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Eating horsemeat: the evidence in the Roman Netherlands

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ABSTRACT: Bones of horses occur in almost every Roman site in the Netherlands: bones with and without butchering marks, found among other refuse and as separate burials, inside and outside settlements. The subject of this paper is whether horsemeat was eaten by the various population groups (military, native, *villa*, inside and outside the Roman empire) and what the reason was for this custom or avoidance.

KEYWORDS: THE NETHERLANDS, ROMAN PERIOD, HORSE, MEAT, FOOD

RESUMEN: Restos óseos de caballos se recuperan en prácticamente todos los yacimientos romanos de los Países Bajos: huesos con y sin huellas de despiece, recuperados tanto entre desechos alimentarios como en enterramientos individualizados, dentro y fuera de los yacimientos. El objeto de este trabajo es el de averiguar si la carne de caballo era consumida por parte de los diferentes grupos humanos (militares, indígenas, *villa*, dentro y fuera del Imperio romano) y cuales podrían ser las razones para esta costumbre o tabú alimentario.

PALABRAS CLAVE: PAÍSES BAJOS, ÉPOCA ROMANA, CABALLO, CARNE, COMIDA

INTRODUCTION

To modern people the term 'eating horsemeat' produces very different reactions. To the English, for instance, it is repulsive, to a Kazakh a tasty necessity and to the Dutch it is a good alternative for their sandwich filling (Gade, 1976; Levine, 1998). These preferences and avoidances are economically, religiously and culturally determined and are connected with the different functions meat and the animal, from which the meat comes, can have.

In the Roman agronomic literature we do not read about the horse as an animal for consumption. But most of this literature is written from the 'Italian' part of the empire. When we look, outside Italy, at the archaeozoological record the question of eating horsemeat seems to be more complicated. And also for the Dutch part of the empire and the adjacent 'free' country, the archaeozoological information indicates differences in the use of horses and products of horses (Clason, 1998; Lauwerier & Robeerst, 1998, in press; Rinkes, 1997; Visser, 1995).

The aim of this study, based on the Dutch material, is to get a stronger grip on this issue of meat, and as a result to gain more insight in the role the horse had for the different populations, some of which lived within, and others beyond the borders of the Roman empire (Figure 1). More specifically, we want to have an answer to the following questions: Did the Romans and the native people that lived in the Netherlands in Roman times eat horsemeat? And if they did so, or did not, what was the reason? An underlying methodological goal is to formulate useful criteria to establish whether or not horse is eaten.

MATERIAL AND METHOD

The archaeozoological information used in this study is the result of an inventory of the available published and unpublished documentation (Lau-

werier & Robeerst, 1998, in press). The investigation was limited historically to the Roman period. The geographical demarcation is that of the present Netherlands. Figure 1 shows the location of the sites on both sides of the *limes*, the Roman border. Also indicated on the map is the nature of the various contexts: military, native, *villa* or temple. The 'military settlements' do not only include the strictly military places or *castella*, but also settlements directly related to them, such as the *canabae legiones* of Nijmegen and other military *vici*. The 30 places shown on the map represent 58 archaeozoological complexes with numerical data and 35 with measurement data. This information is summarized in Figures 2 and 3. A more detailed indication of the various complexes, descriptions of the period, the number of identifiable bones of horses and cattle, sheep, goats and pigs, statistical information about withers heights, and references to the literature the data come from is given elsewhere (Lauwerier & Robeerst, 1998, in press).

For the calculation of the height at withers the Vitt factors recommended by von de Driesch & Boessneck (1974) were used; these have been calculated as far as possible according to May's formulas (1985).

DIFFERENT GROUPS, DIFFERENT HORSES, DIFFERENT PURPOSES

The horse served various purposes. Judging by the many literary and often also pictorial sources, horses in Roman times were kept at any rate for transport, as riding or draught animals in the army, circus or in private service (Toynbee, 1973: 167-185). In addition to this practical use, the horse also had a status value in the Germanic context, which, among other things, is apparent in the custom described by Tacitus of using these animals as gifts to chiefs of neighbouring states (Germania 15).

Occasionally the horse served a symbolic or religious purpose. The horse, for instance, was an attribute of the horse-goddess Epona and a symbol of the power of Jupiter.

Judging from the archaeozoological material, after death or slaughter the bones of horses were only very occasionally used for the manufacture of artefacts. In the Netherlands such use is seen in three northern settlements outside the Roman empire, in the territory of the native Frisii. In Kimswerd a metatarsus IV was made into an awl (Miljkovic & Brinkhuizen, 1984); in Sneek a phalanx was decorated on all sides with a point-circle motif (Clason, 1962); and in Schagen-Wittepaal a metapodial was sawn through, also an indication of bone working (Zeiler, 1996). Similar sawn through metapodials have also been found in the military *castra* of Nijmegen (Lauwerier, 1988). It is striking that in native settlements south of the limes bones of horses were not used for this purpose, in spite of the fact that this material was more easily available than in the northern settlements. Skinning for leather appears to have been far more common. For several settlements this was demonstrated by cutmarks related to this activity (Gehasse, 1997; Lauwerier, 1988: 153-155).

Opinions on whether horseflesh was actually used, which seems economically probable in view of the food value, differ for the various sites. That they were not eaten, is concluded of horses from Valkenburg (Clason, 1960), Zwammerdam (Van Wijngaarden-Bakker, 1970) and various settlements from the eastern and central river area (Laarman, 1996a; Lauwerier, 1988), whereas meat from horses at Paddepoel (Knol, 1983), Velsen-Hoogovens and Schagen-Langedijk (Van Wijngaarden-Bakker, 1988) probably was consumed. These observations lead one to suspect that the consumption of horsemeat varied according to the population group. The question of the evidence for these assumptions will be dealt with in some detail later in this paper.

