

UMAYYAD DYERS' WORKSHOPS OF THE HIPPODROME OF JARASH (PRELIMINARY REPORT 2007)

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The Hippodrome of Jarash (**Fig. 1**), which dates back to the second half of the second century AD (Ostrasz 1989: 51-77), was excavated in the 1930's by E.B. Müller, G. Horsfield and C.H. Kraeling (Kraeling 1938: 50-51, 85-102), and also in the 1980-1990's by 'Abd al-Majid al-Mujalli, I. Kehrberg and A. Ostrasz. They mainly focused on the restoration of the site but also carried out excavations in the *cavea*, the *carceres*, the *arena* (Ostrasz 1989: 51-77) and the basements of the northern and eastern terraces which contained two mass graves (Kehrberg and Ostrasz 1994: 546-547) and some Byzantine potters' workshops (Kehrberg and Ostrasz 1997: 167-173). They also cursorily cleared the remains in the basements of the western terraces of the rubble caused by the earthquake of 131H/748AD (Russel 1985: 37-59), but did not study in depth the layers under the rubble. However, new cleaning in these western terraces carried out from third to nineteenth April 2007 led to the uncovering of a group of workshops. Chambers W6, W9, W11, W14, and W15 contained five identical workshops, which all featured basins and vats having the main characteristics of the Byzantine and Umayyad dyers' workshops found in nearby Gaza (Ovadiah 1969: 193-1989), Baysan (Bar-Nathan and Mazor 1993: 37-38), and the Macellum of Jarash (Martin-Bueno and Uscatescu 1997: 67-88). Moreover, the workshops in the hippodrome of Jarash contained Umayyad coins and ceramics, dating to the first half of the eighth century AD, that is before Jarash's destruction by the earthquake of 131H/748AD.

