

The role of caprines in Roman Italy: idealized and realistic reconstructions using ancient textual and zooarchaeological data

by

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Abstract:

Integration of zooarchaeological and ancient literary data is essential to form a more complete understanding of the roles of animals in antiquity. Sheep and goats are often mentioned in the ancient Latin literature, but chiefly in the context of their involvement in transhumant operations in Italy. Consequently, using the texts alone, one may be prone to reconstruct an idealized, but piecemeal, version of the role of caprines in the Roman Italy. Zooarchaeological data help refine this picture in showing a diversity of caprine husbandry schemes, which varied according to geographic locale, temporal period, and, most importantly, with the degree of integration caprine herding had with other agricultural and husbandry pursuits. Quantification of caprine bones in general, in conjunction with analyses of age and sex ratios from the zooarchaeological database help record the movement of transhumant flocks in Italy. Their results, however, highlight the importance of smaller-scale, short-distance operations, as opposed to the large-scale, long-distance procedures that predominate among the references in the ancient texts. Large-scale transhumant operations draw attention from the ancient authors and legal sources, and become more conspicuous in the textual record, even if they were practiced on a relatively small scale, or combined with other, less noteworthy caprine husbandry schemes. This paper critically examines both the zooarchaeological and ancient textual data for sheep and goats in Roman Italy to gain a better appreciation of the role of these animals in Roman life.*

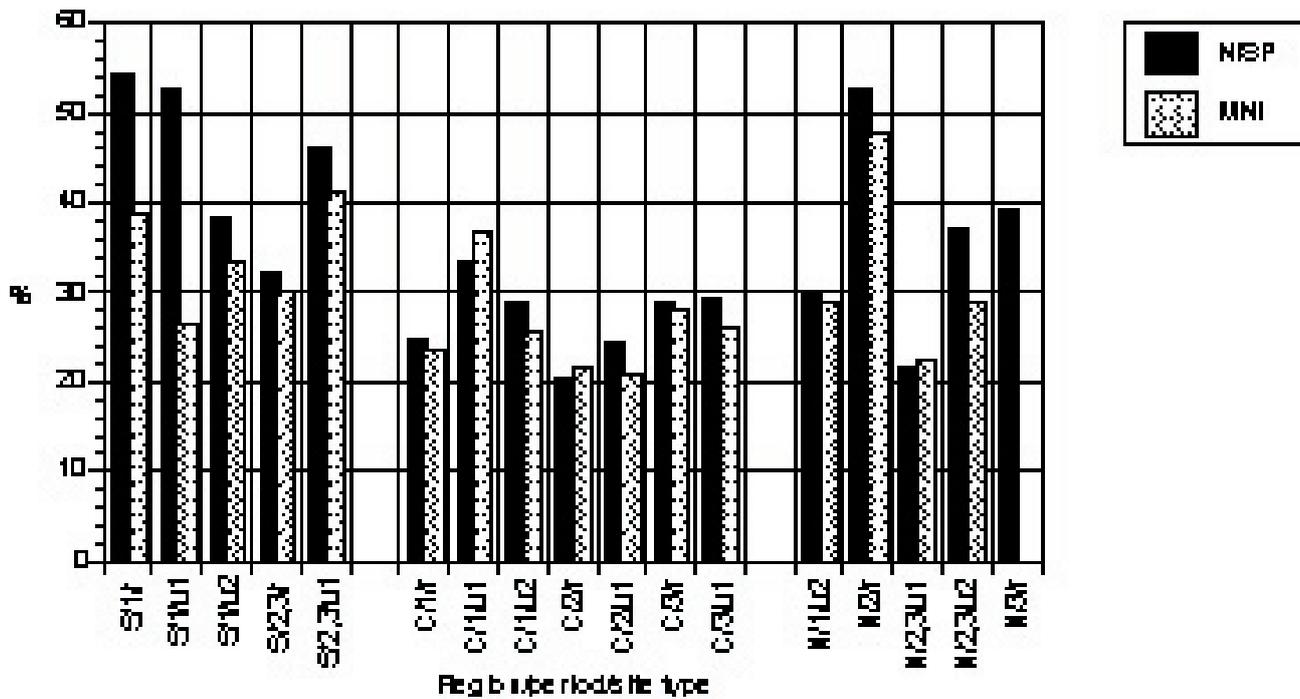
I have an exercise for the reader. Close your eyes and pretend you are a pastoral herder. Describe what you might consider the most important things to document about your profession. What might come to mind? Perhaps the number of sheep and goats in your flocks; maybe the places you visited; maybe some funny story or event that transpired one day. Let me extend this. Now, pretend you are informing your best friend, a baker, about your profession; now, an uninformed child; now, the astute tax collector; now, the busy and seemingly uninterested king who owns the land you use as pasture. What would you consider vital details to report, and what might be left out or embellished as you see fit? Clearly, how we document things depends on the cultural context. Who is the audience? What is the purpose of the work? How accurately do these written accounts reflect reality? These are lofty goals to determine, but not impossible ones. Let's venture back to Roman times in Italy and re-examine how people raised and herded sheep and goats in the past.

