

Pultusk Academy of Humanities



ACTA ARCHAEOLOGICA PULTUSKIENSIA
Vol. IV

**Studies
on Disasters, Catastrophes and the Ends of the World
in Sources**

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PUŁTUSK 2013

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Proof-reading in English by Jo B. Harper, Jan Darasz & Joanna Popielska-Grzybowska
DTP by Jadwiga Iwaszczuk
Graphics by Jadwiga Iwaszczuk
Cover design by Jakub Affelski

Published with financial support
of the Polish Ministry of Science and Higher Education

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Publisher:
Pultusk Academy of Humanities
ul. Daszyńskiego 17, 06-100 Pułtusk
tel./fax (+48 23) 692 50 82
e-mail: rektorat@ah.edu.pl
Internet: www.ah.edu.pl

ISBN 978-83-7549-210-1

Realised on behalf of the publisher:
Przedsiębiorstwo Poligraficzno-Wydawnicze "Graf" – Janusz Janiszewski
04-663 Warszawa
ul. Błękitna 87A
tel. 501 376 898
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The Man-made Economic Disaster of Mid 12th Century BC and the Reconstruction (through Means of Experimental Archaeology) of the Military Technology that It Brought About

Introduction

The purpose of this paper is to review the archaeological evidence about warfare in the period during which the late Bronze Age society of the Greek world collapsed and was then transformed into the emerging societies of the Archaic Period. The Bronze Age Catastrophe or Collapse refers to the social, financial and cultural transformation of the eastern Mediterranean Basin which was destroyed by disasters whose nature is difficult to determine even today.¹ These catastrophes have been described by Richard Hope Simpson and Oliver Dickinson “by the end of LH IIIB almost all the great mainland centres (*sic*) had been destroyed by fire, several been deserted thereafter. The destructions seem to concentrate at sites where there were palaces or comparable large buildings, or fortifications.”² The factors which led to the end of Mycenaean civilisation were undoubtedly complex but are strongly connected to the overly centralised, highly specialised economy³ which never developed a broad-based flexible infantry response, thus leaving the bureaucratic Palatial States armies vulnerable to a variety of enemy military units, that were able to fight in shock formation, were more mobile and flexible, and were not reliant on horsemen or chariot-borne missile troops.⁴

The heavy palace-warrior aristocrats and champions evolved into a new form: from the emergence of the *polis*⁵ came the hoplite warrior and the phalanx formation. There seem to have been two main reasons for this development; one economic, the other political. The economic reason was the reopening of trade routes – the establishment of Greek colonies in the Aegean Islands and southern Italian islands increased prosperity, as well as the number of men able to afford armour and weapons, which previously was a sign of petty aristocracy.⁶

These two societies also gave rise to different types of warfare. The Mycenaean warrior of Late Bronze Age and the Archaic hoplite stand for the ideals of their society, its technology, morality in combat, tactics and aesthetics. Of course we can find a lot of similarities between these two types of fighters. The moral and ideological framework of the warrior is the Heroic Ideal as described by Homer (heroism, egoism, antagonism; and being braver and more noble than one's peers),⁷ even if sometimes, heroic realism was a matter

¹ R. DREWS, *End of the Bronze Age: Changes in Warfare and the Catastrophe ca. 1200 B. C.*, Princeton 1993, pp. 3-4.

² *Ibidem*, p. 21.

³ W.H. STIEBING, The End of the Mycenaean Age, *The Biblical Archaeologist* 43/1 (Winter, 1980), p. 17.

⁴ V.D. HANSON, The Status of Ancient Military History, *The Journal of Military History* 63/2 (Apr., 1999), p. 401.

⁵ *Ibidem*, pp. 401-403.

⁶ S. ANGLIM, Ph.G. JESTICE, R.S. RICE, S.M. RUSCH, J. SERRATI, *Fighting techniques of the Ancient World. 3000 BC-500 AD*, New York 2002, p. 17.

⁷ K.A. RAAFLAUB, Homeric Warriors and Battles: Trying to Resolve Old Problems, *The Classical World* 101/4 (Summer, 2008), pp. 482-483; H. VAN WEES, Kings in Combat: Battles and Heroes in the Iliad, *The Classical Quarterly New Series* 38/1 (1988), pp. 21-24.

of convention only.⁸ Armour ownership is limited to a closed circle of nobles⁹ and palace officials. In this sense, weapons and armour are a clear demonstration of social status.¹⁰

Both warrior types are the product of the strong culture of heavy infantry as traced throughout Hellenic history. This in turn denoted a developed urban life and the warrior's attachment to his ancestral land together with an obvious trend towards increased armour protection. This indicated a large investment both in research and in construction time. Moreover, it also meant the application of advanced productive technology – the use of appropriate materials and technical innovation in metallurgy for producing large metal plates. This tendency for full body protection demonstrated the inner need of the Greeks for martial superiority as conflict transformed into the art of war. Heavy armour makes the statement, "I stand my ground in the defence of my land and people."

