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ROMAN *DOLIA* AND THE FATTENING OF DORMICE[1]

ABSTRACT: *The edible dormouse was known as a delicious treat to rich Romans. This short article aims to emphasise the importance of the archaeological materials for getting to know more about the degree to which dormice were eaten, by whom, and where. The material evidence, consisting of dormouse-jars in which the animals were fattened, is critically reexamined.*

I. Introduction

The fact that the edible dormouse stores body fat just before it hibernates, was one of the important pieces of information available on this animal to the Romans of the Late and Middle Republic and Early Empire.[2] The other important quality of the dormouse, at least as far as Romans were concerned, was that the animal was deemed to be very appetizing. These two facts combined made the dormouse very suitable for fattening and subsequent consumption. But not just anyone ate this small animal: serving luxurious foodstuffs, such as fattened dormice, was a way to show wealth and prestige. Only the rich had the means to spend on the slow fattening process.

In this short article, I briefly sketch the social context of raising, fattening, and eating dormice, after which I turn to the material evidence—with the aim of showing more of the everyday practice of raising dormice than the literary evidence can provide.

II. Dormouse Facts

Before turning to the ancient material, we should be aware of some particulars about the dormouse. The edible dormouse must be distinguished from the garden dormouse and the golden hazel dormouse.[3] Although they may appear to be similar in some respects, they are not quite the same animal.[4] The body of the edible dormouse is only 13–19 centimeters long while its tail can add another 11–15 centimeters to its total length (see plate 1, following this article). On account of this tail, the dormouse could easily be confused with a squirrel; however, the dormouse's tail is much less thick. The

[1] I thank F. G. Naerebout, S. J. Northwood, and *CW*'s anonymous reviewers for their comments on earlier drafts of this article. Any remaining errors are mine.

[2] Plin. *NH* 8.82.224.

[3] Garden dormouse: *Eliomys nitela,* Lat: *nitela, nitedula*. Hazel dormouse: *Muscardinus avellanarius*. Edible dormouse: *Sciurus Glis* L./*Myoxus glis/Glis glis* B., Lat: *glis* Gr: ἐλειός. There is some confusion about the animal's Latin name. The name, however, that is most common in the literature is *Glis glis*. M. J. Brisson gave the animal this name in 1762. Later, in 1766, C. Linnaeus, without having seen the animal, named it *sciurus glis*. This, however, is not correct as the edible dormouse is not a kind of squirrel, which is what this name would signify.

[4] E.g., Martial refers to *aurea nitella* ("a golden mouse," 5.37.8), and the animal he refers to in this context has sometimes been translated as dormouse. However, this does not match the gray appearance of the *glis glis*. It might be another animal, such as the hazel dormouse (*muscardinus avellanarius).* For other references regarding the garden dormouse and the hazel dormouse, see O. Keller, *Die antike Tierwelt* vol. 1 (Leipzig 1909–1920) 189–90.

mouse normally weighs 80–120 grams, which can double shortly before hibernation.[5]

III. Social Context

Showing off one's wealth is often referred to as "conspicuous consumption," a practice common in many cultures, ancient as well as modern. Among well-to-do Romans, conspicuous consumption–with its many manifestations—could also be called a way of life. An individual showed to the world that he was doing well by displaying symbols of wealth, which in turn, made him a symbol of wealth. In this way the wealthy person elevated himself above and distanced himself from other, less well-off, groups within society. The social aspects of conspicuous consumption have been studied in great detail elsewhere, among them those focusing on the fattening of animals.[6]

As a part of this elite way of life, at least from the Late Republic onward and into the Early Empire, the Roman dormouse was fattened, raised, and eaten in what were probably considerable quantities. The use of the edible dormouse in the *haute cuisine* of the Italian peninsula for this period seems secure, even though the sources are scanty. According to both literary and archaeological evidence, dormice became animals farmed for the rich. For example, in Martial 3.58 a farmer brings a number of sleepy dormice to Faustinus' villa in Baiae.[7] Dormouse bones were found in Pompeii: a cranium and a jaw in the forum, and other dormouse bones in the north courtyard garden of the villa of Poppaea.[8] We also know that the taste for them among the elite, at least in the Late Republic, was considered so excessive, that eating dormice was explicitly restricted in sumptuary laws.

