Archaeofauna 34(1) (2025): 367-374

The dog of Tassignano (Capannori, Lucca): a possible Roman Age foundation ritual

Il cane di Tassignano (Capannori, Lucca): un possibile rito di fondazione di Età Romana

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(Received *05 October 2022*; Revised *28 February 2023*; Accepted *05 May 2023*)

ABSTRACT: In 2018, in the locality of Tassignano (Capannori, LU) the skeleton in anatomical connection of a dog was discovered during the excavation of a rural building, whose frequentation lasted from the 2nd/1st century BC to the 6th/7th century AD. A structure interpreted as a *balneum* was brought to light, equipped with a brick floor (*opus figlinum*) and a small basin. A perimeter wall of this room, dismantled by a late antique spoliation, originally covered the remains of the animal: these, intercepted following the emptying of the spoliation pit, lay partially below the brick floor. The dog is an adult male and its skeleton is complete, except for part of the neurocranium and some cervical vertebrae, probably destroyed by the spoliation trench. The fragmented skull did not allow in-depth morphological analysis, while it was possible to make some comparisons based on the mandible. The taphonomic study revealed the presence of butchering marks, linked to skinning, on the dorsal surface of a metatarsus, indicating that the carcass had been treated before deposition. This evidence, together with the context of its deposition, would lead to the hypothesis that the carcass was used as part of a foundation ritual of the building.

KEYWORDS: FOUNDATION RITUAL, DOG, ROMAN AGE, TAPHONOMY, TUSCANY

RIASSUNTO: Nel 2018, in località Tassignano (Capannori, LU) è stato scoperto lo scheletro in connessione anatomica di un cane durante lo scavo di un edificio rurale, la cui frequentazione si è protratta dal II/I secolo a.C. al VI/VII secolo d.C. In particolare, è stato messo in luce un ambiente interpretato come *balneum*, dotato di pavimento in commesso laterizio (*opus figlinum*) e di una piccola vasca. Un muro perimetrale di tale ambiente, smantellato da una spoliazione di epoca tardoantica, copriva in origine i resti dell'animale: questi, intercettati in seguito allo svuotamento della fossa di spoliazione, giacevano parzialmente al di sotto del pavimento in laterizio. Si tratta di un individuo adulto di sesso maschile il cui scheletro è quasi completo: mancano solo parte del neurocranio e alcune vertebre cervicali, probabilmente distrutte dalla trincea di spoliazione. Il cranio frammentato non ha permesso approfondite analisi morfologiche, mentre è stato possibile eseguire alcuni confronti sulla base della mandibola. La presenza di tracce di macellazione, legate allo spellamento, sulla superficie dorsale di un metatarso, indicano un trattamento della carcassa prima della deposizione. Questa evidenza, unita al contesto di giacitura, porterebbe a ipotizzare l'uso della carcassa nell'ambito di un rito di fondazione dell'edificio.

PAROLE CHIAVE: RITO DI FONDAZIONE, CANE, ETÀ ROMANA, TAFONOMIA, TOSCANA

http://www.doi.org/10.15366/archaeofauna2025.34.1.037

INTRODUCTION

In 2018, a rural building was excavated in the locality of Tassignano (Capannori, LU), the frequentation of which lasted from the 2nd/1st century B.C. to the 6th/7th century A.D. The excavation was carried out under a ministerial concession for excavation and archaeological research, granted to the Gruppo Archeologico Capannorese, under the scientific direction of one of the authors (A.G.) and the supervision of the Heritage Office. The territory is that pertaining to the Latin colony of Lucca, founded in 180 BC. The excavation uncovered a room interpreted as *balneum*, equipped with a brick floor (*opus figlinum*) and a small basin. The perimeter walls of that room were dismantled by a spoliation trench dated to the late antique/early medieval period, the excavation of which revealed the soil layers beneath the building. Partially below what remained of the building, the carcass of a dog (*Canis familiaris*) was found. One of the authors (A.G.) organised the removal of the entire block of soil containing the animal's skeleton (Figure 1).

METHODS

Careful excavation of the block of soil was performed in the laboratory, which allowed the recovery, restoration, and thus the study of the osteological material. Skeletal elements were measured according to Driesch (1976), with the addition of a skull measurement from Wagner (1930) to allow comparisons with dogs of known breeds. Taphonomy was carried out by means of a Hirox KH-7700 digital microscope; metrical data of cut marks were collected on a median cross-section following Boschin & Crezzini (2012). Withers height was estimated following

FIGURE 1
The skeleton after a first cleaning.

