



When did roosters start singing at Arslantepe?  
A preliminary assessment of the presence  
and spread of *Gallus gallus* (Linnaeus, 1758)  
in Iron Age Eastern Anatolia

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# When did roosters start singing at Arslantepe? A preliminary assessment of the presence and spread of *Gallus gallus* (Linnaeus, 1758) in Iron Age Eastern Anatolia

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## ABSTRACT

Among the faunal remains brought to light in the recent Iron Age excavations at the site of Arslantepe (South-East Turkey), the discovery of the bones belonging to an adult rooster is of particular interest. The red junglefowl, *Gallus gallus* (Linnaeus, 1758), is not autochthonous of Anatolia; the species is native to and was originally domesticated in south-eastern Asia, reaching the Mesopotamian region only at the beginning of the 3<sup>rd</sup> millennium BC. Throughout the Bronze Age and up to the beginning of the Iron Age the evidence of domestic junglefowl remains sporadic. However, from the second half of the 2<sup>nd</sup> millennium BC onwards, findings became more consistent, allowing us to trace its spread and evolution. The discovery of the first rooster at Arslantepe, in a level dated to the very beginning of the 1<sup>st</sup> millennium BC, fits with the general development of this species into the Near East and from here, during the advanced Iron Age, to the Mediterranean and to the West. The article aims at integrating this discovery into its geographical, cultural, chronological, and zoological background. Moreover, the discussion is broadened within the complex scenario of the development of the Iron Age Syro-Anatolian societies. We argue that the scarcity of chicken remains until the beginning of the 1<sup>st</sup> millennium BC might not be only related to taphonomic conditions but also to the fact that the species was an exotic rarity with possibly some sort of symbolic relevance.

## KEY WORDS

Hittite,  
Near East,  
domestic chicken.

## RÉSUMÉ

*Quand les coqs ont-ils commencé à chanter à Arslantepe? Une évaluation préliminaire de la présence et propagation de Gallus gallus (Linnaeus, 1758) durant l'âge du fer en Anatolie orientale.*

La découverte des os d'un coq adulte parmi les restes de faune mis à jour lors des récentes fouilles de l'âge du fer sur le site d'Arslantepe (sud-est de la Turquie) est particulièrement intéressante. Le coq sauvage rouge, *Gallus gallus* (Linnaeus, 1758), n'est pas autochtone de l'Anatolie; l'espèce est originaire et a été domestiquée en Asie du Sud-Est, n'atteignant la région mésopotamienne qu'au début du troisième millénaire avant J.-C. Les preuves de la présence de poules domestiques tout au long de l'âge du bronze et jusqu'au début de l'âge du fer restent sporadiques. Toutefois, à partir de la deuxième moitié du deuxième millénaire avant J.-C., les trouvailles deviennent plus concordantes, ce qui nous permet de retracer sa propagation et son évolution. La découverte du premier coq à Arslantepe, dans un niveau du tout début du premier millénaire avant J.-C., s'inscrit dans le développement général de cette espèce au Proche-Orient et de là, au cours de l'âge du fer avancé, vers la Méditerranée et l'Ouest. L'article vise à intégrer cette découverte dans ses contextes géographique, culturel, chronologique et zoologique. En outre, la discussion est élargie dans le cadre du scénario complexe du développement des sociétés syro-anatoliennes de l'âge du fer. Nous avançons que la rareté des restes de poule jusqu'au début du premier millénaire avant J.-C. pourrait être liée, non seulement aux conditions taphonomiques, mais aussi au fait que l'espèce était une rareté exotique, avec peut-être une dimension symbolique.

**MOTS CLÉS**  
Hittite,  
Proche-Orient,  
poule domestique.

## INTRODUCTION

Arslantepe is located in south-eastern Anatolia in the Upper Euphrates region about 12 km south of the river. The site lies in the fertile Malatya plain at 912 m above sea level (Fig. 1). The Euphrates links the Malatya plain to Syria and Mesopotamia and also separates it from the area to its east, the Elazığ region (Brown & Wilkinson 2017: 147-149). Over the centuries, this enabled the interaction with the Anatolian, the Syro-Mesopotamian and Transcaucasian worlds and the penetration of foreign influences (Frangipane & Liverani 2013: 350).