The use of the same materials for armour manufacture in both eras, i.e. the bronze and the copper, was because of the inability to produce very large iron plates. Both the Late Bronze Age fighter and the Archaic warrior operated as walking ramparts, around which lighter armoured fighters engaged in combat. There was uniformity in equipment and tactics between various military detachments both in Archaic and the Late Bronze age battle, where the nobility played the leading role (the 'fluid' battle). Heavy armour implies powerful adversaries. These wars were primarily fought amongst Greeks who applied similar tactics and employed similar equipment (Greeks perhaps faced an entirely different style of warfare only in their conflict with the Persians). Powerful offensive weapons that were intended for breaking or piercing heavy armour were also employed such as axes and war-hammers.¹¹ From the above-mentioned points we derive that the fighting method during the two time periods remained the same and there was no substantial difference, neither with the rise of the hoplite phalanx.

Archaic Panoply and Mycenaean Panoply in Terms of Construction and Functionality

Both types of armour were the most advanced of their time. There was no technical knowledge outside the Hellenic World capable of producing these items. In both cases there was generalised usage of bronze¹² or copper.¹³ Around 1025 BC bronze started to be replaced by a previously rare metal, iron.¹⁴ In the Archaic era iron and steel were replacing bronze for most utensils and offensive weapons.¹⁵ Bronze was also used primarily for defensive weaponry, as there was a primary focus on defensive equipment.¹⁶ Of course there were some undisputable differences. The Mycenaean armour is more complicated because of its articulated components. It offers better protection but it also needs a lot of recourses

⁸ I.J.F. DE JONG, Convention versus Realism in the Homeric Epics, *Mnemosyne Fourth Series* 58/1 (2005), p. 20.

⁹ A.M. SNODGRASS, The Hoplite Reform and History, *The Journal of Hellenic Studies* 85 (1965), p. 122.

¹⁰ P. WARREN, The Defensive Armour of the Mycenaeans – Le armi difensive dei Micenei nelle figurazioni by Paola Cassola Guida, *The Classical Review New Series* 28/1 (1978), pp. 103-105.

¹¹ R. D'AMATO, A. SALIMBETI, *Bronze Age Greek Warrior 1600-1100 BC*, Oxford 2011, pp. 17-18.

¹² G. THOMSON, Bad Bronze, *The Classical Review* 58/2 (Dec., 1944), pp. 35-37.

¹³ O. DAVIES, The Chemical Composition of Archaic Greek Bronze, *The Annual of the British School at Athens* 35 (1934/1935), pp. 131-137.

¹⁴ I. MORRIS, Circulation, Deposition and the Formation of the Greek Iron Age, *Man New Series* 24/3 (Sep., 1989), p. 203.

¹⁵ S.C. BAKHUIZEN, Greek Steel, *World Archaeology* 9/2: *Architecture and Archaeology* (Oct., 1977), pp. 222-223.

¹⁶ WARREN, *The Classical Review New Series* 28/1 (1978), pp. 103-104.

for its construction. It weighs more, takes longer to manufacture and reduces mobility, but covers a larger area of the human body and therefore protects the wearer better.