IV. Archaeological Evidence

Thanks to the literary evidence, such as Varro, we know that dormice were raised and eaten.[9] What can the archaeological evidence add? A

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[5] For more information on the species dormouse and the dormouse in modern Europe, see the special issue of *Hystrix* 6 (1–2) (1994).

[6] See T. Veblen, *Theory of the Leisure Class: An Economic Study in the Evolution of Institutions* (New York 1899) 68–101. Since 1899, the term has been used and applied to all sorts of topics, times, and places. A few examples are I. W. Archer "Conspicuous Consumption Revisited: City and Court in the Reign of Elizabeth I," in M. P. Davies and A. Prescott, eds., *London and the Kingdom: Essays in Honour of Caroline M. Barron* (Donington 2008) 38–57; C. M. Woolgar, "Feast and Fast: Conspicuous Consumption and the Diet of the Nobility in the Fifteenth Century," in M. A. Hicks, ed., *Revolution and Consumption in Late Medieval England* (Woodbridge 2001) 7–25; D. Grant Campbell, "Fashionable Suicide: Conspicuous Consumption and the Collapse of Credit in Frances Burney's *Cecilia*," *Studies in Eighteenth-Century Culture* 20 (1991) 131–45. In the context of fattening Roman animals: see K. Beerden, "A Conspicuous Meal: Fattening Dormice, Snails and Thrushes in the Roman World," *Petit Propos Culinaires* 90 (2010) 79–98.

[7] Mart. 3.58.36: *somniculosos ille porrigit glires*.

[8] A. King, "Mammals: Evidence from Wall-paintings, Mosaics, Sculpture, Skeletal Remains, and Ancient Authors," in W. F. Jashemski and F. G. Meyer, eds., *The Natural History of Pompeii* (Cambridge 2002) 428–29.

[9] Varro *Agr.* 3.15.

great deal. It illuminates relevant passages from the literary sources and shows us the more tangible part of raising and fattening dormice.

Varro states that dormice were held in special outdoor pens, enclosed with walls so the dormice could not escape. In these pens would be acorn–bearing trees. If no such trees were available, acorns or chestnuts had to be left in the pen for the dormice to eat. Varro says these dormice did not need much water.[10] What they did need were hollows in the ground so they could breed.[11] Varro implies that when it was time to fatten any number of dormice, keepers would transfer them into terracotta containers (*dolia*).[12] According to Varro, this dormouse-jar was not just a regular *dolium*: he calls it "quite different" (*multo aliter*).[13] The word *dolium* was normally used, according to *The Oxford Latin Dictionary*, to mean "a large earthenware vessel for storing liquids, grain, etc." These vessels could usually be found on farms where these goods were produced, or in retail locations.[14] In many cases, these containers were (partially) interred.[15] *Dolia* were usually so big that they could not be transported over land.[16] For this reason goods were transported in smaller vessels, such as *amphorae*.[17] In the case of this special *dolium* for dormice, the jar was used to "store" live animals which were not allowed much space to move, since they needed to develop fat and not burn calories.[18] As a consequence, the jars were decidedly smaller than regular *dolia*, and thus might easily be confused with *amphorae* (which they are not).[19]

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[10] Modern sources say they do in fact need much water; see G. B. Corbet and S. Harris, *The Handbook of British Mammals*, 2nd ed. (Oxford 1991) s.v. *glis glis*.

[11] Dormice can breed communally, although this is only the case with a minority, and they usually need their own breeding site. See G. Marin and A. Pilastro, "Communally Breeding Dormice, *Glis glis*, are Close Kin," *Animal Behaviour* 47 (1994) 1485 and W. Schlund, F. Scharfe, and J. U. Ganzhorn, "Long-term Comparison of Food Availability and Reproduction in the Edible Dormouse (*Glis glis*)," *Mammal Biology* 87 (2002) 219–32.

[12] Note that the word *glirarium* has often been used for the terracotta jar itself. But a *glirarium* is any environment, and especially the pen, in which dormice are kept. See the *Oxford Latin Dictionary,* s.v. *glirarium*. The terracotta jar is a *dolium*.

[13] Varro *Agr.* 3.15.

[14] J. W. Hayes, *Handbook of Mediterranean Roman Pottery* (London 1997) 36–37.