That there are differences concerning horses between different population groups is known from their appearance. Different groups had different horses. For example, Caesar reports that Germanic horses are small and ugly compared to the Roman horses (De Bello Gallico IV 2,2), and Tacitus writes that Germanic horses are not remarkable for either beauty or speed (Germania 6).

The bones found during excavation, however, provide the clearest picture of horses from the Roman period in the Netherlands. From their size we gain an impression of the size of the horses used by various groups in various parts of the country (Figure 2).

It is striking that there is no question of any gradual increase in wither height during the Roman period as has been established for cattle in the Netherlands and elsewhere in the Roman empire (Audoin-Rouzeau, 1991; Lauwerier, 1988: 166-169). There are, however, clear differences between the various groups of settlements.

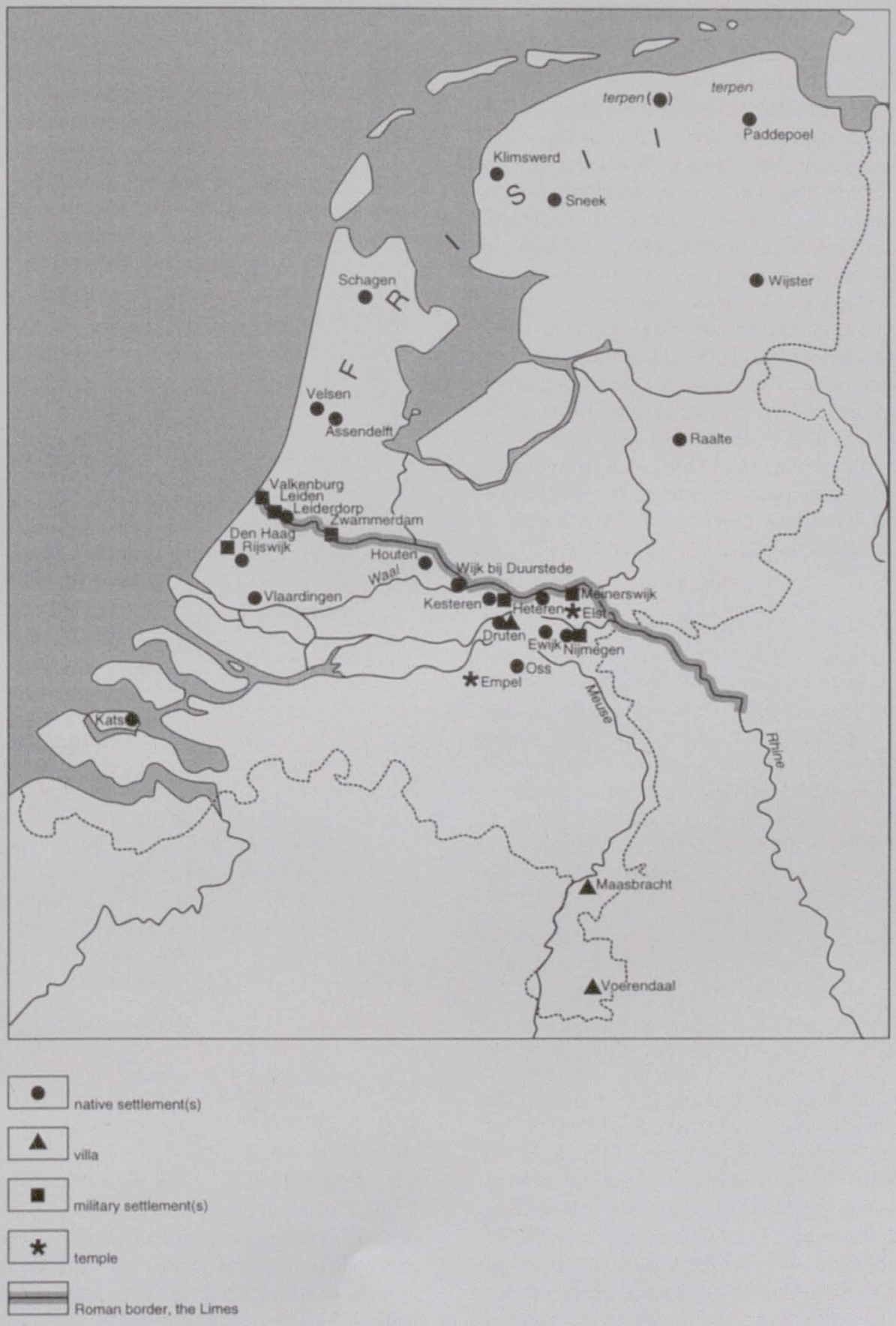

FIGURE 1
Map of the Netherlands with the findspots mentioned in the text. The dotted line indicates the Roman imperial boundary, the *limes*.

The horses in the native settlements north of the *limes* are the smallest, with an average height of 132 cm. They are the same size as the animals from other Germanic settlements outside the empire and scarcely larger than the horses of the Bronze Age and pre-Roman Iron Age (Benecke, 1994: table 24). The largest horses are those from the *villae* and the military settlements with averages of 144 and 142 cm. The native inhabitants of the area occupied by the Romans had animals of a size in between. They are larger than the horses found in the north but smaller than those from military contexts in the vicinity. These differences in height have been explained by differences in origin of the Roman military horse and the local native animals, by preferences of different groups for different types of animals, by strategic reasons for not making southern horses available to the native inhabitants north of the limes, by producer-consumer relations between groups south of the Roman border and by factors like status (Lauwerier & Robeerst, 1998, in press).