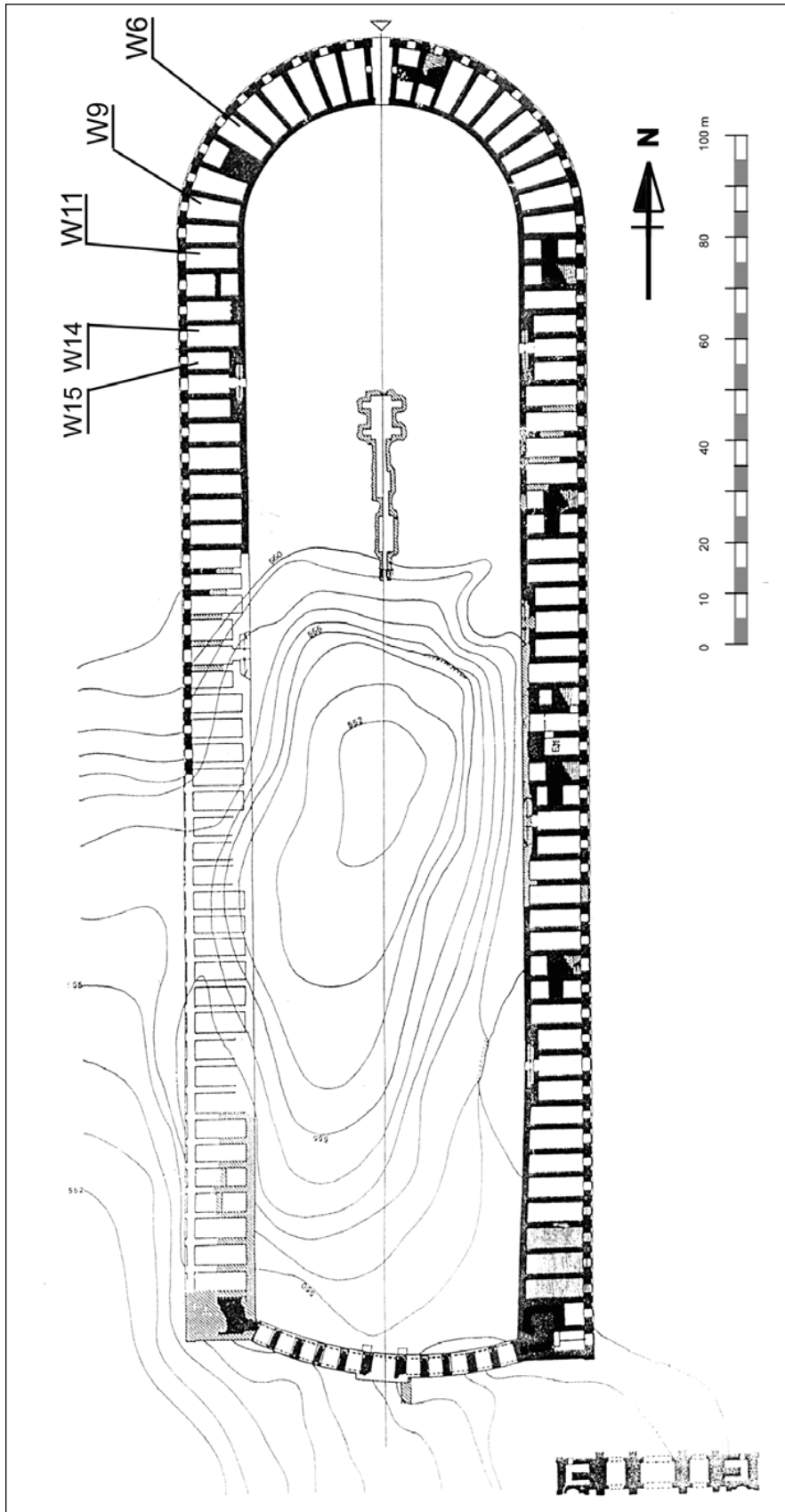
Let us take the example of chamber W9,

whose two trapezoidal layouts are 9,70m in length east-west and 4,30m in width to the east and 3,50m to the west (**Figs. 2 and 3**). The remains of dyeing facilities form two distinct units. The western area is raised while the eastern one is level. The central aisle of the western work area, whose floor is wholly paved, is surrounded by two large circular vats and four rectangular basins, three of which have worktops. The basins (maximum length: 1,68m, maximum width: 0,95m, maximum deep: 0,50) are built equally of rubble-stones, used blocks and paving stones. All of them have a duct for evacuating waste water which then runs through a drainage pipe along the central aisle and then out under the door of the chamber. Moreover, earthenware slabs were applied to the inner walls and the bottom of the basins to prevent leakage. Opposite the basins are the circular vats (maximum diameter: 0,82m, maximum deep: 0,60m), embedded in a cluster of rubble-stones. Both have a small cup like depression in the center to facilitate removal of the last liquid. The fibres and fabrics treated in such dye shops were first cleaned in the vats and the basins of this western workspace. The paved floor, the waste water evacuation pipe and the precautions against loss of water suggest the extensive use of water, which was stored in an open cistern (length: 1,90m, width: 0,80m) outside the room. Thus, the circular vats must have been used as soap baths in which the fibres were dipped in order to clean them of sandstone, greasy deposits or dye resistant pectin's. The rectangular basins were presumably used to rinse the fibres.

