STUDIA HERCYNIA XXVI/1, 77–91

A South Italian Bell-Krater – a New Acquisition of the National Museum, Prague

Helena Svobodová – Pavel Titz – Romana Kozáková

ABSTRACT
The Classical Antiquity Collection in the National Museum was recently enriched by the donation of an assemblage of pottery sherds. Following a careful and systematic procedure, it became possible to reconstruct almost an entire vessel. Subsequent analysis revealed that we were dealing with an early South Italian red-figure bell-krater. Its style of painting dates the vase to the early 4th century BC, making it close to the workshop of the Sisyphus Painter.

KEY WORDS
Red-figure pottery; krater; Early South Italian pottery production; Apulia; National Museum; Prague.

INTRODUCTION

In 2021, the National Museum in Prague gained a new acquisition to the Collection of classical antiquities: a South Italian red-figure bell-krater. It was registered in the collection under the inventory number H10-8550.

This article aims to present the new vessel in the collection to make it accessible in this way to scholars for their further study. Therefore, the vessel was studied in terms of its style and iconography. A clay fabric analysis is presented for the same reason. Secondarily, the aim of this study was to eliminate the possibility that the purchased item was a forgery, not only through a stylistic but also through a scientific analysis. We would also like to stress the, up to now, unusual way of making acquisitions by the National Museum. The acquisition itself was enabled by a donation of the Society of the National Museum, which subsidised the purchase and the restoration of the vase. In this way, the Society of the National Museum continues a tradition that was interrupted during the 40-year communist era.[1]

1 The Society of the National Museum, formerly under the name of 'Society of the Patriotic Museum in Bohemia', became the owner and administrator of the collections and manager of the museum work in 1822. The Society remained the owner of the Museum until 1934, when the collections became the property of the Czech Lands. From then onward, the Society owned the Museum only officially. The Museum was fully administered by the Czechoslovak state in 1949. After 127 years, the Society lost its influence over the institution which it had founded and managed for several generations (Sklenář 2007, 82). Today, the Society attracts people of various interests and professions who appreciate the tradition of the Czech science and culture embodied in the National Museum, and who are willing to support the Museum in various ways.

DESCRIPTION AND STYLISTIC ANALYSIS

The vase was preserved in a fragmentary state before 2021, but it bore traces of past attempts to stick the sherds together with plaster or different types of glue (**Fig. 1**). At that stage, it became obvious that several parts were missing and that one of the rim sherds belonged to a different vessel. The sherds were purchased from a private owner living in Prague. The assemblage was a family inheritance. Although the last owner and seller had no information on the recent history of the sherds and on their precise findspot, an alleged provenance from South Italy was suggested through the original owner's family narratives.

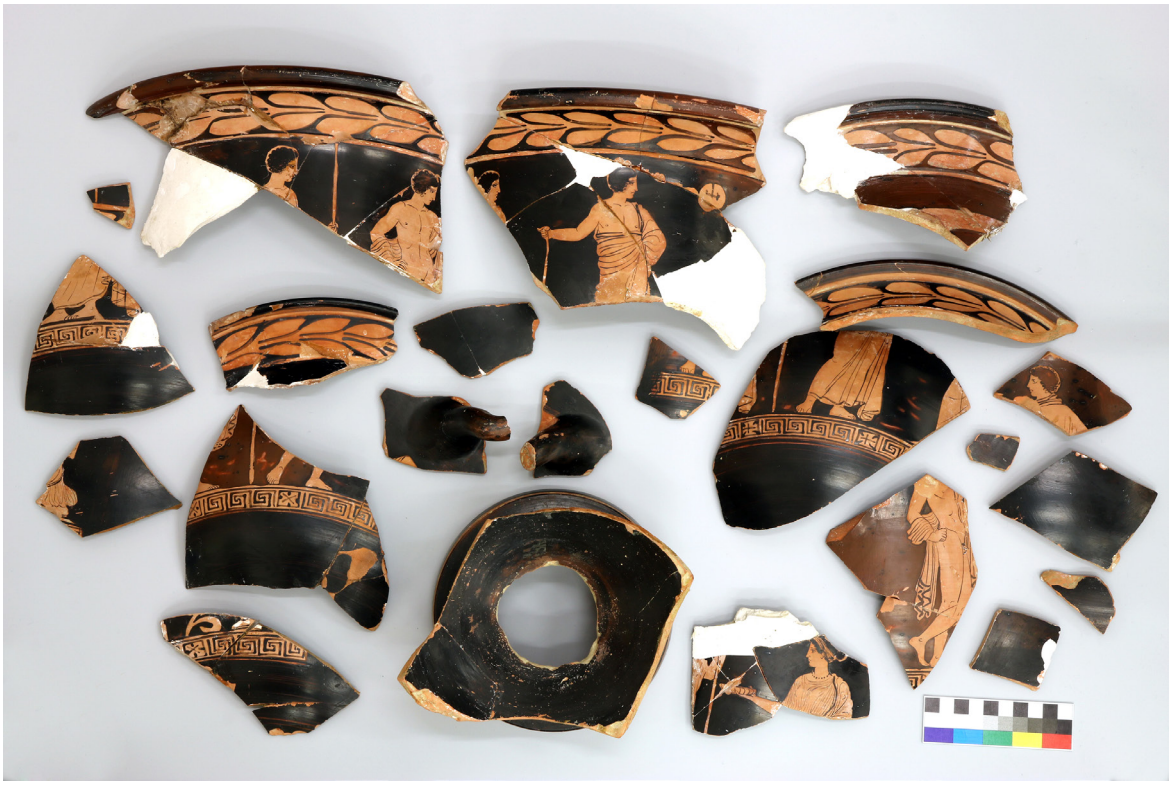


Fig. 1: Original state of preservation. Photo by Romana Kozáková.

