1 (= T222):

ὅτι οὐ μόνον ὁ οἶνος, ἀλλὰ καὶ ἕτερα τίνα μεθύειν ποιεῖ τοὺς πίνοντας. Λεοντίνου.
τῶν πινομένων μεθύειν ποιεῖ πρῶτον μὲν οἶνος· δεύτερον, εἰ καὶ παράδοξον ἀκοῦσαι, ὕδωρ·
τρίτον, τὰ ἀπὸ τοῦ σίτου καὶ τῶν κριθῶν γινόμενα πόματα, οἷς μάλιστα κέχρηται οἱ βάρβαροι·
τέταρτον, τὸ ἀπὸ τῶν ὀλυρῶν, καὶ τὸ ἀπὸ τοῦ βρόμου γινόμενον πόμα. μεθύσκει δὲ καὶ τὸ ἀπὸ
τοῦ κέγχρου καὶ ἐλύμου.

"That not only wine but also other things drunk cause intoxication, by Leontinus.

"First, wine causes intoxication in those drinking it. Second, if the strange story is accepted,

water. Third, drinks arising from wheat and barley, which the barbarians especially use. Fourth, the drink arising from emmer and from oats. Also that from common millet and Italian millet causes intoxication.”

Commentary: This is a unique classification of beers of unknown date.

T221. Anonymus, *Glossae Iuvenalianae* s.v. *celia* (= CGL V, 653.45):

celia potio de suco frumenti

celia] *caelia* ? Nelson (cf. Orosius [T112]).

“*Celia*: a drink [made] from the juice of wheat.”

Commentary: This seems to be taken from the text of Orosius (T112), but it is possible that they are both simply indebted to a common source. It is noteworthy that while Orosius speaks of *triticum*, the glossary here speaks of *frumentum*, which is the term used by Florus (T74) of the Numantian beer.

T222. Cassianus Bassus scholasticus, *De re rustica eclogae* (= *Geoponica*) 7.34.1 from Leontinus Geoponicus (= T220).

T223. Constantinus Porphyrogenitus, *Excerpta de legationibus* 3 from Priscus Panites, *Ecloga historiae gothicae* fr. 11.2, ll. 278-280 Blockley (= T109).

T224. *Suda* s.v. ἄκρατος (α964) (= LG I.1, 89.11-12):

ἄκρατος· Ξενοφῶν· ‘πάνυ δὲ ἦν οἶνος ἄκρατος, εἰ μὴ τις ὕδωρ ἐπιχέοι.’

πάνυ δὲ ἦν οἶνος ἄκρατος] καὶ πάνυ ἄκρατος ἦν Xenophon.

“‘unmixed.’ Xenophon: ‘It was very strong [lit. unmixed] [barley] wine unless one poured in water’ [= T13].”

T225. *Suda* s.v. γόνατον (γ377) (= LG I.1, 535.6-7):

γόνατον· ‘καὶ κάλαμοι ἐνέκειντο ἐν τοῖς κρατήρσιν οὐκ ἔχοντες γόνατα.’

ἐνέκειντο ἐν τοῖς κρατήρσιν] ἐνέκειντο, οἱ μὲν μείζους οἱ δὲ ἐλάττους, Xenophon; οὐκ ἔχοντες γόνατα] γόνατα οὐκ ἔχοντες Xenophon.

“‘knee.’ [Xenophon:] ‘and in the mixing bowls were reeds that did not have joints [lit. knees]’ [= T13].”

T226. *Suda* s.v. ζῦθος (ζ196) (= *LG* I.2, 517.9):

ζῦθος· οἶνος ἀπὸ κριθῆς γινόμενος.

ζῦθος Nelson, ζύθος cod.

“*Zūthos*: a wine arising out of barley.”

Commentary: This same definition is found in Hesychius (T106), and similar ones are found in Herodian (T62) and Photius (T210).

T227a. *Suda* s.v. μελανοσυρμαῖον (μ459) (= *LG* I.3, 351.1-2):

Context: Aristophanes (*Thesm.* 857 [performed in 411 B.C.]) speaks of the Egyptian people as μελανοσυρμαῖον.

μελανοσυρμαῖον· ... συρμαῖα δὲ κρίθινόν ἐστι πόμα.

“‘Of the black laxative/purgative.’ ... the laxative/purgative is barley drink.”

T227b. *Scholium in Aristophanis Thesmophoriazusas* 857:

ἡ δὲ συρμαῖα κρίθινόν ἐστι πόμα.

πόμα Nelson (cf. *Suda*) sive ποτόν? Nelson sive ποτὸν ἢ πόμα? Nelson, πότημα codd.

“The laxative/purgative is barley drink.”

Commentary: For beer as a laxative/purgative, see Didymus (T23). It is quite possible that these two passages also are indebted to Didymus. Aristophanes also mentioned sellers (presumably Egyptian) of laxative/purgative (συρμαιοπῶλαι) in his *Danaids* (fr. 276 Kassel-Austin = fr. 265 Kock); for beer linked with the story of the Danaids, see T4.

T228. *Suda* s.v. μυζεῖ καὶ μύζει (μ1381) (= *LG* I.3, 423.7-9):

μυζεῖ καὶ μύζει· θηλάζει, λείχει. Ξενοφῶν· ἔδει δέ, εἴ τις διψῶη λαβόντα εἰς τὸ στόμα μυζεῖν τοὺς καλάμους, καὶ πάνυ ἄκρατος ἦν ὁ οἶνος, μή τις ὕδωρ ἐπιχέοι.’

δὲ, εἴ τις] ὁπότε τις Xenophon; μυζεῖν τοὺς καλάμους] μύζειν Xenophon; ἄκρατος ἦν ὁ οἶνος, μή] ἄκρατος ἦν, εἰ μὴ Xenophon.

“*Muzeī* and *muzēi*: suckles, licks. Xenophon: ‘If ever someone was thirsty he had to take the reeds in his mouth to suck [*muzēin*]. And the [barley] wine was very strong [lit. unmixed] if someone did not pour in water’ [= T13].”