HORSEMEAT AND THE ROMAN WORLD

A reason to assume that horsemeat was eaten in the 'Dutch part' of the Roman world is the fact that bones of horses are present among the animal finds in almost all excavations. From the settlements shown on Figure 1, representing 58 different archaeozoological complexes, no bones of horses were found in only three: in the *villa* of Maasbracht, the Roman *castellum* at Meinerswijk and at an early temple (before AD 50) at Elst.

Another reason to expect consumption of horsemeat is because it is economically very profitable in view of its food value. Research into horseflesh has shown that it is an important source of vitamins, minerals, essential amino acids and essential fatty acids (Levine, 1998). In the 19th and 20th century the marketing of horsemeat was made legal in Austria, Germany, Scandinavia, Belgium and the Netherlands because of its nutritious value and this meat was considered as 'normal' food, although often only for the lower social classes (Levine, 1998; Simoons, 1994: 188-191). In another part of the world, in Kazakhstan, people from the forest-steppe regard the flesh of their horses as better food than that of cattle, sheep and goats, animals that they also herd (Levine, 1998). An advantage of horsemeat is that, because of its tenderness, unlike beef, it does not deteriorate with the age of the animal (Gade, 1976: 8). Personally, the author of the present article especially relishes the taste of the smoked horsemeat and sausage from the Dutch butcher near the institute.

Besides taste and other subjective and irrational matters, we can conclude that horsemeat is good food. But the question is, was horseflesh considered food in the Roman world?

For the Roman world, which included the military settlements in the Netherlands, we have literary information about the use of horses. Varro (De Re Rustica II, 7, 15), for example, gives four reasons why horses were kept: for the army, for transport, for the breeding of horses and mules and for racing in the Circus. And also the many other literary and pictorial sources confirm that these tasks were their main duties. Sometimes horses were also used as mounts for hunting, for pulling vehicles, for farm activities or to turn mills. After their death the skins, tails and manes served all kinds of purposes (Toynbee, 1973: 167-185). What these literary sources do not mention, is the eating of horsemeat.

The recipes from the Roman cookery book of Apicius/Caelius support this. This cookery book, *De Re Coquinaria*, dates from the 1st century AD. It was written by the well-to-do gastronome Apicius, but the form of the book that is known to us may have been revised by a certain Caelius at the end of the 4th century or the beginning of the 5th century (Forbes, 1965). In this cookery book there are recipes for over fifteen bird species, for about twenty different species of fish, for several molluscs and for all other kinds of sea-food. A total of twelve different mammal species are mentioned almost 150 times. However, there is not one recipe for the preparation of horsemeat.

Also informative with regard to this subject are the animal bones found as the remains of grave gifts in cemeteries. Sometimes these bones are found on dishes and plates, sometimes they are simply placed in the grave. The interesting thing about this bone material is that it is not refuse but part of the meal itself: a sort of table setting for the dead. Whether the meals were meant as real food or just had a symbolic meaning, will not be discussed here. Generally, we only find the remains of pigs, chicken, sheep or goats and cattle on the plates. Horse is always absent. In an inventory of the occurrence of animal bones in graves from twenty cemeteries within the northwestern part of the Roman empire, horse was only found in one