Two principal sources of data provide the requisite details. There are references to pastoralism in the ancient texts and inscriptions, but from our exercise above, we must be wary to interpret these within their cultural context. A second source is animal bones recovered from archaeological sites. These zooarchaeological data provide clues with which to reconstruct the demographics of the ancient herd – which in turn yield information about the practice of pastoralism in antiquity – but again, however, only if examined in light of the strengths and biases of these data. Ultimately, both texts and bones help to reconstruct the past, so it seems natural to use both in this quest for answers to the mechanics behind Roman pastoralism in Italy.

Two biases are important to keep in mind. First, this is a huge topic of which I can only highlight parts here.¹ Second, neither the textual nor the zooarchaeological databases are complete. In terms of ancient references, we are currently limited to those scattered bits that have survived. For zooarchaeological remains, at present fewer than one hundred Roman sites in Italy furnish such data, only a small fraction of the thousands of sites that exist and have been excavated throughout the ages. As new data come in, pictures get changed, refined, reshaped—such is the nature of reconstructing antiquity.

There are many references to animals, including sheep and goats, in the ancient Latin texts and inscriptions. However, to be used effectively, each reference must be contextualized within a temporal and social framework that includes details about the author's intention in writing, his experiences and wisdom, and the demands and expectations of his audience. Contextualizing texts is clearly a formidable task to achieve on a detailed, specific basis, but not a fruitless exercise to approach at a general level.

The agricultural volumes of the Latin authors Cato, Varro, Columella, and Palladius provide a start. These sources contain a wealth of information about ancient animals; however, they are clearly oriented towards an upper-class audience operating at a rural villa. Nonetheless, most seem to be fairly reliable. The fact that



Geographic regions: S = southern Italy; C = central Italy; N = northern Italy **Temporal periods:** 1 = c. Republic; 2 = c. Imperial Period; 3 = c. late antiquity **Site types:** r = rural; u1 = urban1 (i.e., city); u2 = urban2 (i.e., settlement); sp = special

Fig. 1. Sheep/goat NISP and MNI mean frequencies by geographic region, time period and site type (expressed as a percentage of totals for cattle+sheep/goat+pig only). Data from MacKinnon (2004).

authors repeat important and basic information about animals in Roman life suggests that at least those recordings are true. Moreover, presumably audiences would reject inaccuracies, especially from the agricultural writers whose purpose was to educate them about profitable farm management and husbandry techniques. True, the Roman agricultural volumes contain a mixture of descriptive and prescriptive details, which renders it difficult to judge how widespread and in what capacity their advice was followed. However, the fact that these agronomists use examples and anecdotes to illustrate concepts shows that they were aware of possible problems the farmer might encounter. They offer practical advice to counteract these perils, which in turn shows a vested personal interest in agricultural work, as opposed to writing their work as some theoretical or rhetorical exercise.

The ancient texts mention that sheep were common animals at most farms (Varro *Rust.* 1.19.3), principally raised for their renewable secondary resources such as wool and milk (Col. 7.3.13). They were particularly valued during Republican times and herded, sometimes as great transhumant flocks, throughout Italy. Goats co-occur with sheep and their care is similar (Varro *Rust.* 2.3.7; Ael. *NA* 5.48); however, fewer of them are kept and their herds are normally much smaller than those of sheep (Varro *Rust.* 2.3.10). Available zooarchaeological data confirm these textual references to a certain degree. Caprines generally register fairly high figures among Republican period sites in both southern and central Italy, but are not well-represented among sites in northern Italy until Imperial times (Fig. 1). Sheep usually

