

**Supplementary material for: Archeometallurgical Study of a Renaissance Spearhead from
Northern Italy**

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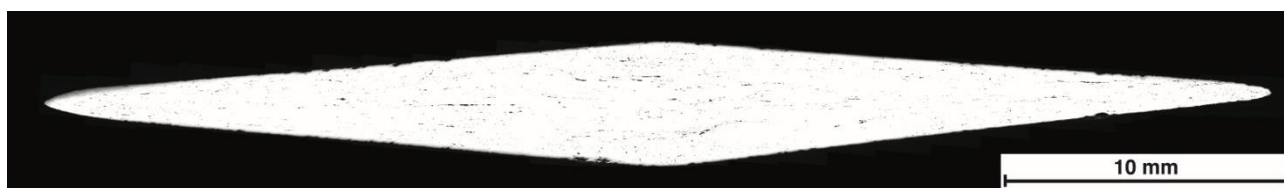


Figure S-1 As-polished S2 section (collage of micrographs with 50X magnification).

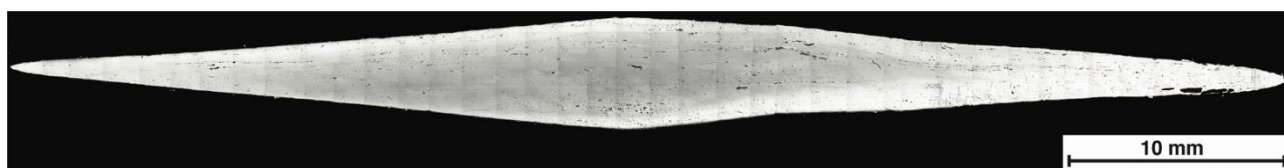
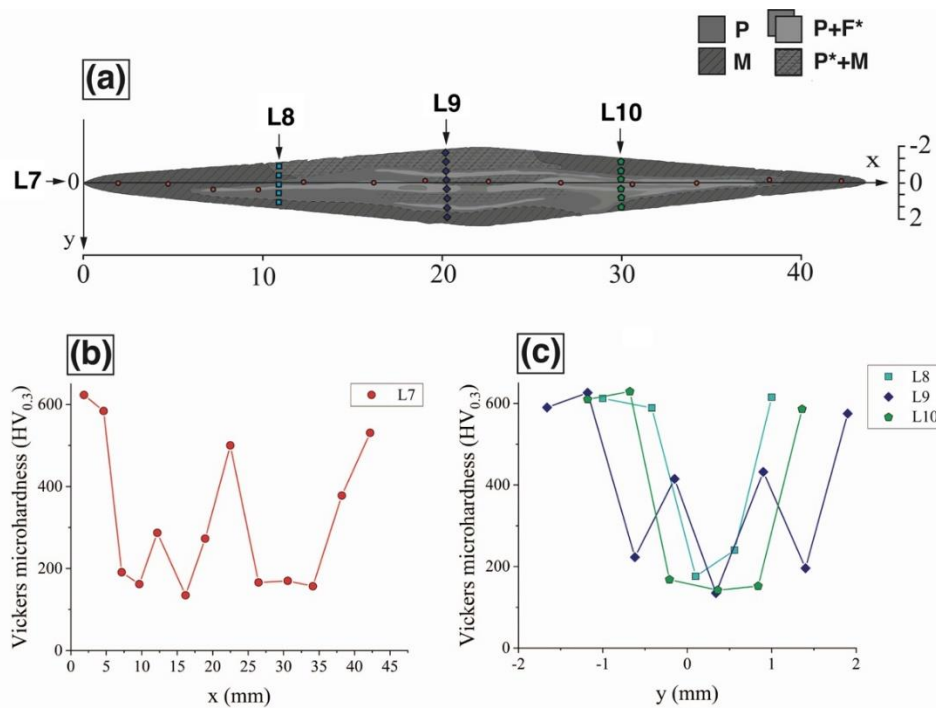


Figure S-2 As-polished S3 section (collage of micrographs with 50X magnification).