The vase was reconstructed from fragments in the laboratory of the National Museum. As mentioned above, with the exception of one piece, all the other fragments belong to a single bell-krater with a slightly out-turned and thick rim (**Fig. 2**). The rim diameter nearly equals the height of the krater which is 33.3 cm. A laurel wreath with its leaves pointing left, between two reserved stripes, decorate a band below the rim. The laurel leaves are not veined. The handles turn slightly upwards and are without decoration where they join the body of the vase, which curves gradually inwards toward the stem. A simple disk foot is attached to the stem. The foot is painted black apart from two reserved stripes on its edges. Beneath the images on both sides there is a meander pattern. On the obverse, the meander is interrupted by two saltire-squares, one with black, short strokes, the other with black dots in the centre of each of its four sides. On the reverse, a band of meander is interrupted by two cross-squares with oblique strokes at each corner. There is a large hole in the base of the vessel.

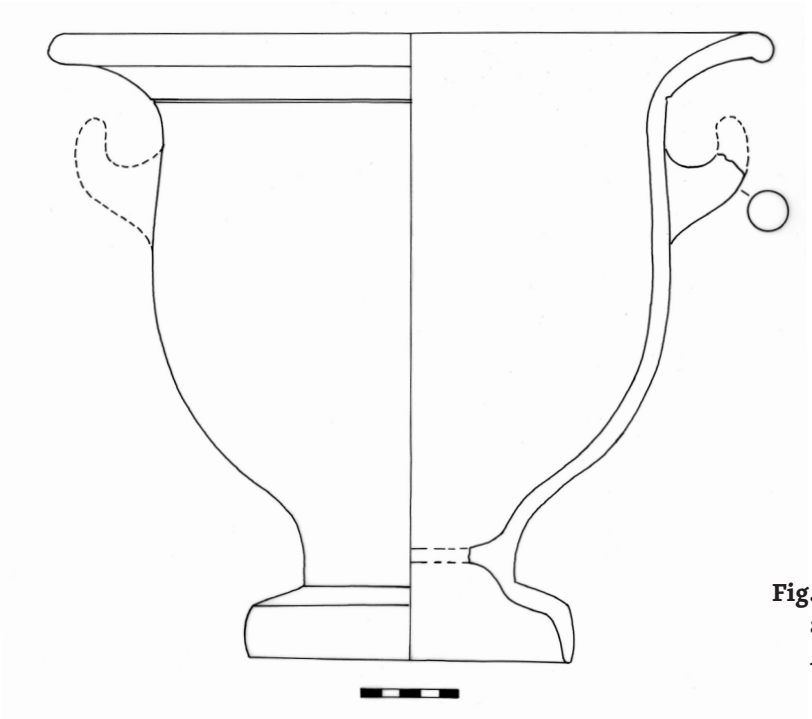


Fig. 2: Profile drawing of the krater after reconstruction. Drawing by Andrea Waldhauserová.

Fig. 3: The obverse of the vase. Photo by Alžběta Kumstátová.

The obverse of the vase is decorated with a three-figured composition (**Fig. 3, Pl. 2/1**). To the left a naked youth is standing with his legs crossed. His left hand is holding the vertical shaft of a long spear, the bronze butt of which is pointing down (**Fig. 4**). His right hand is resting on his hip with fingers clenched in a fist. A *himation* is wrapped around his right arm and then runs behind his back and hangs down in a series of folds along both sides of the figure. The vertical black border flanks the edge of the *himation*. The figure is slender, the stance is relaxed, and the body bent backwards. He has short hair, a rather long nose and a small chin. A line is drawn between the upper eyelid and the brow. Next to him is standing another male figure. He is holding a spear in his left hand, while his right hand is resting on his hip. A cloak draped over his left arm falls down behind his back and hangs over his right arm. His head, with short hair, is slightly bending downwards. He is looking towards a female figure holding a ribbed *phiale* in her right palm (**Fig. 5**). Only the upper part of her body is preserved; she is wearing a chiton with short sleeves. The folds of her garments are fine and reflect the anatomy of her body. From the left shoulder the thick vertical seam is painted in a thick black line. Due to the damage, only the lower part of a wavy hem of her chiton is visible above the groundline. Her black hair is tied into a bun at the back of her head, she is wearing a *sphendone* and a beaded necklace. She is looking towards the two male figures. Between the woman and the man there is a tendril growing.

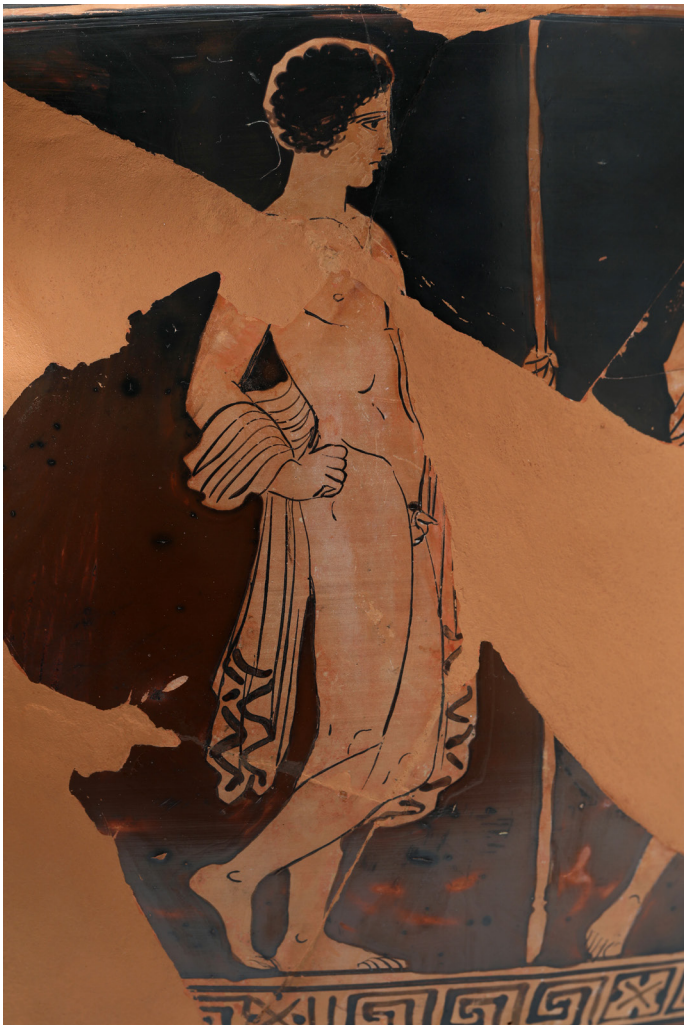


Fig. 4: Youth figure of the obverse scene. Photo by Alžběta Kumstátová.