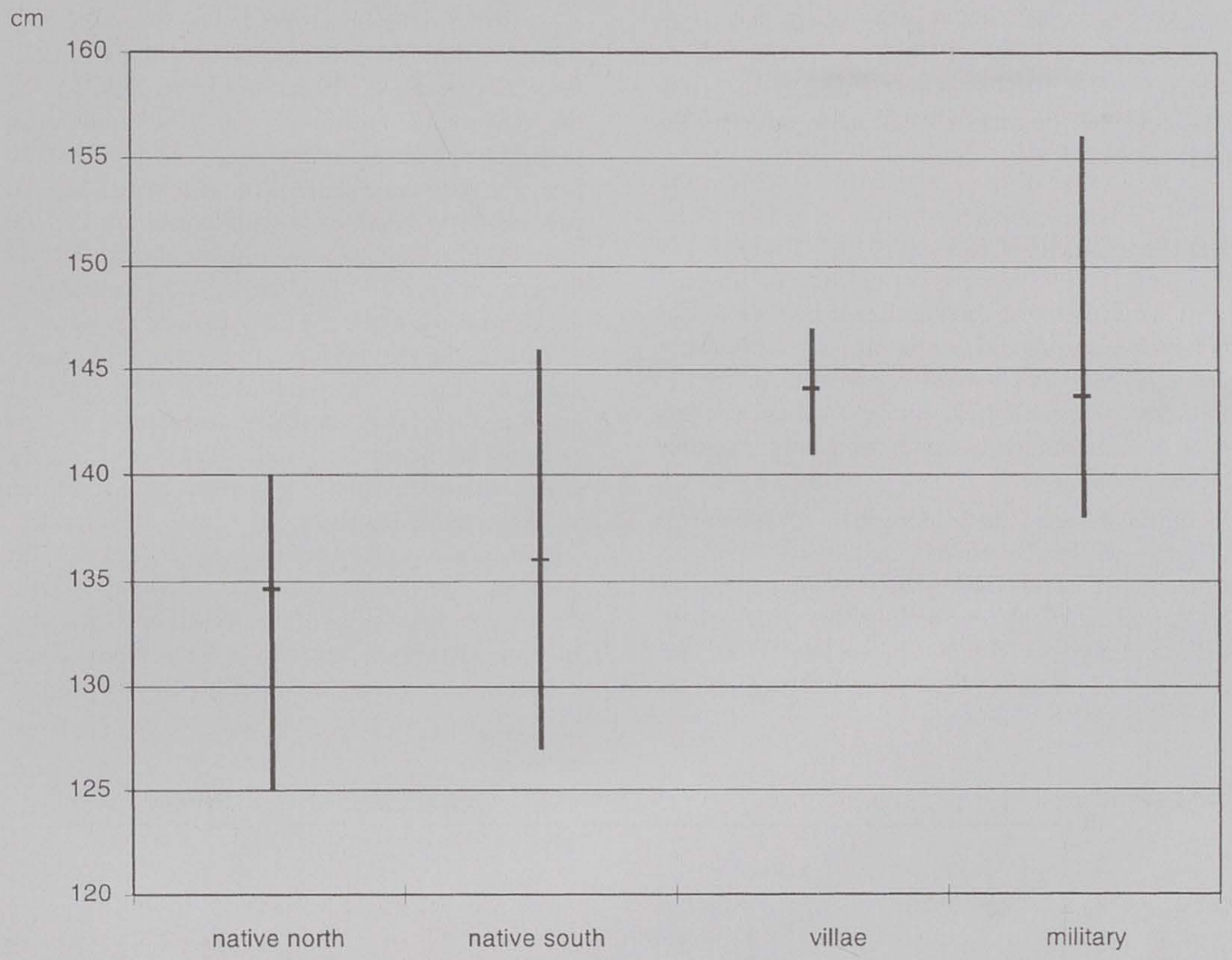

FIGURE 2
Withers heights (cm) of horses from various Roman period contexts in the Netherlands.

case (Lauwerier, 1988: 82-83). The only exception is the Late-Roman cemetery near the *castellum* of Oudenburg (Mertens & Van Impe, 1971). Here in one grave a complete radius was found, in another, a horse scapula. Because these bones were not lying on or near dishes or plates, it is not known if these remains were parts of a meal, and anyhow the radius was complete. Though we have to practise some restraint in drawing conclusions about meat from large animals from the zoological information from graves (Lauwerier, 1993), the data from the cemeteries indicate that horse was not used as food for the deceased.

Significantly the historical sources, where the eating of horsemeat is mentioned, indicate that this was not a normal habit. The Roman writer Tacitus reports that horsemeat was only eaten by the army in emergencies. Thus, thanks to horsemeat, starvation was prevented after the catastrophe to Germanicus' fleet, caused by North Sea storms: *"Some of the ships went down; more were stranded on remote islands; where, in the absence of human life, the troops died of starvation, except for a few who supported themselves on the dead horses washed up on the same beach"* (Annales II, 24; translation Moore & Jackson, 1962).

Also after a defeat by Civilis and forced by famine, horses and other 'unusual' foods were eaten: *" ... their sources of food, both usual and even unusual, failed them, for they had consumed their beasts of burden, their horses, and all other animals, which, even though unclean and disgusting, necessity forced them to use"* (Historiae IV, 60; translation Moore & Jackson, 1962).

From the above, the literary sources, the recipes from the cookery book and the information from cemeteries, we conclude that within the Roman military context, the consumption of horsemeat was generally 'taboo', despite the economic value it might have had as a result of its food value.

Whether this was a taboo in the sense that it had undesirable consequences due to negative magic (Frazer, 1922: 19-20), or was a collective avoidance for other reasons, we will leave aside for the moment.

HORSES IN MILITARY SETTLEMENTS

If we accept that this Roman 'taboo' on eating horsemeat also applied to the military settlements in the Netherlands, we can see what results it had in the archaeozoological dataset of these military sites and subsequently compare it with the other types of settlement.

Figure 3 shows the proportion of horse bones in the material of the various settlements. The percentages of horses are relative compared to the other domesticated food mammals: cattle, sheep, goats and pigs. As with the withers heights, no correlation was found between this proportion and the dates of the settlements. There are, however, considerable differences between the groups of contexts. For example, the average proportion among the native sites north of the *limes* is about seven percent, with most settlements scoring less than five, and only three settlements with more than ten percent horse bone in the find material. On the other hand, the native sites inside the borders of the empire have a high score, most had more than ten percent while the average was sixteen percent. The lowest scores are for temples and military settlements. Inside the temples the proportion of horse is zero. At the military settlements all percentages are below ten, while most of the military sites contain less than five percent horse, with an average of three percent. Of course all these figures are influenced by taphonomic factors; but this does not alter the fact what it is all about. Even if the percentages of military settlements are low, and considerably lower than in other types of settlements, we can state that in almost every military