Arslantepe is the largest and the main mound of the region. The Italian Archaeological Expedition in Eastern Anatolia (MAIAO) has been working at the site since the beginning of the 1960s. The continuity of the excavations allowed the reconstruction over the years of a detailed and uninterrupted sequence that stretches from the 5<sup>th</sup> millennium BC to the Byzantine period (Frangipane 2019). The first round of activities conducted by the Italian expedition at the mound focused on the 2<sup>nd</sup> and 1<sup>st</sup> millennium BC (Pecorella 1975). Following a long interruption, excavations on the Late Bronze (*c.* 1600-1200 BC) and the Iron Age (*c.* 1200-700 BC) levels restarted at Arslantepe in 2008. Historically, these are the periods of the Hittite influence at the site and the subsequent creation of an independent Neo-Hittite reign respectively (Hawkins 2000: 282-288). The new project unearthed an uninterrupted sequence of monumental structures, covering the entire Iron Age occupation at the site for a period that approximately ranges from the 12<sup>th</sup> to the 7<sup>th</sup> century BC (Manuelli 2019: 163-168; Fig. 2).

## THE IRON AGE SEQUENCE AT ARSLANTEPE

The beginning of the Iron Age at the site (Arslantepe IIIA) is characterized by the construction of a massive fortification wall that enclosed and protected the citadel of Arslantepe for *c.* two centuries (Manuelli & Mori 2016: 216-222). During this period, the site was the capital of the kingdom of Malizi, a regional polity that extended its domain to the westward valleys (Di Filippo & Mori 2018). At around 1000 BC a violent fire provoked the destruction and collapse of the fortification and an ensuing change in the settlement pattern of this area of the mound. During the Iron Age II (Arslantepe IIIB), despite the reuse of some of the earlier structures, a series of large silos and pits indicates an area now specifically devoted to storage activities (Manuelli 2020: 113-118). The end of Arslantepe IIIB is dated to the second half of the 9<sup>th</sup> century BC and marks the beginning of a new important phase for the history of the site. Arslantepe is now known from Assyrian sources to be the capital of the Neo-Hittite reign of Melid (Bryce 2012: 98-101). The Middle Iron Age levels (Arslantepe IIA) are indeed marked by the construction of a succession of three monumental pillared halls that span approximately the period between the end of the 9<sup>th</sup> and the end of the 8<sup>th</sup> century BC (Liverani 2010). The later levels of the sequence have been found partially disturbed by modern intrusions. However, Arslantepe IIB is still characterized by the presence of further public monumental structures, dated from the late 8<sup>th</sup> to the 7<sup>th</sup> century BC and corresponding to the period of the Neo-Assyrian influence at the site. The end of the sequence is marked by the final conquest and definitive destruction of Arslantepe by Sargon II of Assyria in 712 BC (Liverani 2004).





FIG. 1. — Map of Anatolia and the Levant with the main sites mentioned in the text (modified data courtesy of National Centers for Environmental Information – ETOPO1, Natural Earth and Geo Network opensource. <https://doi.org/10.7289/V5C8276M>).

As a consequence of the abovementioned long-lasting investigations, the Iron Age archeozoological remains have been over the years analyzed by different researchers. In the 1970s-1990s S. Bökönyi (1983) studied a large number of animal bones related to the Late Bronze and Iron Age levels, and since 2007 faunal material has been analyzed by Siracusano & Bartosiewicz (2012). The Arslantepe rooster was found during the 2015 excavation campaign. The bones have been collected from a filling layer – square G3 (15), layer 8b  $\alpha$  – corresponding to the final Arslantepe IIIB level, which is dated through associated material and high precision C14 dating to the end of the 9<sup>th</sup> century BC (Manuelli *et al.* 2021; Fig. 3). This filling layer is associated with the ultimate destruction of the Iron Age fortification wall which sealed the abovementioned silos and pits level. Despite the fact that the bones have not been found *in situ* and unfortunately not much can be said about their exact context, it seems also reasonable to assume that the remains were somehow originally associated to the phase of use of this storing area or to its final employment as a dump. Another fragment that could be attributed to a *Gallus* comes instead from the filling of the last pillared hall of Arslantepe IIA – square G3 (13-14), A1142 layer 1a – dated to the 8<sup>th</sup> century BC.

