

## THE PETRA NATIONAL TRUST SITE PROJECTS

### PRELIMINARY REPORT ON THE 1991 SEASON AT ZURRABAH

by  
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#### Introduction

The fourth season of excavation at the Zurrabah pottery workshop took place between 17 February and 14 March 1991, with an additional week for recording. Funding for the excavation was generously provided by the Petra National Trust, within the framework of a project aimed at providing income for the people of Wadi Musa and Petra during a difficult period, marked by the absence of tourism, the main income for a large segment of the population there (see the report by Zayadine and Farajat in this volume).

The three previous seasons at the site, which lies between Petra and Wadi Musa, were in 1980 and 1981, started by Nabil Qadi and continued by Fawzi Zayadine (Zayadine 1981; 1982; 1986). It was felt, however, that the workshop needed further investigation, this being mainly due to the following reasons:

1. It was obvious from the wasters found at the site that the area produced pottery over a long period of time (first to at least sixth century AD). Four kilns, in two pairs dated to the Roman period, with very different designs, were uncovered during the 1980 seasons. Other kilns belonging to different time periods should exist at the site. Their excavation would give an idea of the evolution of kiln design.

2. Neither of the larger kilns excavated had intact, or at least an indication of, stacking-floor supports. Thus an important part of Nabataean kiln design is yet unknown.

3. Kilns III and IV, in the western part of the site, were re-buried after a salvage excavation in 1980. These two kilns needed to be re-exposed for better documentation.

4. Most of the pottery excavated from the site came from dumps containing substantial amounts of residual sherds. The possibility of separating dumps belonging to different

phases using statistical analyses of pottery wares as well as forms should be tested.

5. Only one probable potter's tool was found during the past seasons. Discovery of more tools would help give a better understanding of the Nabataean potter's craft.

6. The side rooms uncovered in the past seasons are part of a large complex — with several phases of use — that has only been partially exposed, and therefore not fully understood. More of the complex needed excavation.

Obviously the short season of 1991, interrupted by some of the worst weather South Jordan has known, with a team consisting of only one person and six to seven workmen, could not hope to answer all these questions. It was thought, however, that any additional work at the Zurrabah workshop would be a step toward re-starting interest in this unique and important site. The season was meant as preparation for more extensive future work at the only known well-preserved, multi-period pottery production site of the Nabataean tradition.

#### Strategy

Work at the site started with the excavation of one trench, A.12, to the east and uphill from Kilns I and II (Trench A.1, Fig. 1). The trench dimensions, 3.50 × 5.00m, were dictated by the topography of the area. The location was chosen because Sq. A.11 — directly to the north of A.12, excavated in 1981 — provided the best preserved evidence for the latest phases of occupation of the site and the southern part of Trench A.12 should lie outside the main complex building, thus giving an indication of what was happening there, an aspect overwhelmed by the kiln discoveries during the previous seasons.

Additionally, parts of Sqs. A.6 and A.7 to the west of Kilns I and II were cleared in

