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Laser-scanner Survey at Kong-e Yār ʻAlīvand. Research of the Iranian-Italian Joint Expedition in Kūzestān*

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Abstract: Between 2008 and 2010, the Iranian-Italian Joint Expedition in Kūzestān conducted research in the area of the modern town of Īda under the direction of the authors of this paper. The aim of the expedition was to acquire new data on the Parthian rock reliefs recognised up to now at Kong-e Azdar, Kong-e Yār ʻAlīvand and Kong-e Kamālvand by applying the most up-to-date technologies, namely the GPS survey and laser scanning. Indeed, despite the several studies conducted on these works, several aspects, such as the chronology of the represented scenes, their evolution and carving techniques, still need to be clarified.

A preliminary elaboration of the data acquired at Kong-e Yār ʻAlīvand allowed us to create a digital 3D model of the sculpted surface consisting of 2,467,745 points. The surface analysis conducted on this digital support revealed traces of an inscription on the upper part of the sculpted scene, which has been deeply eroded and was never reported in previous surveys, and still undetected iconographic details, which shed new light on the sculpted scene, usually interpreted as an investiture.

Key words: rock reliefs, Kong-e Yār ʻAlīvand, Kūzestān.

When I met Professor David Sellwood for the last time in 2006, in Florence, he was preparing a revision of a particular series of Parthian "provincial" issues with Alberto Simonetta. We spent almost the whole day looking at ruler portraits through magnifying lenses and, on that occasion, I asked him for his opinion on a project that I was at that time just starting to think about. My intention was to conduct field research in the area

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of the city of Izeh (ancient Mal-e Mir), where several Parthian rock carvings are located, with the aim of acquiring new information and data on their method of manufacture and interpretation. Needless to say, he warmly encouraged me to proceed and kindly gave me precious suggestions on the scientific relevance of these sculptural works. That research started in 2008, with the first campaign of the Iranian-Italian Joint Expedition in Khuzestan, and is still ongoing under the co-direction of myself – the corresponding author – and Jafar Mehr Kian.[1] We would like to honour Professor Sellwood by presenting some of the results of the research conducted at Hung-e Yar-i Alivand, where traces of an inscription unnoticed by previous surveys and new iconographic details have been detected on the surface of a well-known Parthian rock carving.

The Parthian carvings located in the area of the modern city of Izeh belong to the so-called group of rock carvings of ancient Elymais.[2] These works are of particular importance for two main reasons: they constitute the most outstanding group of carvings in Parthian Iran, and their individual characteristics set them apart from other sculptural works found in other regions of the Parthian Empire. The carvings dated to the AD centuries appear particularly unified because of their composition (in which an absolute hieratic frontality of the figures prevails), choice of iconographic themes (such as scenes celebrating the sovereign's victories or investiture scenes), and some figurative details (such as the clothing).

However, some carvings are not well understood because of their poor state of preservation, while their method of manufacture and interpretation have never been focused on in recent studies. Indeed, despite research being carried out by traditional methods, some aspects regarding their iconography, style and carving technique still need to be clarified, for the available documentation is limited to photographs or drawings which, even when of superior quality, do not allow for more in-depth examination.

Our project aimed to acquire new data on these carvings by means of modern technologies and methods, including architectural survey techniques: namely laser scanning and 3D modelling. This technology processes complex information by 3D digital models that are faithful and measurable representations of real objects. Given that 3D models of the carvings might be constructed on a scale of 1 : 1 (both graphically and in a digital medium), previously undetected details might be subjected to analysis. These observations are the result of objective measurements, verifiable by other observers using the same data: for this reason, the 3D surface analysis offers promise of considerable advance in the study of ancient sculptural works, while 3D digital models are innovative means for documenting and sharing both raw and elaborated data.

Three rock carvings in the area of Izeh, dated to the Parthian period, have been selected for this analysis, namely at Hung-e Yar-i Alivand, Hung-e Azhdar and Hung-e Kamalvand. The relief at Hung-e Azhdar is, for several reasons, the most important of them from the historical point of view: indeed, it shows a scene of homage or investiture

[1] The expedition operates within the framework of a Memorandum of Understanding signed by the Centro Ricerche Archeologiche e Scavi di Torino per il Medio Oriente e l'Asia and the Iranian Center for Archaeological Research. Other Institutions involved in the project are the University of Turin, Politecnico di Torino, and the Ayapir Cultural Heritage NGO.

[2] At present, 14 Parthian monuments are known to us in the region of Elymais (Mehr Kian 1997, 67–72; Mehr Kian 2011, 293–298).