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Short fieldwork report

Human remains from Porphyreon (Jiyeh), Lebanon, 2004–2012

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The ancient town/big village of Porphyreon (Jiyeh) is an archaeological site situated approximately 14km north of Sidon and 8km west of Chhîm (33°39′52′′N, 35°25′ 8′′E) at the coast of the Mediterranean Sea. It consists of a residential quarter and a Christian basilica in the southern part of the settlement as well as the necropolis and pottery production center on its northern outskirts (33°40′3′′N, 35°25′9′′E, **Figure 1**). The archaeological excavations conducted on the site between 2009 and 2014 by a team from the Polish Centre of Mediterranean Archaeology of the University of Warsaw have established a date for its occupation from the Iron Age II until at least the mid-7th century CE (Waliszewski & Gwiazda 2015).

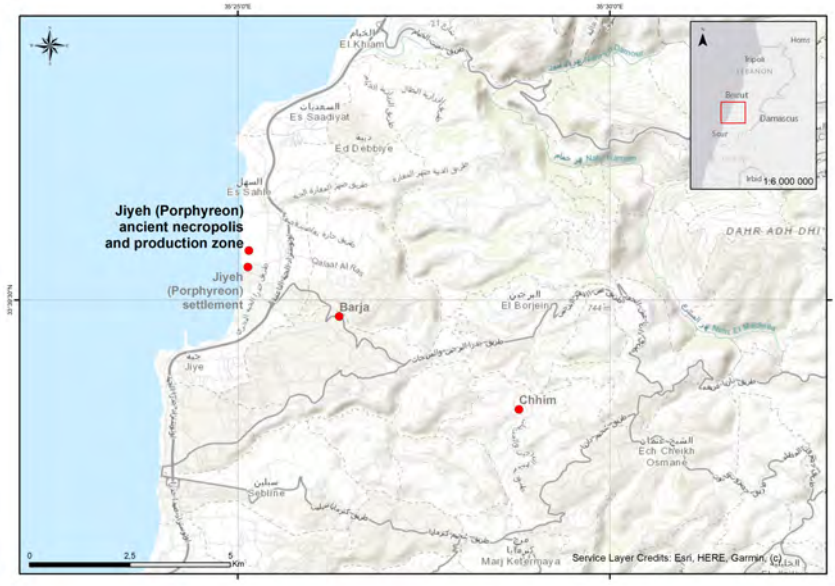

Figure 1. Map showing location of Jiyeh. Drawing by J. Chyla.

Salvage excavations conducted on the site in 2004–2005 and in 2012 uncovered a necropolis with 27 tombs representing simple rock-cut graves, loculi tombs and chamber tombs. The construction of a tourist resort resulted in the destruction of many of the burials but most of them had been previously documented. Cippi, steles and sarcophagi allow for dating to the turn of the 3rd century BCE and the 1st to the early 2nd century CE (Gwiazda 2013). The presence of a Late Antique cemetery on top of earlier remains was also noted. The human remains studied in the present paper

Figure 2. Plan of the settlement and the necropolis at Jiyeh. Drawing by M. Puszkarski.

were recovered from the Roman and Late Antique tombs located in the northern part of the necropolis. Unfortunately, due to the salvage character of the excavations and secondary character of retrieved human bone assemblages, a precise dating of these remains is impossible.

Human remains from Jiyeh were recorded using standard guidelines (Buikstra & Ubelaker 1994) with some modifications (Sołtysiak et al. 2019). No articulated skeletons were present at the site and human remains were not only disarticulated, but usually also strongly fragmented, eroded and affected by several taphonomic agents, including rodents (**Figure 3**), which is typical for bodies decaying in an empty space (Sołtysiak & Fetner 2017). In total, 28 burial contexts (graves, loculi, sarcophagi) containing bone fragments were identified, but in some cases there were just unrecognizable tiny pieces and in most cases the number of identified elements was low (less than 20). Only in two contexts were relatively large assemblages of human remains found for which the minimum number of individuals (MNI) was higher than 3. These contexts are 2004 grave I (MNI=12, including 7 adults) and 2004 sector A area II context 7 (MNI=16, including 9 adults).

Reliable sex and age-at-death assessment was not possible in most cases and observation of pathological conditions was compromised by the state of preservation. However, the sample size is sufficient to check the frequency of elements from various parts of the skeleton in different locations, allowing some insight into the post-depositional histories of specific contexts (cf. Sołtysiak & Fetner 2017). Three subsets of human remains from Jiyeh—Jiyeh 1 (all minor assemblages), Jiyeh 2 (grave I discovered in the season 2004) and Jiyeh 3 (sector A area II context 7, also from the season 2004)—have been compared with human remains from nearby Chhîm (Sołtysiak & Waliszewski 2021) and a reference complete skeleton. For every subset the minimum number of elements (MNE) has been calculated for 34 parts of the skeleton (see **Table 1**) and then the MNE patterns were compared using correspondence analysis (CA). Only elements from adult individuals were included, to avoid bias due to difference in size and mineralization degree.

Figure 3. Rodent tooth marks on a bone fragment from Jiyeh. Photograph by A. Sołtysiak.

