

Poetic Wisdom and Food for the ‘Savage Mind’: Greek *tamisos* and Provençal *toma* as Evidence of Ancient Celtic Cheesemaking

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ABSTRACT: When a new technology arises in a given culture, speakers of that culture’s language must draw upon their imagination to create words referring to the new items and processes. In this paper we examine western Indo-European words for cheesemaking, especially terms for rennet and aged cheese, originating in prehistoric times. The poetic imagination of the early namers of rennet seized upon different aspects of this new cheesemaking technology: describing the appearance of the contents of a ruminant’s stomach as akin to pus, focusing on the initial formation of a gel, on the subsequent separation of curds and whey, and on the final product of cheese made with rennet. Greek *tamisos* ‘rennet’ and Provençal *toma* ‘cheese’ are shown to be cognates, both reflecting the influence of a prehistoric Celtic cheesemaking culture in the Alps.

44 An area of investigation of considerable importance in the West and still very much requiring elucidation is that of dairy products. Particularly at issue here are the technological innovations behind the transformation of milk into cheese, especially aged cheese. From extant early textual and pictorial evidence from the Near East, it is clear that cheesemaking and possibly also the use of rennet, which greatly facilitates the making of aged cheeses, had become a significant element in the alimentation of peoples in the Fertile Crescent already by the third millennium B.C., a development which is not surprising given that the three most important species for dairy production in the West – sheep, goats, and cattle – were all first brought under domestication in one or the other part of the region several thousand years earlier. It is also virtually universally accepted that agriculture came to Europe through a process of diffusion of both people and ideas from the Near East, starting with population movements from western Anatolia and the northern Levant to both the eastern Balkans and Greece circa 7000 B.C.; these agropastoralist groups brought with them their crops, domesticated animals, and their knowledge, which undoubtedly included at least rudimentary know-how of dairy processing. Remaining far less clear is, however, when and where the use of rennet arose and, indeed, if it is at all legitimate to assume, as many scholars do, that it arose but once, in the Near East, and gradually spread from there in several directions, including into Europe. Given that the discovery, presumed diffusion, and much of the early development of rennet-based cheesemaking occurred in pre-, proto-,

and parahistorical contexts, any attempt to understand this set of developments must include linguistic analysis of any relevant data available.

After the partial displacement of and partial merger with Europe's older foraging population by Neolithic farming groups, the process was in effect repeated with the arrival in the third millennium B.C. of new waves of immigrant groups from the Pontic-Caspian steppes of Ukraine and southern Russia, the bearers of the Indo-European dialects that developed into almost all of the well attested languages of Europe. Despite this thorough linguistic replacement, scholars generally agree that widespread population merger took place, and the attested Indo-European languages reflect to varying degrees the concomitant cultural influences in their lexicons. One semantic field in which we find numerous borrowings in the western Indo-European languages is agriculture, more specifically in the names of crops which had been exploited by the Neolithic farmers but were ostensibly unknown to the newcomers from the steppes (Iversen & Kroonen 2017:515)

In striking contrast to what we find with the vocabulary of domesticated (and wild) plants, where borrowings from the European Neolithic substrate population are numerous, the vocabulary of dairy production in western Indo-European languages shows no borrowings: In this semantic field, the words are of Indo-European origin, constructed from widely attested IE roots by means of IE derivational processes. This contrast appears to concord with what archaeologists and linguists have concluded about the mode of life of the Indo-Europeans in their homeland on the steppes, where they practiced only rudimentary agriculture, focussed on primitive grains, and relied to a great extent on pastoralism, exploiting for food and service cattle, sheep, and horses. To be sure, the Indo-European groups that emigrated into Europe brought with them their own knowledge of dairy production. Yet also striking is the fact that although words related to dairy production throughout the family are generally all of Indo-European origin, there is tremendous variety across the daughter languages with respect to the roots and derivations used to name various items, so much so that reconstruction of a unified vocabulary assignable to the IE proto-language is particularly difficult.