Figure S-3 As-polished S4 section (collage of micrographs with 50X magnification).

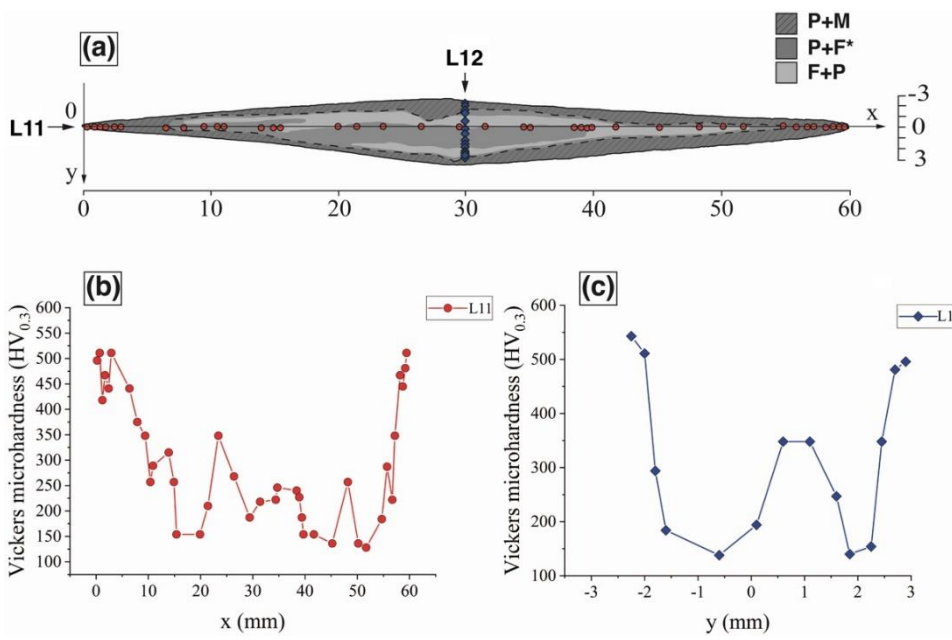
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22 **Figure S-4** (a) Distribution map of Vickers microhardness indentations on S2 section and resulting
23 measurements along (b) horizontal (L7) and (c) vertical (L8, L9, L10) lines.

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26 **Figure S-5** (a) Distribution map of Vickers microhardness indentations on S3 section and resulting
27 measurements along (b) horizontal (L11) and (c) vertical (L12) lines.