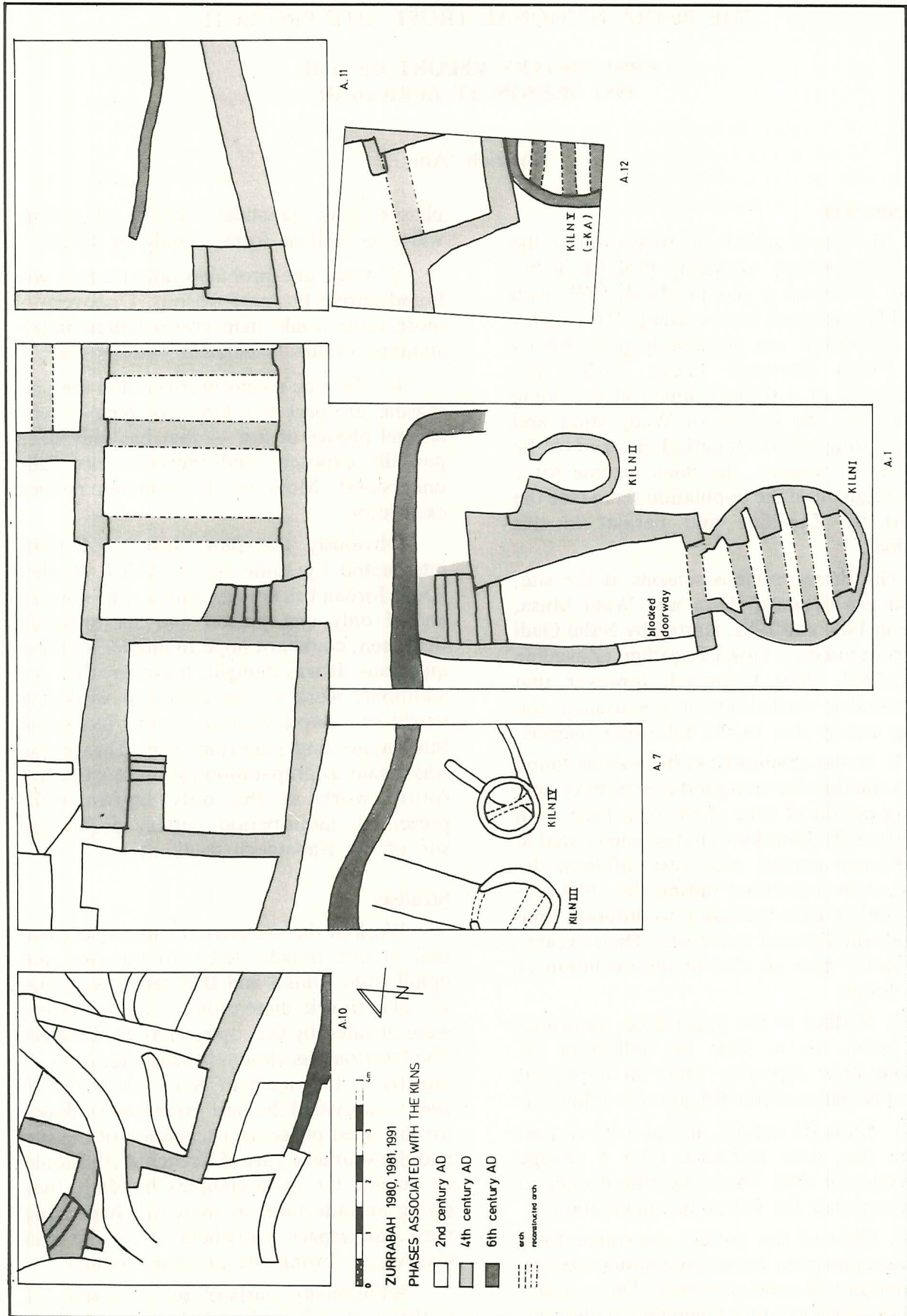


Fig. 1. Schematic plan of the excavations at Zurrabah.



order to re-expose Kilns III and IV.

## Results

### *Trench A.12 (Fig. 2)*

Part of a room belonging to the main complex building was exposed in the north-eastern part of the trench, the function of which could not be determined yet, the floor was not reached during the season. The room is unique in having a square recess at its southeastern corner, measuring approximately  $1.80 \times 1.80\text{m}$  (defined by walls WB/5, WC/7 and WE/27). The entrance to this recess was spanned by an arch, the roughly built springers of which contrast sharply with the well-dressed voussoirs (in the typical oblique tool marks of the Nabataean fashion) found strewn to the south in the upper levels, perhaps moved by modern bulldozer activity as a plastic bottle was found under one of them. The positions of two of the voussoirs is shown in Fig. 2 next to the east section, top elevations 1058.61 and 1058.70 m asl. The entrance to the recess is also defined by a low partial curtain wall. WF/35.

All the uncovered walls were roughly built, the 'exteriors' of which were even more rough than the 'interiors'. Actually most of the exterior face of wall WA/5 could not be defined, as that would have meant undermining the top two courses, while the exterior face of wall WB/6 was an irregular mass of rubble and clay (compare Pl. I, 1 and 2). The layers at both sides of the room represented dumps/fills of mixed pottery. The layers inside the room (shown in section to the north of WA/5, below loci 2 and 19 in Fig. 3, to the west of WD/20, below locus 19 in Fig. 4) produced pottery dating up to the fourth and perhaps early fifth centuries AD, while those outside the room (to the south of WA/5, below loci ++ and 8 in Fig. 3) had no sherds dating later than the second century AD. All of the external layers are ash dumps from kilns. The only explanation to this phenomenon is that the building was dug into earlier dumps, thus it would have been underground at the time of use. This is supported by the fact that all the previously excavated rooms had no doors or windows, despite their comparatively deep preserved heights, and the only accesses found were