If we take into account the large amounts of bronze arrow tips excavated at the sites of the Bronze Age palace complexes we understand that the use of massed archery in war requires heavy armour if it is to be countered. The articulated parts allow a great variety of armour in various shapes, and we have a large variety of designs adapted to the human anatomy. Mycenaean armour effectively covers the upper parts, negating shield use, and offers greater mobility. This is uncommon in Archaic and Classical hoplite armour as they required more flexibility. The use of a large ox-hide shield was no longer required. We can assume that this was necessary because of heavy bronze swords and pauldrons. A sword-fight would bore little resemblance to modern fencing. There would have been a preference towards using the edge to crush the armour rather than using the point, aimed at openings. The Mycenaean warrior presented – largely because of articulated armour plates – an “inhuman killing machine” trapped in a metallic shell. The non-anthropomorphic image of his armour showed a nightmarish/hellish figure for the enemy. The visual aesthetic of the Archaic hoplite is anthropocentric and followed the artistic concept of the time, which meant a tendency to worship the human form as human-faced god cults became more popular. The human body is aggrandised with the use of the warrior’s panoply. The armour demonstrated anthropomorphic features like the “triangular torso”, the imitation of chest anatomy and the usage of the abdominal arch and the “alba linea” in the armour decoration.¹⁷ The usage of all these features attempted to create the impression of an “ideal archaic body”. Everything was now closer to the common man’s level. The whole culture chose the mortal human body as its focal point, thus opening the road for the miracle of Classical Athens. Mycenaean armour hides the human form while Archaic Armour highlights it. The Archaic hoplite does not have pauldrons and this means that mobility is favoured over full protection. The Archaic hoplite can be viewed like a mobile metallic kouros (perhaps the mythic figure of Talos?) or as a naked shiny metal statue – an expression of the Heroic ideal of the nude. Let us note also that helmets gradually lost their rather bestial outlook. The appearance of decorative carvings transformed them into artwork which even tries to placate the gods of the Underworld. There were no scales in the early Archaic armour – an attempt to present the perfect human form. All accessories tied to imitate the human form. Greaves were distinctly right or left while Mycenaean greaves were identical – no right or left. The Mycenaean warrior expressed in his armour his static collectivistic society while the Archaic hoplite armour demonstrated social mobility. The Archaic panoply was a personal affair while the Mycenaean armour, because of articulated components, could adapt to different body types therefore was less individualistic.

Here we must note the importance of copper and bronze. To these ancient peoples they had metaphysical, almost divine qualities. The investment of the Archaic era statues with metal (bronze) parts elevated them to the level of divinity. Another interesting observation of the evolution of armour from the Bronze Age to the Archaic is the rise of the cult of Hercules from patron of the Doric tribe to a pan-Hellenic god. It would not be inappropriate to suppose that Archaic hoplites, encased in their bronze, anthropomorphic armour, were tapping into the strength of the deified hero while fighting to protect their society from danger. The atavistic memories of the palace societies collapsed and the calamities linked to it probably haunted the memories of the Archaic people. The sight of the metal encased (god-like) hoplite was a reassurance that all would be done so that it would never be repeated.

¹⁷ K. DIMITRIS, *Linothorax vs Bell Cuirass – Λινοθώρακας εναυτίον κωδωνόσχημου θώρακα*, *Army and Tactics Magazine-Περιοδικό Στρατοί και Τακτικές* 15 (June 2011), pp. 15-19.

Conclusions

The collapse of the palace societies obliges us to reflect on the inherent lack of human institutions when facing odds of a cataclysmic state and also the folly of the human belief that things with which we are comfortable with can last forever. The differences in weaponry between the two periods show us that Mycenaean society was characterised by a conservatism that made it so inflexible, that in the time of need it could not overcome the odds. In contrast, Archaic society, with its encouragement of mobility, colonialism, individualism, innovation and support for experimentation, left us all the tools that we need to survive as a species in times of hardship and even turn the odds in our favour. The Greek proverb about the inflexible oak and the flexible reed could not have been more appropriate.

Acknowledgments

KORYVANTES Association of Historic Studies would like to thank Armourer Mr. Dimitrios Katsikis (hellenicarmors.gr) for his dedication and perseverance of hard work that made the accurate reconstructions, which aided us greatly in our research and provided valuable information.

Association President Mr. Antonios Aliades whose tireless efforts and refusal to give up in the face of adversity made this project possible.

KORYVANTES Association of Historic Studies would like to thank SCA Packaging Hellas S.A., for the generous contribution that made the construction of the armour and consequently this study feasible.

The armour presented in this study was first presented in “Journées Gallo-Romaines St-Romain-en-Gal 2012”, held in Musée gallo-romain de Saint-Romain-en-Gal – Vienne, France. We would like to thank the Museum Authorities and Personnel for the hospitality and great assistance that made the KORYVANTES Association participation feasible.



Fig. 70. Reconstruction of Mycenaean Warrior Armour of Late Bronze Age Era (1300-1200 BC) from a Middle Eastern Colony. The Homeric weapon "Aksini" is based on an exhibit from the Kanelopoulou Museum in Athens. The shield is an interpretation from those depicted in Dipylon Amphora exhibited in the National Archaeological Museum in Athens and the Armour is based on an interpretation of the "Pylos tablets" and the newly discovered "Thebes Arsenal".

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Fig. 71. Reconstruction of an Archaic Period Hoplite Armour, from the Greek Mainland. The bell cuirass and grieves are based on exhibits from the Olympia Museum and the Corinthian helmet on an item found in Tarento – now exhibited in the Geneva Museum of Art. Association of Historical Studies KORYVANTES