In general, animal husbandry at Arslantepe was based on sheep and goat since the earliest time. These comprised slightly more than the half of the total quantity of



FIG. 2. — Arslantepe, the Iron Age monumental sequence. Photo credits: R. Ceccacci, ©MAIAO.

domestic animals, while cattle were around one-third of the animal stock. As far as pig breeding is concerned, they were almost absent during the Early Bronze Age at the site (*c.* 3200-2000 BC) (Siracusano & Bartosiewicz 2012: 108; Siracusano, in press). Pig consumption began instead during the Middle Bronze Age (*c.* 2000-1600 BC), with pigs later reaching 7-8% of the livestock in the Late Bronze Age (Bartosiewicz *et al.* 2013: 277, tab. VI.1). During the Iron Age, a general increase in the presence of the caprine flocks is notable, while pigs gradually lose importance halving their presence among domestic animals. In this period horses and donkeys were also represented, even if always at a low frequency. Hunting has never shown a strong impact on the faunal remains of Arslantepe. Small game and avian finds are in general very sporadic and fowling could hardly have been ordinarily practiced at the site. Interestingly, avifauna increases during the Iron Age, as is shown by the occasional presence of quails, partridges, geese, ducks, as well as herons and cranes, possibly testifying to a more significant involvement of hunting and fowling practices at the site.

#### THE FIND AND ITS OSTEOLOGICAL PLACEMENT WITHIN COMPARATIVE MATERIAL

The faunal osteological remains at Arslantepe have always been hand-collected and analyzed directly on site. The samples, collected with the best care possible, were ordered in appropriate bags each labelled with scrupulous attention to both horizontal and vertical localizations. The bones themselves were washed and then labelled in order to register each identified sample more accurately in the relative depositional context and to produce more reliable results.

Among the numerous bone fragments of domestic animals collected from the excavations of the Iron Age levels, 15 portions of a galliform skeleton were identified. The bones consist of one scapula, one sternum, two humeri, one radius, two ulna, two tibias, one pelvis, two femurs, two tarsometatarsi and one sacrum (Fig. 4). Except for the sternum,

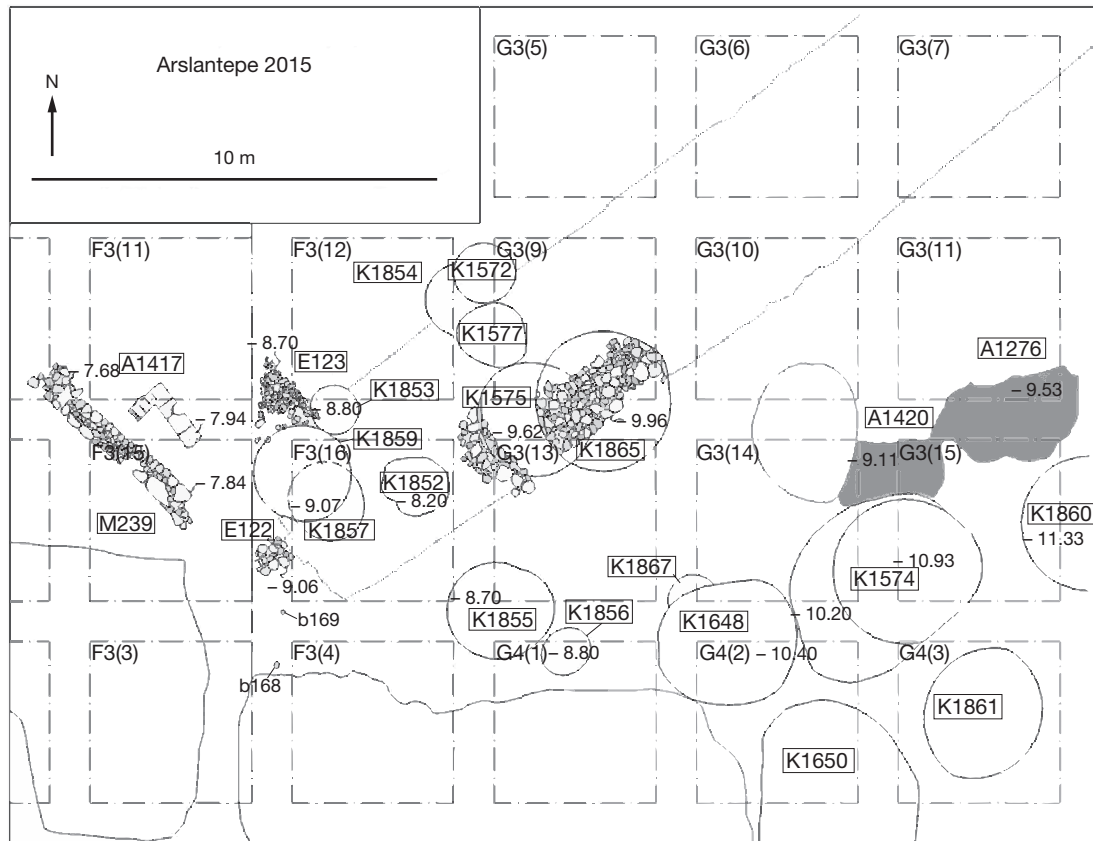


Fig. 3. — Arslantepe, level IIIB. Credits: G. Liberotti, © MAIAO.