T229. *Suda* s.v. σίκερα (σ394) (= *LG* I.4, 357.22-23):

σίκερα· σκευαστὸν πόμα. καὶ παρ' Ἑβραίοις οὕτω λεγόμενον μέθυσμα. οἶνος συμμιγῆς ἡδύσμασιν· ἐκ τοῦ συγκεκράσθαι.

“*Sikera*: a prepared drink. Also among Hebrews an intoxicant is thus called. Wine mixed with sweeteners; from ‘mixed-with’ [*sunkekrāsthai*].”

Commentary: The first part of this definition is found in Photius (T211) and the last part in Hesychius (T108). For further definitions of the term, see Methodius (T85), Jerome (T99) with Isidore (T136), and Johannes Zonaras (T236).

T230. *Suda* s.v. συμμαθόντι (σ1352b) (= *LG* I.4, 457.20-21):

συμμαθόντι· συνεθισθέντι. ‘καὶ πάνυ ἡδὺ ἦν συμμαθόντι τὸ πόμα τὸ ἐκ κριθῶν.’

ἦν συμμαθόντι τὸ πόμα τὸ ἐκ κριθῶν] συμμαθόντι τὸ πῶμα ἦν Xenophon.

“‘to the one used to it.’ to the one accustomed to it. [Xenophon:] ‘And the drink [made] from barley was very good to the one used to it’ [= T13].”

T231. *Suda* s.v. οἶνος (σ1135) (= *LG* I.4, 624.20-21):

οἶνος· ... ‘ἦν δὲ καὶ οἶνος κριθίνος ἐν κρατήρσιν. ἐνῆσαν δὲ καὶ αὐταὶ αἱ κριθαὶ ἰσοχειλεῖς.’

ἦν δὲ καὶ] καὶ Xenophon (T13).

“‘wine.’ [Xenophon:] ‘There was also barley wine in mixing bowls. The barley itself was on top, at lip-level’ [= T13].”

T232. Aynardus, *Excerpta ex glossis* s.v. *braces* (= *CGL* V, 616.26):

braces sunt unde fit cervisia

“*Braces*: what one would make *cervisia* from.”

Commentary: This may imply malt, but Pliny says (*Hist. nat.* 18.11.62) that *bracis* (or *brace*) is a Gallic name for a type of emmer. Though this lexicon was written in A.D. 969 it incorporates much earlier material.

T233. Michael Psellus, *Versus civiles de grammatica* 436 in *Anecdota graeca* 3.225 Boissonade:

... ὁ δὲ βρῦτος, πῶμά τι.

βρῦτος Nelson, βρυτὸς cod.

“... *Brūtos* is a sort of drink.”

T234. Eustathius, *Commentaria ad Homeri Iliadem* 11.638 (871.53-58):

Context: Eustathius, commenting on Homer’s reference to Nestor and others drinking Pramnian wine with grated cheese and barley meal, mentions beer.

εἰκὸς δὲ καὶ ἐν τῷ λωτῷ τοιοῦτόν τι γίνεσθαι, ὁμοίως δὲ καὶ ἐν τῷ ζύθει, περὶ οὐ φέρεται, ὅτι παρὰ Κελτοῖς οἱ μὲν πλουτοῦντες οἶνον πίνουνσιν ἄκρατον ἐν τῷ συνευωχεῖσθαι παραμυγνόντες ἐνίοτε καὶ ὀλίγον ὕδωρ, παρὰ δὲ τοῖς ὑποδεεστέροις ζύθος πύρινον μετὰ μέλιτος ἐσκεύασται, παρὰ δὲ πολλοῖς καὶ αὐτό καθ’ αὐτό. καὶ ὅρα τὸ ζύθος πύρινον διαστελλόμενον τοῦ ἐξ ὀλῶν, ὃ ἐστὶ κριθῶν, παρονομαζομένου ζύθους, ὃ καὶ αὐτὸ ὑποκορίζεται πως τὸν Διονυσιακὸν οἶνον παρὰ ἔθνεσιν, οἷς οὐκ ἔστιν οἶνος, ὃς δὴ κρίθινος οἶνος πίνος μὲν κατὰ τινας, βρῦτος δὲ καθ’ ἑτέρους ἐκαλεῖτο, ὡς ἐν τοῖς πρὸ τούτων γέγραπται, ὅπου καὶ ἀπὸ ῥιζῶν οἶνον γίνεσθαι δεδήλωται.

οἱ μὲν ... καθ’ αὐτό ap. Athen.; συνευωχεῖσθαι non ap. Athen.; ζύθος Nelson, ζύθος codd.; ἐσκεύασται] ἐσκευασμένον Athen.; πολλοῖς] τοῖς πολλοῖς Athen.; καὶ αὐτό καθ’ αὐτό] καθ’ αὐτό Athen.; πίνος] πίνον (neut.) Aristotle (ap. Athen.).

“It is likely also that there may be something in the lotus similar to what is also in *zūthos*, concerning which, it is passed on [by Athenaeus] that among the Celts [from Athenaeus, *Deipnosophistae* 4.151e] those who are rich drink unmixed wine in their feasting together (sometimes mixing in also a little water) while among the needier wheaten *zūthos* is prepared with honey, and among the masses there is also this [i.e. *zūthos*] plain [= T78]. Behold also [that] wheaten *zūthos* is separated from the whole [i.e. the majority], which is [made] of barley, [and] similarly named *zūthos*, and which is endearingly called anyhow Dionysiac wine by peoples, among whom there is no wine. It is then called barleyed *pinos* wine among some, and *brūtos* among others [= T80], as these have been written among them in previous times, where also wine was wasted, being made from roots [= T80].”

Commentary: Eustathius strangely connects the lotus to beer. Also his reference to beer being known as “Dionysiac wine” is unparalleled.