Fig. 5: Female figure of the obverse scene. Photo by Alžběta Kumstátová.

The reverse of the vase is also decorated with a three-figure composition (**Fig. 6**). On the left is the head of a youth. He is looking towards the youth in the middle. His fine profile is identical to that of the youth next to him. His body is not preserved, except for a part of his cloak (*himation*) above the groundline. A barefoot youth in the middle is standing with his weight on his left leg (**Fig. 7**). His right arm is extended outwards and is holding a staff, while his left arm is resting on his hip beneath the cloak, which is draped over his body leaving his chest and right arm bare. His head is in profile to the right. He has short curly hair with a reserved contour. His features are well drawn; his eye and brow are tilted upwards and his mouth is downturned. He is facing towards the head and upper part of the body of a draped youth to the right. The head of this figure is drawn in profile to the left. The youth has a pointed nose, downward curved mouth and a small chin. The lower part of his *himation* and bare feet are preserved above the groundline. Above the youths, there is a pair of *halteres* (?).

On both sides of the krater, we can see two different three-figured compositions with figures in calm and relaxed positions. The scenes are not easy to interpret due to the lack of additional attributes. A woman holding a *patera* or a *phiale* on the obverse is sometimes linked to Dionysus or his adherents. Although Dionysiac themes were favourite subjects among South Italian vase painters and predominate over other mythological scenes, on our vase, we miss the figures (i.e., the satyrs), or the objects (i.e., the *thyrsus,* or those related to the symposium) (see Cambitoglou – Trendall 1961, pl. IV:17) indicating a Dionysiac scene. The scene is devoid of movement (dancing), the entire composition lacks strength and displays a solemn attitude of the figures arranged in calm groups. Another type of scene representing a woman with a *patera* together with two men relates to the pouring of a libation for the departing warriors (Trendall – Cambitoglou 1978, pl. I:1–2). In such scenes, men are usually well identified by their shields and helmets. Two youths holding spears are depicted on a column-krater in the British Museum (Cambitoglou – Trendall 1961, pl. IX:39–40). Between them there is a seated figure on a *klismos* and a woman holding a *phiale* and an *epichysis*. Both youths have a *pilos* attached by a ribbon around the neck, hanging down their back. The scene may represent the departure of Dioskouroi (Cambitoglou – Trendall 1961, 28). Two naked male figures

Fig. 6: The reverse of the vase. Photo by Alžběta Kumstátová.

with spears in the company of a draped woman, in this case wearing a wreath, are depicted on a bell-krater in Naples (Cambitoglou – Trendall 1961, pl. I:3).

On the reverse of the Prague krater, the scene of three draped youths, one holding a stick, and with the *halteres* (?) hanging between the two to the right, may represent a conversation scene from a palaestra, alluding to daily life, which occupied a prominent place in South Italian vase-painting.

On the reverse, the youth in the middle (**Fig. 7**) adopts a pose and draping of his *himation* similar to that of the figures by the Sisyphus Painter: he is leaning upon a stick held in his right hand, with his left hand resting on his hip and the head facing the youth to the right. For an almost identical scene, see a bell-krater in Vienna (Cambitoglou – Trendall 1961, pl. II:6), and a bell-krater in London (Trendall 1989, fig. 39), cf. also the treatment of the mantle at his waist, with the rows of horizontal folds. Since the fully draped youths on the sides are only partly preserved, their position can only be hypothetically reconstructed, as shown in Figure 8. A similar three-figured composition can be seen on the reverse of bell-kraters in Naples and Jena (Cambitoglou – Trendall 1961, pl. I: figs. 2, 4) and a bell-krater in Matera (Trendall – Cambitoglou 1978, pl. 6:2) as well as in the Louvre (*CVA* Louvre 25, pl. 38:3, note especially the youth in the middle who is holding a stick in his right hand). In these scenes, the central youths are draped with *himatia* leaving only their shoulders bare. In the Sisyphus

Fig. 7: The youth in the middle of the reverse scene. Photo by Alžběta Kumstátová.

Painter's later work, a black border appears at the top of the *himation* along the chest and the left shoulder (see the middle figure on the reverse of a bell-krater in Milan, *CVA* Milan 'H.A' II collection, IVD, pl. 6:4). The head of the youth in the middle, on the reverse of our vase, with the curls along his face, has been closely associated with the figures on a bell-krater in the Louvre by the Sisyphus Painter (Serino 2014, fig. 13f). Furthermore, the youth in three-quarter view, with the crossed legs, finds parallels in a youth on the obverse of a volute-krater in Matera (Trendall – Cambitoglou 1978, pl. 6:1) and in another example in Saint Petersburg (Trendall – Cambitoglou 1978, pl. 7:3) in which a naked male figure with a strigil in his hand is standing next to a younger man.

It has been acknowledged that the Sisyphus Painter influenced the works of the Tarporley Painter who started as his pupil. The nude youths of the Tarporley Painter often rest their weight on one leg (usually the left) and keep their other leg slightly bent. Heads tend to be fairly small and often slightly bowed, as seen on the youth on the left, on the obverse of our vase (his weight rests on his right leg), who can be paralleled with a nude youth on

