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THE MEANING AND FUNCTION OF ΛΗΝΟΣ AND RELATED FEATURES IN THE
PRODUCTION OF WINE

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There has been an amount of uncertainty and confusion in interpreting the meaning of ληνός in the papyri, as can be seen in Preisigke, *Wb* s.v., where it is defined as *Bottich, Trog, Weinkufe, Weinfass*. Note also Schnebel, *Landwirtschaft*, p. 283: "Für die Kelter selbst finden wir in den Urkunden ληνός und κοῦφον. ληνός wird besonders auch bei der Leistung von Zahlungen in Wein, die παρὰ ληνόν, an der Kelter, zu vollziehen sind, gebraucht. Sonst bedeutet ληνός auch das Fass, und P. Teb. I 120,57 Πτολε(μαίου) Νείλου εἰς πιεῖν ἐν ληνῶ hat ληνός die Bedeutung von Kelterraum wie sonst ληνών. Auch κοῦφον bedeutet ein Fass, und zwar ursprünglich ein grosses grobes Tongefäss. Solche Tongefässe fanden als Weinfässer Verwendung." In English, ληνός has generally been translated as "winepress" or as "vat."¹

A fairly recent article by N. Kruit (*ZPE* 90 [1992] 268-269; 273-274), designed to clarify ληνός and other terms related to wine, holds (p. 268) that ληνός, citing Schnebel, "... can be translated in two different ways, either as 'wine-press' or as 'fermentation vat'... With the meaning 'fermentation vat' ληνός is synonymous with πίθος." He concludes with the statement that " 'fermentation vat' has to be the translation of ληνός (ληνός usually being specified by a number) in orders for payment of wine, since wine can only be delivered if it is fully fermented." None of the above terms address the special place of the ληνός in the wine-making process.

The dilemma regarding the meaning of ληνός cannot be resolved by resorting solely to the economic papyri. The participants in various transactions, especially those involved in contracts for the delivery or sale of wine, knew what was meant by the word and did not have to explain it further. ληνός in a wine-producing context is not immediately suggested by *LSJ*'s definition of "anything shaped like a tub or a trough." Take for example, *LXX Gen.* 30.38 which describes Jacob placing rods "in the shallows of the watering places (for cattle)," ἐν τοῖς ληνοῖς Ποιτηρίων. These water holes, unlike the φρέαρ in 24.20, were catchment basins or depressions that collected the runoff of rain or flood water.

In the production of wine, the ληνός was a similar holding area—concave, or if flat, surrounded by a low retaining wall—for juice that resulted from treading or pressing grapes.² In short, the ληνός, denotatively, is the treading floor or the pressing platform of a winery, and as such, it is only one part of that complex. By synecdoche ληνός can be, and has been, taken as the entire equipment of a winery. Epiphanius, Bishop of Salamis, in his work on biblical and post-biblical weights and measures, cites a jar known by its Syriac name of Sabitha, meaning a ληνιαῖον ἄντλημα, "a decanting vessel for the winery." The Syriac version makes clear that the Sabitha served to transfer must (γλεῦκος/μοῦστος) from a collection basin (see ὑπολήνιον below) of a winepress into storage jars.³

The distinction between the ληνός and other equipment in the winery is evident in *P. Oxy.* XXXIV 2723 and LI 3638, two documents which involve the sale or the cession of part of a vineyard containing a wine-making installation. Both documents deal with similar pieces of equipment (lines 9 and 8): ληνός, πίθος, τεμφυλουργικὸν ὄργανον. The editor of 2723 translates the three items as "winepress and cask and squeezing machine"; the editor of 3638, "treading trough, vat, and pressing-machine." These distinct terms are generally used in other documents, save when ληνός is employed to denote the entire wine-making installation. To maintain "fermentation vat" as the translation for πίθος and that "wine can only be delivered if it is fully fermented" (Kruit 268-269) is open to question. The πίθος is

¹ On κοῦφα meaning "Empties", see my article in *BASP* 34 (1997) 47-52.