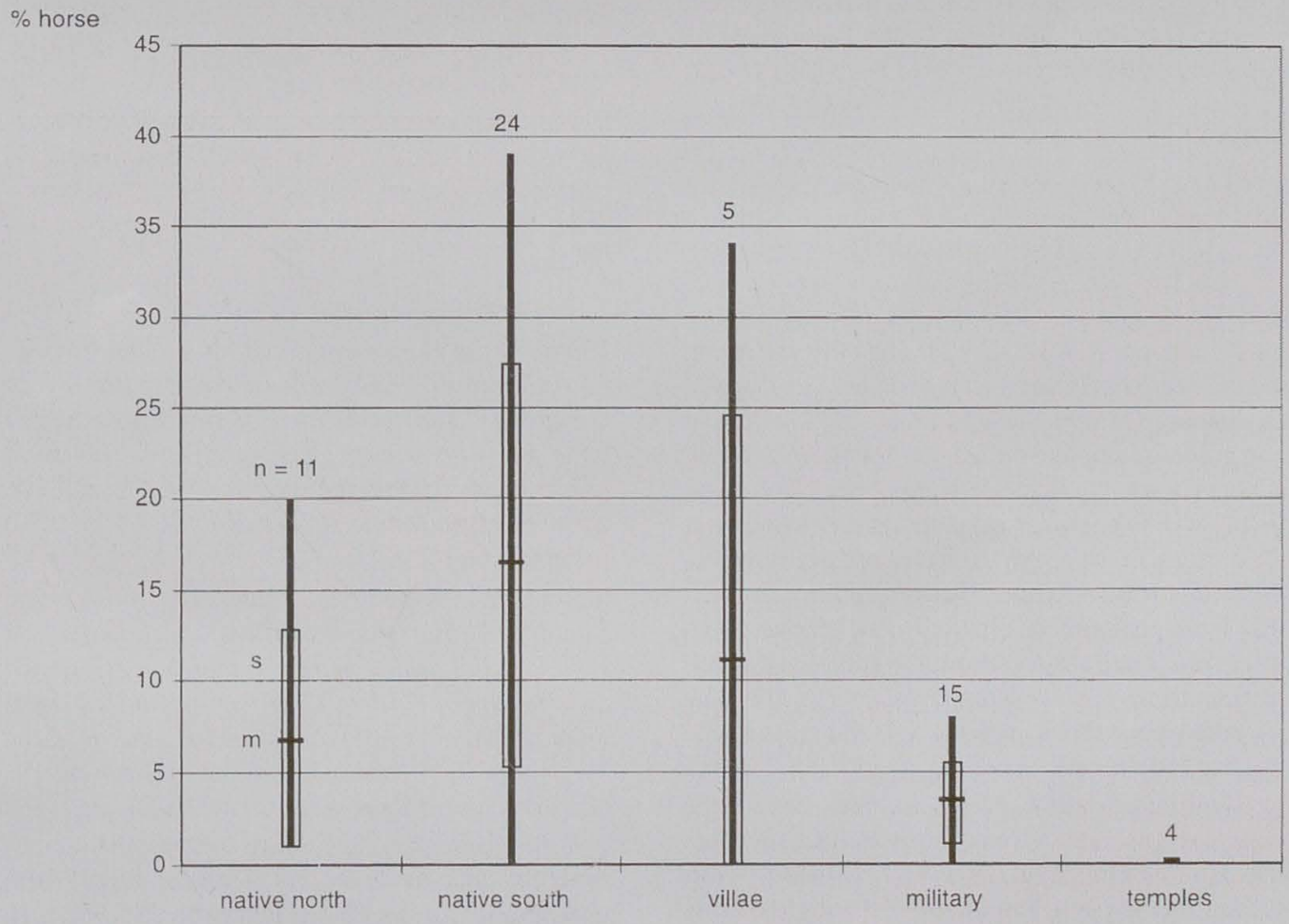

FIGURE 3
Relative frequencies of horses from Roman period sites in the Netherlands. (Relative compared to hand-collected material of cattle, sheep, goats and pigs).

settlement bones of horses are found among the normal settlement refuse.

If the bone material itself is considered, as far as it is described in the publications, three observations can be made: horse bones have few butchering marks compared with cattle bones, the horse bones are often complete or consist of large fragments, and many articulated elements are found.

Early investigation of the material from the *castellum* Valkenburg showed that the horse bones were not broken (Clason, 1960). The more recent excavation of the site around this army camp shows that the horse bones have few butchery marks compared to cattle bones, that there are high percentages of associated elements and that the bones are often complete or consist of large fragments (Gehasse, 1997). An identical pattern can be seen at Leiden-Roomburg: little fragmentation, the absence of chopping marks (except one case that will be discussed later), and the occurrence of associated bones. Little fragmentation and the absence of traces of butchering have also been established in the case of the military settlements at Zwammerdam (Van Wijngaarden-Bakker, 1970) and three military sites at Nijmegen (Ia; castra; canabae legionis) (Lauwerier, 1988: 150-155; table 68).

Although we find bones amongst the normal offal, these features underline the literary evidence that horsemeat was not eaten at military sites, nor at military sites in this northern part of the empire. Since the animals were not butchered and boned, fewer butchery traces are found and the bones are less fragmented. Peters (1994) suggests that the smaller degree of fragmentation may be connected with the decreased flavour of the marrow from horses which were generally older. However, even if marrow extraction is not involved, one would still expect to find just as many butchery marks as for cattle at the points of articulation, due to the disarticulation of parts of the skeleton. This is not usually the case. Of the three bones with traces from the *castra* at Nijmegen, there are two sawn through metatarsi, indicating manufacturing artefacts not butchering. In the *canabae legionis* and Nijmegen Ia no bones with any butchery marks were found at all. In addition to traces indicating the skinning of the animals at the military site Valkenburg-Marktveld, a few traces were also found which could be linked to the disarticulation of the carcass and stripping of flesh. For this reason, Gehasse (1997) does not exclude the sporadic consumption of horsemeat at this site. Sporadic, because the fragmentation is relatively slight and there are many associated bones. Based on these circumstances, the butchery marks could perhaps be better explained as resulting from the rough cutting off of large pieces of meat for the dogs. At Leiden-Roomburg more or less complete horse bones were found with traces of gnawing by dogs.