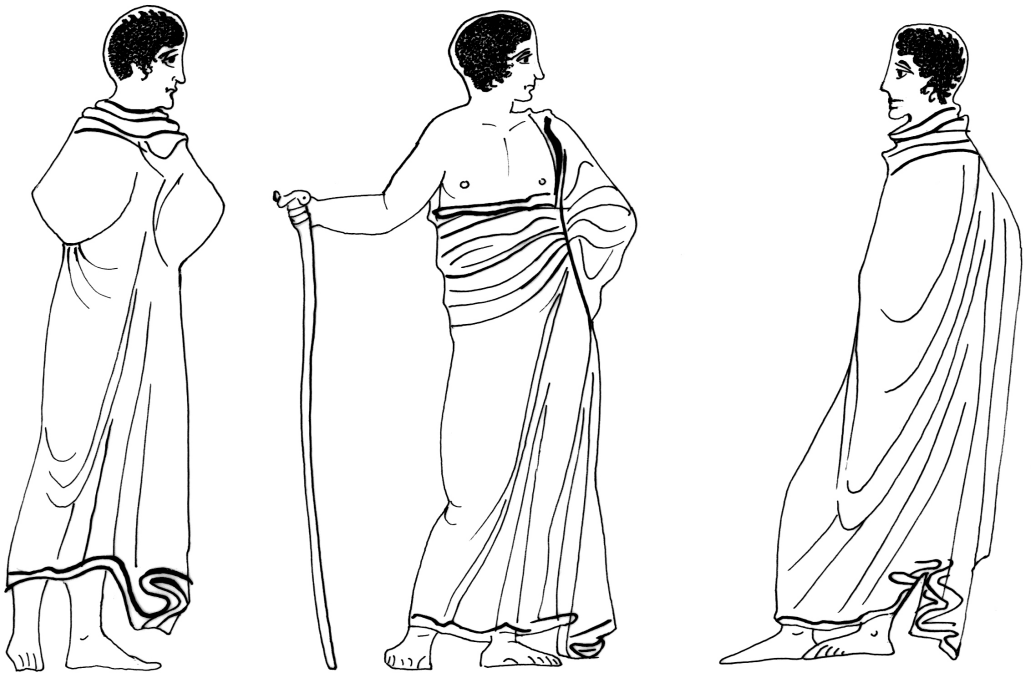


Fig. 8: Hypothetical reconstruction of the reverse scene. Drawing by Andrea Waldhauserová.

bell-kraters in the Fogg Museum and in Sydney (Trendall – Cambitoglou 1978, pl. 14).[2] It is also worth noting the thick black double line on the lower selvedge of his drapery, which is similar to that of a standing youth on a pelike in Naples (Trendall – Cambitoglou 1978, pl. XIII:62). A close parallel to our naked youth is the posture of Perseus on a bell-krater in Boston (Padgett *et al*. 1993, fig. 10) attributed to the Tarporley Painter. The youth is holding a spear in his left hand and resting his right hand on his hip. There is also a double black wavy line on the lower selvedge of his drapery.

The Tarporley Painter was fond of Dionysiac themes. A draped woman with patera often appears on his vases (e.g. a bell-krater in Taranto, Ragusa coll., Trendall – Cambitoglou 1978, pl. 15:1–2 with a female figure holding a patera in her right hand and a situla in her left; a maenad with a phiale in her right hand and a fawnskin across her left arm, Cambitoglou – Trendall 1961, pl. XI:51; a maenad with a phiale and a *thyrsus* in Vienna, Cambitoglou – Trendall 1961, pl. XII:54 or a woman on a *lebes gamikos* in Cork, Cambitoglou – Trendall 1961, pl. XIII:65). The Sisyphean influence on the work of the Tarporley Painter is also seen on the youths on the reverses. They too have their *himatia* draped so as to leave one shoulder and part of the chest exposed and also have a black thick line on the edge of the *himatia* (Trendall – Cambitoglou 1978, pl. 13, the youth on the left, a bell-krater in New York; Cambitoglou – Trendall 1961, pl. XI:52, a bell-krater in Bowdoin College).

The unusual style of draping the *himation* of the youth in the middle, on the reverse of our vase can also be paralleled by examples from Sydney (*CVA* Australia, The Nicholson Museum 2, pl. 22–24), Trieste and Taranto (Trendall 1983, pl. III) attributed to the Lucanian Ragusa Painter,

2 We can see a similar posture of the head of Pan on a bell-krater in the Los Angeles County Museum (Denoyelle – Silvestrelli 2013, fig. 3). For crossed legs, see Hermes on a *pelike* in Taranto (Cambitoglou – Trendall 1961, pl. XIV:57–60).

but the hand of the painter is not the same. Details such as the hairstyles and physiognomy are different, especially the rendering of the nose and the eyes. The Lucanian and Apulian painters worked at the beginning of the fourth century BC in close connection, a good example of this cooperation is the so called TARDOL Group (Trendall – Cambitoglou 1978, 53–55) assembled by A.D. Trendall. It is a small group of vases which provide a close connecting link between the work of the Lucanian Dolon Painter and of the Apulian Tarporley and Klejman Painters.

One specific detail makes the vessel in Prague unusual. Regarding the framing bands, not only the Tarporley and the Sisyphus Painters, but also the majority of other painters used only one type of meander band on a single vase. In Prague we see a saltire-square band on one side and a cross-square band on the other.

THE FUNCTION OF THE KRATER

When the authors dealt with the assemblage of sherds for the first time it was easy to distinguish two different surfaces of the fragment edges. All of the sharp and fresh-looking edges were incorporated into the body of the vessel during the reconstruction. Such breaks are therefore the result of the final damage to the krater. But it was possible to observe different types of breaks on the surface as well. Obviously worn or weathered edges encircle a partially irregular hole in the centre of the vessel bottom. It is approximately 6.5×7.0 cm wide (for the different appearance of such surfaces see **Fig. 1**). It is obvious that the hole in the bottom was not made by the potter before firing. It also has nothing to do with the improvement of the firing process as has been suggested by some scholars to explain the existence of holes made by potters (Robinson 2014, 229, footnote 92). In such a case the glaze would cover at a least part of the hole edges. No doubt, the hole was secondarily made and the weathered condition of the hole edges witness possible exposure of the vase to the elements for a certain time (**Fig. 9**).