There are two general ways to account for this great diversity of dairy-related terminology in the Indo-European daughter languages: 1) we might conclude that exploitation of milk resources only became significant after the Proto-Indo-European period, developing in the subsequent time when the communities in which the various branches (Celtic, Italic, Greek, etc.) were increasingly linguistically isolated from one another, or 2) there is something about the nature of dairy production which leads to a high rate lexical innovation. It is my belief that both are true to a degree: Though Indo-Europeans exploited dairy products from earliest times, the innovation of rennet demanded the creation of a new vocabulary of cheesemaking in the period of dialectal diversification in the western branches.

Some Fundamental Aspects of Dairy Production

Speaking in very broad terms, it may suffice to make one basic division between dairy production without the use of rennet and dairy production with the use of rennet but for present purposes that is an unworkable simplification of matters. Beyond the consumption of fresh milk there lies an initial group of secondary products which depend largely upon the natural fermentation of milk. This fermentation occurs as microflora and especially *Lactococcus lactis*, already present in the milk, transform some of the complex carbohydrate *lactose* into *lactic acid*, which lowers the pH of the milk and thus inhibits the growth of harmful organisms; this acidic fermentation also causes partial precipitation or coagulation of milk solids – i.e. the fats and proteins suspended in water that constitute milk – and brings about a thickening of the substance while also producing a pleasant sour flavour. The controlled application of heat can accelerate the process, particularly in conjunction with the direct addition of an acid; with subsequent draining one obtains rudimentary cheese or cheese-like foods, such as the South Asian *paneer*, Middle Eastern *labneh*, or northern European *quark*. Though secondary products produced only by means of acidification or acidification together with controlled heating still contain high levels of moisture and are therefore subject to rapid spoilage, they are markedly more stable than raw milk left to its own devices.

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The use of rennet to produce secondary dairy products involves enzymic action on the milk proteins, especially the *caseins*. For a very long time, the most widespread means of inducing this enzymic action was the use of the abomasum – the fourth stomach – of immature ruminants (kids, lambs, calves) which contain the enzyme *chymosin*. This enzyme, when introduced into acidified milk, causes the milk solids, suspended as small particles in fresh milk, to form long strands that capture the water, transforming the whole into a gel; when this gel is cut with a tool, the strings are broken, releasing the liquid and, with draining, yield on the one hand the curdled milk solids, i.e. the curds, and the watery whey. With the addition of an acid or more rennet and the application of heat, the residual milk solids suspended in the whey can also be coagulated and drained, yielding whey-cheeses (e.g. ricotta) and secondary whey.

The speed and thoroughness of the separation of curds and whey brought about by enzymic action makes it far easier to reduce quickly the moisture level of the curd and prevent spoilage, which in turn allows for new possibilities in aging, most especially in conjunction with the addition of salt. The aging of cheese has multiple significant advantages: 1) it makes possible the development of products with a range of appealing flavours; 2) prolonged fermentation reduces greatly the residual lactose and thus creates a dairy food consumable by people who are lactose intolerant; 3) aging renders possible the conversion of the nutritional value of milk into a storable food, either for consumption within the producing community in times of scarcity or for trade outside the immediate

area of production; 4) the whey left over from cheesemaking can be used to produce further cheese-like products such as ricotta. In light of these advantages, the discovery of rennet must be considered one of the most important advances in food technology in the West.

This discovery of rennet, though often assumed to have been a sort of singular 'eureka-event', was surely not so simple. First, evidence for the use of rennet in the ancient Near East in the third and second millennia B.C. is obviously important but hardly excludes the possibility that rennet had been independently discovered elsewhere, in contexts where writing was not yet known and where the tools employed in cheesemaking would largely or wholly vanish from the potential archaeological record: It seems hard to imagine that pastoralists in all but one place failed to observe the curdled milk present in the stomachs of slaughtered young animals. Second, it must be recognised that there are multiple ways to make the abomasum of such animals useful. Surely the simplest and oldest method is to take the curdled milk together with the mucous (both containing the active enzymes) in the abomasum of a freshly slaughtered animal, and add it to milk; one can store the curds in the fresh abomasum as well, allowing for multiple uses over a period of a few weeks, as is still done for traditional cheesemaking in Egypt. It must be regarded as a further discovery that the abomasum itself can be preserved by cleaning, drying, and salting and kept for use for years; as needed, small pieces of the preserved stomach can be added directly to milk for coagulation or one can steep the cutting in water and add the 'juice' thus obtained to the milk. This method of preserving would be highly useful, facilitating cheesemaking by shepherding groups removed from their main settlement in order to exploit seasonal pasturage (transhumance).