If horsemeat was not, or only rarely, eaten in military settlements, that implies that after the death of a horse a carcass was left with several hundred kilos of rotting, stinking meat. Within a densely populated settlement such as a fort or *vicus*, this would have been a very unpleasant problem, which would have been solved by removing the horse from the settlement. And that is what we find in the archaeological record. At the fort in Zwammerdam, the dead dogs and horses were thrown into the river Rhine at a location not far from the settlement (Van Wijngaarden-Bakker, 1970). The same was done with a horse discovered during an excavation carried out in 1962 in the immediate surroundings of the *castellum* of Leiden-Roomburg. Cavalry horses from the *castellum* of Kesteren were dumped at the place where a cemetery was later built (Lauwerier & Hessing, 1992). The dead horses from the Nijmegen *castra* were thrown, together with a great deal of other refuse, from a steep hill in the neighbourhood of the east exit of the army camp. Occasionally they were buried outside the army camp (Haalebos, 1993).

All these methods of refuse removal at least partly explain the much lower percentages of horse bone at military sites compared to native settlements. But the finds of skeletons also confirm that horse was not eaten normally in these military settlements. We can also conclude that it is clear that the percentage of horse bones in a settlement context does not actually say much about whether or not horses were eaten, but mainly about how dead or slaughtered animals were dealt with and where they were deposited.

HORSEMEAT AND NATIVE SETTLEMENTS

For a few native sites it has been concluded that, in view of the high degree of fragmentation of the bone and the many butchering marks, horsemeat probably was eaten. Such was the case with the settlement at Paddepoel (Knol, 1983) and the simple agrarian settlement at Houten-Doornkade (Taayke, 1984). At Rijswijk some of the horses

were slaughtered for consumption, others were not (Clason, 1978; Ket, 1987). It is also assumed for Schagen-Langedijk and Velsen-Hoogovens that horsemeat was eaten, but no mention is made of the grounds for this assumption (Van Wijngaarden-Bakker, 1988).

On the basis of the same above-mentioned criteria, it is concluded that horsemeat was not consumed at the native sites of Raalte-Heeten (Lauwerier *et al.*, 1999), Houten-Tiellandt (Laarman, 1996a), Wijk bij Duurstede (Laarman, 1996b), Druten I, Kesteren, Ewijk, Heteren, Nijmegen Ib-c, Nijmegen IV (Lauwerier, 1988: 162-164). Here we find a much lower degree of fragmentation and far fewer butchery marks in comparison with cattle from the same sites. One unusual skeleton from Houten-Tiellandt bearing very clear butchery marks, will be discussed later. According to Zeiler (1996), the butchery marks on the horse bones from Schagen-Wittepaal do not give a definite answer to this question. No statements on consumption have been made for the remaining sites.

All in all, we may conclude on the basis of the degree of fragmentation and the occurrence of butchery marks, that there were considerable differences between the native sites with regard to the consumption of meat. At some native sites horsemeat was probably eaten, but not at others. The consumption of horsemeat appears to have been customary particularly among some Frisian groups north of the *limes*, and in some settlements in the western part of the river area (Figure 1). Horsemeat was seldom or never eaten by the rest of the native population in the southern area. This may perhaps be connected with the prevailing Roman/military 'taboo' in these parts, but it may also have been (partly) an independent custom. Anyway, also in the preceding period, in the Iron Age, horsemeat was apparently only very rarely consumed by population groups that lived in the western Netherlands, Belgium and northern France (Ijzereef, Laarman & Lauwerier, 1992; Gautier, 1990).

It is noteworthy that at many native sites complete or partial articulated skeletons are found. That such skeletons occur at sites where horsemeat probably was not eaten is not surprising. Just as at the military sites, the carcasses were dumped. The difference is that horse carcasses in a military context were dumped outside the site as much as possible, but in the case of the mainly agrarian native settlements they were often dumped inside the settlement.

Whole or partial skeletons of horses, which were therefore not used for consumption, have also been found, however, at sites where horsemeat probably was sometimes eaten. This applies to Rijswijk where, among other things, a pit containing a complete skeleton (Ket, 1987) and one with two forelegs were found (Clason, 1978). At Velsen-Hoogovens two partial skeletons were discovered in a pit; and at Schagen-Langedijk three, all containing lower limbs (Van Wijngaarden-Bakker, 1988). The lower limbs could be primary slaughtering refuse. Whole or partial skeletons found at sites where horsemeat was eaten may generally be explained in two ways. Perhaps horsemeat was not a preferred food, so that meat from these animals, or at any rate parts of them were only eaten in times of famine, and the animals were buried in other circumstances. Another reason might be that the animals, or parts of them, were deposited as a ritual procedure. There is a third explanation in the case of complete skeletons: that animals unfit for consumption due to illness were dumped.

REASON FOR THE 'TABOO'

In the military settlements and most of the native settlements horseflesh was not used for consumption. So, horses in the Roman period were not only of economic and practical value. It is clear that, more than other farm animals, they also had an emotional value. The fact that there was in most cases a 'taboo' on the consumption of horsemeat is an indication that these animals were regarded as more than just meat on the hoof, which could also be used for riding purposes.

We can only speculate as to the reason for this avoidance. It may be based on the aversion to consuming `comrades', which in most of the contemporary western world applies to dogs, cats and usually horses. That this 'taboo' is not absolute and can be disregarded in times of famine, as was the case with the naval disaster and defeat of the Roman army referred to above, is an added argument in favour of such an explanation. It is comparable with the comrade dog, that is also eaten in Europe almost only in times of famine and bad social conditions (Geppert, 1990; Simoons, 1994: 240-241).

Another possibility is that horses were associated with religious or magical matters, and for that reason could not be eaten. Take, for example, the horse as a cult animal or as an attribute or symbol

of some deity or other. The horse, for instance, was an attribute of the Celtic horse-goddess Epona. Tacitus describes white horses which lived in sacred woods and which served as messengers between gods and humans (Germania 10). With this type of source, however, we do not know what the scope was and whether it covered the area discussed in this article.