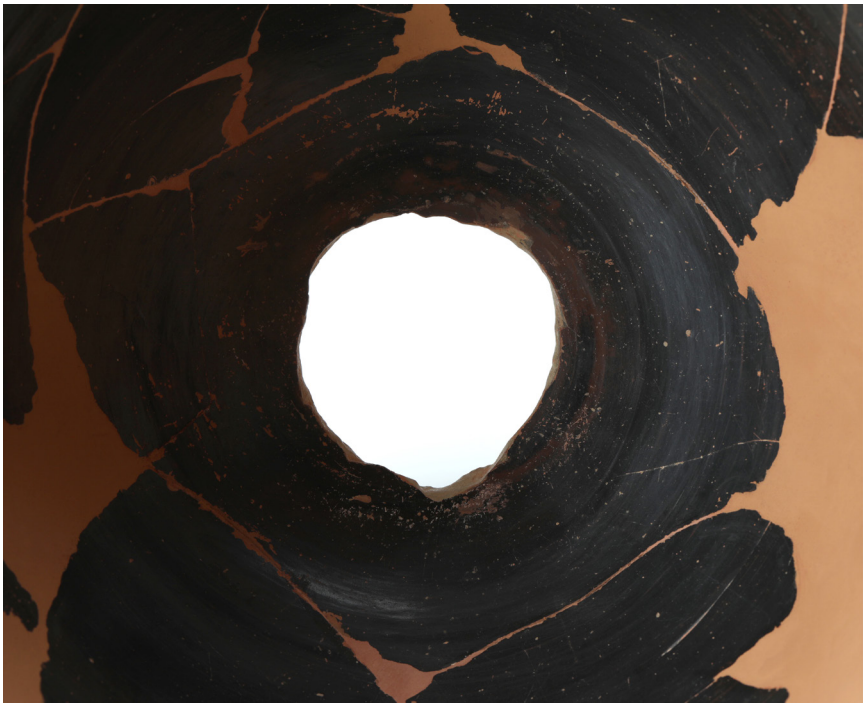


Fig. 9: Detail of the hole in the bottom of the vase. Photo by Alžběta Kumstátová.

It seems to us that the krater itself was not originally created as a *sema* – a grave marker (Fontannaz 2014, 80). It was possibly made for a non-funerary context. We assume that its function had changed during its life-time to mark a grave. While the nature of the figural decoration suggests its primarily non-sepulchral function it is very probable that the krater later functioned for a definite period of its ancient past as a funerary vessel and stood on the ground marking a particular grave. Such holes in the bottom lead from the cavity of the vase through the foot to the ground and connect the vase cavity with the grave. Large kraters used to be placed on top of graves firstly to mark them and secondly to take an active part in the funerary rituals in a technical meaning. Such a practice is evidenced in terms of physical appearance as well as its iconography by the Sarpedon Painter's bell-krater (IG 4605) from Taranto (Fontannaz 2014, 80, footnote 66). The libations poured by mourners into the vessels flowed through the hole in the bottom right into the graves. It is an interesting coincidence that among Apulian red-figured vases it was the volute-krater name-vase of the Sisyphus Painter, from Ruvo (now Munich 3268; RVAp 1/51) which was the first example of a vessel produced especially for a grave, since it was made with a large hole in its base (Robinson 2014, 228).

SCIENTIFIC ANALYSIS OF THE CLAY FABRIC OF THE KRATER

The pre-restoration study of our krater was complemented by an investigation of the analytical data of the clay fabric and the glaze. To compare scientific analysis data with already published ones, we opted for investigation methods routinely used for archaeological pottery. Such an approach allows us also a comparison with post-classical pottery to exclude later copies or forgeries.

The decorated surface of the krater was observed in a linear and side light and UV light, while a small sample was taken from the upper body of the pot to be further analysed. The methods used were the following: a) Polarized-light Optical Microscopy (OM), b) Scanning Electron Microscopy with Energy Dispersive Spectrometry (SEM/EDS), c) Powder X-ray Fluorescence (XRF), and d) X-ray Diffraction (XRD).

The observation of the cross section of the sample was performed by OM on a polished surface and then by the SEM type TESCAN VEGA3 LMU.[3] The EDCA analyser INCA 350[4] and the Aztec evaluation software were used to characterize the elementary composition of the layers. Before the measurement itself, the sample was gilded twice with a 5 nm layer on a K550X sprayer. Both the analytical methods focused on the transitional space between the body and the black glazed surface of the sample.

The chemical composition of the ceramic body was measured in the form of a very fine powder, which after drying was pressed into a pre-pressed crucible, with a diameter of 40 mm, made of boric acid. A fully automatic PERFORM'X sequential wave-dispersive X-ray spectrometer[5] was used for the analysis. The samples were measured in vacuo with the Oxsas program. Element intensities were converted to concentrations using the semi-quantitative non-standard software UniQuant 5, which is integrated into Oxsas.

Mineralogical compositions were determined at room temperature on an X-Pert3 Powder ϑ-ϑ powder diffractometer with a Cu lamp and using a CuKα wavelength in the angular range

3 Tescan Orsay holding, a. s. Brno.
4 Oxford Instruments, Great Britain.
5 Thermo ARL Switzerland.

4–70° 2ϑ. Data was evaluated using Panalytical High Score Plus 4.0 software. The ceramic body and black glaze were measured from the surfaces and then in powdered form. Semi-quantitative analysis was performed using RIR (Reference Intensity Ratio) values from the PDF 4+ High Score Plus software database. The presence of a non-crystalline phase was not considered in the evaluation (Kloužková 2021).[6]

Thanks to the use of side-lighting it was possible to highlight details, particularly those of the figures, which are important for a better understanding of the individual painter's style. It is possible to observe in general the distinct difference between the precise painting of the figures and the negligent rendition of the background. It is very likely that the figures and the background were made by two different painters. We can assume the workshop production process arrangement when the master paints the figures and his assistant the background. The style of the figures is characterized by the subtlety and confidence of the drawn lines. On the contrary, the background is made with a broad paintbrush and the edges of the background are inartistically terminated (**Pl. 2/2**). In this way we consider also subsidiary decoration in the form of a wreath under the rim and meander bands under the figural scenes to be the production of workshop helpers. The master-painter used different glaze densities to paint flat areas as well as the details of the figures, all of these are made by the same hand. The brush strokes are very accurate. The plasticity of painting was achieved by the use of a different density of the glaze. Diluted glaze in the areas like for example hair is combined with relief lines made with dense glaze (**Pl. 2/3–4**). **Pl. 2/5** shows that small details on the face of the woman which were layered in many subsequent steps. This particular detail is possibly the master's correction of the face shaping. It is not possible to find similar corrections on the other figures' faces.