which appeared in three small fragments, the other bones are fairly intact. They are mostly portions of legs and wings and they do not present particular fragmentations, such as those due to food preparation. Even if it is very plausible that the bones belonged to a single specimen, there is still some uncertainty. Indeed, the two tarsometatarsi surely belonged to a single male specimen, while it cannot be excluded that the other remains could also stem from other individuals. Considering this and after comparisons, medullary bone analysis was not taken into consideration. However, we do not exclude the possibility that further future analyses might shed new light on the result here presented.

When possible, bones measurements were taken following von den Driesch (1976: 103-129). Only one of the two tarsometatarsi was measured, at least concerning its maximum length (GL). As said, the morphology of the two tarsometatarsi allowed us to state, with a certain margin of confidence, that they belong to the same individual and that this was an adult male. The spurs are in fact rather developed, reaching over one-third of the length of the tarsometatarsus (Table 1).

Looking for comparisons, we should first of all consider that when dealing with osseous material it is sometimes hard to distinguish well-contextualized and stratified finds from intrusive remains. This is especially clear when considering that most of the examples come from multi-phases settlements excavated more than 40 years ago. In any case, from an osteometrical point of view, the Arslantepe rooster is smaller than

the average of the examples found in the Euphrates region, as at Lidar Höyük and Korucutepe (Boessneck & von den Driesch 1975: tab. 29; Kussinger 1988: 183; Table 2). It should be also noted that the chickens of Lidar Höyük were in part larger than those of Korucutepe. Broadening our horizons, they were also bigger than examples found for instance in northern Iran, at Takht-i Suleiman (Steber 1986: tab. 48) and Bastam (Krauss 1975: tab. 34). In any case, bones of this size fall in the lower range of the Hellenistic domestic chicken of Maresha (Perry-Gal *et al.* 2015: tab. S1) and those from the Byzantine period at Sagalassos (De Cupere *et al.* 2005). Furthermore, they are all in the medium range of the values summarized by Thesing (1977: tab. 6-9) for remains of domestic chickens from the Roman period and the Middle Ages.

The size of the tarsometatarsal spurs of the specimen from Arslantepe precludes their attribution to any local wild Phasianidae reported among the birds used as food resources (Katabiar 2019). This is also confirmed by the lack of any further visible morphological and macroscopical evidence for the distinction of this species and association with the taxonomic family (Tomek & Bochenski 2009; Masaki *et al.* 2016). The chukar, *Alectoris chukar* (J.E. Gray, 1830), the grey partridge, *Perdix perdix* (Linnaeus, 1758), the black francolin, *Francolinus francolinus* (Linnaeus, 1766), and even the see-see partridge, *Ammoperdix griseogularis* (Brandt, 1843), indeed show much smaller dimensions (Johnsgard 1988). Only the size of the pheasant could more closely resemble one of the bones from Arslantepe. But it seems that the common pheasant,





FIG. 4. — Arslantepe, tarsometatarsi (left and right) of rooster from level III B. Photo credits: R. Ceccacci, ©MAIAO. Scale bar: 3 cm.

*Phasianus colchicus* Linnaeus, 1758, did not belong to the primeval ornithofauna of the region. Indeed, in its expansion to the West the natural spread of this species was still limited to north-eastern Anatolia (Hill & Robertson 1988). In their westernmost distribution, pheasants of the *colchicus* taxonomic group were in fact originally confined to the Transcaucasian region between the north Caucasus and the Caspian Sea coasts (Arrigoni degli Oddi 1929; Ghigi 1968). The first reports of *P. colchicus* in the western oecumene come from a few archaeological sites in Bulgaria and are dated not prior to the Chalcolithic Age (c. 5530-5480 BC) (Boev 1997; Masseti 2002).