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Finally, it is important to note that while the just discussed animal rennet has long been the mostly widely used coagulant in cheesemaking in the West, it is not the only one and by no means necessarily the oldest method of employing enzymic action to produce cheese. In both the Near East and throughout Europe, there are a number of plants which produce enzymes which work much like chymosin and their use in cheesemaking is explicitly discussed in Greco-Roman texts from Classical Antiquity; common sources are fig sap, cardoons, artichokes, thistles, and *Galium verum* (yellow bedstraw). Indeed, many cheeses are to this day made with vegetable rennet, particularly in mountainous parts of Portugal, Spain, France and Italy. In traditional pastoralist settings, vegetable rennet had the advantage of being readily available to herders away from home at summer pasturage. It seems to me likely that their use has over time steadily lost ground to the use of animal rennet. Early herders may have come upon enzymic coagulation with vegetable rennet accidentally when introducing parts of plants to already naturally acidified milk, with the intention of flavouring it or of giving it some medicinal quality. In any event, the discoveries of both animal and vegetable rennets lie further back in time than any historical records

and probably will never be clearly detected in the archaeological record, leaving us to turn to historical linguistics for at least some clues.

When a new technology arises in a given culture, speakers of that culture’s language must come up with words to refer to the new items and processes involved. If the new technology develops within that community, they will have to create new words or extend the meanings of existing words within their own language. If the technology is acquired through contact with another, alloglot culture, they might ‘borrow’ all or some of the needed vocabulary from that other culture’s language, or for various reasons they might eschew borrowings and create native terms, possibly on the model of the other language’s terminology. From this, it follows that borrowed terminology implies the borrowing of the technology but native terminology does not necessarily exclude the possibility of borrowed technology.

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Living in an age when technological innovations that affect our daily lives arise at an astounding pace, we are all aware of the coining of neologisms, both of the learned/scientific sort and of the popular sort. One can easily see the processes involved, often rather poetic in nature, in, for example, the terminology surrounding the computer, where many existing words have been assigned new, metaphorical applications – *mouse*, *memory*, *cloud*, etc. – or surrounding electronic instruments, where we find such compounds as *pickup*, *fuzzbox*. When we examine the traditional terminology surrounding dairy production in the Indo-European languages, we are in many cases looking at ancient neologisms, created to refer to new things and processes linked to prehistoric technological advances. In general, the basic strategies for creating new words were then as they are now – compounding, affixation, and often rather poetic metaphorical extensions – but in Proto-Indo-European and in the early stages of the daughter languages the derivational morphology involved was far more complex than what we find in modern English. These complexities, together with related phonological complexities and gaps in our knowledge at all levels, render analyses of these old words difficult, but alongside all the technical linguistic issues there lies at the heart of the process the semantic considerations, the attempt to imagine the poetic imagination of the speakers of these ancient language stages.

Toma and τᾰμῖσος; Etymological Evidence for the Early History of Cheesemaking
From an historical perspective, the number of words in the national languages of western Europe with the generic meaning of ‘cheese’ are few but their distribution is rather striking, especially in contrast with their generic counterparts meaning ‘bread’. In this latter case, we find complete agreement within the two large language families, Romance and Germanic, which extends down to the level of regional dialects: all the Romance languages have a reflex of Latin *panis* and all Germanic languages (and their regional dialects) have direct cognates of English *bread*, all descended from a Proto- or Common Germanic word reconstructed

as **braudan-*. The picture of unity breaks down in the surviving Celtic languages where we have a split between the two branches: in Goidelic, Irish *arán*, Scots Gaelic *aran* vs. Brittonic, Welsh and Breton *bara*.