There is no evidence that the horse served as a sacrificial animal at temple sites in the Netherlands, as was the case at other cult places from the pre-Roman period (Roymans, 1990: 79). Mainly young cattle were ritually slaughtered at the Gallo-Roman temples at Elst. Only one bone from a horse was found there (Lauwerier, 1988: 111-121). At Empel, too, the horse is virtually absent (Seijnen, 1994). The same applies to the Fortuna temple at Nijmegen (Zeiler, 1997). Here, apart from goats, cattle, quail and fish, it was mainly chickens that were burnt as sacrifices. A small quantity of bones were found in the ditches of a sanctuary at Oss-Ussen, which is dated to the Roman period. These are mainly from cattle, pigs, sheep or goats and from a dog. There were no horse bones (Lauwerier & Ijzereef, 1994: 240). From the absence of horse bones we concluded that the horse did not play any part in sacrifices or ritual meals in any of these temple complexes.

At other places there appear to have been ritual dealings involving horses (Lauwerier & Robeerst, 1997, in press). At the rather native *villa* of Druten two horses had been buried at the entrances of two buildings, apparently as building offerings (Hulst, 1978; Lauwerier, 1988: 104-111). And also in a native settlement at Wijster (225-360 AD) horses were probably used as building sacrifices as well as cattle (Clason, 1967; Van Es, 1967: plan V and VI).

At the Germanic settlement of Raalte-Heeten, which specialized in iron production, a total of twenty skeletons of cattle and horses were found, and one of red deer (Lauwerier *et al.*, 1999; Lauwerier & Groenewoudt, in press). Five skeletons of cattle and three of horses from a period from 310/320 to 345 AD at this site were found associated with the fence and entrance building. They might be explained as site offerings with which the settlement area was inaugurated or confirmed, a Germanic counterpart, as it were, of the Roman *suovetaurilia* offering. Moreover, one might also consider a function, such as site offering, for the animal graves from a later period at the above mentioned native site at Wijster, consisting of horses or combinations of horses and cattle and situated against or close to the enclosure (Van Es, 1967: plan VII). At the native settlement of Leidschendam-De Leeuwenbergh there was a single horse burial exactly at the entrance to a farmyard on the inside of the plot boundary (Wiepking, 1997). This horse, dating to between 120 and 180 AD, also qualifies as a site offering. A young horse and two dogs, discovered during the same excavation on the premises of what had possibly been a cult place, could also have ritual significance.

A clear indication of possible ritual use of horses in a military context comes from the *castellum* of Leiden-Roomburg, Roman *Matilo*. In the fill of the Corbulo Canal, *the Fossa Corbulonis*, exceptionally heavily chop marked, but complete bones, partly belonging together, were found on a spot where a bronze mask and several unused coins were also unearthed. It is suggested that these finds may form part of a votive offering (Enckevort & Hazenberg, 1997; Lauwerier & Robeerst, 1998, in press).

The use of horses for such ritual purposes could be the reason for a taboo on eating their flesh. Nevertheless, if we consider that cattle also served this kind of ritual or magic purpose, but that this did not result in a taboo, and the fact that in time of famine the 'taboo' could be broken, the first mentioned explanation, the aversion to consuming 'comrades', would in general seem to be the most likely reason for the avoidance of horsemeat.

A RITUAL HORSE MEAL

Most remarkable is a group of horse bones found in Houten-Tiellandt, a native site south of the *limes* (50-300 AD) (Laarman, 1996a). In a pit there were altogether 87 bones of one approximately five-year-old mare, but they were not in anatomical connection. The other unusual thing about this skeleton is that it shows cutting and chopping marks on all bones (Figure 4). If this animal had been slaughtered for normal human consumption, not all the bones would have remained together, since carcass sections would have been removed, bones and all, as can be seen everywhere else. Laarman (1996a) assumes that the animal died from natural causes and that the flesh was stripped off and fed to dogs. In that case, however, no clear traces of butchering would have remained. Particularly the butchering marks on the vertebrae and the cut through ribs indicate pieces of meat on the