The very pronounced tarsometatarsal spurs of the Arslantepe collection recall those of capons. Despite the fact that capon bones have always been the subject of discussions among scholars (Peters 1997: 54) and that their presence in the Iron Age seems also rather unlikely, the practice of castration cannot be ruled out *a priori*. In this framework, it should be noted that the spurs begin to appear as protuberances on the legs of roosters towards the 5<sup>th</sup> month (Habermehl 1975: 181). Our individual shows how well-developed the spurs were, indicating that the specimen was certainly an adult. With regard to the tarsometatarsus, it has been noted that the Arslantepe rooster had rather short legs compared to the size of those from Korucutepe (Table 2). However, the specimen does not show cut marks or other traces on its bones that could indicate the consumption of its meat by human beings. This is further proved by the fact that its osteological fragments have all been found in reciprocal connection and undamaged. So the main question is: was it perhaps an animal kept in captivity for breeding purposes? Or considering its rarity and exoticism, could it be a specimen destined for exhibition? Indeed, collecting allochthonous ani-

TABLE 1. — Measurements of the Arslantepe rooster according to von den Driesch (1976: 103-129). Measurements are all in mm. Abbreviations: **Bd**, breadth of the distal end; **BFd**, breadth of distal facet; **BG**, breadth glenoid; **Bp**, proximal breadth; **BT**, breadth distal troclea; **DAPp**, proximal antero-posterior diameter; **Dd**, depth of the distal end; **Dic**, diagonal cranial; **Dp**, proximal depth; **GL**, greatest length; **SC**, smallest breadth of the corpus; **SD**, smallest breadth of diaphysis; \*, approximate measurement.

Arslantepe context		<i>Gallus gallus</i> L. Measurements						
G3(15) 8b α	scapula	GL	Dic	BG				
		64.8	5.8	11.2				
G3(15) 8b α	humerus	GL	Bp	Dp	SC	Bd	BT	
		64.2	18.3	11.1	5.8	16	15.1	
		GL	Bp	DAPp	SD	Bd	BFd	
G3(15) 8b α	radius	57.1	6.1	5.9	—	6.8	4	
		GL	Bp	Dp	SC	Dd	Bd	
G3(15) 8b α	ulna	65.3	9.7	8.5	5.4	10	7.3	
		GL	Bp	Dp	SC	Dd	Bd	
		—	17	12.6	4.9	—	—	
G3(15) 8b α	tibiotarsus	70*	—	—	—	14	11.2	
G3(15) 8b α	femur	70*	—	—	—	14	11.2	
G3(15) 8b α	tarsometatarsus	63.2	13.6	11.1	—	15	9.9	
G3(15) 8b α	spur	22.6	—	—	—	—	—	

TABLE 2. — Bones measurements of the roosters from Arslantepe, Lidar Höyük and Korucutepe according to von den Driesch (1976: 103-129). Measurements are all in mm. Abbreviations: **Bd**, breadth of the distal end; **Bp**, proximal breadth; **GL**, greatest length; **SC**, smallest breadth of the corpus; **SD**, smallest breadth of diaphysis; \*, approximate measurement.

<i>Gallus</i> sp.	Measure	Arslantepe	Lidar Höyük	Korucutepe
scapula	GL	64.8	67	—
	GL	64.2	76-65	60.2
	Bp	18.3	20.5-17.2	—
	SC	5.8	7.5-6	5.3
	Bd	15.7	16.2-13	12.2
radius	GL	57.1	66.5-59.5	—
	GL	65.3	70-66	—
ulna	GL	65.3	70-66	—
	GL	70*	92-72	64.0-52
tibia	SD	4.9	6.2-5	—
	Bd	6.8	12-9.8	—
tarsometatarsus	GL	63.2	91-71	84.5
	Bp	13.6	15.5-11.5	15
	Bd	14.7	15.5-12	14.2

mals of various kinds was a common practice among ancient rulers. Indeed, the exotic zoological species kept in the royal menageries represented authentic status symbols that underscored the affluence and social position of their owners, while the possession and display of rare animals was considered a sign of prestige and power.

## THE DISPERSAL HISTORY OF CHICKEN IN THE WIDER REGION

The red junglefowl, *Gallus gallus* (Linnaeus, 1758), is not indigenous to Turkey. It is regarded as the main progenitor of all current domestic chickens, which are scientifically classified as logically belonging to the same species (Wong 2004). In fact, it makes no sense to give the significance of subspecies, or even of different species, to the domestic forms derived from the same unique wild ancestor.