² In crushing grapes for wine, there is a distinction between "treading" and "pressing"; one is done with the feet, the other with a mechanical device. Both techniques were used through the Middle Ages into modern times.

³ See my article, "Another Unreported Ascalon Jar: The *Sabitha/Sapation*, *Israel Exploration Journal* 46 (1996) 258-261, and "Epiphanius' *Sabitha* in Egypt", *BASP* 35.3-4 (1998) 215-218.

distinct from the ληνός since it is the storage jar into which must (i.e. γλεῦκος/μοῦκτος) is transferred from the ληνός *to be kept as such* or to be fermented. Further, wine need not be fully fermented in order to be delivered. In the documents, γλεῦκος or μοῦκτος was held to be οἶνος and was delivered in orders for payment of wine.⁴

The specific meaning of the word ληνός is the "treading or pressing floor" or "treading trough" or even the "treading vat". It has the primary role in the processing of grapes into must and wine. Diodorus Siculus 4.5 makes this point in accounting for Dionysus' epithet of Lenaeus: ἀπὸ τοῦ πατῆσαι τὰς σταφυλάς ἐν ληνῷ ("...from the treading of grapes on the treading floor" ["in the wine-tub", Loeb]). In the apocryphal *Sirach* 30.25, the prophet compares himself to a grape-gatherer and "like a grape-gatherer I filled the treading floor" (ὡς τρυγῶν ἐπλήρωσα ληνόν). In the documents (*CPR* XVIIA 19.12-14; *P. Mil.Vogl.* III 152.50), the one who crushes the grapes on the treading floor is called the ληνοβάτης.

By synecdoche, as stated above, ληνός was often taken as the entire wine-making installation and has been translated as "winepress" or "vat." That is how it is taken in the Egyptian documents with some variation. The translation as "vat" can be ambiguous since in the mind's eye "vat" is often viewed as a large jar or container of some kind. As for "winepress", the word is often thought of as an instrument or device for pressing grapes. If ληνός is taken as the wine-making establishment, a better translation perhaps might be "the winery".

There is, however, another essential part of the wine-making process which the documents, but with one exception (*P. Oxy.* XIV 1735.5 ὑπολήνιον), do not record and that is the ὑπολήνιον. The ὑπολήνιον is the receiving container or vessel, sited below the ληνός, that collects the flow (ῥυκίς) of the must (μοῦκτος, γλεῦκος) as it comes off the treading floor. In many installations, particularly those of some size, the must flows by gravity into the ὑπολήνιον by means of a duct. In treading or pressing operations in which the ῥυκίς exceeds the capacity of a single ὑπολήνιον, the flow off the ληνός is diverted into additional receiving containers. These ὑπολήνια are wide-mouthed so as to allow a decanting vessel to transfer the must into the πίθοι or other jars.

The ὑπολήνιον is an essential part of a winery of any scale. Although it is only mentioned once in the documents, it is apparent that it was considered part of the ληνός and for that reason it is not detailed in sales of property involving a winery. In addition to the two Oxyrhynchus documents cited above, several others (*P. Cair.Mas.* I 67097.2; *P. Hamb.* I 23.18; *P. Vind.Tandem* 28.10; *StudPal.* XX 20.218) cite the sale of a ληνοπίθος, which should be taken as shorthand for the entire wine-making complex.⁵