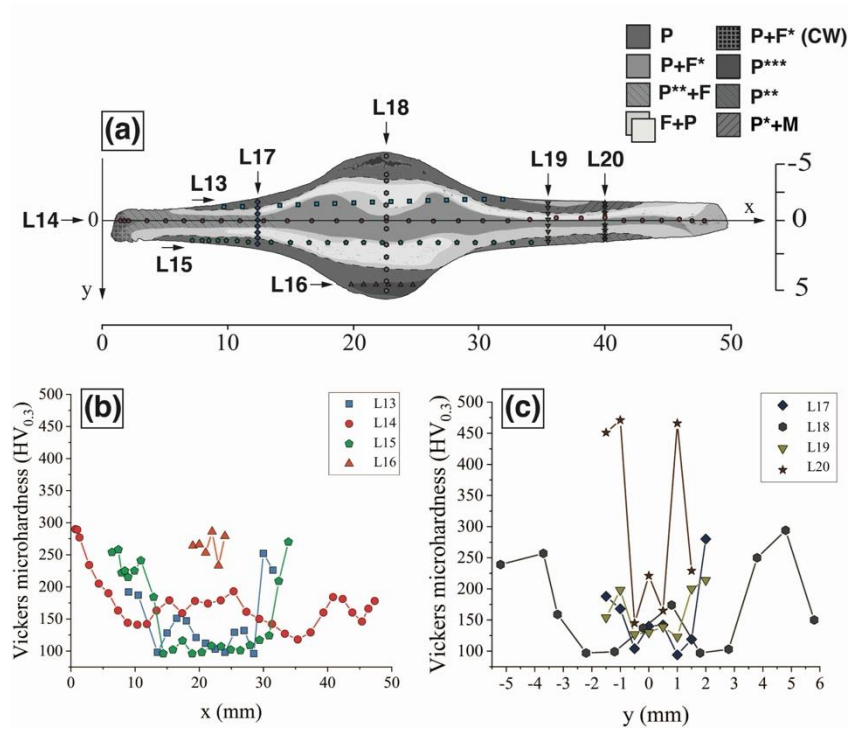


Figure S-6 (a) Distribution map of Vickers microhardness indentations on S4 section and resulting measurements along (b) horizontal (L13, L14, L15, L16) and (c) vertical (L17, L18, L19, L20) lines.

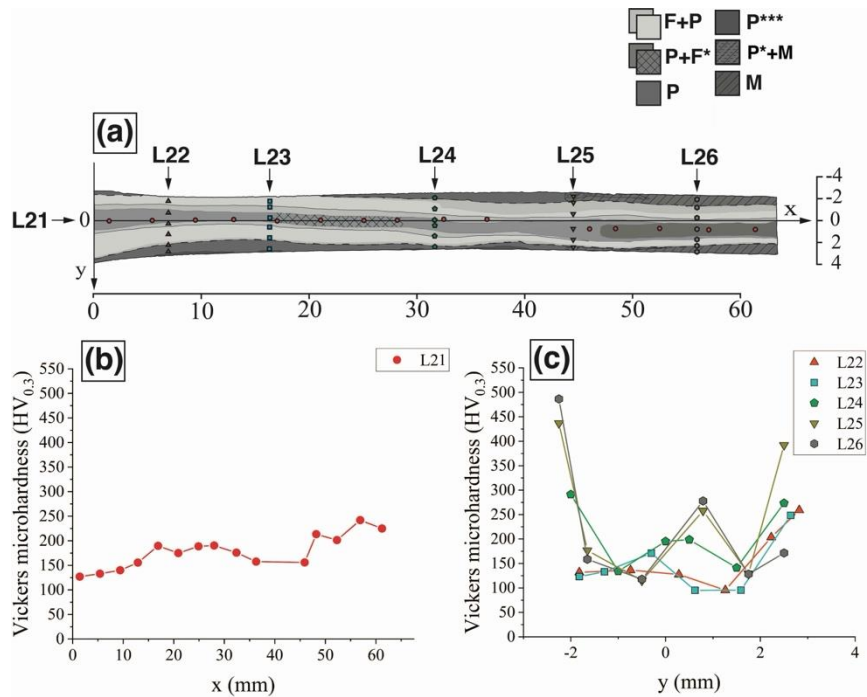
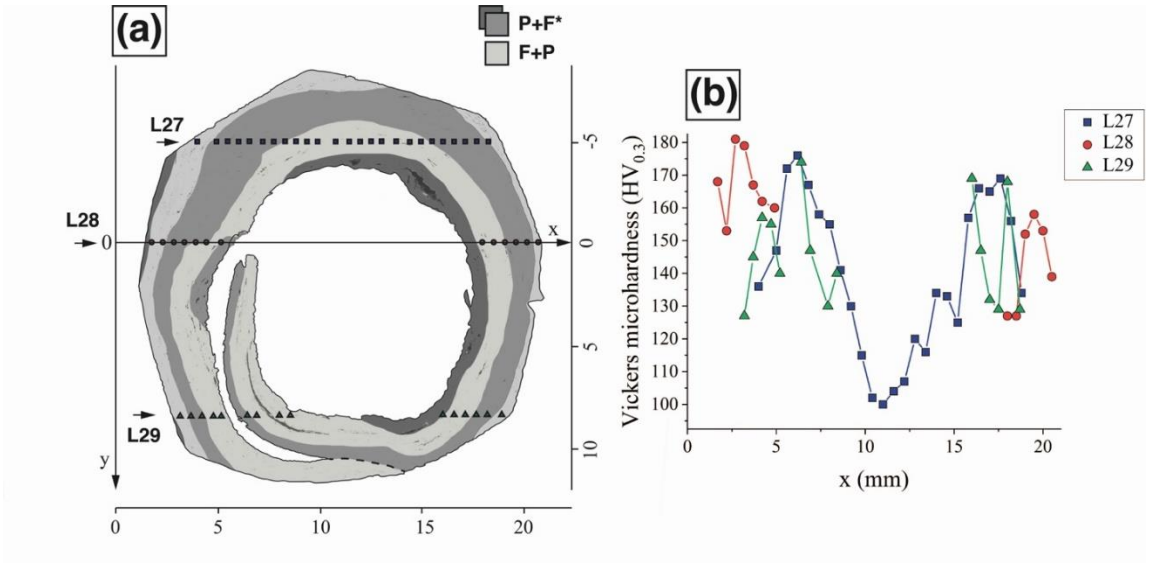