Harcourt (1974). Statistics were performed using the PAST software (Hammer *et al*., 2001). All raw data are reported in the Supplementary Materials.

RESULTS

The body laid in a twisted position: it rested on the belly at the lumbar level and on the left side at the level of the rib cage. The neck was folded forward, the innominate was highly sloped while the left hind limb had a verticalized tibia and the autopodium at a higher level than the rest of the skeleton (Figure 1); this could be due to the restricted size of the pit in which the animal was buried. The skeleton was found in anatomical connection, although the bones show some dislocations: this is the case, for example, of the right femur and the *baculum*. The excavation of the Late Antique trench partially destroyed the neurocranium and the first cervical vertebrae. Close examination of bone surfaces revealed the presence of some butchering marks on the dorsal portion of a metatarsal (Figure 2) and on the innominate. The ratio between the breadth at the top and the breadth at the floor of the cuts (RTF index, Boschin & Crezzini, 2012) is fully compatible with a metal blade (Supplementary Material 3).

The individual is a medium-sized dog, with a height at withers of just under 60 cm. The restoration allowed the collection of some biometric data related to the splanchnocranium and the mandible. The data were processed through a Principal Component Analysis (PCA) and results can be seen in Figure 3. About 92 % of the sample's variability is explained by PC 1, which appears to be related to the "size" parameter. Small breeds are well noticed at low values and large breeds at high values. PC 2 describes 6.9% of the variability and is more related to skull morphology: breeds characterized by a shortened muzzle are distributed around higher values (e.g., boxers) while greyhounds are distributed around lower values. The Tassignano individual has an elongated muzzle and is close to greyhounds and other hunting dogs.