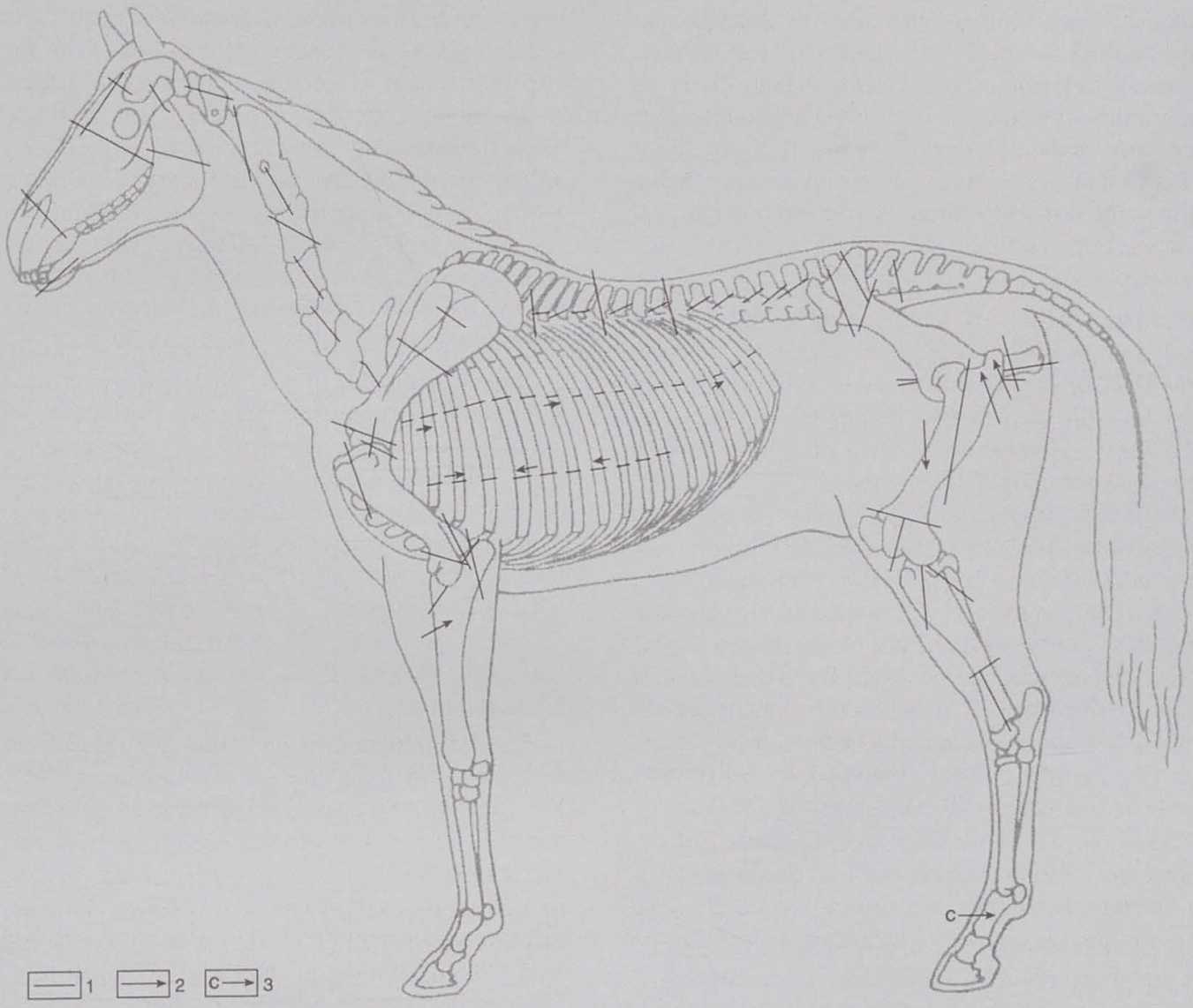

FIGURE 4
Houten-Tiellandt: cutting and chopping marks on the bones of a mare which were not assembled anatomically. Legend: 1 chopped through; 2 chopping mark; 3 cutting mark (after Laarman, 1996a: figure 66).

bone. If these pieces had been fed to the dogs there would certainly have been gnawing marks on them, but they are absent. Moreover the bones would have been scattered by the dogs.

The fragmentation and butchery marks indicate slaughter for consumption. What is striking is that, although the other finds from Houten show that horsemeat was not eaten, this horse had been consumed and yet all the remains stayed together after consumption. This cannot have been a normal pattern of consumption. About two hundred kilograms of horsemeat must have been eaten near the find pit within a short space. This extremely concentrated, probably once-only consumption of such a large quantity of meat from an animal which was not normally eaten makes one suspect that these were the remains of a ritual meal.

One can only speculate as to its significance. The relatively large quantities of bones from apparently uneaten horses elsewhere on the excavation site indicate that the horse must have played an important part in the economy of Houten; Laarman (1996a) suggests the breeding of these animals. The eating of horse may have been part of a ritual in honour of a horse deity connected with such activities. But this is pure speculation.

CONCLUSION

Written as well as archaeological sources indicate that the consumption of horsemeat in the Roman military world was subject to a kind of taboo. This avoidance of horseflesh is reflected in

the archaeozoological record of military settlements in the Netherlands. Although bones of horses are found among the 'normal' offal, the bones are little fragmented, often complete and articulated and frequently found as complete skeletons. The 'taboo' was probably mainly based on the principle that one does not eat one's comrades and in general had no religious or magical background.

The avoidance of eating horse was not general among the native population. At various places north of the *limes*, in the area of the Frisii, and in the western part of the river area, some groups did eat horsemeat. In the rest of the land occupied by the Romans the natives did not eat horse. Possibly this 'taboo' was influenced by Roman presence, but older, native habits are not excluded.

From the foregoing it can be concluded that the fact that eating horsemeat was forbidden in later periods cannot so much be seen as a Christian tradition but primarily an adopted Roman, and partly even native, habit. The few known papal bans on the consumption of horsemeat known from medieval times, at the most indicate that the already existing taboo was christianized.

The Roman army usually dumped their dead, uneaten horses outside the military camps and *vici*; at native settlements the horses were dumped inside the site, more often than in military settlements.

Occasionally the horse served a ritual purpose. Only at various native sites, were horses used as building or site sacrifices, sometimes in combination with other animals. The only possible ritual use identified at a military context is at the military *vicus* at Leiden. These horse bones, together with a mask and unused coins may be part of a votive offering. There are, however, no indications that the flesh of the horses that were ritually used by the natives or by the soldiers, was used for consumption.

A completely different phenomenon linked with ritual use is the complete skeleton of a horse from the native settlement of Houten-Tiellandt, which had clearly been butchered for consumption. It is regarded as the remains of a ritual meal eaten by the inhabitants of a settlement where horsemeat was not normally consumed.

From a methodological point of view we can conclude that, if we want to know whether the flesh of an animal had been eaten, apart from written sources, we have to look at a variety of factors such as nutritional value, fragmentation, articulation, the place and form of chopping and cutting traces, the occurrence of complete or partial skeletons and especially the context in which the animal remains are found. The percentage of the animal remains alone does not say much about this question.

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