predominate over goats—most sites register over 80% sheep to less than 20% goat by NISP figures. This would suggest that wool was a valuable commodity. Aging and sexing data show a preponderance of adult females at some sites, thereby supporting references about the importance of wool, but also alluding to milk exploitation. Less can be said about temporal changes in specific regions, but overall the zooarchaeological patterning suggests a decline in wool exploitation relative to other aspects of the Roman economy from Republican to Imperial times, with a slight resurgence in some parts of central and northern Italy during late antiquity (see, Fig. 1). This general trend parallels the shifting demands for garment materials and the economics behind the wool trade. Wool dominated the textile market during Republican and early Imperial times until linen began to advance in popularity during the 1st c. AD.² The return, in some areas, to sheep raising during late antiquity may, in part, reflect a decline in linen imports into Italy at these times, a change in fashion, and a need to re-establish wool supplies in Italy. This trend to augmented sheep and goat production during late antiquity in Italy may have been motivated by political and military troubles in the Roman provinces and a subsequent loss or decline of cheap foreign imports of wool to Italy. This then resulted in a need for more autonomy among Italian farms, and a gradual shift to more pastoral operations at this time to replenish the reduced wool supplies. It is also possible that the large and intensive cash-cropping farming enterprises often associated with the Imperial period in Italy were replaced by small-scale herding and farming

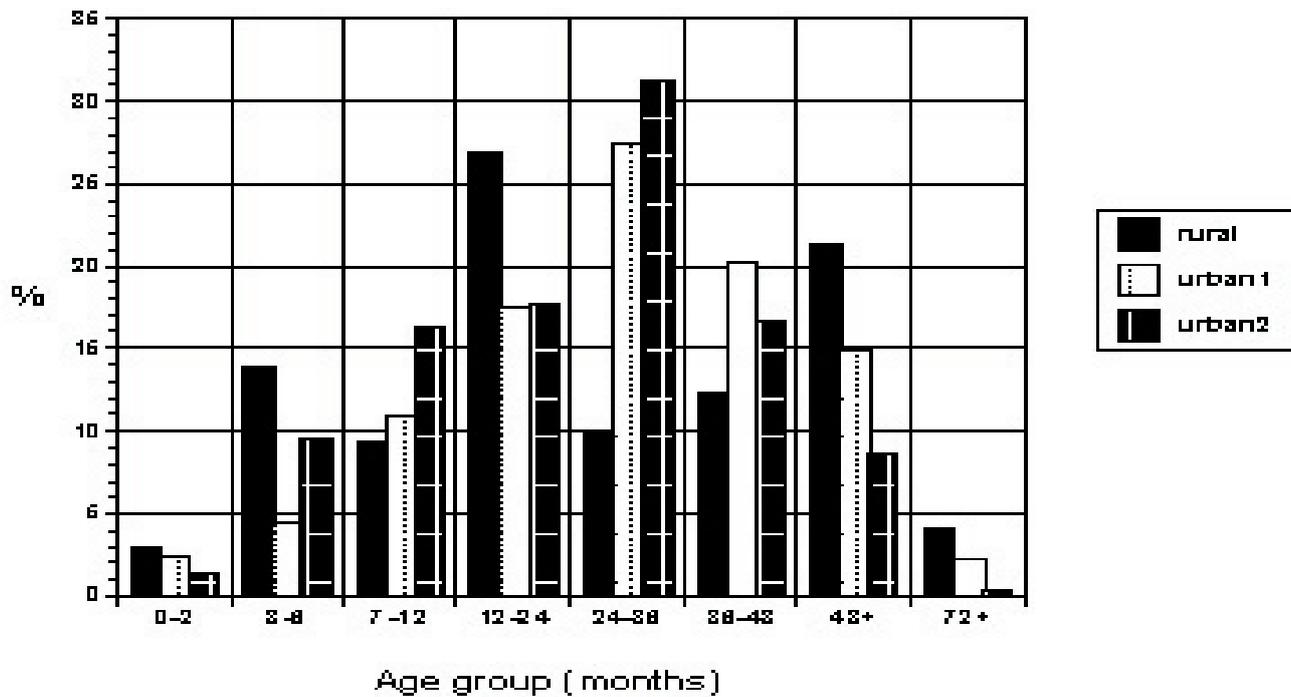


Fig. 2. Frequency of sheep/goats at various age groups among rural and urban sites in Roman Italy. Urban1=city; urban2=settlement. Data from MacKinnon (2004).

ventures that stressed self-sufficiency over specialization. Again, a variety of social, political, and economic agents, such as a shift to local rather than regional or empire-wide economic networks, coupled with the insecurities of warfare, might be catalysts or causal factors for such a change.