The contrast with the situation with words for ‘cheese’ is twofold. First, both Romance and Germanic are split. In Romance, some of the daughter languages show, as one might expect, reflexes of the Latin *caseus* – Spanish *queso*, Portuguese *queijo* – whereas French and Italian have *fromage* and *formaggio*. But here it is important to go beyond the national languages and note that at the level of regional dialects, Italian is split between the dialects of the north, which generally show forms related to *formaggio* and those of the centre and south, which generally show reflexes of *caseus*, as in Tuscan *cacio* and Neapolitan *caso*, which even in the dialects have been giving ground as the generic word to the intrusive *formaggio*. An analogous situation is found in France, where at the regional level we find that in the dialects of the old regional language Occitan/Provençal, there appears a local word – *toumo*, *touma*, etc., Old Provençal *toma* – which appears to have been the generic term in the past but, as in central and southern Italy, survives robustly but in a more restricted rôle alongside *fromage*. Surprisingly, clear cognates of *toma* exist throughout Sicily and in places in continental southern Italy (Calabria, Basilicata), where it exists alongside forms of both *caseus* and *formaggio*.

The second contrast to be drawn with the words for ‘bread’, which all over western Europe appear to be native, inherited words, is that with the words for ‘cheese’ we find unambiguous instances of borrowing. In Germanic, there is a neat split along dialect lines: the North Germanic languages all show *ost(-)* (e.g. Danish *ost*, Icelandic *ostur*) while the West Germanic languages (and their regional dialects) all show reflexes of a very early borrowing of Latin *caseus*: Eng. *cheese*, Ger. *Käse*, Du. *kaas*, etc. In addition, both surviving branches of Celtic also reflect this borrowing, as in Irish *cáis* and Welsh *caws*.

Though the term *fromage/formaggio* and the reflexes of *caseus* are not our central concern here, some brief comments about them are needed. To begin, the etymology of *caseus* has long been regarded as problematic in that this Latin word aligns nicely with some phonologically and semantically related forms in other branches of Indo-European but with some complications that demand explanation. For present purposes, let us simply assert that it is in fact a native Latin word and its coining must ultimately go back at least to the Proto-Italic stage and likely back to Late Indo-European. It was undoubtedly the generic word for ‘cheese’ in Latin and in my view originally had the specific meaning of ‘product made from drained(/pressed) curds’. That the word spread throughout the regions conquered and colonised by the Romans from the Republican period on is hardly surprising, particularly in those areas where Latin/Romance supplanted local languages (Oscan, Etruscan, etc.). Somewhat surprising is the success of the word beyond where Roman colonisation and influence was strong enough to lead to language-replacement, for it is clear that *caseus* was

borrowed by speakers of a still linguistically undifferentiated West Germanic, presumably along the Roman *limes* in the Low Countries, west-central and southern Germany, whence it spread throughout all West Germanic territory, most likely reaching the Angles, Saxons and Jutes on the continent before their departure for the greener pastures of Britain. The insular Celtic languages also clearly borrowed the word at an early date.

Scholars have long surmised that the reason for the success of Latin *caseus* among West Germanic peoples (and one should add Insular Celts) is that, although those peoples had long been intimately familiar with dairy products, they had been content with consuming only fresh, unformed kinds of cheeses. It was then perhaps the Romans who introduced them to aged, formed cheeses. The novel product, along with its name, could then be diffused into barbarian territory as a trade item by merchants, as Roman merchants did with a number of other things and their names. I suspect, however, that an important element in this diffusion may well have been the Roman army, which required their *caseus* and probably made arrangements to procure it from local people wherever they established outposts, thus diffusing not just the thing and its name but also the knowledge of its production.

50 While the word *caseus* spread quickly beyond the northern fringes of the western empire, it is not clear how deeply its use spread among the local population of Gaul itself, the region bordering much of West Germanic territory. Without doubt, the word must have been current among Roman administrators, merchants, soldiers and colonists but it is an overlooked oddity that reflexes of *caseus* are conspicuously absent from the Romance varieties of France, including almost all of the Romance varieties, north and south; only some derivatives can be found, e.g. *chasier/chaisier* etc. ‘basket for draining cheese’ (Wartburg 1928: v. 2, 456ff.). The same situation obtains by and large in the Romance dialects of neighbouring Switzerland and northwest Italy. Here the most widespread word for cheese is of the *fromage/formaggio* type and the origins of this word seem to be quite clear and to lie within historical times. This word derives from a process of making shaped, aged cheeses and can be literally rendered in English as *form-+-age*; the word first occurs in Late Latin as *formaticum*, derived from the Latin word *forma* and almost certainly refers to an innovatory method of pressing and shaping curds for their transformation into cheese – perhaps the specific innovation involved wooden forms. In any event, for several reasons, partly linguistic in nature, this word appears to have supplanted *caseus* in a large swathe of Romance territory and did so before the onset of textual transmission of the vernacular there.