Figure S-7 (a) Distribution map of Vickers microhardness indentations on S5 section and resulting measurements along (b) horizontal (L21) and (c) vertical (L22, L23, L24, L25, L26) lines.

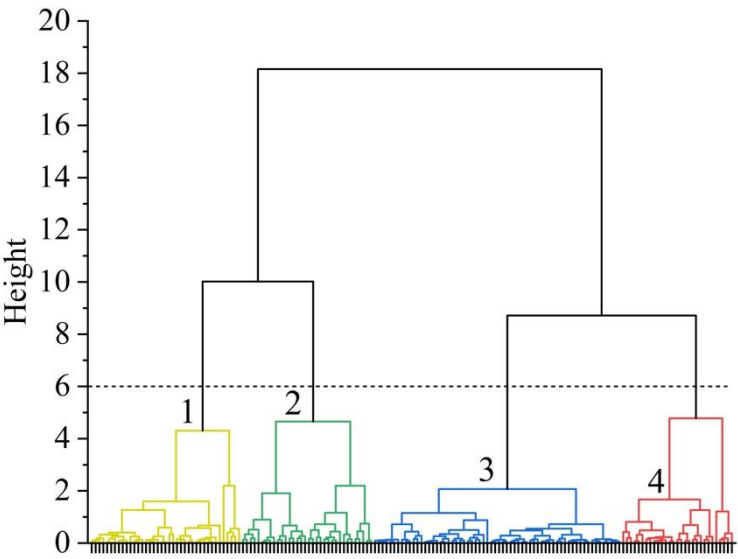
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38 **Figure S-8** (a) Distribution map of Vickers microhardness indentations on S6 section and resulting
39 measurements along (b) horizontal (L27, L28, L29) lines.

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42 **Figure S-9** Dendrogram plot resulting from

43 hierarchical clustering.

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48 **Table S-I** Vickers microhardness results (N=sample amplitude, Min=minimum value,
 49 Max=maximum value, $\bar{x}$ =mean value, s=sample standard deviation).

Section	Microstructure	N	Min	Max	$\bar{x}$	s
S1	F+P	12	122	160	149	11
S1	P+F*	22	177	385	261	68
S1	P+M	46	348	709	561	87
S2	P+F*	13	135	223	167	25
S2	P*+M	5	378	500	431	51
S2	P	5	240	287	267	24
S2	M	12	531	629	598	28
S3	F+P	10	128	154	146	10
S3	P+F*	28	184	375	266	61
S3	P+M	15	418	543	481	35
S4	F+P	46	94	159	120	19
S4	P	16	198	280	238	22
S4	P**	6	168	214	192	15
S4	P***	7	150	286	247	46
S4	P+F*	8	159	193	173	10
S4	P+F (CW)	5	266	290	279	10
S4	P***+F	7	141	234	174	10
S4	P*+M	5	439	471	455	13
S5	F+P	13	95	141	121	16
S5	P+F*	23	127	258	180	34
S5	P	5	204	291	261	34
S5	P***	5	242	257	249	6
S5	P*+M	5	392	487	428	44
S6	F+P	28	100	147	129	14
S6	P+F*	25	152	181	164	8