While the distinction between the ληνός and ὑπολήνιον is not spelled out in the Egyptian documents, it is supported in literary accounts. Lacking the commentary of a Greek Cato, Varro, Pliny, Columella, or Palladius, we turn to the *Geoponica* (H. Beckh, ed.) a late omnium gatherum of agricultural practices culled from "ancient writers". The summary to Book 6, on the production of wine for the oncoming vintage, treats among other aspects, the preparation of the ληνός, the ὑπολήνιον and the πίθοι, the positioning of the πίθοι in the wine-cellar, the method of making and pitching them, how to prepare for the vintage, how to tread the grapes and how to fill the πίθοι with must (γλεῦκος), how to keep the must from fermenting, and how one may have must all year round. *Geoponica* 6.1.3, dealing with the preparations for the oncoming vintage states: "It is necessary that the whole area of the treading floor (ληνεῶνα) be covered all over with smooth plaster, no less so the ducts (ἀναφορᾶς, see LSJ, *Revised Supplement*) that lead to the ὑπολήνιον), lest dirt or living things falling into them would contaminate the wine." With specific reference to the ὑπολήνιον (6.1.4), it should be "wide-mouthed" (πλατύ-

⁴ A fuller treatment of this issue is taken up in my article "Transactions Involving γλεῦκος/μοῦκτος: Must or Wine? or Must Wine?", *BASP* 36 (1999) 123-128.

⁵ Cf. Schnebel, *Landwirtschaft*. p. 285 who equates ληνόπιθος with πίθος: "Πίθος und ληνόπιθος waren feststehende, d. h. in den Boden eingelassene oder eingemauerte Fässer..." The four documents (VI AD) in which this word appears are contracts for property involving equipment connected with vineyards. It does not seem likely that the contracts would call only for jars for storing or fermenting wine (πίθοι) apart from the essential piece of equipment, the ληνός.

στομον) and kept clean by being washed with salt water and sponged. To keep mice from drowning in the must and making the wine undrinkable, a wooden cover must be placed over the ὑπολήνιον. As for the πίθος (6.2.1) it should be at a distance from the ληνός, away from any bad odors, and (6.2.3) in a dry place.



Fig. 1: Excavated treading floor at Sobata (after Mazor 1981.54). Note the outlet in the foreground that led the must from the floor to the receiving container.

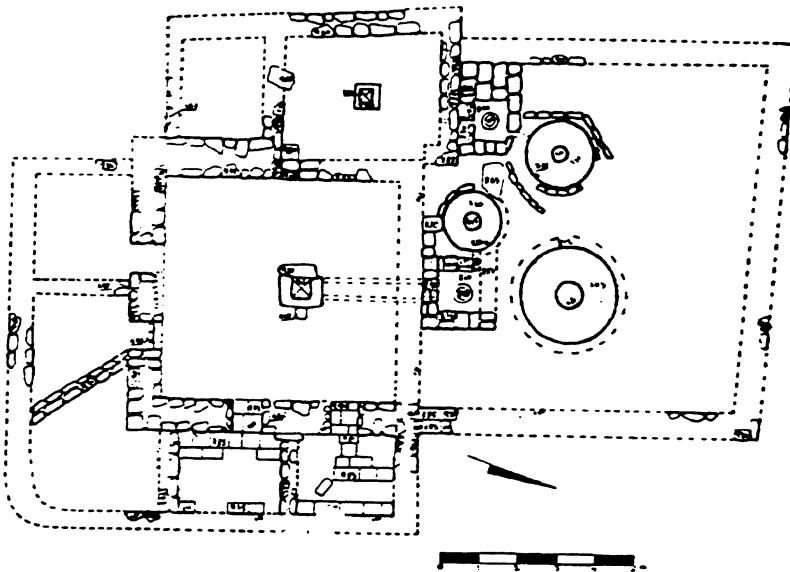


Fig. 2: Plan of an excavated wine-making complex at Eboda (after Mazor 1981.53.) Note that an additional treading floor and receiving vessels have been added to the larger one.

wine into their vats" (καὶ οὐ μὴ πατήσουσιν οἶνον εἰς τὰ ὑπολήνια).