What then of *toma*? This word for ‘cheese’ has been treated in relevant etymological dictionaries but otherwise has received little attention. The most recent treatment is a detailed study on cheesemaking in the West by Alinei (2010) which contains interesting data and insights into particular issues but is, alas, skewed by the author’s theoretical framework of the ‘Palaeolithic Continuity Paradigm’; in effect, Alinei sees tremendous

linguistic continuity in Europe which leads him to bizarrely project language developments – developments that for all other Romanists obviously belong to historical times – back into the Neolithic period. His results are unconvincing.

There are no traces of a word *toma* meaning ‘cheese’ in the entire corpus of Latin literature, which includes a number of discussions of cheesemaking and cheese types, leading scholars to conclude with good reason that it must be a borrowing into the Romance dialects in which it appears. For scholars focussing on its appearance in the dialects of southeastern France and neighbouring parts of Italy and Switzerland, Gaulish and the closely related Lepontic of northern Italy has seemed a possible source but the occurrence of the word in Sicily and southern Italy seems to speak against a Continental Celtic source. Rey et al. (2006:3749) suggests it is vaguely “prélatine” but then also mentions a possible connexion to Latin *tumere* ‘to swell’ without further discussion. Alinei (2010:101ff.) sees connexions between *toma* and Greek forms but rather than exploring them in a coherent way seeks to explain the relationship in terms of an archaeological culture (Bell Beaker) which might connect the Western Alps to Sicily in accordance with his particular theory. In accordance with more mainstream approaches, one might conclude from its dialectal distribution that *toma* could be Greek in origin, given the fact that there was a massive presence of Greeks in Sicily and southern Italy in Classical Antiquity and that Greek cultural influences in southeastern Gaul, emanating from the Greek colonies of the coast, most notably *Massilia* (Marseille, founded ca. 600 B.C.), are well attested in the archaeological and epigraphic records. But a Greek word resembling *toma* and meaning something akin to ‘cheese’ is attested no better in that language than in Latin, which is to say not at all. It is my firm belief that the presence of reflexes of *toma* in Sicily and southern Italy is a red herring. The word there is clearly intrusive, just as *furmaggiu* (*formaggio*) is, in areas where older reflexes of *caseus* still occur as relicts, and arrived in Sicily and the Mezzogiorno as a result of the establishment of ‘Gallo-Romance’ colonies, with settlers from southeastern France and northwestern Italy in the Middle Ages, a topic which I have addressed in different culinary contexts not long ago (e.g. Buccini 2015:58ff).

Consequently, the origins of *toma* must be sought in the context of the region of its pre-medieval homeland, namely, the area which I will refer to here as the Western Alps, bearing in mind that the Alps extend from Switzerland southward along the French/Italian frontier and within Provence, down to the Mediterranean. Though it is unlikely that *toma* was an otherwise unattested Greek word for ‘cheese’ borrowed into Gaulish and later surviving by being taken up in Latin/Romance varieties of the Western Alps as they eventually made the switch from their old Celtic language to the dominant language of the empire in which they lived, it is reasonable to think it may have been a local Gaulish word which survived the shift of language. In support of this claim is the fact that in the Romance dialects of the

Western Alps, there are other words in the semantic field of dairy production which can best be explained as abiding Gaulish-isms but nary a one that appears to be Greek.