[15] For the difference between *amphorae* and *dolia*, see J. Theodore Peña, *Roman Pottery in the Archaeological Record* (Cambridge 2007) 46.

[16] Note that they were sometimes used to transport goods over sea. See Theodore Peña (above, n.15) 46.

[17] Theodore Peña (above, n.15) 47–50.

[18] There is much literature on Roman pottery. *Dolia* are less discussed than *amphorae*, which have received the bulk of the attention. Yet *dolia* are discussed in Hayes (above, n.14) 36–37; Theodore Peña (above, n.15), e.g., 46–50. For recent general works on Roman pottery see D. P. S. Peacock, *Pottery in the Roman World: An Ethnoarchaeological Approach* (London 1982); D. P. S. Peacock and D. F. Williams, *Amphorae and the Roman Economy: An Introductory Guide* (London 1986); K. T. Greene, *Roman Pottery*. (London 1992); B. Liesen and U. Brandel, *Römische Keramik, Herstellung und Handel: Kolloquium Xanten, 15–17.6.2000* (Mainz am Rhein 2003).

[19] Some would say that the dormouse-jar looks like Dressel type 20 or 23. Yet this is only a superficial similarity—there are differences, such as the small handles and so on. Decisive in not classifying our jars as *amphorae* is their function: the

The dormouse-jars were not only different from regular *dolia* with respect to their size, they were also specially produced in order to replicate the hollow of a tree. The reason for this replication was that, according to some sources, dormice in the wild would grow fat while residing in trees.[20] These special holding jars had "ribs" (*semitae*) on the inside, serving as walkways for dormice so they could deposit food at the bottom of the jar that had been placed in small containers at the top (in the *cavum*, see plate 2). The food dormice ate in captivity were the nuts Varro mentioned, and Pliny the Younger added that beechnuts were also used.[21] It should be noted that modern dormice apparently prefer hazelnuts over other nuts, if they are available.[22] The dormouse-jar was closed with a lid. The sides of the jar were pierced with small holes to aerate the container.[23] The dormice lived in a dark space with little to do but eat, and consequently became fatter. Darkness itself was thought to stimulate the dormice to become fatter, just as Martial thought hibernation itself did.[24] Whatever their diet may have been, it is certain that these mice could indeed become very fat:

> Sometimes at their banquets the scales are even called for, in order to weigh the . . . dormice that are served, whose great size they commend again and again. . . . (Amm. Marc. 28.4.13)[25]

Several dormouse-jars have been found. A basic sub-categorization of these jars can be made on the basis of their shape: 1) globular, 2) bucket-like, and 3) cylindrical.[26] The globular dormouse-jars have curved sides, while the bucket-like ones have straight sides, and the diameter of the jar is slightly bigger at the top than it is at the bottom. Cylindrical dormouse-jars also have straight sides, but the diameters at the bottom and top of the jar are equal. Furthermore, the *semitae* may be parallel and concentric, or shaped helicoidal ("corkscrew"). When a dormouse was placed in a jar with one continuous helicoidal

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dormouse-jar was most probably not used to transport the dormice (as far as we know), while transport was the main function of *amphorae*.

[20] Arist. *HA* 600b13–14.

[21] Plin. *NH* 16.7.18.

[22] G. Rodolfi, "Dormice Glis glis Activity and Hazelnut Consumption," *Acta Theriologica* 39 (1994) 215–19. Dormice are deemed to like hazelnuts because of their high calorific content, their high edible/inedible share ratio, and their great metabolic energy. Furthermore, dormice can quickly handle and open hazelnuts, which allows them to eat the nut quickly. The dormice researched by Rodolfi reached a mean of eating between 31.7 and 20.5 hazelnuts per day.

[23] E. Saglio, "Glirarium," in Ch. Daremberg and E. Saglio, eds., *Dictionnaire des antiquités grecques et romaines* (Paris 1877–1919) 1613–14.

[24] 13.59: *tota mihi dormitur hiems et pinguior illo/tempore sum quo me nil nisi somnit alit*.

[25] *Poscuntur etiam in conviviis aliquotiens trutinae, ut appositi . . . glires, quorum magnitudo saepius replicata*. . . . J. C. Rolfe, tr., *Ammianus Marcellinus: History* (London 1956–1958).