John Chrysostom employs the figure of the three pieces of wine-making equipment to express the obsession of business men to sinfully pocket profits without sharing them with others (*In Matth.*, PG 58.592.1) "... ληνούς καὶ ὑπολήνια πληροῦντες... ἀλλὰ ὀλόκληρον τὸν καρπὸν εἰς τοὺς τῆς παρανομίας αὐτῶν ἀντλοῦντες πίθους..."⁶

In 6.11.3, following instructions for readying the installation and making the πίθοι watertight (pitching), the wine-making process begins. After checking for quality, the grapes are put onto the treading floor and the treading process begins (ἐμβληθείσας δὲ τὰς σταφυλὰς εἰς τὰς ληνούς εὐθὺς τοῖς ποσὶν ἀποθλιβέτωσαν). The skins and seeds of the pressed grapes are removed to allow the free flow of the juice into the collection vat (ὥστε τὸ πολὺ τοῦ ὑγροῦ ἀπορρυῆναι εἰς τὸ ὑπολήνιον). 6.12, as its heading indicates, describes the method of transferring must into storage jars (μετὰ τὴν τελείαν πάτησιν τῶν σταφυλῶν πῶς ἐν τοῖς πίθοις τὸ γλεῦκος ἐμβλητέον).

The words ληνός and ὑπολήνιον are often used metaphorically. The difference of the two is clearly demonstrated in LXX of *Joel* 3(4)13.3: εἰσπορεύεσθε, πατεῖτε, διότι πλήρης ἡ ληνός, ὑπερεκχεῖται τὰ ὑπολήνια, ὅτι πεπλήθυνται τὰ κακὰ αὐτῶν, "Go in. Tread, for the treading floor is full; the collection vats (for the must) are overflowing for their evils are multiplied." *Isaiah* 16.10, holding forth against the Moabites, prophesizes that they will have no joy in their vineyards "and that they will not tread

⁶ For additional citations for ληνός and ὑπολήνιον, see Stephanus, *Thesaurus graecae linguae*, ed. Dindorf.

To illustrate the ληνός and its connection with the ὑπολήνιον, we go to the Negev of Southern Palestine and to Ascalon where archaeologists have uncovered wine-producing installations. At several sites in the Negev, a number of extraordinary wine-making installations of the Byzantine period have been



Fig. 3: Attic black-figure vase of the Amasis painter illustrating all the phases of the wine-making process.

uncovered, each showing treading floors that had one or two collection vats that were fed by a sophisticated drainage system (figs. 1, 2).⁷ Ascalon, at a much earlier date, had collection basins that were constructed of bricks or cobblestones and plastered. The grapes were pressed by foot on a plastered treading floor, the must flowing through a duct at an opening of the rimmed floor into the basins.⁸ Small domestic presses had the ὑπολήνια directly underneath the treading floor. The Attic black-figure vase painting by the Amasis painter, c. 550 B.C., illustrates (fig. 3) the wine-making process: the treading of the grapes,

the must going into a jar (ὑπολήνιον) underneath the treader, the jar containing the must then being poured into a πίθος.

Returning to the position taken by Kruit (p. 269) that "wine can only be delivered if it is fully fermented," the Duke Data Bank provides an ample number of documents in which γλεῦκος or μοῦστος (i.e. must: "wine" at the very earliest stage of fermentation) is sold or provided by vintners. For example, *CPR* XIV 4.8, a sale of wine, is a purchase in advance of 60 jars of top quality must (οἴνου μούστος εὐαρέστου). A Ptolemaic document, *P. Col.* III 55, a receipt for government wine, appears to call for both kinds of wine (p. 144): line 8, 40 *metretai* γλεῦκου...οἴνου; line 10, 75 *metretai* of οἴνου. *P. Vat.Aphr.* 9.10 is an acknowledgment of receipt of 9 double jars οἴνου γλεῦκ(ου). *SB* XVI 12492.3,8 calls for 300 measures of must (μούσθου) with a guarantee of its quality until the month of Tybi (*cf.*, Kruit [n. 4], 273-274). Since many of these documents deal with large amounts of wine, what must be taken into consideration is the likelihood that the buyers (wine merchants?) wanted to finish the aging process of the must in their own jars.