Nevertheless, knowledge of ancient Greek dairy terminology can be of service here. In that language, the main word employed to express ‘rennet’ was *πυτία* (with variants *πυετία*, *πιτύα*), which has remained in use to modern times. In the *Geopontika* 18.19 (Dalby 2011:331), a 10th century Byzantine text based on much older sources, we are told that *πυτία*, especially from kids, was the mostly widely used coagulant for making cheese and this clear statement accords with what we can glean directly from classical sources. This word indicated in particular the curdled milk (and presumably the accompanying mucus) taken from the stomach of a suckling animal (mentioned above) and this sense fits well with the likely etymology. Beekes (2009:1259) sees *πυτία* as a straightforward derivative of *πυός* ‘beestings’, i.e. the rich milk produced by the mother immediately after giving birth, which makes good sense both semantically and morphologically. Yet the deeper etymology of the root, as noted by both Beekes and Chantraine (1968:956), most likely goes back to an IE root **pu(H)-* ‘to rot, decay’, represented in English *foul*, *filth* (Germanic), *putrid*, *pus* (from Latin) (Watkins 1985:53), and reflected clearly in Greek *πύδομαι* ‘to putrify’, *πύον*/*πύοσ* ‘pus’. To my mind, the derivation of ‘beestings’ directly from a root denoting ‘pus, rot’ makes little sense, but if we consider how the curdled beestings and especially the mucus – the *πυτία* – from the stomach of a just-born kid looks, we can see a reasonable association with pus. I therefore suggest that *πυτία* was derived from *πύον* ‘pus, putrification’ and that *πυός* ‘beestings’ was backformed from *πυτία*, given that the curdled milk (used as rennet) was often enough curdled beestings.

There was another word in Classical Greek that meant ‘rennet’, namely, *τάμισος*, which is attested in a number of medical texts and is also included in Hesychius’s (fifth century A.D.) lexicon of unusual or obscure words, who glosses it simply as ‘*πυτία*’ (Schmidt 1867: v.4, 127). *Τάμισος* was identified as a Doric dialect word and one must wonder why it made its way into the usage of speakers of other Greek dialects, such as Theophrastus (from Lesbos) and Nicander (from Claros in Ionia). Though it may over time have come to be used as a synonym of *πυτία*, it most probably was originally distinct in some way.

A number of scholars have taken *τάμισος* as a possible native Greek word of IE origin and have posited a relationship with the Greek verb *τέμνω* (Attic)/*τάμνω* (Doric/Ionian) ‘to cut, split, destroy’, derived from an IE root **temH-*, usually glossed simply as ‘to cut’.¹ This root is widely attested in Indo-European (see Pokorny 2007:3076) and was particularly productive in Greek, yielding multiple derivatives in all three ablaut grades, e.g.: 1) e-grade: *τέμενος* ‘domain, sanctuary’; 2) o-grade: *τόμος* ‘section, piece’, *τομός* (adj.) ‘sharp’, *τομή* ‘cutting, thing cut off’; 3) Ø-grade: *τμήσις* ‘division’, *τάμνω* ‘to cut’.²

Proceeding from the sense ‘to cut’, some scholars have struggled with the semantics of certain reflexes of **temH-* in the daughter languages; for example, Beekes (2009: 1466)

suggests for Latin (*con-*)*temno* ‘despise’ (cf. Eng. *contempt*) a development via ‘cut up, mutilate’. A better explanation arises if we posit that **temH-* could mean ‘separate’ as well as ‘cut’, the distinction being one of aspectual views of one action, where ‘cut’ expresses a focus on the process and ‘separate’ on the intended achievement. Thus, the sense of (*con-*)*temno* would have been ‘separate (socially)/shun → scorn’ (cf. Walde 1910:768); the Greek *τέμενος* ‘land set off, separated (as domain or divine sanctuary)’ bears this sense and not the literal sense of ‘cut’ (cf. Lat. *templum* ‘temple’). If *τάμισος* contains the root **temH-*, it surely was formed with this sense of ‘separate’, referring to the stage after the application of rennet to milk resulting in gel-formation, when the gel is disturbed with a cutting action resulting crucially in the separation of the gel into two substances, curds and whey, with rennet here being imagined as ‘separator’.

Two oft cited pieces of evidence from Greek in connexion with *τάμισος* support our semantic analysis. First, in Hesychius there appears a word *γαλατμόν*, which very much appears to be a compound of *γάλα* ‘milk’ and *-τμόν*, probably a zero-grade derivative of the **IE* root **temH-*. Hesychius glosses this word as *λάχανον ἄγρον* ‘wild herb’, presumably a plant known as a vegetable rennet and called ‘milk-separator’. Second, in Dioscorides there appears the phrase *σχίζειν τὸ γάλα* (*σχίζω* ‘to cut, split, separate’).