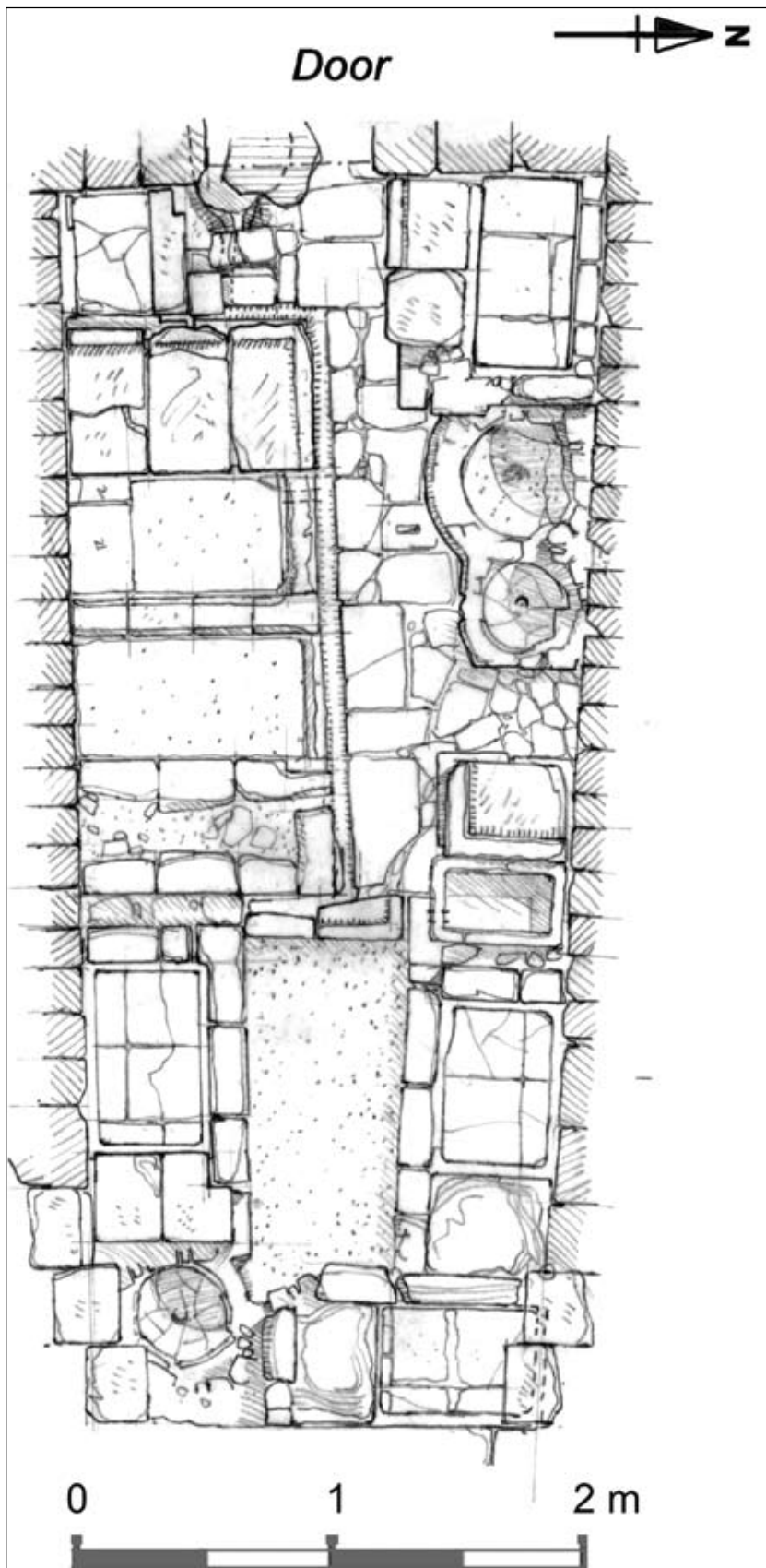
The central aisle of the eastern area of the

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vate and to the IFPO, Dr. Jacques Seigne (CNRS), Mr. 'Abd al-Magid Mujalli for their support.