[26] G. M. Carpaneto and M. Cristaldi, "Dormice and Men: a Review of Past and Present Relations," *Hystrix* 6 (1994) 319.

semita, it could walk straight from the bottom to the top of the jar, otherwise the dormice would have to jump from *semita* to *semita* to reach the top of the jar and get to the food which was placed there.[27]

Carpaneto and Cristaldi have produced a table of various dormouse-jars. After reanalysis of all existing secondary literature, some changes to their table can be made to further their overview. Changes to the original table consist of adding inventory numbers and, where possible, measurements and several new references, as well as—more importantly—a critical reconsideration of the total number of jars on the basis of the publications (see table 1 below). Carpaneto and Cristaldi allow for fifteen jars to have been found; I am convinced, however, that there are only nine jars. Note that the table does not include any dates, since no definitive dating of the objects can be made.

Apart from the jar in figure no. 2 (no. 1 in the table), which was found in the area of Mt. Vesuvius, a number of other jars from this region have been published. There are two jars in the Naples Museum with inventory numbers 24244 and 24245 (nos. 2 and 3).[28] I consider these to be the two dormice-jars from Pompeii mentioned, without any measurements or photographs, by G. Messineo.[29] In the Naples Museum more jars are stored, such as the one first published by T. L. Donaldson which was probably found in Herculaneum (no. 4).[30] When Donaldson published it, he was unsure about the function of the supposedly bronze object but "it was certainly not a beehive."[31] The leading expert on bee-keeping in antiquity, Eva Crane, seems to accept this statement.[32] A. J. Graham suggested, on the basis of other publications, that the jar is in fact a terracotta and not a bronze one as Donaldson states.[33] In this case the jar could certainly be a dormouse-jar, as it corresponds to the other jars in measurements, air holes, and the *semita* inside the jar. In the library of the Society of Antiquaries of London is a drawing by C. E. Fox of another vessel (no. 5). The sides of this jar are much straighter than Donaldson's jar (no. 4), and the dimensions differ as well: height 0.78 m.; diameter 0.66 m.; diameter of mouth 0.41 m.[34] A drawing in Daremberg and Saglio's *Dictionnaire des Antiquités Grecques et Romaines* refers to two jars

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[27] Carpaneto and Cristaldi (above, n.26) 318.

[28] A. J. Graham, "The Vari House—An Addendum," *Annual of the British School at Athens* 73 (1978) 99–101, plate 14.

[29] G. Messineo, "Suppellettile fittile per uso agricolo a Roma e suburbia," in R. Bussi, ed., *Misurare la terra: centuriazione e coloni nel mondo Romano: città, agricoltura, commercio: materiali da Roma e dal suburbia* (Modena 1985) 151.

[30] T. L. Donaldson, "Pompeii," *Society for Disseminating Useful Knowledge* 2 (1827) 79 (which I have not seen); J. E. Jones, A. J. Graham and L. H. Sackett, "An Attic Country House below the Cave of Pan at Vari," *Annual of the British School at Athens* 68 (1973) 355–452.

[31] Graham (above, n.28) 100.

[32] E. Crane, *The Archaeology of Beekeeping* (London 1983) 113–15.

[33] First suggested by C. C. F. Hülsen, *Ein Monument des Vatikanischen Museums* (Gross-Lichterfelde 1887) 10 (which I have not seen); Graham (above, n.28) 99.

[34] Graham (above, n.28) plate 15.

in the Naples Museum.[35] One of them seems to correspond to jar no. 3; the other one (on the right of the drawing) appears very much like Fox's jar (no. 5). The jar preserved at the Granai del Foro at Pompeii happens to be the only cylindrical dormouse-jar known at present (no. 6).[36] There is also the jar published by E. Lissi Carona, found in Rome (no. 7);[37] a jar from Castelvenere mentioned by M. Annecchino is broken, and is now in Salerno or Montesarchio (no. 8); and finally there is a dormouse-jar from Castelluccio first published in 1896 (no. 9).[38]

In my revision of Carpaneto and Cristaldi, I have omitted reports of dormice-jars made in personal correspondence, mainly because they seem speculative. Secondly, a drawing of a jar, in Carpaneto and Cristaldi, with only one concentric *semita*, few air holes, and missing food trays on top, has been, in my opinion, mistakenly identified as a jar for dormice.[39] In addition, this jar was found in a grave in Ptuj in Slovenia. It would be the only dormice-jar found outside the Italian peninsula as well as the only one found in the context of a burial.[40] Altogether this evidence does not support the thesis that this jar is one for dormice. Thirdly, Carpaneto and Cristaldi list fragments that are far from conclusively dormouse-jars and thus are not entered in this table. As Annecchino speculates, there may be more dormice-jars which could be added to this table;[41] the ones presented here, however, existed with all certainty.