Spreading from the Indian subcontinent to Indochina and the Indonesian archipelago, *G. gallus* populates both the monsoon jungles and the equatorial forests, as well as the green areas of the anthropogenic environments (BirdLife International 2016). The chromatic and morphological variations that this species presents in different geographical areas are very marked, particularly in males. Since 1992, these birds are all commonly called *bankiva*, although properly speaking this term only refers the junglefowl of Java. *Bantam* is another epithet to indicate numerous dwarf breeds, derived from an ethnic human group native to the namesake locality of Java. Some studies have placed the beginning of its domestication in the Neolithic of northern China, but contrary to what Xiang *et al.* (2014) claimed, it is not yet clear when the first domestic chickens actually appeared there (Eda *et al.* 2016). The research, however, suggests that wild junglefowl – mainly due to the absence of adequate environmental parameters – were a rare presence in central and northern China, assuming a likely human-mediated import of animals from south-eastern Asia (Peters *et al.* 2016). Domestic breeds of junglefowl occurred in India as early as 3200 BC (Watson 2002). A few artefacts possibly representing chickens are known from the Mohenjo Daro civilization in the Indus Valley (Pakistan). They include, among others, a clay figurine dated to c. 2700 BC (Brooklyn Museum, New York), and two seals (2500-2100 BC). It seems probable that chickens entered the Near East spreading slowly across Iran (3900 BC) into Turkey (2900-2400 BC), Syria (2400-2000 BC), and Jordan (1200 BC) (Table 3). Based upon textual evidence, the red junglefowl was known in Mesopotamia by the time of the Third Dynasty of Ur (2113-2006 BC) (Heimpel & Calmeyer 1972: 487, 488; Salonen 1973: 154).

It might be speculated that the spread of domestic chickens occurred via nomadic populations: this would account for instance for their appearance in Iran and Turkey at early dates. Despite the fact that the involvement of nomadic people in the spread of this species is hardly demonstrable in this period, a similar diffusion can be clearly traced when dealing with the translocations of junglefowl over ocean distances, such as the examples brought to Marianas Islands from the Philippines can show (Oustalet 1895; Crawford 1993; Heaney *et al.* 1997; Masetti & Van der Mije 2014).

In Iran, evidence of the chicken is reported from Tepe Yahya with one fragment in deposits dated to 3900-3800 BC and a larger sample from deposits dated to 1000 BC (Meadow 1986). In Turkey, chicken bones have been reported in the faunal samples from Hayaz Höyük (2900-2400 BC) (Buitenhuis 1985). Other finds are reported as said at Lidar Höyük (Kussinger 1988: 183-185), while evidence dating back to the Bronze Age comes from Yarikkaya, in Central Anatolia (2600-2300 and 1500-1200 BC) and Korucutepe (1800-1600 BC) (Boessneck & von den Driesch 1975: 120; Boessneck & Wiedemann 1977). The introduction of the species into Anatolia from the East is also documented between the end of the 2<sup>nd</sup> and the beginning of the 1<sup>st</sup> millennium BC. *Gallus* bones are also reported from Boztepe in the Upper Tigris,

where a chicken was identified in the Iron Age levels (Parker *et al.* 2002: 56-58). Despite the fact that relative findings became more frequent from this period onwards, at Kinet Höyük domestic fowl, chicken in particular, do not appear until the later phases of the Iron Age (Kabatlar 2017). Faunal remains from Ziyaret Tepe (ancient Tishkan), a Neo-Assyrian site in southeastern Turkey, include three chicken elements (Matney *et al.* 2011; Greenfield *et al.* 2013).

From Anatolia and Mesopotamia, the species would have been imported into Syria and the Levant. In Syria, osteological remains of the species are reported in faunal assemblages at Tell Sweyhat (2400-2000 BC) (Buitenhuis 1983) and at Tell Hadidi (2000-1400 BC) (Buitenhuis 1979). Three chicken bones are reported from Tell Mishrifeh (ancient Qatna), one each from the Middle Bronze Age, Late Bronze Age, and Iron Age (Vila & Gourichon 2007). As far as is presently known, the earliest chicken in Israel is a single bone from the Middle Bronze Age III (1650-1550 BC) levels at Shiloh (Hellwing *et al.* 1993). However, it should be considered that the massive spread of chicken into the Near Eastern region does not occur before the Persian time in the 6<sup>th</sup>-5<sup>th</sup> century BC (Lindner 1979).

## CHICKENS CONQUERING THE WEST

The discovery of the *Gallus gallus* remains at Arslantepe, in an archaeological context dated to the very beginning of the 1<sup>st</sup> millennium BC, seems in a way to anticipate the introduction of the bird in the western occumene.