1. The Hippodrome of Jarah.



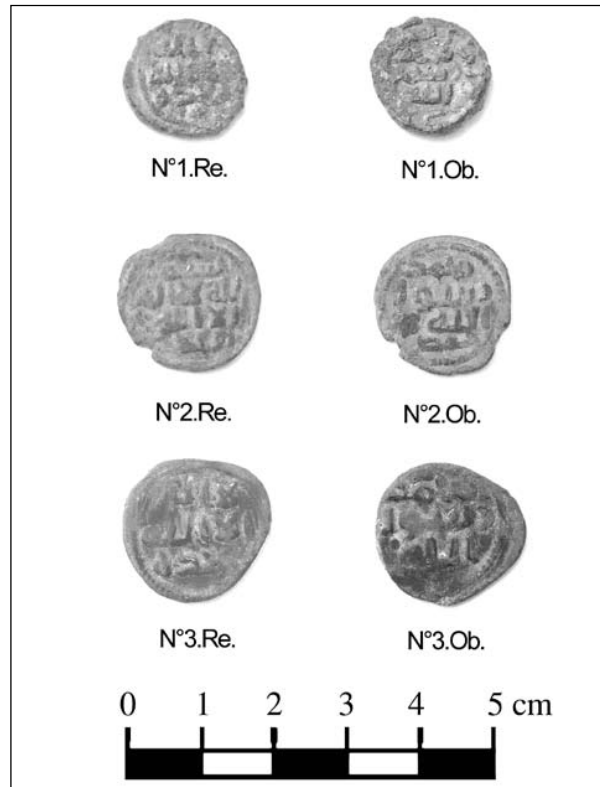
2. Drawing for the western terraces.



3. The western terraces.

chamber has a simple earthenware floor. It is surrounded by three deep rectangular basins and their worktops and a circular vat embedded in the ground (see **Fig. 2**). The basins (maximum length: 1,68m, maximum width: 0,95m, deep: 0,75m) have no drainage holes and are built with blocks or stone slabs. Their worktops are covered with heavy lime coating. The vat (diameter: 0,77m, deep: 0,60m) is set in a block of mortar and rubble-stones. Despite its poor state, remains of lime coating are still visible. The dyeing of the fibres was carried out in this eastern work area. Since there is no hearth we can assume that the dyes used must have been vat dyes, in particular indigo and red ochre, traces of which can be seen. As vat dyes are insoluble in water and need a reducing agent like alkaline and low temperatures to become soluble, the dyers presumably combined quick lime (traces of which were also found) and water in dyeing vats to produce heat and an alkaline-rich envi-

2. Zoomorphic handle type lamps, dated to the Umayyad era, were also recovered in the temple of Artemis and in a residential area by the south decumanus.