T235. Eustathius, *Commentaria ad Homeri Iliadem* 22.283 (1270.11-13):

Context: Hector says to Achilles that if he ran toward him he would be hit in the chest not in the back, and Eustathius oddly takes this as an opportunity to quote Aristotle (through Athenaeus) on the effects of beer.

λέγεται γὰρ ὡς οἱ τὸν κρίθινον πεπωκότες οἶνον, ὃν πίνουν μὲν τινες, ἕτεροι δὲ βρῦτον καλοῦσιν, ὕπτιοι κατακλίνονται. ὃ δὲ τοῦτο φάμενος Δειπνοσοφιστῆς λέγει καὶ ὅτι τινὲς τοῦ πίνου τὸν βρῦτον διῆστώσιν ὡς καὶ ἀπὸ ῥιζῶν γινόμενον, καὶ ὅτι εἰσὶ τοιοῦτοπόται καὶ οἱ Αἰγύπτιοι, οἷ, ὡς Ἐκαταῖος φησιν, ἄρτοφάγοι ὄντες τὰς κριθᾶς εἰς τὸ πόμα καταλέουσιν, ἤγουν ἀλήθουσιν.

οἱ τὸν ... κατακλίνονται paraphr. Athenaeus; κατακλίνονται] κλίνονται Aristotle (in Athenaeo).

“It is said that those who have drunk barley wine, which some call *pinon* and others *brūon* [or *brūtos*] fall down onto their backs and lie flat. The Deipnosophist [i.e. Athenaeus] relating this says also that some separate *brūtos* from *pinon* [or *pinos*] as also arising from roots and that the Egyptians are drinkers of this, who, as Hecataeus says, being bread-eaters grind (that is, pound) barley for a beverage [= T80].”

T236. Johannes Zonaras, *In canones sanctorum apostolorum* 3 (= PG 137.40C + 41A):

Context: Johannes comments on the canon that nothing should be offered to God (such as σίκερα) except for oil for lighting and incense.

σίκερα ἐστὶ πᾶν τὸ ἄνευ οἴνου μέθην ἐμποιοῦν, οἷά εἰσιν ἃ ἐπιτηδεύουσιν ἄνθρωποι, ὡς ἡ λεγομένη χουμέλη, καὶ ὅσα ὁμοίως σκευάζονται.

“*Sikera* is all which, apart from wine, causes intoxication, such as those things which men invent, like that which is called *choumelē* [i.e. mead?] and those similar things which are prepared.”

Commentary: This passage is copied in the thirteenth century A.D. Theodorus Balsamon’s *In canones sanctorum apostolorum* 3 (= PG 137.40A and C). For further definitions of the term σίκερα, see Methodius (T86), Jerome (T99) with Isidore (T136), Hesychius (T108), Photius (T211), and the *Suda* (T229).

T237. Anonymus, *Hermeneumata Monacensia* s.v. *zitos* (= CGL III, 184.63):

zitos furta

Commentary: This is clearly taken from the Latin translation of Dioscorides (T54b) from the sixth century A.D., in which ζῦθος is translated as *furta*. The oldest copy of this glossary dates to A.D. 1158 but its contents are earlier.

T238. Manuel Philes, *Brevis expositio de elephante* 139-142 and 145-151:

ἄρτι δὲ καὶ σταφίδες ἡμερουμένῳ
κριθῆς τε χυλὸς καὶ παρὸν χύδην μέλι
καὶ μήλα καὶ κρόμμυα καὶ γλυκὺς πέπων
εὐωχίας ἔχουσι τῷ κτήνι κρίσιν.

...

οἴνου δὲ τὸν τοσοῦτον εὐφραίνει κύλιξ,
ὃν ὁ τρυγητὴρ ἐκκενοῖ τῶν βοτρύων.
ὀρεκτιῶν δὲ καὶ σφαδάζων εἰς μάχην
τὸν ἀπὸ λωτοῦ καὶ τὸν ἀπὸ φοινίκων
καὶ τῆς ὀρύζης ἐκροφεῖ τῆς ἀγρίας,
ὡς ἂν ὁ θυμὸς ἀκρατῶς ὑποζέων
ἀντιστατικῶς καρδιώττειν ὀτρύνῃ.

“Even now raisins and the juice of barley and honey, being present in abundance, and apples and onions and sweet melon possess good cheer for the subdued herd [of elephants]. ... A cup of wine gladdens it [i.e. the elephant] so much, which the vine-worker should drain of grapes. It gulps down that [wine] from lotus and from palm dates and from wild rice, lunging and struggling into battle, since its heart uncontrollably somewhat fermenting, rouses it to take courage against the enemy.”

Commentary: It is quite possible that Manuel Philes’s source here is Ctesias (= T11) or Megasthenes (= T18); see the similar passages in Pliny (T45) and Aelian (T76).

T239. Henricus Stephanus, *Glossae Addenda* s.v. *cilicia* (= CGL III, 468.15):

cilicia ζῦθος

ζῦθος Nelson, ζύθος cod.

Commentary: *Cilicia* is otherwise equated with χιθος (CGL III, 476.57) and λιθος (CGL III, 441.69) in the same glossary. Henri Estienne is known to have collected entries from various glossaries, many of which are no longer extant.

APPENDIX II: GRECO-ROMAN EPIGRAPHIC SOURCES ON BEER

I present here every epigraphic source on beer in Gallo-Latin, Latin, Greco-Latin, and Greek. I use an asterisk (*) to denote an unsure reference to beer. I also include a brief commentary for each entry.