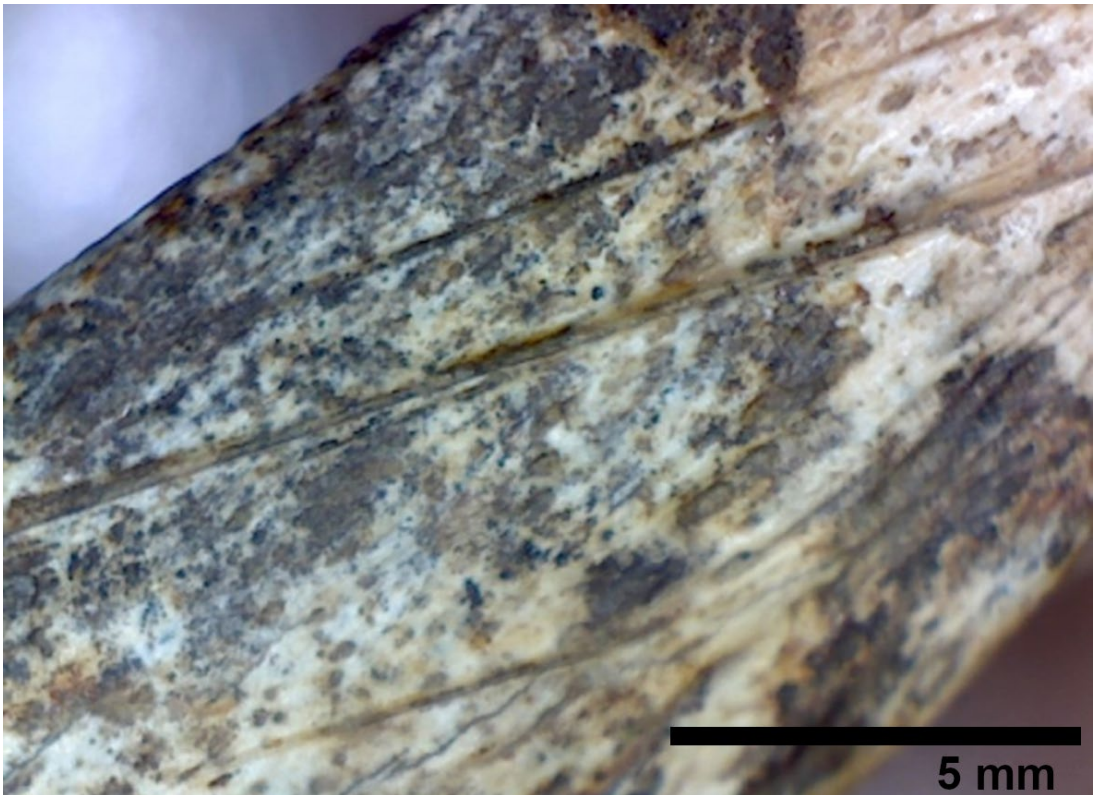

FIGURE 2
Cutmarks on the right third metatarsal

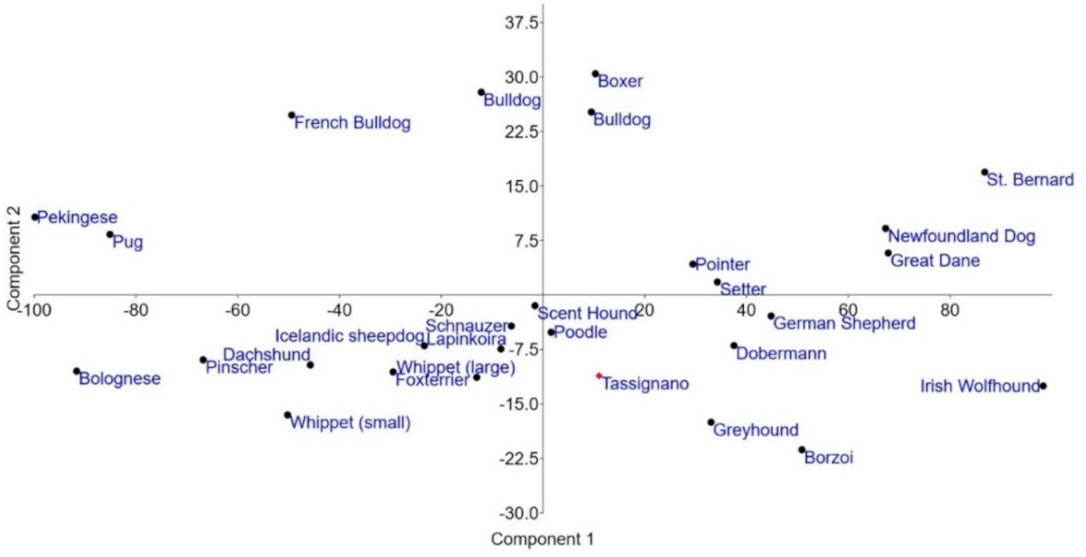

FIGURE 3

Scatterplot of a PCA carried out on cranial and mandibular measurements.

DISCUSSION AND CONCLUSIONS

The location of the carcass under the floor of the building, coupled with the skinning action, suggests a ritual burial, perhaps related to the foundation rite. However, the way the dog was killed remains unresolved. Although dog sacrifices are not uncommon in the Italian archaeological record, the Tassignano specimen represents one of the few Roman-age foundation rites involving dogs discovered in Italy so far (De Grossi Mazzorin & Minniti, 2006). Even if dogs are present in Italy since pre-Neolithic times (Boschin, 2020; Boschin *et al*., 2020), reliable selection for breeds is reported only from the Iron Age onwards (De Grossi Mazzorin & Tagliacozzo, 2000). Biometry of the Tassignano dog, considering limitations due to comparison with current breeds, indicate an individual morphologically like hunting dogs, such as greyhounds. It fits well into the wide variability that dogs acquired in Roman times due to increasingly stringent selective processes, which led to the breeding of specialised dogs for hunting, guarding, fighting or coursing (e.g., De Grossi Mazzorin & Tagliacozzo, 2000; Schoenebeck *et al*., 2020; Bennet & Timm, 2021).

ACKNOWLEDGEMENTS

Authors thank the Gruppo Archeologico Capannorese and dott. Neva Chiarenza of the Soprintendenza ABAP per le Province di Lucca e Massa Carrara for having made possible this work.