If, as the zooarchaeological data suggest, changes in the system and scale of pastoral herding occurred during Roman times in Italy, then can this be refined. Where? How? When? These are all questions to pose upon the data.

There are essentially two scales of transhumance—large and small—which can be practiced over long or short distances. Generally, larger-scale operations involve great distances, while small-scale ventures are often restricted to short-distance movements within a limited area.³

Large-scale transhumance was likely geared towards the production of wool⁴ with more animals reared to adulthood, including perhaps a higher proportion of males and even castrates.⁵ Herds numbering from several hundred to several thousand would characterize the system. Often large-scale transhumance involved seasonal movement over great distance and was linked to market demands for caprine resources.

Small-scale transhumance may show a different pattern as it is often geared towards subsistence, depending on how accessible the site was and on its relationship to local and distant markets. Flocks were probably herded over shorter distances since smaller pasture areas would suffice. Moreover, milk and meat may have held equal or even greater value than wool, since it might not be advisable to the herder to specialize too much, given that he needed to rely on his flock for a variety of goods

and foodstuffs. Ewes would likely predominate. Female lambs would be raised to maturity, while young males would be killed for their meat.

Age and sex data, therefore, might be able to refine our picture of transhumance in Italy. Zooarchaeology can provide this information to some degree. In terms of sex and age ratios, long-distance transhumance should show an abundance of young lambs (i.e., less than six months), preferably males, at sites in winter grazing areas, since this is where caprines were supposed to be born. This should be followed by very few deaths in the 7-12 month bracket since at this time the flock would be at their summer grazing-ground in the mountains, and presumably away from the lowland settlements. In addition, we might expect to see some deaths of elderly sheep of both sexes in the faunal record for winter (i.e., lowland) grazing areas, considering that shepherds were told to sell and slaughter feeble and old sheep in the autumn (Pallad. 8.15; Col. 7.3.14). This could coincide with the beginning of the season in the lowland, and might be more logical at this time. If the shepherd waited until the lambs were born he would at least know how many were viable and thus he could better judge the required number of old and feeble sheep which had to be killed to balance the flock.

As shown in *Fig. 2*, sheep/goat aging and sexing data are limited for most of the Roman period sites in Italy used here. *Fig. 3* displays the location of the sites mentioned in this text. Of the southern Italian examples, only Gravina and Herdonia offer some of the better, although still not conclusive, evidence for long-distance transhumance. Both sites yielded a large amount of neonate and juvenile caprine bones. The pit deposit at Gravina, in particular, contained a large amount. Lamb bones