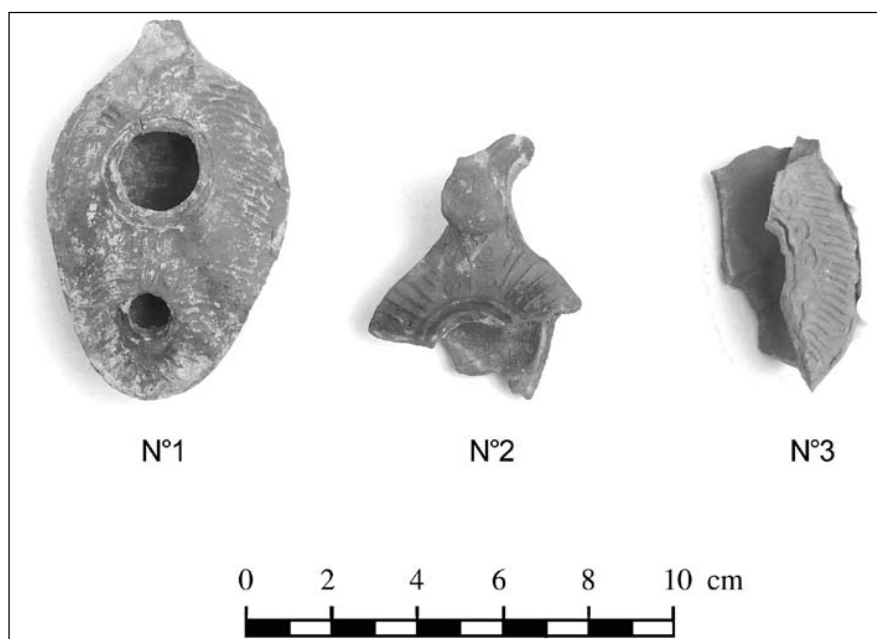


4. Umayyad Fulūs

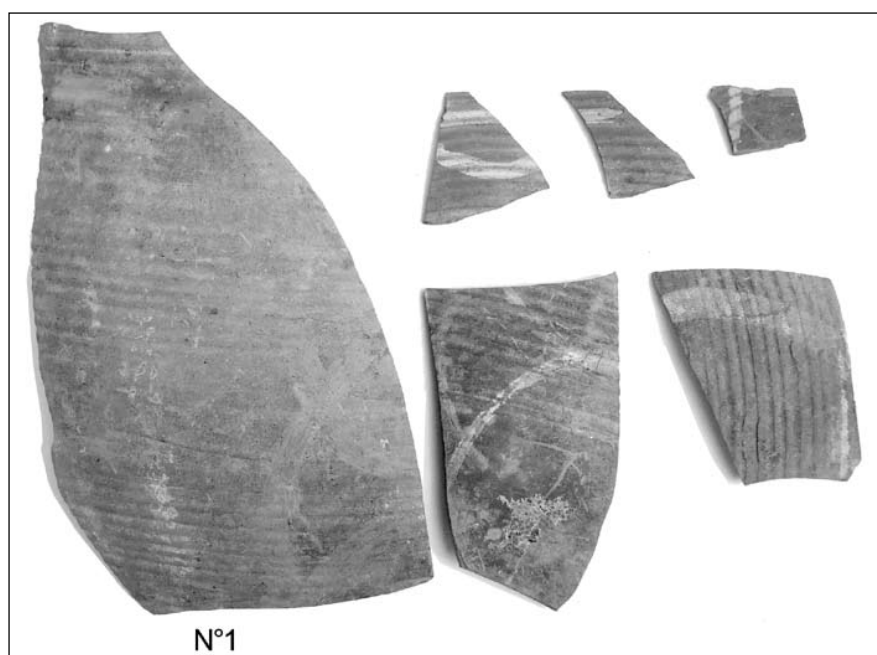
ronment. The earthenware jars, built up and embedded in a cluster of rubble stones, must have been macerating vats. The craftsmen then dyed the fibres or the fabrics in the worktop basins.

Dating these dyeing workshops is possible thanks to ceramic and numismatic finds. First, three Umayyad bronze coins (Naghawi 1989: 219-222) struck after the reform of the caliph ‘Abd al-Malik bin Marwan in 80H/696AD were recovered on the paved floor in chambers W11 and W14 of the hippodrome (**Fig. 4**). Second, three moulded, zoomorphic handle type lamps, of oblong form were recovered while excavating chambers W6 and W14 (**Fig. 5**). They can also be dated to the Umayyad era (Scholl 1986: 163-166; Parapetti 1986: 167-205; Gawlikowski and Musa 1986: 137-162) ². Moreover, several fragments of jugs and red and dark clay gargolettes, decorated with sinusoidal patterns in white paint, typical of the ceramic works of Umayyad Jerash³, are further strong evidence

3. Similar ceramics were uncovered in a residential area by the south decumanus and in the church of the bishop Marianos (see Gawlikowski and Musa 1986: 137-162).



5. Three moulded, zoomorphic handle type lamps.



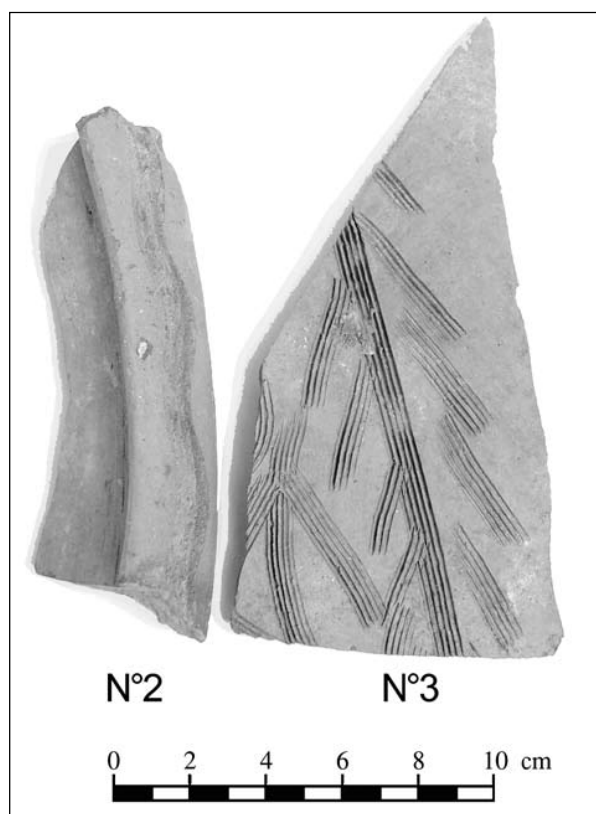
6. Fragments of Jugs.