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SUPPLEMENTARY MATERIAL 1

Element	**Position**	**Side**	**Digits**																							
Measurement				**8**	**9**	**15**	**16**	**17**	**19**	**22**	**32**	**33**	**34**	**35**	**36**	**37**	**41**									
Skull				94,2	108	64,7	16,7	53,2	18,6	24,3	47,4	35	61	37	34	26,3	42									
Measurement				**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13L**	**13B**	**14**	**15L**	**15B**	**16L**	**16B**	**17**	**18**	**19**	**20**
Mandible				141,3	138,9	132,5	125	118,1	125,3	82,6	74,4	70	34,2	42,3	36,3	21,8	9	21	8,8	6,4	4	4,3	12,3	56,5	22	19
Measurement				**GL**	**PL**	**GB**	**BFcr**	**HFcd**																		
Sacrum				43	37,4	48,2	25,1	11,5																		
Measurement				**GLP**	**LG**	**BG**																				
Scapula		Right		31,2	25,6	19																				
Measurement				**GL**	**LAR**	**SH**	**Lfo**	**SH**	**SB**																	
Innominate		Left		153,7	23,8	8,7	28,3																			
Innominate				154,7	24,3	8,5	27																			
Measurement				**GL**	**GLC**	**DP**	**SD**	**Bd**																		
Humerus		Right		172,1	165	43,1	13,4	33,1																		
Humerus		Left		171,4	165,2	43,5	13,5	32,9																		
Measurement				**GL**	**Bp**	**SD**	**Bd**																			
Radius		Right		175,4	19	12,8	24,7																			
Radius		Left		174	19	12,8	24,7																			
Measurement				**DPA**	**SDO**	**BPC**																				
Ulna		Right		24,8	23																					
Ulna		Left		24,4	22,6	19																				
Measurement				**GL**	**Bd**																					
Metacarpal I		Right		21,7																						
Metacarpal I		Right		22																						
Metacarpal II		Right		58	9,5																					
Metacarpal II		Left		58	9,5																					
Metacarpal III		Right		66	9,4																					
Metacarpal III		Left		66,1	9,4																					
Metacarpal IV		Right		6	9																					
Metacarpal IV		Left		65																						
Metacarpal V		Right		56,4	9,5																					
Metacarpal V		Left		56,6	9,9																					
Measurement				**GLC**	**BP**	**DC**	**SD**	**Bd**																		
Femur		Left			40	19,5	13,6	32,8																		
Femur		Right		188,6	41,6	19,6	13,9	31,8																		
Measurement				**GB**																						
Patella		Left		10,6																						
Patella		Right		10,4																						
Measurement				**GL**	**Bp**	**SD**	**Bd**																			
Tibia		Left			35,1	13,4																				
Tibia		Right		192,2	35,1	13,6	23,3																			

Measurement				**GL**																					
Talus		Left		27,7																					
Talus		Right		27,7																					
Calcaneum		Left		48,7																					
Calcaneum		Right		48,3																					
Measurement				**GL**	**Bd**																				
Metatarsal II		Left		65,6	9,3																				
Metatarsal III		Left		73,9	9																				
Metatarsal IV		Left		75,1	8,4																				
Metatarsal V		Left		66,8	9,2																				
Metatarsal II		Right		65,2	9,1																				
Metatarsal III		Right		72,6	9,2																				
Metatarsal IV		Right		74,6	8,4																				
Metatarsal V		Right		67,4	8,9																				
				101,6																					
Measurement				**GL**	**Bp**	**SD**	**Bd**																		
Phalanx 1	anterior	Left	II	23,4	9	6,2	7,8																		
Phalanx 1	anterior	Left	III			6	7,6																		
Phalanx 1	anterior	Left	IV			6	7,5																		
Phalanx 1	anterior	Left	V	23,7	8,7	6,3	7,5																		
Phalanx 1	anterior	Right	II	23,1	9	6	7,6																		
Phalanx 1	anterior	Right	III			6	7,6																		
Phalanx 1	anterior	Right	IV		9	9,2																			
Phalanx 1	anterior	Right	V	23,1	9	6	7,7																		
Phalanx 1	posterior	Left	II		8,4	5,3																			
Phalanx 1	posterior	Left	III	28	8,7	6	7,5																		
Phalanx 1	posterior	Left	IV	28,2	8,6	6	7,4																		
Phalanx 1	posterior	Left	V	23,6	8	5	7																		
Phalanx 1	posterior	Right	II			5,2	7,1																		
Phalanx 1	posterior	Right	III	28	8,8	5,9	7,4																		
Phalanx 1	posterior	Right	IV		6	7,4	7,5																		
Phalanx 1	posterior	Right	V	23,6	8	5,3	7,1																		
Phalanx 2	anterior	Left	V	13,7	8,4	6,5	8																		
Phalanx 2	anterior	Left	II	14,2	8,3	6,8	8																		
Phalanx 2	anterior	Right	III	18,8	8,1	6	8,3																		
Phalanx 2	anterior	Right	IV	19,1		6,1	8,3																		
Phalanx 2	anterior	Right	V	14	8,6	6,7	8,2																		
Phalanx 2	posterior	Left	II	14,3	8	6,1	7,6																		
Phalanx 2	posterior	Left	III	20,1	8	5,7	8,3																		
Phalanx 2	posterior	Left	IV	19,7	8	5,5	7,8																		
Phalanx 2	posterior	Left	V	14,7	8	6,1	7,4																		
Phalanx 2	posterior	Right	II	14,1	8,2	5,7	7,3																		
Phalanx 2	posterior	Right	III	19,6	8	5,5	7,8																		
Phalanx 2	posterior	Right	IV		8	5,6																			
Phalanx 2	posterior	Right	V	14,1		5,6	7																		