The UV light inspection detected the remains of older varnish, probably of shellac, which was used for repairing works (**Pl. 2/6a–b**) (Tjon Sie Fat 2012).

The OM and SEM observation shows that the black glaze is layered directly on the ceramic surface (**Pl. 2/7a–b**). There is no evidence of using the red engobe, as in some products of red-figured pottery (Magnone *et al*. 2008, 1540, fig. 6). The thickness of the black glaze depends on the shape of the decoration. It has a finer and more homogenous structure than the ceramic body and does not contain large particles. The elemental composition obtained by EDS shows a higher amount of K and Fe in the black glaze than in the ceramic body and the absence of Ca (**Fig. 10**). Its mineralogical composition includes mainly quartz and feldspar and a lower amount of haematite and magnetite. The black colour is a result of the reduction firing when haematite (Fe_2O_3) is transformed into magnetite $Fe^{3+}(Fe^{2+}Fe^{3+})O_4$ (**Tab. 2**). The presence of the organic carbon in the clay is of course necessary (Hanykýř – Kutzendörfer 2002). Due to an unequal firing process some irregularities in the black colour intensity can be seen in the upper part of the vessel.

The elemental composition of the ceramic body was analysed using two different methods (**Fig. 11**, **Tab. 1**). The ceramic body is rich in Ca. Its mineralogical composition includes mainly quartz and feldspar and a smaller amount of haematite as in the black glaze. The difference is in the content of the calcite and muscovite in the ceramic body instead of the magnetite which was found in the glaze (**Tab. 2**). A big composition difference between the black glaze and the ceramic body can be caused by using two types of clay, instead of purifying one type.

6 The measurements were made in cooperation with Dr. Ing. A. Kloužková, CSc. in the Department of Glass and Ceramic of the University of Chemistry and Technology Prague.

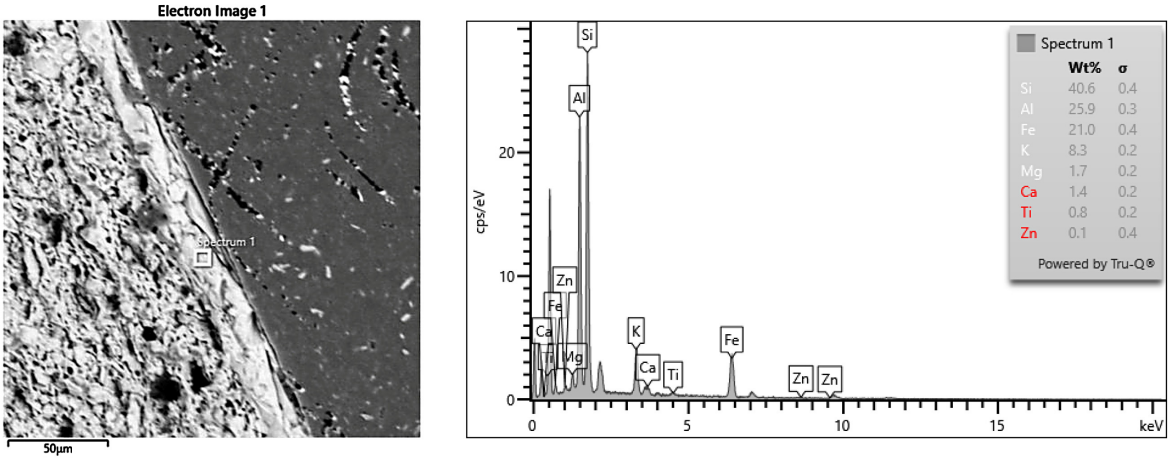


Fig. 10: The image and chemical composition of the black glaze. Photo by Martina Kohoutková (Kloužková 2021).

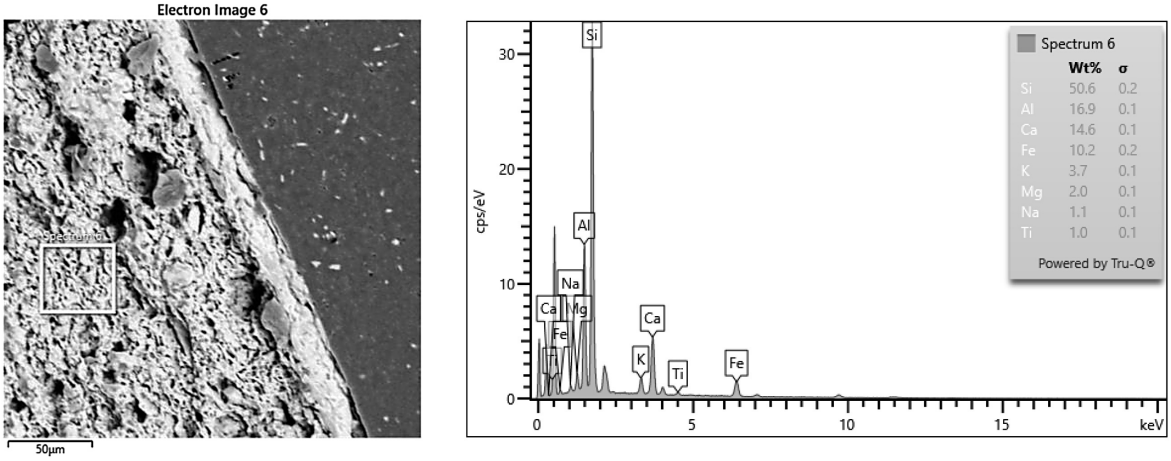


Fig. 11: The image and chemical composition of the ceramic body mass 70 µm under the black layer. Photo by Photo by Martina Kohoutková (Kloužková 2021).

In mineralogical composition there is no evidence of neo-formed minerals. Together with the presence of the haematite and calcite in the ceramic body, it is possible to consider a lower firing temperature (under 900 °C) or too short a firing time at the highest temperature.

Compared to other published measurements and analyses we can state that the black glaze of the Prague krater shows the same structure and chemical composition as the samples of Apulian red-figure pottery (cf. Giannossa – Mininni – Laviano 2017; Giannossa *et al.* 2020; Magnone *et al.* 2008; Iordanidis – Garcia-Guinea – Karamitrou-Mentessidi 2009). For this reason, we can accept the Prague krater as an Apulian original. The traces of the gypsum could relate to the old repairs of the krater (see **Fig. 1**).