V. Conclusion

Nine dormouse-jars can—with reasonable certainty—be identified as such. They add the physical aspect to our knowledge gleaned from literary sources on how dormice were fattened, how they breathed in the jar, how their movements were limited, and how they were fed. The geographic area of the finds, the villa areas of Italy, corroborates that the "conspicuous consumers" of dormice were members of the Roman elite.

Uncertainty about the precise provenance of the dormouse-jars, however, leads to at least two hypotheses about their use in the fattening process. First, it could be argued, in accordance with

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[35] Saglio (above, n.23) 1613–14.

[36] A discussion of the various jars and relevant images: Graham (above, n.28) 100-1.

[37] E. Lissi Carona, "Roma," in *Notizie degli scavi di Antichità,* Accademia Nazionale dei Lincei (Rome 1968) 15.

[38] G. F. Gamurrini, "Casteluccio," in *Notizie degli scavi di Antichità,* Accademia Nazionale dei Lincei (Rome 1896) 77–79; M. Annecchino, "Suppellettile fittile per uso agricolo in Pompei e nell'Agro Vesuviano," in *La regione sotterrata dal Vesuvio: studi e prospettive: atti del convegno internazionale 11–15 novembre 1979* (Naples 1982) 764.

[39] Z. Šubic, "La Necropole Romaine à Poetivio," *Inventaria Archaeologica* (Yugoslavia 1972) fasc. 14.Y.135.

[40] The jar as described in *Notizie degli scavi di antichità* (1972), 402–404 does not appear to be a vessel for raising dormice because of its shape and, especially, because of the absence of air holes.

[41] Annecchino (above, n.38) 764 n.28.

Varro, that a farmer who kept large quantities of dormice in pens transferred them into jars for the final fattening process. A second way of interpreting the archaeological evidence is that in those cases where just a few dormice were needed (for small-scale consumption) a jar in one's own backyard would do.

After going through all the trouble of fattening the mice, eating them had to be a treat. While Petronius recommended sprinkling dormice with honey and poppy seeds before consumption,[42] Apicius advised to prepare them stuffed, roasted, or boiled. The dormouse was, for this purpose, transferred from the dormouse-jar into the cooking pot:

> [A dormouse] is stuffed with a forcemeat of pork and small pieces of dormouse meat trimmings, all pounded with pepper, nuts, laser, broth. Put the dormouse thus stuffed in an earthen casserole, roast it in the oven, or boil it in the stock pot. (Apicius 8.9 [Vehling 396])[43]

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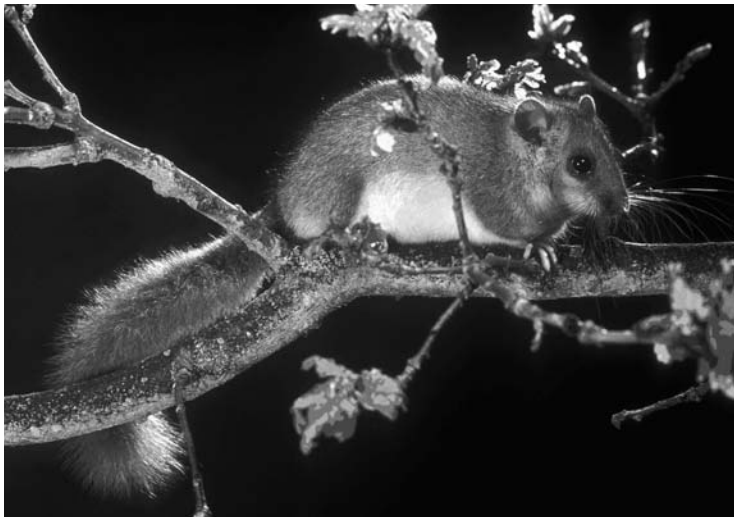
[42] Petr. *Sat*. 31: *glires melle ac papavere sparsos.*

[43] *Glires: isicio porcino, item pulpis ex omni membro glirium trito, cum pipere, nucleis, lasere, liquamine farcies glires, et sutos in tegula positos mittes in furnum aut farsos in clibano coques.* J. D. Vehling, ed. and tr., *Apicius: Cooking and Dining in Imperial Rome*, 2nd ed. (New York 1977) 205.