Abbreviations:

AE = *L'Année épigraphique* (1888-)

APF = *Archiv für Papyrusforschung und verwandte Gebiete* (1902-)

BRGK 17 = *Neue Inschriften, 17^{er} Bericht der römisch-germanischen Kommission*, ed. H. Finke (1927)

CIG = *Corpus Inscriptionum Graecarum*, ed. A. Böckh (1828-1877)

CIL = *Corpus Inscriptionum Latinarum* (1863-)

GLG = *Les graffites de La Graufesenque*, ed. R. Marichal (1988)

IG = *Inscriptiones Graecae* (1906-)

IGRR = *Inscriptiones Graecae ad res Romanas pertinentes*, ed. R. Cagnat (1906-1927)

ILTG = *Inscriptions latines des Trois Gaules*, ed. P. Wuilleumier (1963)

OGIS = *Orientis Graeci Inscriptiones selectae*, ed. W. Dittenberger (1903-1905)

RIB I = *The Roman Inscriptions of Britain I. Inscriptions on Stone*, edd. R. G. Collingwood and R. P. Wright (1965)

SB = *Sammelbuch griechischer Urkunden aus Ägypten* (1915-)

SEG = *Supplementum Epigraphicum Graecum* (1923-)

GALLO-LATIN:

E1. *ILTG* 529 (a spindle whorl, Aûtun [ancient Augustodonum], France, undated):

a: *nata vimpi*

b: *curmi da*

“Beautiful girl, good *curmi*.”

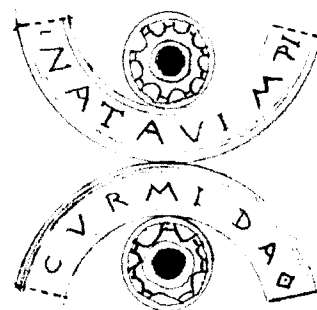


Figure 7: *ILTG* 529

Commentary: This inscription (which may be completely written in Gallic, with no trace of Latin) seems to involve the two things dearest to a Gallic man. Rather than taking *da* here to be the Latin “give,” I assume that it is a Gallic word akin to the Welsh *da* meaning “good” (for which, see also E14).

***E2a.** *GLG* 12.13 (a dish with a kilning docket, La Graufesenque [Millau], France, mid 1st C. A.D.):

Cervesa catili DCC

“Cervesa: 700 small dishes.”

Commentary: This and the following dish seem to refer to a man named (or quite possibly nicknamed) Cervesa.

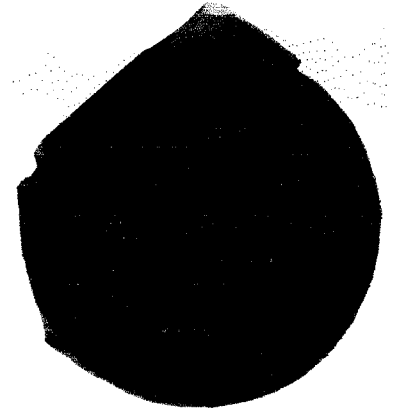


Figure 8: *GLG* 12

***E2b.** *GLG* 14.11 (same as E2a):

Cervesa catili (I)CC

“Cervesa: 200 small dishes.”

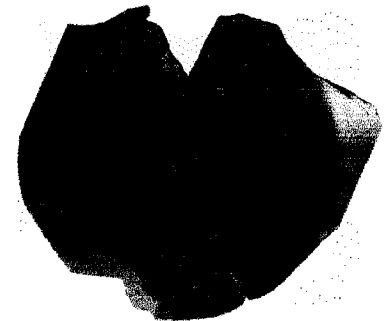


Figure 9: *GLG* 14

Cf. C.[in *GLG* 82.4.

LATIN:

***E3.** *CIL* VII.176 = *RIB* I.278 (an altar from Haddon House near modern Bakewell, Derbyshire, England, undated):

- 1 *Deo*
Marti
Braciacae
Q(uintus) Sittius
- 5 *Caecilian(us)*
praef(ectus) coh(ortis)
I Aquitano(rum)
v(otum) s(olvit)

Restor.: *RIB*.



Figure 10:
CIL VII.176
= *RIB* I.278

“Quintus Sittius Caecilianus, prefect of the first cohort of the Aquitani, payed this vow to the god Mars Braciaca [of malt?].”

Commentary: Rather than Braciacus being an epithet relating to *brace/bracis* (a type of wheat or malt), it may be connected to a place name.

E4. CIL XII.372 (a stone from Narbonensis Gaul, modern Riez, France, undated):

- [... *utri-*]
 1 *usque sex[us ...]*
utric[ulariorum]
ob liberali[tatem ...]
statuar(um) im[...]
 5 *agnito n[...]*
ded(it) e(t) cervi[siam ?]
et oleum p[lebei utriusque]
sexus II p[...]
specta[cul...]

Restor.: Hirschfeld. *usque sex[us ...]* Nelson, *usque sex[us ... colleg]* Hirschfeld; *statuar(um) im[...]* Nelson, *statuar im[pensam remisit ?]* Hirschfeld, *statuar(um) im[pendio universo]* Mommsen; *agnito n[...]* Nelson, *agnito n[onnisti II accepit et epulo dato]* Mommsen, *adgniton[...]* inscript.; *ded(it)* Hirschfeld, *ded(icavit)* Mommsen; *cervi[siam ?]* Hirschfeld, *cervi[sianis ?]* Riez, *cervi[sam] ?* Nelson.

“... of each gend[er] ... of pipe[-players] ... for the sake of liberali[ty] ... we should dedicate ... in recognition ... he gives both *cervi[sia]* and oil to the p[opulace and each] gender two ... *specta[cl...]*”

Commentary: This is a unique example of beer being given as a gift to the populace.

E5. CIL XIII.10012.7 (a vessel from Aquitania Gaul, modern Banassac, France, undated):

a: *cervesar[*

b: *]esar[*



Figure 11: CIL XIII.10012.7a

- a: *cervesar[iis feliciter]* de Barthélemy 1877: 176, *cervesa r[eple]* Déchelette 1904: 1:120, 125, no. 6.
 b: *cerv]esar[?* Nelson, *cerv]esa r[eple]* Déchelette 1904: 1:125, no. 7.

Commentary: This may refer to beer-makers (as is usually thought), or more likely simply to the vessel being filled with beer (see E8 and 14).