Tab. 1: Chemical composition of the ceramic body measured by powder XRF (wt.%).

	wt%
SiO_2	53.81
Al_2O_3	20.35
CaO	10.99
Fe_2O_3	7.00
MgO	2.82
K_2O	2.26
Na_2O	1.07
P_2O_5	0.27
TiO_2	0.87
MnO	0.17

	wt%
SO_3	0.114
Cl	0.062
V_2O_5	0.023
Cr_2O_3	0.017
NiO	0.009
Rb_2O	0.014
SrO	0.057
Y_2O_3	0.006
ZrO_2	0.039
Nb_2O_5	0.009

Tab. 2: Semiquantitative mineralogical composition of samples measured by XRD (wt.%).

Sample	Minerals (wt.%)						
	Quartz	Feldspar	Haematite	Magnetite	Calcite	Muscovite	Gypsum
black gloss (compact)	50	20	10	5			Traces
black gloss (powder)	50	40	10	Low			Traces
red surface (compact)	60	20	10	Traces			Traces
ceramic body (powder)	50	25	10	Traces	5	10	Traces
ceramic body (powder)	50	20	10	Traces	10	5	Traces

CONCLUSION

The shape of the krater and certain features of its decoration, such as the restriction of the meander to the area below the scene, the absence of any ornament by the connection of the handles and vase and the three draped youths on the reverse, suggest a date not far from 400 BC (Trendall 1987, 4). The interpretation of the scene on the obverse is not entirely clear, the scene on the reverse may be a scene from the palaestra. Despite the stylistic connections to the Tarporley Painter, especially the reverse of the Prague krater is typically Sisyphean in posture as well as in drapery rendition and thus the krater seems to be close to the workshop of the Sisyphus Painter as was shown above by the stylistic and iconographic study. Additionally, the chemical and mineralogical analysis of the vessel support the stylistic and iconographic study arguing for an Apulian provenance of this vase. Apulian red-figure pottery was prominent among the regional productions of South Italy and had a strong influence on other Italian workshops. Taranto was the most important and perhaps the sole place of production

of Apulian red-figure pottery in its early phase, c. 440–370 BC. It is not sure though whether the Prague krater was made in this very city.

ACKNOWLEDGMENTS

This work was financially supported by the Ministry of Culture of the Czech Republic (DKRVO 2019-23/17.IV.b, and DKRVO 2019 – 2023/8. III.d National Museum, 00023272).

ABBREVIATIONS

CVA: *Corpus vasorum antiquorum*.

BIBLIOGRAPHY

Cambitoglou, A. – Trendall, A.D. 1961: *Apulian Red-Figured Vase-Painters of the Plain Style*. The Archaeological Institute of America.

Denoyelle, M. – Silvestrelli, F. 2013: From Tarporley to Dolon. The Reattribution of the Early South Italian, New York Goose Vase. *Metropolitan Museum Journal* 48, 59–71.

Fontannaz, D. 2014: Production and Function of Apulian Red-Figure Pottery in Taras. New Contexts and Problems of Interpretation. In: T.H. Carpenter – K.M. Lynch – E.D.G. Robinson (eds.): *The Italic People of Ancient Apulia. New Evidence from Pottery for Workshops, Markets, and Customs*. Cambridge.

Giannossa, L.C. – Mininni, R.M. – Laviano, R. 2017: An archaeometric approach to gain knowledge on technology and provenance of Apulian red-figured pottery from Tarranto. *Archaeological and Anthropological Sciences* 9, 1125–1135.

Giannossa *et al.* 2020 = Giannossa, L.C. – Muntoni, I.M. – Laviano, R. – Mangone, A.: Building a step-by-step results in archaeometry. Raw materials, provenance and production technology of Apulian Red Figured pottery. *Journal of Cultural Heritage* 43, 242–248.

Hanykýř, V. – Kutzendörfer, J. 2002: *Technologie keramiky*. Hradec Králové.

Iordanidis, A. – Garcia-Guinea, J. – Karamitrou-Mentessidi, G. 2009: Analytical study of ancient pottery from archaeological site of Aiani, northern Greece. *Materials Characterization* 60, 292–302.

Kloužková, A. *et al.* 2021: Zpráva úkolu DČ 107611014 – Zhotovení analýzy antické keramiky, VŠCHT Praha.

Mangone *et al.* 2008 = Mangone, A. – Giannossa, L.C. – Ciancio, A. – Laviano, R. – Traini, A.: Technological features of Apulian red figured pottery. *Journal of Archaeological Science* 35, 1533–1541.

Padgett, J.M. *et al.* 1993: *Vase-Painting in Italy. Red-Figure and Related Works*. Boston.

Robinson, E.G.D. 2014: The Early Phases of Apulian Red-figure. In: S. Schierup – V. Sabetai (eds.): *The Regional Production of Red-figure Pottery. Greece, Magna Graecia and Etruria*. Aarhus, 218–234.

Serino, M. 2014: The Beginnings of Sicilian Red-figured Pottery and its Relationship with Early South Italian Productions. A Reapraisal through the Case-study of the Himera Painter Workshop. In: S. Schierup – V. Sabetai (eds.): *The Regional Production of Red-figure Pottery. Greece, Magna Graecia and Etruria*. Aarhus, 247–268.

Sklenář, K. 2007: *Společnost Národního muzea v dějinách i v současnosti*. Praha.

Tjon Sie Fat, E. 2012: *Reading Restorations, 19th century restorations on red-figure South Italian vases from the National Museum of Antiquities*. Master Thesis Archaeology, Leiden University, Faculty of Archaeology. Leiden.

Trendall, A.D. 1983: *The Red-figured Vases of Lucania, Campania and Sicily. Third Supplement*. BICS Suppl. 41. London.

Trendall, A.D. 1987: An Early South Italian Bell-Krater. *Records of the Art Museum, Princeton University* 46/2, 2–7.