Pl. 1: Dormouse © Vilda/Yves Adams. Used by permission.

Pl. 2: Dormouse-jar © Luciano Pedicini. Used by permission.

	Present location	Findspot	Shape	Height	Diameter (max)	Diameter mouth	References	Images
1	MN (National Museum) Naples s.n.	Circumvesuvio	G	0.38.3 (26.5 CC)	0.33.5 (28.5 CC)		Carpaneto and Cristaldi (n.26); M. Lista, "Gefäss zur Aufzucht von Siebenschläfern," in R. Asskamp et al., eds., *Luxus und Dekadenz: Romisches Leben am Golf von Neapel* (Mainz am Rhein 2007) 261	Carpaneto and Cristaldi (n.26), fig. 5; fig. 6 (left); Lista 2007 6.52
2	MN Naples 24244	Pompeii	G	0.39.6			Annecchino (n.38); Messineo (n.29); Carpaneto and Cristaldi (n.26)	Carpaneto and Cristaldi (n.26), fig. 6 (middle) ?
3	MN Naples 24245	Pompeii	G	0.46.2 (0.48 Graham)	0.51 (0.55 Graham)	0.27 (0.33 Graham)	E. Saglio (n.23); M. Annecchino, "Suppellettile fittile da cucina di Pompei," in M. Annecchino et al., eds, *L'Instrumentum domesticum di Ercolano e Pompei nella prima età imperiale* (Rome 1977) 105–20; Graham (n.28); Annecchino 1982; Messineo (n.29); Carpaneto and Cristaldi (n.26)	Graham (n.28), Annecchino 1977, pl. 14; pl. 53, 12
4	MN Naples s.n.?	Pompeii	G	ca. 0.61	ca. 0.63	ca. 0.28	Donaldson (n.30); Graham (n.28); Carpaneto and Cristaldi (n.26)	Graham (n.28), fig. 1
5	MN Naples s.n.?	Vesuvian plain	B	0.78 (0.76 GS) (81.5 CC)	0.66 (0.61 GS) (0.71 CC)	0.41	Daremberg and Saglio (n.23) (Fox 1886, see Graham [n.28]); Carpaneto and Cristaldi (n.26); M. Lista, "Gli oggetti di uso quotidiano," in *Le collezioni del Museo Nazionale di Napoli* (Rome 1986) 77–85	Graham (n.28), pl. 15a; Carpaneto and Cristaldi (n.26), fig. 6 (right)
6	Granai del Foro (now Boscoreale?)	Pompeii (Schola Iuventutis, via dell'Abbondanza)	C	0.45		0.27	Annecchino 1977; Graham (n.28); Annecchino 1982; Carpaneto and Cristaldi (n.26)	Graham (n.28), pl. 15b; Annecchino 1977, pl. 53, 11; Annecchino 1982, 10a–b; Carpaneto and Cristaldi (n.26), figs. 9–10
7	MN Roma	Rome (Via Casilina, Tor Bella Monaca)	G	0.66	0.63	0.30.5	Lissi Caronna (n.37); Annecchino (n.38); Messineo (n.29); Carpaneto and Cristaldi (n.26)	Lissi Caronna figs 8–9; Messineo (n.29), fig. 127; Carpaneto and Cristaldi (n.26), figs. 3–4; figs. 7–8
8	Salerno/Montesarchio	Castel-venere (Benevento)	G				Annecchino 1982; Messineo (n.29); Carpaneto and Cristaldi (n.26)	Carpaneto and Cristaldi (n.26), fig. 2
9	MN Chiusi	Castel-luccio (Siena)	G	0.70	0.70	0.38	Gamurrini (n.38); Annecchino 1982; Messineo (n.29); Carpaneto and Cristaldi (n.26)	Gamurrini 1896, p.77

Table 1: Dormouse-jars