SUPPLEMENTARY MATERIAL 2

Measurement number (Wagner, 1930)	**1**	**8**	**9**	**23**	**24**	**26**	**27**	**28**	**29**	**32**
Measurement number (Driesch, 1976)	**1**	**9**		**32**	**33**	**34**	**35**	**36**	**22**	**15**
Tassignano	141,3	108	87	47,4	35	61	37	34	24,3	64,7
Deutsche Dogge	178,5	136,2	102,6	69,2	48,4	78	43,3	48,3	25,8	75,2
Schaefer	162,9	125,1	97,7	62,5	42,2	70	37,6	41,9	23,5	72,7
Bulldog	135,8	81,9	57,5	63,7	43,8	74,6	37,9	42,5	22,3	51,1
Dachs	103,7	81,8	57,3	43,3	28,8	51,7	25,7	28	17,5	50,3
Setter	160,2	115,6	90,4	59	43,4	69,8	37	41,8	24	69
Boxer	149	93,8	67,1	68,8	46,2	80,7	43,4	46,2	23,1	56,8
Irischer Wolfshund	198	161	118	70	37	77	34	49	28	83
Bernhardiner	192,2	142	107,2	75,5	53	86,3	50,3	56,8	27,2	76,8
Neufundlander	180,1	133,3	101,3	71	49	79,2	43,1	48,4	26	76,4
Barsoi	166,1	135,5	104,6	55,5	38,5	62,5	29,6	34,5	26,5	78,6
Englischer Windhund	154,7	124,7	95,7	54,7	38,2	60,3	29,8	33,2	24,5	72,5
Dobermann-Pinscher	158,5	122,1	95,8	58,3	41	67,4	34,6	38,8	23,6	72,8
Pointer	157,5	112,5	87	57,1	40,7	73,2	38,1	42,2	22,8	71,7
Bulldog alter typus	144	96,8	70,5	70,8	48,5	75,4	40,1	46,4	22,6	58,6
Dingo	141	109,2	83,3	51,3	35,8	59,8	30,7	35	24,8	67
Pudel	134,2	104,9	77,5	53,3	36,2	62,8	31,8	35,6	21,7	62,8
Norwegischer Hasenhund	132	100,6	76,8	51,5	34,7	62,6	32	45,8	21,1	64,1
lappenhund	129	99,8	73,5	49,3	34,8	59	30	34	20	62,3
Grosser Whippet	124,8	99	73	49	33	55,8	28	31,2	20	59
Islaendischer hund	117,9	91,6	68	48,6	33	56,4	28,4	32,8	20	57
foxterrier	113,4	90,7	65,6	44,5	29,6	55,8	27,7	30,2	18,6	56,1
Franzosische Zwergbulldog	108,6	66	41,8	54,6	37,8	67,2	35,6	40	18,8	36,6
Whippet	101,8	80,5	57,6	38,6	26,6	46,7	22,2	24,9	18,2	51,4
Ratle-pinscher	91,9	69,3	47,1	39,6	27,1	46,9	22,4	25,7	17,9	43,3
Mops	82,3	52,6	33,5	43,9	28,1	52,2	27,5	29,3	17,2	34
Bolognese	74,2	57,2	37,6	37	24,4	40,8	19,8	21,8	15	36
Pekinese-Tshin	75,5	41,2	27	45,5	27,2	48	25	26	15	29
Schnauzer	130	99,8	73,8	51,5	34	62	32	35,3	21	62,5

SUPPLEMENTARY MATERIAL 3