*E6. *CIL* XIII.10012.15b (pottery fragment, modern Banassac, France, undated):

]are[

[*cerves*]a re[ple] Déchelette 1904: 1:127, no. 67. Cf. *CIL* XIII.10012.15d ([ce]) and 16f ([ce]).

Commentary: See E5.

E7. V.-J. Vaillant. “A propos des vases pastillés et épigraphiés de l’époque gallo-romaine trouvés dans le Boulonnais.” *Bulletin de la commission des antiquités départementales ou monuments historiques du Pas-de-Calais* 6 (1885) 219-220 (undated).

cerrivi[sia/sa]

Commentary: This is a unique spelling on what was probably a beer vessel.

E8. *CIL* XIII.10018.7 (an annular flask from Lutetia [modern Paris], Lugdunensis Gaul, undated):

a: (*h*)ospita reple lagona(*m*) cervesa

b: copo cnoditu(*m*) (*h*)abes est reple(*n*)da

Restor.: ed. *cnoditu(m)* = *conditu(m)*; *reple(n)da*] *reple, da* ?

a: “Waitress, fill up my flask with *cervesa*.”

b: “Bartender, do you have spiced wine? It needs to be filled.”

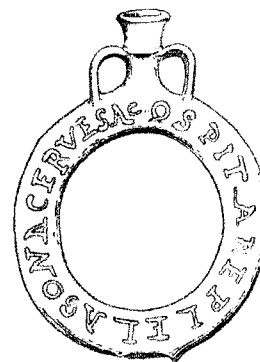


Figure 12:
CIL XIII.10018.7a

Commentary: This oddly shaped flask was evidently used as a beer container; compare the inscription on E14. Venantius Fortunatus (T115) similarly speaks of a *lagunarius* filled with beer.

E9. *CIL* XIII.11319 (a *cippus* stone from Trier [ancient Augusta Treverorum], Germany, undated):

- [*D(is) M(anibus)*]
 1 *Satt* or *Capp*]onius
Capurillus
cervesar[ius
si[*bi et suis v(otum) f(ecit)*]



Abg. Nelson
 16/07/00

Suppl. in Rheinisches Landesmuseum, Trier; *Capponius* Siebert 1998: 123, fig. 8.

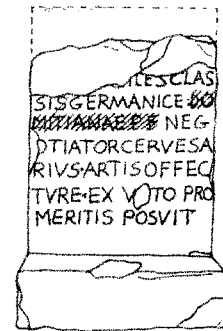
Figure 13:
CIL XIII.11319

“[To the shades of the dead, *Satt/Capp*]onius *Capurillus* the maker of *cervesa* made [this] vow for himself and his own.”

Commentary: For similar tombstones of beer-makers, see E11-13 below.

E10. S. Loeschke, ed. *Die Erforschung des Tempelbezirkes im Altbachtale zur Trier* (Berlin 1928). 22 = *AE* 1928, no. 183 = *BRGK* 17, no. 41 (a stone, from Trier [ancient Augusta Treverorum], Germany, end of the first century A.D.):

- 1 *miles clas-*
sis germanic<*a*>*e do-*
mitianae p(iae) f(elicis) neg-
otiator cervesa-
 5 *rius artis effect-*
tur<*a*>*e ex voto pro*
meritis posuit.



Abg. Nelson
 16/07/00

Figure 14:
AE 1928, no. 183
 = *NI* no. 41

germanic<*a*>*e* Nelson; *domitianae* del.; *p(iae) f(elicis)* Nelson; *artis effectur*<*a*>*e* Nelson, *et artis effecturae* Rau in *RE* 2.6 (1937) 2336.

“... soldier of the German fleet of Domitian, [which is] dutiful [and] lucky, the *cervesa*-related dealer of the guild of dyeing, set up [this stone] in accordance with a vow, in return for services.”

Commentary: It is not clear here whether this was a soldier or veteran or what was his association with dyeing.

E11. *CIL* XIII.450* (a tombstone from St. Matthias, Trier [ancient Augusta Treverorum], Germany, undated):

[Ho?]sidia Mater-
[n]a n<e>go<t>ians
ar<t>is <c>ervesa-
riae sive <ce>rea-
riae sibi viva
fec[it titulu?]m

Restor.: Binsfeld in *Germania* 50 (1972) 258.

“Hosidia Materna, dealing, of the guild of making *cervesa* or *cerea*, made [this] inscription while living.”

Commentary: For similar tombstones of beer-makers, see E9, 12, and 13.

E12. Unpublished (?) (a *cippus* stone from St. Matthias, Trier [ancient Augusta Treverorum], Germany, undated):

1 ... Fo]rtunato n[egotiatori ?
...]artis ce[rvesariae ...
...]ont mn[...]

Suppl. in Rheinisches Landesmuseum, Trier.



Figure 15:
Unpublished (?)
Inscription from
Trier, Germany

“To Fortunatus the dealer ... of the guild of the maker of *cervesa* ...”

Commentary: For similar tombstones of beer-makers, see E9, 11, and 13 .

E13. *CIL* XIII.11360 = XIII.597* (a *cippus* stone from Metz [ancient Mediomatrici], France, undated):

1 Iulio
ce]rvesario
medi(omatrigo) vix(i)t a(nnis) L
coniux viva p(osuit)
5 mulier vir(o)

L Barrett, *E CIL*; *coniux* Nelson, *coniuc CIL*; *p(osuit)* Barrett; *vir(o)* Barrett.

"To Julius the maker of *cervesa*, of the Mediomatrici, (who) lived for 50 years, (his) legally married, living wife, set up (this stone) for her husband."

Commentary: For similar tombstones of beer-makers, see E9, 11, and 13.

E14. S. Künzl. "Ein Biergefäß aus Mainz: barbotinedekorierte Terra Sigillata mit Inschriften." *Mainzer Zeitschrift* 86 (1991) 171-185, at 171 (decorated cup from Mainz [ancient Mogontiacum], early 4th C. A.D.):

imple (h)ospita ol(l)a(m) de cervesa da

Restor.: Nelson.