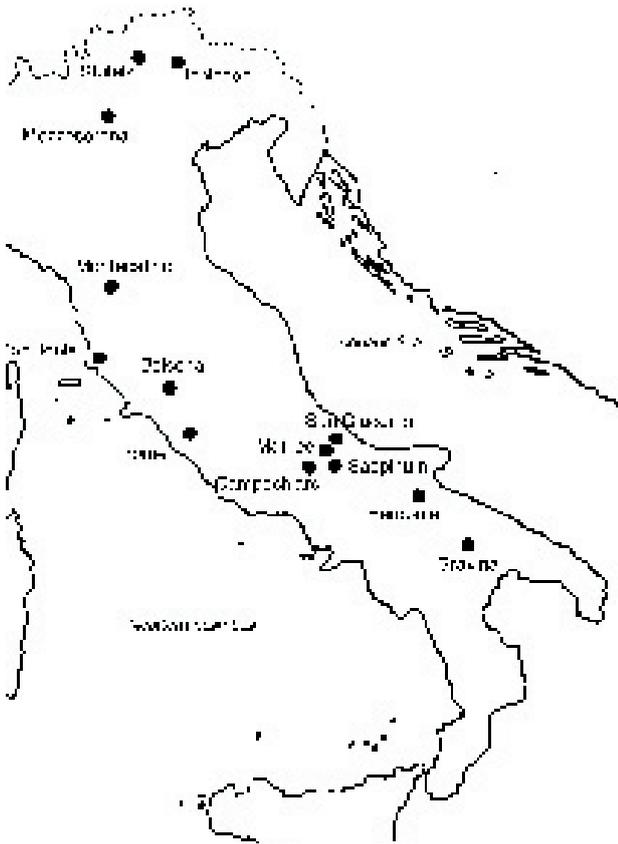


Fig. 3. Location of sites mentioned in text. References to sites: Stufels (Riedel 1979; 1984); Innichen (Riedel 1983); Mezzocorona (Riedel & Rizzi 1994); Montecatino (Wilkens 1991); Populonia (De Grossi Mazzorin 1985); Bolsena (Tagliacozzo 1995); Rome (Barker 1982; De Grossi Mazzorin 1995; 1996); Campochiaro, Matrice, Saepinum (Barker & Clark 1995); San Giacomo (Albarella 1993); Herdonia (Pennacchioni 1985; Simone 2000); Gravina (MacKinnon 1994; Watson 1992).

were also recovered at other excavations in the area.⁶ At Herdonia, aging profiles indicate over 30% neonate caprines, and about one-third juveniles. Combined, this evidence shows that at least some very young sheep and goats were in these areas during the wintertime, assuming these lambs and kids were not imported, and assuming winter births as recommended by the ancient authors. These flocks then moved elsewhere in the spring, presumably to mountain pastures, which would account for the low number of subadult deaths in the 7-12 month period at each site. Herdonia, on the coastal lowlands of northern Apulia, is ideally suited as a winter pasture zone for flocks of sheep and goats, and available zooarchaeological data support this use. Gravina, however, is rather far back into the Apulian hilly interior, or somewhat removed from the main winter grazing-grounds on the coastal plain. Thus, it may have served as more of a peripheral winter-grazing area.

The ancient texts, especially Varro (*Rust.* 2.10.11), supply more information about transhumance between southern Italy and the Samnium and Reatine hills of central Italy. Available zooarchaeological data from sites in this area offer some support. First, sheep/goat frequency values are relatively high among sites located along or

near the main transhumant routes linking southern and central Italy (e.g., San Giacomo, Matrice, Saepinum, Campochiaro). This indicates that these caprines were readily available. Second, few young individuals, less than 12 months, are recorded at these sites. This suggests that birthing occurred elsewhere, presumably in the south, leaving sites like San Giacomo and Matrice tied more towards summer pasturing and associated activities such as wool manufacturing, milk and cheese production, or the processing of mutton, but generally not lamb meat.

While transhumance may not have operated in central Italy to the degree it appears to have in the south, this should not be construed to suggest that caprine pastoralism was not important in this region. The turbulent political climate of Tuscany and Latium during late Etruscan and early Roman times would certainly impede long-distance transhumance during these periods; however, high frequencies of sheep and goat bones at sites such as Bolsena, Montecatino, and Populonia confirm the significance of caprines in the diet and economy of Tuscany during the last several centuries BC. Sizeable proportions of juveniles—up to 60% at Bolsena—suggest that lambs and kids were available, presumably locally, and expendable in that they could be killed without jeopardizing flock vitality.

Although there are a number of textual references to sheep from northern Italy, the pastoral schemes there are difficult to reconstruct. Sheep and goats unquestionably formed a major part of the diet and economy of Alpine sites but the data are mixed as to the scale of operation. The fairly balanced age and sex profiles for one site, Stufels, suggest that it maintained a small local herd, year-round. Some individuals may have moved seasonally but a supply was always kept on hand. Considering adult female sheep and goats predominate, I suggest that milk and cheese were important commodities. This pattern appears better suited to short-distance transhumant schemes where ewes might have greater prominence, rather than long-distance transhumant operations that emphasize raising wethers and rams for wool. A similar situation is proposed for the sites of Innichen and Mezzocorona, which also contain more female than male sheep/goat bones, although low-milk-producing sheep largely outnumber high-milk-producing goats at these sites. It is possible that the caprine economy at these sites stressed the exploitation of wool, but combined this with some milking, and the accumulation of quality stock, especially females, for breeding purposes. These activities could have been conducted locally without the need for any major transhumant operation to ensure the success of the flock.

Although the zooarchaeological data support the existence of transhumance in Roman Italy, especially in the south, no site documents that activity perfectly, and there are many complications. One problem concerns the urban sites. Many of these are located in lowland areas and were presumably supplied with lambs and wool from sheep and goats raised at neighbouring rural farms.