Further with regard to delivery, wine, as stated in some contracts, was to be delivered παρὰ ληνόν or ἐπὶ ληνοῦ. Similarly, in leases the costs for the wine that workers will drink ἐπὶ ληνου as well as other costs of wine-making are to be borne jointly by the owner of the vineyard and the lessee (e.g. *P. Soterichos* I.16 and 2.11f.) In the latter case the drinking might have taken place at the treading floor. But παρὰ ληνον and ἐπὶ ληνου may also have designated adjacent spaces if not the entire wine-making establishment (see above, p. 161f.). If the contract stipulates that the purchaser bring empty vessels (κοῦφα), which may either be jars or wineskins⁹ his wine was to be decanted into these κοῦφα from the πίθοι. If the purchaser was interested in calculating the volume of the vintage, the γλεῦκος/μούστος or οἶνος was measured by σηκώματα of x number of *xestai*¹⁰ or by other measuring vessels (e.g., μέτρον πίθου, χύματι τοῦ χωρίου).

⁷ See my article, "The Wine and Vineyards of Gaza in the Byzantine Period", *Bulletin of the American Schools of Oriental Research* 257 (1985) 75-80, figs. 1-4. G. Mazor, "Wine Presses in the Negev", *Qadmoniot* 14 (1981) 51-60 (Hebrew).

⁸ L. E. Stager, "Ashkelon and the Archaeology of Destruction: Kislev 604 BCE", *Eretz-Israel* XXV (1996) 62-63, fig. 2; "The Fury of Babylon: Ashkelon and the Archaeology of Destruction", *Biblical Archaeology Review* 22 (1996) 64, 66-67.

⁹ See my article, above, n. 1, in which I failed to see that some of these κοῦφα may have been wineskins as well as jars.

¹⁰ See my article on σηκώματα as "standard" measures for decanting wine, *BASP* 35.3-4 (1998) 153-158.

There remains the question of the ληνός bearing a number (e.g., the second—third or fourth— ληνός). Kruit holds (p. 269) that these are to be taken as "fermentation vats." Several documents, however, make clear that the number associated with ληνός represent one of a number other wine-making installations, not πίθοι of fermenting wine. *P. Vind.Tandem* 28, *SB IV* 7369, and *StudPal.* XX 218 deal with πρωτολήνια in contracts involving the sharing of a vineyard in which wine was to be taken ἀπὸ τοῦ κοινοῦ πίθου. That these numbered ληνοί are "corporate" wineries in a large holding can be seen in *P. Oxy.* XLIX 3513, 3515, 3516, 3519, 3520 and 3521 (*ZPE* 31 [1978] 145-160). The documents are orders from an overseer of an estate to a subordinate to pay certain employees a number of *ceramia* of wine from different holdings on the estate: the 2nd ληνός is at "Colluthous' plot" (3513, 3515, 3519); the 3rd and 4th is at the "Western plot" (3515, 3516, 3520, 3521). Similarly, *P. Oxy.* VII 1055 is an order, presumably from a person in charge to a subordinate, to deliver a large order of wine from the 4th and 5th ληνός to a wine seller. The wine undoubtedly came from the πίθοι of estate wineries or from some larger wine-making complex.¹¹

To conclude, this paper has attempted to demonstrate that the ληνός in the Egyptian documents has as its basic meaning "a treading/pressing floor or platform" and that it also encompassed another unrecorded feature, the ὑπολήνιον, a receptacle which received the juice of the crushed or pressed grape as it ran off the ληνός. By synecdoche, the ληνός was perceived as the entire wine-making complex which included the ληνός. The ὑπολήνιον, and the storage jar (πίθος) in which the must (γλεῦκος/μοῦστος) was to be kept as such or fermented.

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¹¹ *P. Flor.* II.246 in *ZPE* 75 (1988) 160, which emends line 9 and 10, with support from *P. Flor.* II.139, has to do with wine from the 9th and 4th press. The δεκάτην ληνόν cited in 139 is another such numbered installation.