From a formal standpoint, *τάμισος* looks to be a zero-grade built from **tmH-* plus a suffix **-is-*. The suffix **-is-* is not widespread in Greek, a fact which leads Beekes on this point alone to judge the word a borrowing from his non-Indo-European ‘Pre-Greek’ substrate, and, indeed, if the word were directly inherited from IE into Greek, the intervocalic *-s-* of **τάμισος* should have developed to *-h-* and thence lost some time in the second millennium B.C. That this word is a feminine thematic noun in *-os* is also somewhat odd and a possible indication that it may have been borrowed into Greek.

Whether *τάμισος* is native Greek (requiring explanation of the retained intervocalic *-s-*) or a borrowing from some other language, the links in form and sense to *IE *temH-* speak against the word having its origins in Beekes’ Pre-Greek. Assuming for the moment that it is Indo-European in origin, we need to identify the suffix and I suggest that it might reflect the zero-grade **-is-* of *IE *-yes-/yos-*, a widely attested formant in comparatives/superlatives around the family (Meillet 1964:270-271; Ringe 2006:64). This ‘elative’ **-is-* suffix yielded adjectives with a sense of ‘extremely X’ and in this case of the nominalised *τάμισος* I suggest the original sense was ‘strong separator’, a conceivably very apt description of a form of rennet.

To my knowledge, no one has hitherto seen a connexion between Grk *τάμισος* and a French word well known to professional cooks the world over, namely, *tamis* ‘sieve’. This word is attested since the twelfth century in Old French, as well as in Old Provençal, and has been recorded in dialects from Wallonia in Belgium to the far south of France; unambiguous cognates are also found in Switzerland and northern Italy (Wartburg 1928: v.13/1, 73ff.). Equally unambiguous cognates are found throughout West Germanic – Eng.

temse, Dutch *teems*, Frisian *têms*, German (dial.) *Zims* – leading some scholars to speculate that French borrowed the word from a West Germanic language at an early date. The word has, however, no clear etymology in Germanic, just as it has no clear etymology within Latin/Romance. That *tamis* might then be of Gaulish origin has been often suggested but never satisfactorily investigated.

Across the Romance dialects, the word occurs widely in two different forms, basically *tamis* and *tamise* (also *tamigio* in northern Italy); the latter accords with the Medieval Latin gloss *tamisium* ‘sieve’ from the Lyon region (Whatmough 1970:586) and appears to be an old form with a starting point in Gallo-Romance **tamisio*. The two-syllable form can most simply be reconstructed as GRom **tamiso*. There are further complexities in the Romance data that I will address elsewhere but for now let it suffice to indicate that we apparently have as our source a Gaulish **tamision/tamisios*, perhaps with a variant **tamison/tamisos*. Meaning ‘sieve’ everywhere, it is a thing that separates and given the success of the word, we might say it is ‘strong separator’.

54 In both Romance and Germanic territory, this kind of sieve has come to have a close association with the sifting of flour, but this association need hardly be original, as in parts of England it is also associated with beer-making and in France a *tamis* can also be used to separate solids from liquid. Interesting in this regard is that in a large swathe of Germanic territory, extending through the western dialects of Dutch northward into Frisian and Low German areas, the *teems* etc. is a traditional tool in cheese and butter making. I would suggest that this usage may well be relictal and that the use of sieves bearing cognate names may have been the rule in dairy production in early Latin/Romance varieties of Gaul. It seems quite possible that the early borrowing of the word *caseus* and spread of the knowledge of making aged cheese into West Germanic territory was the very context in which an effective tool of cheesemaking, a specialised sieve, was also diffused northward.

A sieve is not the same thing as rennet but the two are in effect both tools by which the separation of curds and whey is achieved. That an old name for rennet, supplanted by some new name, might have been reassigned to the kind of sieve that finished the task of separation, is not far-fetched. I suggest then that we must see a close connexion between our Gaulish word for ‘sieve’ and the Greek word *τάμισος*. From an Indo-European standpoint, the development would be as described above, a zero-grade of **temH-* + **-is-* but with either **-yo-s* or *-o(s)*: IE **t H-is-(y)o(s)* would have yielded Celtic/Gaulish **tamis(y)os*.