"Waitress, fill up the pot from the good *cervesa*!"

Commentary: See the very similar inscription on a vessel at E8. For *da* meaning "good," see E1. For another reference to an *olla* of beer, see T174.

***E15.** W. Ludowici. *Stempel-namen römischer Töpfer von meinen Ausgrabungen in Rheinzabern, Tabernae rhenanae, 1901-1904* (Munich 1905) x; copied in J. Whatmough. *The Dialects of Ancient Gaul* (Cambridge, Mass. 1970). 1076, no. 230 (vessel from Rheinzabern, Germany [ancient Tabernae], undated):

1]xl
]ccc
 ll
 cer]vesa[ri (?)
5]cl
]cccc

cer]vesa[ri ? Whatmough,]vesti cl Ludowici.

"... 40 ... 300 ... maker of *cervesa* [?] ... 150 ... 400 ..."

Commentary: It is very doubtful whether beer (or a beer-maker) is mentioned here.

GRECO-LATIN:

E16a. *CIL* III.1, 827 (a stone from Stratonica, Asia Minor, A.D. 301) = Diocletian, *Edictum de pretiis rerum venalium* 2.11-12:

cervesiae <sive> *camī Italicum s(extarium) unum denaribus quattuor*
zythi Italicum s(extarium) unum denaribus duobus

Ed.: S. Lauffer, *Diocletians Preisedikt* (Berlin 1971). 102. <sive> Her.; *s(extarium)* Nelson; *denaribus* Nelson, ✕ inscr.; *quattuor* edd., *quattbor* inscr.

“One Italian pint of *cervesia* or *camum* for four denarii.
 One Italian pint of *zythum* [or *zythus*] for two denarii.”

Commentary: Diocletian provides us the only Greco-Roman evidence for the price of beer as compared to that of wine.

E16b. *CIL* III.2, Suppl. 1916.1.29-30 (a stone from Megara, Greece, A.D. 301) = Diocletian, *Edictum de pretiis rerum venalium* 2.11-12:

καρβησί<υ>καλοῦ (Ἰταλικὸν) ξ(έστην) α' δηνάριοις [δ']
 ζύ[θ]ου (Ἰταλικὸν) ξ(έστην) α' δηνάριοις β'

καρβησί<υ>καλοῦ Nelson, καρβησιοκαλου inscr.; ζύ[θ]ου Nelson, ζυ[θ]ου.

E16c. *CIL* III.2, Suppl. 1918.1.17-18 = *IG* VII.3064.17-18 (a stone from Lebedaea, Boeotia, Greece, A.D. 301) = Diocletian, *Edictum de pretiis rerum venalium* 2.11-12:

κερβησί^{ου} ἥτοι κ[άμου] Ἰταλ(ικὸν) ξ(έστην) α' δηνάριοις δ']
 ζύθου Ἰταλ(ικὸν) ξ(έστην) α' [δηνάριοις β']

κ[άμου ...] Mommsen; δηνάριοις Nelson, ✕ inscr.

“One Italian pint of *kerbēsia* or *kamon* for four denarii.
One Italian pint of *zūthos* for two denarii.”

E16d. *CIL* III.3, Suppl. 2328.58 (a stone from Aegirae, Achaia, Greece, A.D. 301) = Diocletian,
Edictum de pretiis rerum venalium 2.11-12:

κερβησίας ἤτοι μάκαμου Ἰταλ(ικὸν) ξ(έστην) α' δηνάριοις δ'
ζύθους Ἰταλ(ικὸν) ξ(έστην) α' δηνάριοις β'

Ed.: S. Lauffer, *Diocletians Preisedikt*, (Berlin 1971). 103. δηνάριοις Nelson, ✕ inscr.

“One Italian pint of *kerbēsia* or *makamon* for four denarii.
One Italian pint of *zūthos* for two denarii.”

GREEK:

E17. *SEG* XXXVI.1398.6-9 (= *APF* 2 [1903] 565, nr. 121 = *IGRR* I.1101 = *SB* V.8797) (a stone
from the Menelaite nome, Egypt, A.D. 11-14):

6 ... βουλόμενος δὲ προσκτίσαι
7 [νῦν ἐνταῦθα καὶ ζ]υτοπολίον ἐπ' εὐεργεσίαι τοῦ
8 [ἱεροῦ, ἀξιῶ ἐπιχ]ωρηθῆναι καὶ τοῦτο εἶναι ἀτελές
9 [...]

“... wishing[, here and now, to also] to build in addition also a beer-factory/beer-store, for the
support of [the temple, I deem worthy to be yie]lded to and for this to be exempt from taxation
...”

E18. *SEG* XLI.1612.5 (an inscription on the base of Tuthmosis III's throne, Egypt, A.D. 324):

5 ... Π(ε)πκ[ο]ῦ(σις) ... ζυτοπ() ...

ζυτοπ(οῖος) edd.; ζυτοπ(οιός) sive ζυτοπ(ώλης) Nelson.

“... P(e)pkois is the beer-maker/-seller ...”

E19a. *OGIS* 200.1, 6-12, 16-17 (= *CIG* 5128.16 = *SB* III.6949 = *SB* V.8546) (a granite stele from Axum, Nubia, 4th-5th C. A.D.):

- 1 Ἀειζανᾶς βασιλεὺς ...
- 6 ... ἀτακτησάντων
- 7 κατὰ καιρὸν τοῦ ἔθνους τῶν Βουγαει-
- 8 τῶν ἀπεστίλαμεν τοὺς ἡμετέρους
- 9 ἀδελφούς ...
- 10 τούτους πολεμήσαι καὶ παραδεδω-
- 11 κότεων αὐτῶν ὑποτάξαντες αὐτοὺς
- 12 ἤγαγον πρὸς ἡμᾶς ...
- 16 ... ποτίζοντες αὐτοὺς ζύτῳ
- 17 καὶ οἶνῳ ...

