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IL CRATERE A VOLUTE SU *HYPOKRATERIDION* DA TREBENIŠTE STUDI, RICERCHE ED INTERVENTI DI RESTAURO

ABSTRACT

The large krater in bronze found in 1930 in Tomb VIII of the necropolis of Trebenište (near Lake Ohrid in what is now Macedonia-FYROM), was the subject of a complex programme of study and restoration involving several specialists and qualified professionals in order to benefit from every opportunity to gather knowledge available during the krater's temporary stay in Italy. The artefact – a masterpiece of VI-century B.C. Greek toreutics - is indeed one of the extremely rare archaic kraters to have survived to this day (together with the other example found in the Tomb I of the same necropolis and now part of the collection of the Archaeological Museum of Sofia in Bulgaria, and the monumental krater discovered at Vix, in France). Among the rare artefacts belonging to this category, that of Trebenište is the only publicly known krater to be on a tripod.

In 2007, this precious artefact - which had never left the National Museum of Belgrade - was temporarily granted on loan, together with other archaeological finds, for the exhibition entitled "The Balkans. Ancient Civilizations between the Adriatic and the Danube" held at the National Archaeological Museum of Adria. For this occasion, the Direzione Generale per i Beni Archeologici [General Administration for Archaeological Assets] of the Mi.B.A.C. [Ministry for Cultural Assets and Activities], in agreement with the Direction of the National Museum in Belgrade, initially entrusted the specialists of the Soprintendenza Speciale per i Beni Archeologici di Roma [Special Authority for the Archaeological Assets] with protecting the work during its transportation to Italy, as well as with an intervention of 'aesthetic presentation' for the exhibition in Adria. Furthermore, a mandate was issued to both analyse the state of conservation of the work and prepare an accurate and articulated project for the successive restoration intervention (including even the reconstruction of the form). For this occasion, a series of scientific analyses were planned, contemplating an archaeometric study of the constitutive materials as well as an in-depth study of the ancient manufacturing techniques of archaic Greek bronze works.

Therefore, also thanks to the sponsorship of the CA.RI.PA.RO. Foundation of Vicenza, 2008 marked the start up of these various activities. An investigative campaign aimed at characterising the constitutive alloys was conducted on all parts and fragments of the krater, mostly by means of non-destructive techniques and portable instrumentation. The X-ray Fluorescence (XRF) analyses were carried out by the CNR-ITABC [Italian National Research Council-Institute for technologies applied to cultural heritage of Rome] while the Laser-induced breakdown spectroscopy (LIBS) was carried out by the CNR-ICCOM [Italian National Research Council- Institute of chemistry of organometallic compounds of Pisa]. These studies identified the ternary alloy the krater was made of, allowing successive experimentation based on the physical-chemical characteristics identified. In fact, by using an alloy of identical composition, some examples of horses - which adorn the neck of the original - were created reproducing

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them according to the ancient manufacturing techniques.

The presence of sand casting residues also allowed chemical, mineralogical, and petrographic analyses aimed at identifying the area of origins of the clay and, consequently, the presumed work-shop of production, which seems to have been located on the island of Aegina in the Saronic Gulf. These studies were conducted at the Department of Earth Sciences - University 'Sapienza' of Rome.

The state of preservation of the bronze, instead, was studied both by means of metallographic and scanning electronic microscope analyses carried out at the ISCR [Superior Institute for Conservation and Restoration of Rome], both by X-ray Diffraction of samples of patina carried out at the Institute of Chemistry of the University 'Sapienza' of Rome - Diffractometric Structural Chemistry Group Laboratory.

The acquisition of the 3D relief - carried out by FMW S.r.l (TV) - in addition to constituting documentation of the 'current condition' before the restoration, made it possible to plan the new form of support for the body of the vase, which is seriously incomplete. Indeed, only very few fragments of the basin of the krater are preserved, hence the connection between the hypocrateridion and the upper part is missing. All of the analyses confirmed the reciprocal pertinence between the neck with its handles and the tripod, making the creation of a new shape for the body, that would function as a support for the existing parts of the krater, necessary.

Accurate metrological and proportional studies were also conducted on the reference parameters used for the reconstruction of this form by comparing what was still available of the Trebenište krater with the direct measurement of the features of other coeval examples and, in particular, the kraters of Sofia and Vix (these phases of study and intervention were carried out by the Società DART in Rome).

Moreover, the recent restoration of the precious artefact from Trebenište - carried out in the Laboratories of the Soprintendenza Speciale per i Beni Archeologici di Roma - through the cleaning of the surfaces and the correct reconstruction of the shape, has regained both the interpretation of the original refinement of the decorative details and the re-establishment of formal and proportional balances that had been altered during the two previous reconstructions (the first during the 1930s and the other dating back to the 1960s).

Therefore, from a modern perspective of 'archaeological' research carried out on ancient artistic handmade artefacts, the entirety of the data presented in the various contributions prepared for this occasion highlight more intensely the vital value that targeted interdisciplinary studies are capable of doing. In fact, the in-depth analyses conducted for the restoration of the Trebenište krater have provided priceless information of purely historical, stylistic, and archaeological nature, as well as diagnostic, archaeometric, and analytical data, including even potential references on the production technologies of Greek bronze workers of the Archaic Age, as well as on the presumed organisation of coeval workshops.

In conclusion, this experience with the so-called "Magnificent Krater" – in addition to having represented a significant cultural 'bridge' between Italy and Serbia – furthermore confirms how the intervention of restoration constitutes an effective, authentic 'cognitive moment' of the work of art in its dual aesthetic and historical significance, with a view to preserving it for future generations.

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