Domestic junglefowl spread rapidly into the Mediterranean world, where we find them already documented in the island of Crete from around the middle of the 2<sup>nd</sup> millennium BC (Watson 2002). From the 9<sup>th</sup> century BC, chicken bones have been discovered in Eleftherna on Crete (Vila 1994; Nobis 1998, 1999, 2003) and Kition on Cyprus (A. Gardeisen, pers. com.).

According to Watson (2002), these birds were already present as cage animals in ancient Greece. Although they were unknown to Homer and Hesiod (Pollard 1977), chickens appear on Greek coins of the town of Himera in Sicily before 842 BC (Thompson D'Arcy 1895), and in Ephesus in 700 BC (Watson 2002). There, and on the Greek mainland, they may have been introduced from Persia and probably entered Italy through Greek colonies shortly thereafter (Wood-Gush 1985). Not by chance, in fact, the rooster was described by Aristophanes (*Aves*, 483) as a "Persian" bird. The oldest securely identified remains of the species so far available in Italy would be contemporary to its first appearance in the Greek coin iconography. In fact, chickens were imported in the course of the Iron Age (De Grossi Mazzorin 2005; George *et al.* 2017). As far as is presently known, the first bones were uncovered by the excavation of the site of Monte Cucco (Castel Gandolfo, Rome), in central Italy, and dated to the end of the 9<sup>th</sup> or beginning of the 8<sup>th</sup> century BC (Bartoloni *et al.* 1987; De Grossi Mazzorin 2005; Corbino *et al.* 2018, in press). While the osteological evidence of



domestic junglefowl becomes more common after this date, they remain rare outside of ritual and funerary contexts in central Italy until the Hellenistic period. In northern Italy, the move to the quotidian consumption of chicken may have occurred slightly earlier than in Etruria (George *et al.* 2017).

In Etruscan culture, chickens still seem to be regarded more as exotic rarities, representing authentic status symbols that underscored the affluence and social positions of their owners. They were not yet used for food purposes as they were later in Roman times. This can be seen, for example, in a floor mosaic with ducks and sea life, in which a wildcat – possibly of the Asian subspecies *Felis silvestris ornata* Gray, 1832 (Masseti, in press) – is catching a hen, from the House of the Faun at Pompeii during the 1<sup>st</sup> century AD (Museo Archeologico Nazionale, Napoli); or in an *opus vermiculatum* fragment with the same subject, from the late Republican era, dated to the first quarter of the 1<sup>st</sup> century BC (National Roman Museum – Palazzo Massimo, Rome). The hens portrayed in both of these mosaics show the unmistakable phenotypic characters of the Middle and Far Eastern junglefowl or one of its oldest domestic breeds, such as the *bankiva* (Ghigi 1968; see also Giavarini 1983). There are even several famous mosaics depicting rooster fights, like the one from Pompeii, referred to the 1<sup>st</sup> century BC (Museo Archeologico Nazionale, Napoli). According to Toynbee (1973), in Italy fighting junglefowls were kept for sport as early as the 2<sup>nd</sup> century BC, as indicated in Lucilius' words on the victor rooster that struts proudly along, rising on tiptoe as it goes (Marx 1904: 22, 300, 301). The appearance of *G. gallus* in Etruscan decorative contexts seems to be more motivated by aesthetic and ornamental needs than the real appreciation of its domestication, not unlike other wild birds that were kept in captivity in the patrician houses for recreational purposes.

On the other side of the Mediterranean, the oldest bones of these birds have been documented in the Iberian Peninsula from the first half of the 8<sup>th</sup> century BC in sites with clear connections to the Phoenician world, such as Castillo de Doña Blanca in Cadiz (Hernández Carrasquilla & Jonsson 1994), and they were also found at Toscanos y Cerro de la Tortuga, in Malaga and dated to the 7<sup>th</sup> century BC (Hernández Carrasquilla 1992; Albizuri Canadel *et al.* 2020).

## CONCLUSIONS

So, why did chickens have this success? A first observation regards the ease of their breeding. They do not require special work to contain them, do not travel long distances or run and are not able to make long flights. They were allowed to roam freely between the houses of the villages. They do not require much effort, even children could take care of them.

What was the role of the chicken in the subsistence system? They were a locally maintained inexpensive protein resource. Chicken meat production is two to three times more efficient than meat production from pigs, which is in turn two to three times more efficient than cattle and domestic caprine (Redding 2015). It essentially does not need to be fed except

TABLE 3. — Occurrence and spread of domestic junglefowl *Gallus gallus* (Linnaeus, 1758) from the Near East to the Western world.