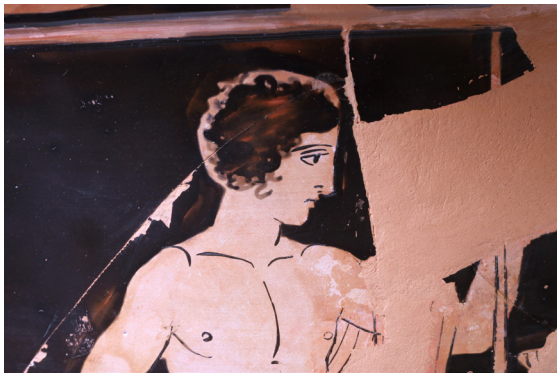
Trendall, A.D. 1989: *The Red Fugure Vases of South Italy and Sicily*. *A handbook*. London.

Trendall, A.D. – Cambitoglou, A. 1978: *The Red-figured Vases of Apulia. Early and Middle Apulian* I. Oxford.

Helena Svobodová
Pavel Titz
Romana Kozáková
Národní Muzeum
Václavské nám. 68,
Praha 1, 110 00

helena.svobodova@nm.cz
pavel.titz@nm.cz
romana.kozakova@nm.cz

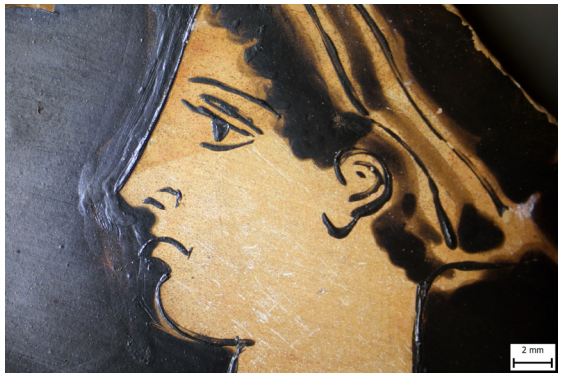
Pl. 2/1: The obverse of the vase. Photo by Alžběta Kumstátová.



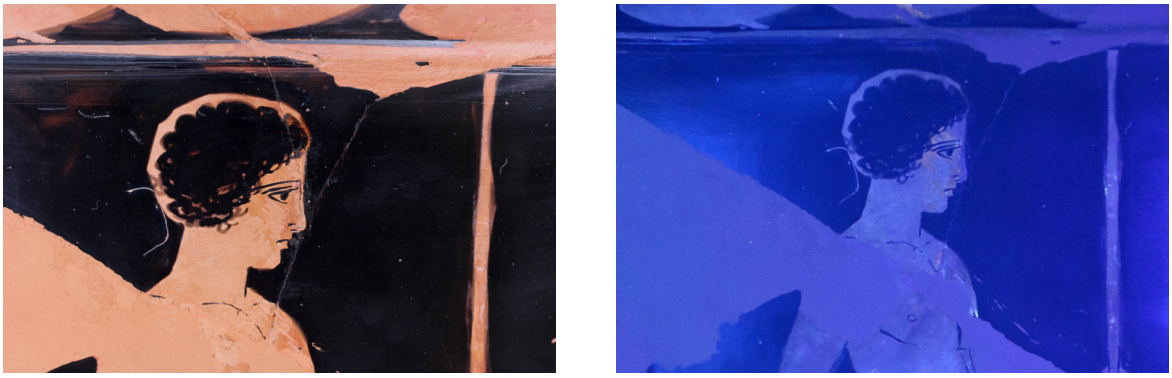
Pl. 2/2: The edges of the background are carelessly terminated. Photo by Romana Kozáková.

Pl. 2/3 Diluted glaze and relief lines made of dense glaze. Photo by Romana Kozáková.

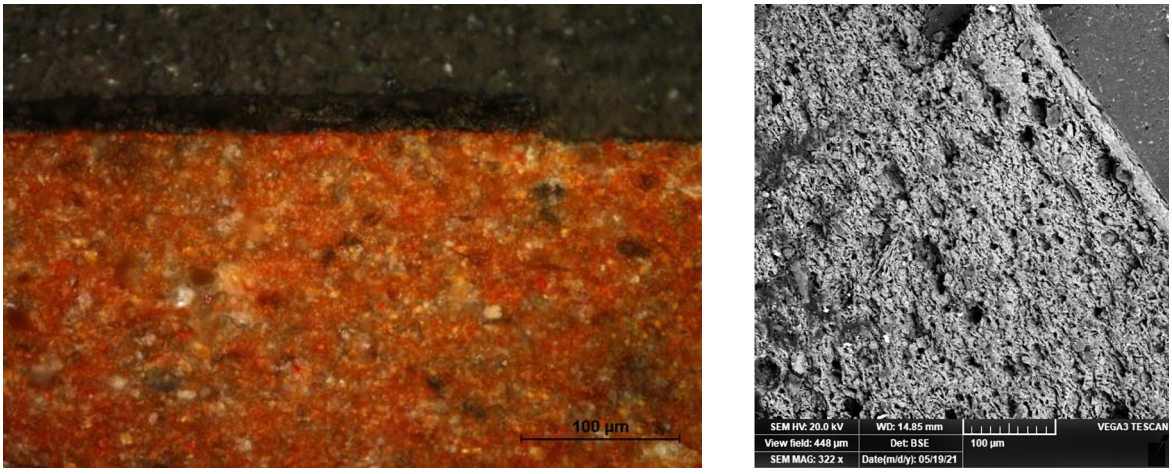
Pl. 2/4: The side light highlights the structure of the painted drapery. The fine lines are the last layer of the painting and were applied in a pasty form. Photo by Romana Kozáková.



Pl. 2/5: Multiple sketching of the face highlighted by the side light. Photo by Romana Kozáková.



Pl. 2/6: a – An image of a young male figure in visible light; b – The UV light makes areas with the remains of the varnish more visible (orange parts in the face, chest and in the wreath below the rim). Photo by Romana Kozáková.



Pl. 2/7: An image of the transition point between the black glaze and the ceramic body. a – in transmitted polarized light (the black glaze is in the upper part); b – in BSE (the black glaze is in right upper corner). Photo by Martina Kohoutková (Kloužková 2021).