Urban sites, however, record very few sheep/goat deaths below 6 months, but a sizable number in the 7-12 month category, as shown in *Fig. 2*. This initially appears to contradict the criteria presented above for long-distance transhumance that hypothesized an abundance of deaths in the 0-6 month category and a dearth of them in the 7-12 month category for sites associated with lowland pastures. The pattern might be explained if urban sites in lowland areas received 7-12 month sheep and goats from the flock as it made its way to the upland pasture. The shepherd could have waited until the lambs were older before marketing them for slaughter at urban centers, perhaps working this into the transhumant scheme so that the flock passed by a city on its journey to the upland pastures. Moreover, the four month span during which sheep and goats were to mate (i.e., mid-April to mid-July [Col. 7.3.11; Plin. *NH* 8.72.187; Varro *Rust.* 2.1.18; Pallad. 8.11]) and give birth (i.e., mid-September to mid-December [Plin. *NH* 8.72.187; Varro *Rust.* 2.1.19, 2.2.14]) provides a period of flexibility which is not easily adjusted to the age categories given in *Fig. 2* in light of variations in transhumant schemes. For example, a transhumant flock that gave birth in October in the lowland areas, but remained there until May or June before heading to upland pastures would yield a number of eight-month old lambs that could have been sold to urban markets before the flock returned to upland regions. Thus, assuming cities were provisioned with transhumant caprines, then the relatively high number of sheep/goat deaths in the 7-12 month category at urban sites, as recorded in *Fig. 2*, might be attributed to a transhumant scheme characterized by an extended lowland season lasting over six months with a subsequently shortened upland season. If cities were not supplied with transhumant animals but rather with caprines raised year-round at individual sites, then the age pattern exhibited would simply reflect local husbandry concerns and urban meat demands, since in this case it is assumed animals would be more readily available for sale and slaughter throughout the year as opposed to the stricter seasonal transhumant schedule which required them to be in upland areas during the spring and summer months.

The picture gets complicated when we factor in other variables, especially agriculture. Transhumance should not be viewed as a separate venture from agricultural pursuits, but as an integrated activity.⁷ This could take on a variety of forms. Transhumant herds could graze and manure the fields of their hosts during part of the year. Reserving leguminous fodder crops for animals in the context of a crop rotation system is another means of integration.⁸ Finally, the fact these flocks were away from the farm for a period of time is in effect a type of integration, since this normally coincided with the interval of summer drought, high temperatures and excessive resource stress in the lowlands.⁹ It was advantageous for the flock to move to higher, cooler pastures at this time. Upon their return, they would again be integrated into the agricultural scheme by pasturing among the stubble and weeds while simultaneously manuring the fields,

effectively preparing and fertilizing these areas for subsequent planting. Both Cato (*Agr.* 30) and Varro (*Rust.* 2.2.12) advocate the use of sheep in this manner.¹⁰

So, to conclude, we have come back to our original problem. By mixing textual and zooarchaeological data, we see that the scale and practice of transhumance in Roman Italy was much more complicated and variable than what can be reconstructed by using either textual or zooarchaeological data alone. Large-scale transhumant operations draw attention from the ancient authors and legal sources, and become more conspicuous in the textual record, even if they were practiced on a relatively small scale, or combined with other, less noteworthy caprine husbandry schemes. I don't believe that any one source of data, no matter how detailed it might be can all the answers to our reconstructions of the past. Integration is the key in our quest to achieve that goal.

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¹ For further details see MacKinnon (2004).

² Frank 1933-40, vol. V, 156 [on linen]; White 1970a, 303.

³ Chang 1984 and Chang & Koster 1986 discuss the various scales of pastoralism and transhumance from an ethnoarchaeological perspective. Barker 1989, 1990 and Barker and Grant 1991 provide further discussion based on ethnoarchaeological studies of pastoralism in central Italy.

⁴ Pasquinucci 1979.

⁵ Barker & Grant 1991.

⁶ Watson 1992, 98 notes these but does not include them in his dental categories.

⁷ Many others also argue for an integrated system of agriculture and animal husbandry in antiquity (e.g., Delano-Smith 1979, Gallant 1991, Garnsey 1988, Halstead 1987, Spurr 1986).

⁸ See Spurr 1986 and Boag 1997 for more discussion of crop rotation schemes in Roman Italy and the integration of animals, especially sheep, into these.

⁹ Lirb 1993, 270.

¹⁰ On the other hand, some activities were detrimental to agriculture over the long term. Shepherds in Apulia, we are told, burned off the vegetation so that flocks could browse on the fresh shoots (Verg. *G.* 2.303; Plin. *NH* 16.77.208).

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