Date (BC)	Site	Reference
3900-3800	Tepe Yaha (Iran)	Meadow 1986
2900-2400	Hayaz Höyük (Turkey)	Buitenhuis 1985
2600-2300	Yarikkaya (Turkey)	Boessneck & Wiedemann 1977
Early Bronze Age	Lidar Höyük (Turkey)	Kussinger 1988
2400-2200	Tell Sweyhat (Syria)	Buitenhuis 1983
Late 3 <sup>rd</sup> millennium	Tall al'Umayri (Jordan)	Peters <i>et al.</i> 2002
2000-1400	Tell Hadidi (Syria)	Buitenhuis 1979
Middle Bronze III (1650-1550)	Shiloh (Israel)	Hellwing <i>et al.</i> 1993
1800-1600	Korucutepe (Turkey)	Boessneck & von den Driesch 1975
Hittite Empire 1200-900	Kaman-Kalehöyük (Turkey) Hesban (Jordan)	Hongo 1993 LaBianca <i>et al.</i> 1990
1000-850	Arslantepe (Turkey)	Present study
Iron Age (1 <sup>st</sup> millennium)	Boztepe (Turkey)	Parker <i>et al.</i> 2002
900-600	Tall Seh Hamad (Syria)	Becker 2008
9 <sup>th</sup> -8 <sup>th</sup> century	Boğazköy-Büyükkaya (Turkey)	von den Driesch & Pöllath 2004
End of the 9 <sup>th</sup> -8 <sup>th</sup> century	Monte Cucco (Italy)	Corbino <i>et al.</i> 2018
Late Assyrian (862-611)	Ziyaret Tepe (Turkey)	Greenfield <i>et al.</i> 2013
Late Phrygian (550-330)	Gordion (Turkey)	Zeder & Arter 1994

with the waste of agricultural production and the remains of food. They also require a small amount of water, less than the other domestic animals. Domestic fowls practically provide continuous nourishment, considering their short reproductive intervals and prolific nature and, above all, the fact that they produce eggs almost seamlessly for most of the year. Indeed, quoting one of the most popular sayings of the Vaudeville theater (Adam 1977: 9): “chicken is the only animal that can be eaten before it is born and after it dies”.

To conclude, why is the discovery of the chicken remains from the Iron Age levels at Arslantepe relevant to this issue? Its appearance at the very beginning of the 1<sup>st</sup> millennium BC conforms well with the dispersal history of chicken known up to now, considering the arrival of the species in south-eastern Anatolia at around the mid-2<sup>nd</sup> millennium BC and its subsequent spread at the turn of the new millennium. The osteological analysis of the specimen from Arslantepe shows us that the adult animal was probably kept in captivity. It was found with fairly intact bone portions all gathered together, maybe as a sign of the fact that it was kept in a cage and was certainly used for purposes other than those specifically related to direct food consumption (Becker 2008; Grigson *et al.* 2015). Actually, despite the evidently wide spread of the species from east to west during the 2<sup>nd</sup> and early 1<sup>st</sup> millennium BC, it is not possible to ignore the fact that chicken remains have always been very limited in their quantity and that, as said, domestic junglefowl became popular in the context of daily diet only later, during the Hellenistic and the Roman periods.

With this in mind, it is possible to assume that the chicken still played a sort of symbolic role as exotic rarity at the beginning of the 1<sup>st</sup> millennium BC. The remains of exotic animals, such as elephants, lions, leopards and even cheetahs are attested, although sporadically, at Arslantepe over the centuries (Bökönyi 1985, 1993; Siracusano 2012). They certainly testify to practices of self-glorification attested at the site, stressing once again that some species were not necessarily considered as food resources only (Bartosiewicz 2010: 125, 126; Siracusano & Bartosiewicz 2012: 114). In the specific context of the beginning of the 1<sup>st</sup> millennium BC, it should be noted that also some fragments of Asiatic elephants (*Elephas maximus* Linnaeus, 1758) have been found (Bökönyi 1985). Moreover, the presence at the site of exotic objects and artworks should also be considered, such as some finely made ivory, distinctive imported or locally imitated bone and bronze material. These further testify to the participation of high-ranking individuals in a wider scenario of interculturality, exchange and globalism (Manuelli & Pittman 2018). In conclusion, the discovery of the rooster at Arslantepe, in the context of the flourishing Iron Age societies, can be seen as a practice of wealth display probably associated with the emerging new high-status ruling class at the site.

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