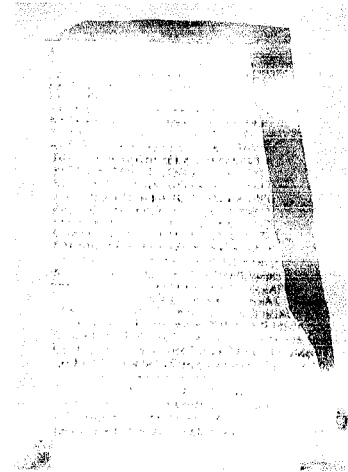


Figure 16: *OGIS* 200

“We, King Aezanas ... during the time when the Bougaeitai peoples were being disorderly, sent our brothers ... to make war against them and, having reached them, they [the brothers] restored order and led them to us ... giving themselves to drink *zūos* and wine ...”

Commentary: This and the following inscription provide unique ancient evidence for Nubian beer.

E19b. *SEG* XXXII.1601.1, 5-6, 8-9, 12-14 (= *OGIS* 200, Add[1]) (a stele from Axum, Nubia, 4th-5th C. A.D.):

- 1 Ἀειζανᾶς βασιλεὺς ...
- 5 ... ἀτακτησάντων κατὰ καιρὸν τοῦ
- 6 ἔθνους τῶν Βουγαειτῶν ἀπεστίλαμεν τοὺς ἡμετέρους ἀδελφούς ...
- 8 τούτους πολεμήσαι καὶ παραδεδωκότεων αὐ-
- 9 τῶν ὑποτάξαντες αὐτοὺς ἤγαγον πρὸς ἡμᾶς ...
- 12 ... θρέψαντες αὐτοὺς ...
- 13 ... οἶν(ω) τε κ(αὶ) ὑδρομέλιτι,
- 14 ζύτῳ ...

“We, King Aezanas ... during the time when the Bougaeitai peoples were being disorderly, sent our brothers ... to make war against them and, having reached them, they [the brothers] restored order and led them to us ... feeding themselves ... with wine and mead and *zūos* ...”

APPENDIX III: SPURIOUS GRECO-ROMAN REFERENCES TO BEER

There have been numerous spurious references to beer in ancient Greek and Latin authors in modern works. One amateur emendator jokingly suggested that Pindar began his first Olympian ode by writing “beer is best” (ἄριστον μὲν ζῦθος) rather than the manuscripts’ “water is best” (ἄριστον μὲν ὕδωρ).¹ Sophocles is said to have “touted the many positive aspects of beer drinking” and extolled the benefits of a daily beer.² In fact we know only that he mentioned beer once in his *Triptolemus* in an unknown context (T10). Herodotus supposedly wrote “a hefty treatise on beer”³ when in fact he only mentioned Egyptian barley beer once in passing (T7). Similarly Zosimus of Panopolis is said to have written a “complete book on beer-brewing” when in fact only one recipe is preserved in all of his works (T89).⁴ Diodorus Siculus supposedly wrote of the British in his fifth book: “Upon extraordinary occasions they drank a kind of fermented liquor made of barley, honey, or apples, and when intoxicated never failed to quarrel, like the ancient Thracians.”⁵ Diodorus speaks of the British in his fifth book but says nothing about their drinking habits.⁶ Cato supposedly said in his *De agricultura* that “beer was the national beverage of the Gauls.”⁷ Pliny “wrote about how the Greeks learned brewing from

¹ This proposed emendation by “some schoolboy wit” is recorded by Knox 1993: 120-121. Aside from the implausibility of this emendation, the mere fact that the line does not scan should be enough to condemn it.

² Katz 1979: 145 and Smith 1995: 15-16 (with the quote from 16), with Smith and Getty 1997: 230 and 245.

³ Smith 1995: 15.

⁴ Dayagi-Mendels 1999: 113. See also Forbes (1956: 140 and 1965: 130): “reported to have written a book on brewing.”

⁵ French 1890: 1-2.

⁶ Diod. Sic., *Hist.* 5.21-22 (perhaps based on Pytheas). Neuberger (1930: 100) says that according to Diodorus (as well as Herodotus and Pliny) Osiris introduced malted rye beer into Egypt in the town of Pelusium in 2017 B.C.!

⁷ Dornbusch 1997: 13.

the Egyptians.”⁸ He also supposedly mentioned German and Iberian hopped beer.⁹ Athenaeus purportedly recorded that boiled cabbage was a good hangover cure if one was “beer drinking deep;”¹⁰ in fact he quotes Alexis about this in the general context of drinking (undoubtedly wine) shortly after quoting Aristotle on beer (T14a).¹¹ Seltman takes the extreme liberty of translating Paulus Silentarius as mentioning beer rather than bread: “Let the toiling rustic fill his barley-soaked belly with beer—gift of the mother of black-robed Persephone.”¹²

By far the largest number of spurious references involve Julius Caesar (see Figure 17 on the right). It is said that Caesar preferred beer to wine¹³ and that he “toasted his officers in [*sic*] beer after crossing the Rubicon in northern Italy during their march in Rome shortly before the first century [the crossing actually occurred in 49 B.C.].”¹⁴ He is reported to have said: “Beer: a high and mighty liquor.”¹⁵ Caesar is even said to have brought beer to



Figure 17:
Julius Caesar Enjoying a Beer

⁸ Smith 1995: 16; he mentions further spurious statements by Pliny, including the drinking of wheat beer by Romans. Porter (1975: 4) says that Greeks learned brewing from Egyptians, Romans from Greeks, and northerners from Romans. Finch (1989: 16) says: “Greeks and Romans learned brewing from the Egyptians.” Smith (1994: 3) also speaks of Romans introducing the making of beer to Europe.

⁹ German: Bickerdyke 1889: 66 and also Panati 1984: 90, who says that hopped beer existed already in Egypt in 1000 B.C. Iberian: Forbes 1956: 141 and 1965: 132, assuming that Pliny’s reference to aging beers (T49) points to the use of hops.