If *τάμισος* is a borrowed word in Greek, it is hard to imagine Greek-Celtic cultural contact at a time early enough for the word to be established in Classical Greek and not be known as foreign – the Celtic invasions of the southern Balkans and Greece only took place in the early third century B.C. It is, however, interesting that *τάμισος* was identified as a Doricism and the Doric dialect originated in the far northwest of Greek territory. We might imagine that *τάμισος*, either specifically as a borrowed Celtic word or possibly as a

regional Indo-European word belonging also to one or more of the little known Palaeo-Balkan languages (Illyrian?) may have made its way into the northwestern fringes of the Greek language area before the spread of the Dorians southward, ca. 1100 B.C. Again, if a borrowing, *τάμιος* could well have been originally a commodity, something that could travel, and as a form of rennet, we think not of the fresh stomach or its pus-like contents but rather of the salted, fermented and desiccated stomach of a young animal, an invention that has considerable advantages over *πυτία* in some situations. Might this technological advance have been made by the Celts living in and around the Alps? We know they practised dairying intensively, they had ample amounts of salt for making aged cheeses and for preserving kids’ bellies, and in addition they surely used transhumance to some degree, to take advantage of the summertime high pastures. It is hardly inconceivable that with the innovation of a new form of animal rennet, the thing and its name could have spread from the Swiss Alps, down the Carnic and Dinaric Alps to the edge of the Greek world.

Finally, the survival of the generic word for cheese *toma* in the Western Alps must be addressed. The success that *caseus* had in West Germanic territory as the name of a new thing contrasts strikingly with the lack of success it had in the Western Alps. There *toma* survived and judging from later attested reflexes, it had a broad range of meanings from rennet-produced curds to soft cheeses to formed, aged cheeses of modest size. In other words, it was largely synonymous with Latin *caseus*. Given the unlikelihood that it is a borrowing from Greek and in light of our discussion of *τάμιος/tamis(e)*, the probability is that it is of Gaulish origin. As such, it can be analysed as another derivative of IE **temH-* and probably a parallel formation to a Greek form cited above, *τομή* ‘cutting, thing cut off’, but then with the sense of ‘separation, thing separated’, i.e. rennet-produced curds, cheese made from such curds. In support of this etymology, one notes that other reflexes of **temH-* are attested in Celtic (e.g. Old Irish *temnaid* ‘to cut’) and, from a semantic standpoint, one notes further that the Irish word for rennet is *binit*, derived from another verb glossed as ‘cut (and ‘strike’) but here ‘separate’. The Celtic rennet words share this semantic sense, focussing on the achievement of the action, and in this regard contrast with rennet words in Germanic (*rennet* – run together), Romance (Fr. *présure* – *prendre* ‘to take’) and Latin (*coagulum* – *coagulare* ‘drive together’) which clearly focus on the initial stage of gel-formation.

Notes

1. A few notes on the IE forms discussed here are warranted. First, *-H-* is used to indicate any ‘laryngeal’ consonant, of which there were three, each indicated with a subscripted number; for this paper, the specific identity of the laryngeals is not essential and for typographical simplicity omitted. Laryngeals were lost in almost all the daughter languages, though they often left traces of their former presence on neighbouring sounds.

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Second, an important morphological element in IE is called ‘ablaut’, which refers to patterned (grammatically, derivationally) alternations of root vowels. Theoretically, a given root could appear under certain condition in the e-grade (with the vowel *-e-*, ‘full-grade’), o-grade (with *-o-*) or Ø-grade (with no vowel, ‘zero-grade’); there were also lengthened grades. Grammatical conditioning of ablaut can still be observed in, e.g., English *sing-sang-sung* (reflecting in order the three basic grades).

Third, in IE the glides *y, w* and resonants *l, r, m, n* could function as vowels in some environments. This change of rôle arose frequently in Ø-grades: *y, w* were realised as *i, u* and resonants as *l̥ m̥ n̥ r̥*.

2. The vowel in Doric/Ionian *τέμνο* is original, replaced analogically in Attic *τέμνο*. See Chantraine 1968:1104.

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