Table 1. MNE values for specific skeletal parts in three subsets from Jiyeh and Chhîm. When indicated (R/L), right and left side MNE values are summed up.

Acronym	Element	Jiyeh 1	Jiyeh 2	Jiyeh 3	Chhîm
CRV	Cranium: vault (R/L)	8	2	2	22
CRF	Cranium: face (R/L)	2	1	0	16
CRB	Cranium: base (R/L)	3	3	2	18
MAN	Mandible (R/L)	9	3	2	20
HYO	Hyoid	1	1	0	8
ATL	Atlas	1	3	0	10
AXS	Axis	1	3	0	12
CEV	Cervical vertebrae	1	2	1	9
THV	Thoracic vertebrae	1	1	3	11
LUV	Lumbar vertebrae	1	1	3	10
SAC	Sacrum	1	1	4	13
CLA	Clavicle (R/L)	3	2	3	22
SCA	Scapula (R/L)	2	2	2	21
STE	Sternum	0	0	0	7
RIB	Ribs (R/L)	1	3	1	19
ILI	Pelvis: ilium (R/L)	0	1	9	14
ISP	Pelvis: ischium and pubis (R/L)	6	1	17	18
HUM	Humerus (R/L)	6	2	8	21
RAD	Radius (R/L)	2	2	5	26
ULN	Ulna (R/L)	5	7	14	27
CAR	Carpals (R/L)	2	0	0	20
MCR	Metacarpals (R/L)	4	3	0	21
FP1	Finger phalangies I (R/L)	5	4	1	22
FP2	Finger phalangies II/III (R/L)	1	1	1	15
FEM	Femur (R/L)	5	5	18	25
PAT	Patella (R/L)	0	1	4	18
TIB	Tibia (R/L)	4	2	6	22
FIB	Fibula (R/L)	2	5	1	16
TAL	Talus (R/L)	7	9	4	22
CLC	Calcaneus (R/L)	10	6	3	19
TAR	Tarsals (R/L)	3	4	3	19
MTR	Metatarsals (R/L)	16	14	4	21
TP1	Toe phalangies I (R/L)	9	8	1	13
TP2	Toe phalangies II/III (R/L)	1	1	0	5

The CA biplot for MNE values (**Figure 4**) shows that the assemblage from Chhîm is close to the reference assemblage of complete skeletons. Only a few tiny or fragile elements (as carpals, sternum and especially toe phalanges) are less represented. However, all subsets from Jiyeh show completely different patterns of MNE distribution.

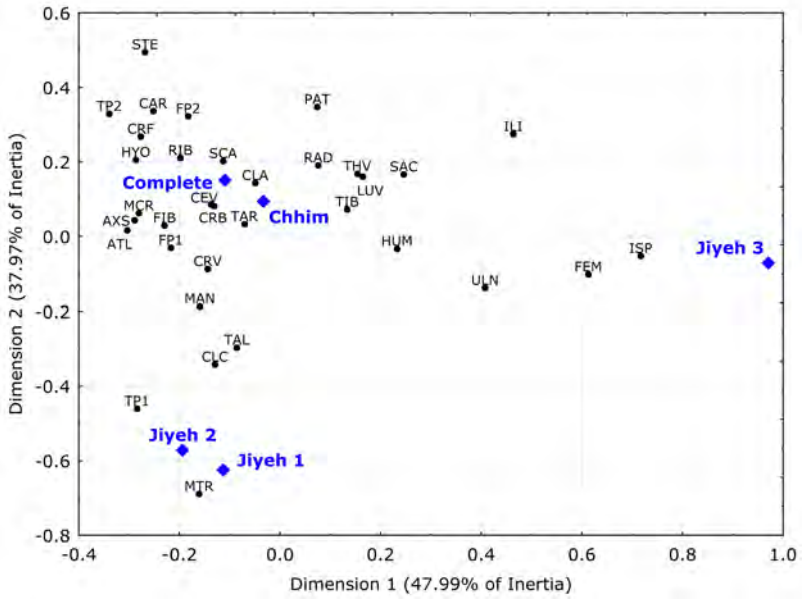

Figure 4. Correspondence analysis biplot for MNE values in three subsets from Jiyeh and comparative data. Drawing by A. Sołtysiak.

Two of them (Jiyeh 1 and Jiyeh 2) are very close to each other and are characterised by some clear surplus of distal leg elements (especially some tarsals and metatarsals). This may be the effect of removal of other skeletal elements to another place, so these contexts most likely represent primary burials that were at least partially post-depositionally altered and only the most distal leg parts remained overlooked during this activity.

A third context from Jiyeh is completely different and here some surplus of major bones (e.g., femora, humeri and *ossa coxae*) was noted. This is either the primary burial place that has been strongly affected by taphonomic agents or, what is perhaps more consistent with the observed pattern, a secondary burial where major elements taken from other contexts were laid down. It is likely therefore that some burials at Jiyeh (Jiyeh 1 and 2) were primary burial places, periodically cleaned up to make space for the new bodies, and the others (as Jiyeh 3) served as ossuaries housing selected elements taken from other contexts.

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