¹⁰ Smith 2000: 17 (who writes “Athenaeus”).

¹¹ Athen., *Deipn.* 1.34c-d quoting Alexis, fr. 287 Kassel-Austin. For hangover cures in antiquity, see Brown 1898.

¹² *Anth. Pal.* 11.60.3-4 in Seltman 1957: 123-124; in the original the stomach is said to be σιτοδόκος (“bread-welcoming”) and beer is not mentioned.

¹³ Rabin and Forget 1998: 72 (“Julius Caesar preferred [*sic*] cerevisia to wine”).

¹⁴ Katz 1979: 145, with <http://members.tripod.com/im4future/beer/beer.html> (home page).

¹⁵ Smith and Getty 1997: 230. Finch (1989: 16) says that Caesar praised beer. The Heineken brewery in The Netherlands owns the rights to the name *Caesar* while a *Julius* beer has been brewed by the Hoegaarden brewery in Belgium (owned by Interbrew, formerly de Kluis) since 1987 and a *Cezarken* beer by the Crombé brewery in Belgium

the northerners!¹⁶ Caesar actually nowhere mentions beer (see section 4.3.3.2 above), nor is he mentioned in any ancient source in connection with beer, and the only evidence we have about Caesar's personal drinking habits (as far as I am aware) is Suetonius's statement that he drank abstemiously.¹⁷

Finally, it may as well be noted that a third century A.D. relief (see Figure 18 below) in the musée luxembourgeois in Arlon (ancient Orolaunum), Belgium, is often said to depict a brewer tasting his product, interpreting the object on the bottom as a barrel.¹⁸ However, it is clear that the object is a stone well, and the man is probably a traveler or sick individual drinking water from it.



Figure 18:
The "Brewer" of Arlon,
Belgium

since 1989.

¹⁶ Porter 1975: 4. Dornbusch (1997: 11) speaks of Caesar and his legions learning of beer from Germans and introducing it to Britain.

¹⁷ Suet., *Vit. Caes.* 53. Pliny (*Hist. nat.* 14.17.97) notes that Caesar served very good wine when he organised feasts.

¹⁸ See, for instance, Perrier-Robert and Fontaine 1996: 10 (who also mistakenly speak of brewers). Also, the postcard from which Figure 18 is taken reads: "Le buveur, sans doute un brasseur goûtant la cervoise qu'on vient de fabriquer." A notice by the relief (#56), however, points out that this interpretation cannot be accepted.

APPENDIX IV: RECREATING ANCIENT BEERS

In the last few years, there have been various attempts at recreating ancient beers, either according to surviving remains or extant recipes. By far the best known attempt was that undertaken by Dr. Solomon H. Katz of the University of Pennsylvania with Fritz Maytag of the Anchor Brewing Company in San Francisco in 1991. Following a Sumerian hymn to the goddess Ninkasi (“the lady who fills the mouth”) on a cuneiform tablet from c. 1800 B.C., they made a beer from malted twice-baked honeyed barley bread and dates; the final aged product (known as *Ninkasi*) was around 4% in alcohol and was effervescent and cidery.¹ A recipe for a Sumerian homebrew was also developed a few years later by Ed Hitchcock.² An ancient Egyptian-style beer named *Hekt, the Beer of Egypt* was created by Dr. Alan D. Eames with the help of the Pyramids Brewery in Cairo in 1989.³ However, the most famous attempt at making an ancient Egyptian beer is that of Dr. Delwen Samuel of Cambridge University with the help of the Scottish and Newcastle Brewery; the beer was popularly called *Tutankhamun Ale* or *Pharaoh’s Gold*.⁴ With the growing work on chemical analysis of ancient remains as well as the great popularity of craft beers, more and more such recreated ancient brews are being produced, and examples of them could easily be multiplied.⁵

With the help of Iain Hill of the Yaletown Brewing Company of Vancouver I have developed (and also used) a recipe based on that of Pseudo-Zosimus (T89):

¹ Katz and Maytag 1991, and see Stone 1991, Young 1991, Glover 1997: 10, and Glaser 2001: 29-30. For the hymn, see also Civil 1964.

² Hitchcock 1994 (found at www.brewingtechniques.com/library/backissues/issue2.5/hitchcock.html).

³ Eames 1989.

⁴ Samuel 1995 and 1996, and see Williams 1996, Glover 1997: 10, and Glaser 2001: 30-31. See also www.pharaohsbrew.com or www.pharaohsgold.com.

⁵ For Scottish heather ale, see sections 3.5.6 and 3.5.7 above; for meadowsweet ale, see section 3.5.6.

- 1) Steep 2.5 kilograms of two-row barley for 24 hours in cold water. Stir occasionally and replace with colder water at least three times.
- 2) Drain the barley and leave it to germinate at room temperature for three days. Allow it to aerate and stir it occasionally.
- 3) Dry the malt thoroughly in the hot sun for one or two days.
- 4) Grind the malted barley thoroughly.
- 5) Form the resulting flour into loaves with the necessary amount of water and with a wild sour dough starter made by leaving out a lump of wet flour for two or three days.⁶
- 6) Leave out the leavened loaves for about 18 hours at room temperature.
- 7) Heat the leavened loaves on pans at 60 to 70 degrees Celsius for 12 to 24 hours. Turn over the loaves occasionally.
- 8) Crumble the loaves into 10 litres of water kept for 1 hour at 60 to 70 degrees Celsius.
- 9) Leave out the resulting mash at room temperature until fermented, either with wild yeast or with pitched-in, cultivated yeast.
- 10) Sieve the beer and serve it at room temperature.

The resulting beer, first officially served at my thesis defence on June 5, 2001, was a very murky, had a light chocolate colour, was uncarbonated, and had a not unpleasant sour, sweet flavour.

⁶ The recipe for bread yeast is adapted from Plin., *Hist. nat.* 18.26.104.