of the Umayyad origins of the workshops (**Fig. 6**). In addition, fragments of large jars and craters, decorated on the top of the body or the rim with typical incisions (wavy or wheat motifs) of middle-eastern ceramic of the beginning of the eighth century AD⁴, are additional criteria testifying to the Umayyad dating of the site (**Fig. 7**). Finally, the absence of refurbishing works in the dyers workshops suggest that their operat-

ing lifespan did not exceed fifty years. Thanks to this evidence, we can safely say that the dyeing workshops operated continuously from their foundation, perhaps in 'Abd al-Malik's Caliphate, up to the earthquake that destroyed the city of Jarash in 131H/748AD. Given the high similarity of the five dyeing workshops in the hippodrome of Jarash, it is also possible that they were the product of a coordinated effort by the

4. Similar fragments of Umayyad craters decorated on the top of the body with wheat motifs were uncovered in

Khirbat as-Samrā (see Desreumaux 1986: 271.



7. Fragments of large Jars and craters.

state or by local authorities, rather than being merely the result of individual plans.

One can draw the following conclusions. On the one hand, the analysis of the remains of the hippodrome's dyeing workshops has yielded new and worthy information about the artisanal techniques used in textile dyeing in the East. On the other hand, homogenous numismatic and ceramic evidence, dating back to the eighth century AD, testify to the thriving activity of the hippodrome up to the earthquake of 131H/748AD. It was prosperous during the Umayyad period thanks to the development of textile industries which probably were the result of coordinated efforts by the local authorities.

Catalogue of Selected Ceramics and Umayyad Fulūs from the Dyers' Workshops

Umayyad fulūs

No.1 (Fig. 4) (Walker 1956)

Ob.: With two concentric circles (لا اله الا الله)

(الله/ وحده)

Rev.: Central (الله/ رسول/ الله)

No.2 (Fig. 4)

Ob.: With two concentric circles (بسم الله لا اله الا الله)

Rev.: Central, within a circle of dots (محمد/ رسول/ الله/ حمص)

No.3 (Fig. 4)

Ob.: With two concentric circles (لا اله الا الله/ وحده)

Rev.: Central, within a circle of dots (محمد/ رسول/ الله)

Mould made lamps

No.1 (Fig. 5)

Mould made lamp, used; zoomorphic handle missing; on rim and nozzle radial lines, circles and half-volutes; on base oval ring, two pairs of half-volutes and two short lines.

No.2 (Fig. 5)

Fragment of mould made lamp, used; zoomorphic handle; nozzle radial lines, circles, below zoomorphic handle Greek cross.

No.3 (Fig. 5)

Fragment of mould made lamp; nozzle radial lines, half-volute and scallop patterns (cf. Scholl 1986; Parapetti 1986; Gawlikowski 1986; Kehrberg 1989).

Pottery

No.1 (Fig. 6)

Fragments of jugs and gargolettes; red and grey ware; white painted decoration, sinusoidal patterns.

No.2 (Fig. 7)

Fragment of basin; grey ware; combined incised decoration on the rim, wavy motif.

No.3 (Fig. 7)

ragment of crater; red ware; combined incised decoration on the top of the body, wheat motif (Kehrberg 1989; Sodini and Villeneuve 1992).

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