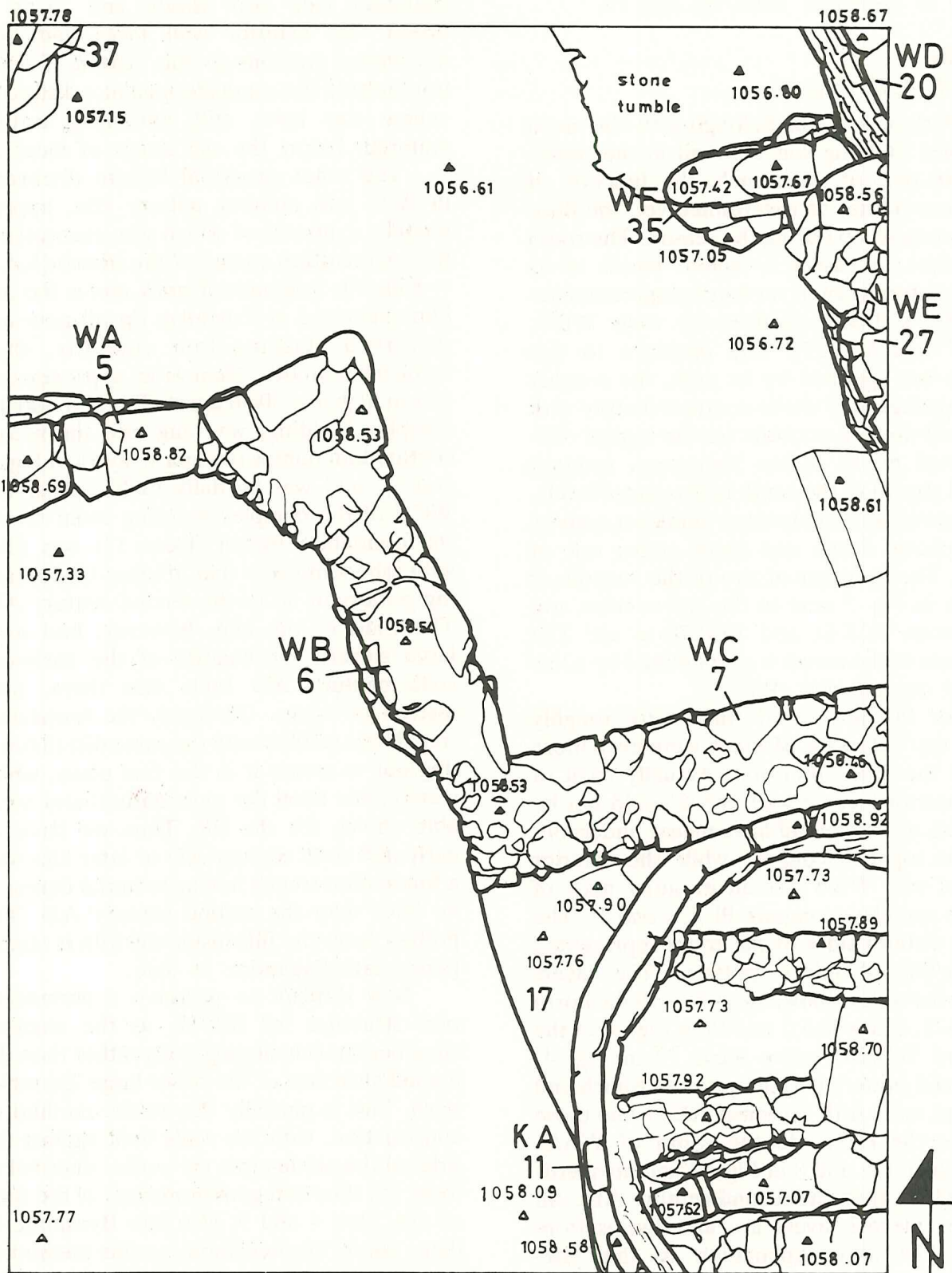
staircases (see also Mason and 'Amr, in press). No exterior wall faces had been uncovered previous to this season. Excavation outside the room stopped at a distinctive yellow clay level, still containing cultural material, below the ash dump of locus 15.

The other structural feature discovered in A.12 was another pottery kiln, approximately a quarter of which was excavated in the southeastern corner of the trench (KA/11 = Kiln V). It is built of brick and is the only kiln excavated at Zurrabah up till now with preserved stacking-floor supports, these being brick arches, 28cm wide, approximately 100cm high and 30cm apart. The kiln, like the complex building, was dug into the second century kiln dumps (compare layers in Figs. 3 and 5), and was partially built against wall WC/7 of the complex building room recess. Its foundation trench (locus 17) was filled with ash identical to that of locus 15, containing pottery of up to the second century AD. The walls of the kiln, however, had some large storage jar handles of the early-mid sixth century AD built *into* them, used instead of bricks. Obviously the foundation trench was refilled with the same dirt that was dug out to create it in the first place, which would have been the most natural and available choice for the fill. Thus we have an early-mid sixth century AD or later kiln with a foundation trench having material dating to no later than the second century AD. The pottery from the fills inside the kiln is almost purely late Byzantine in date.

It is difficult to perceive a permanent roof structure for KA/11, as the stacking chamber has out-sloping walls rather than the domed structure of the other large Zurrabah kilns. This is partially due to the method of construction, with the walls built against the sides of the pit dug into the earlier material of locus 15, thus being underground at the time of use. Loci 4 and 9, also late Byzantine in date, are further testimony to this method of construction (see Fig. 5). Not much could be said about the method of access to the relatively elaborate arched firebox until more of the kiln is exposed.

An interesting find from locus 23, fill between the arches inside the kiln, was a painted bowl almost 80 percent of which was





# ZURRABAH 1991 A.12

Fig. 2. Trench A.12, top plan.

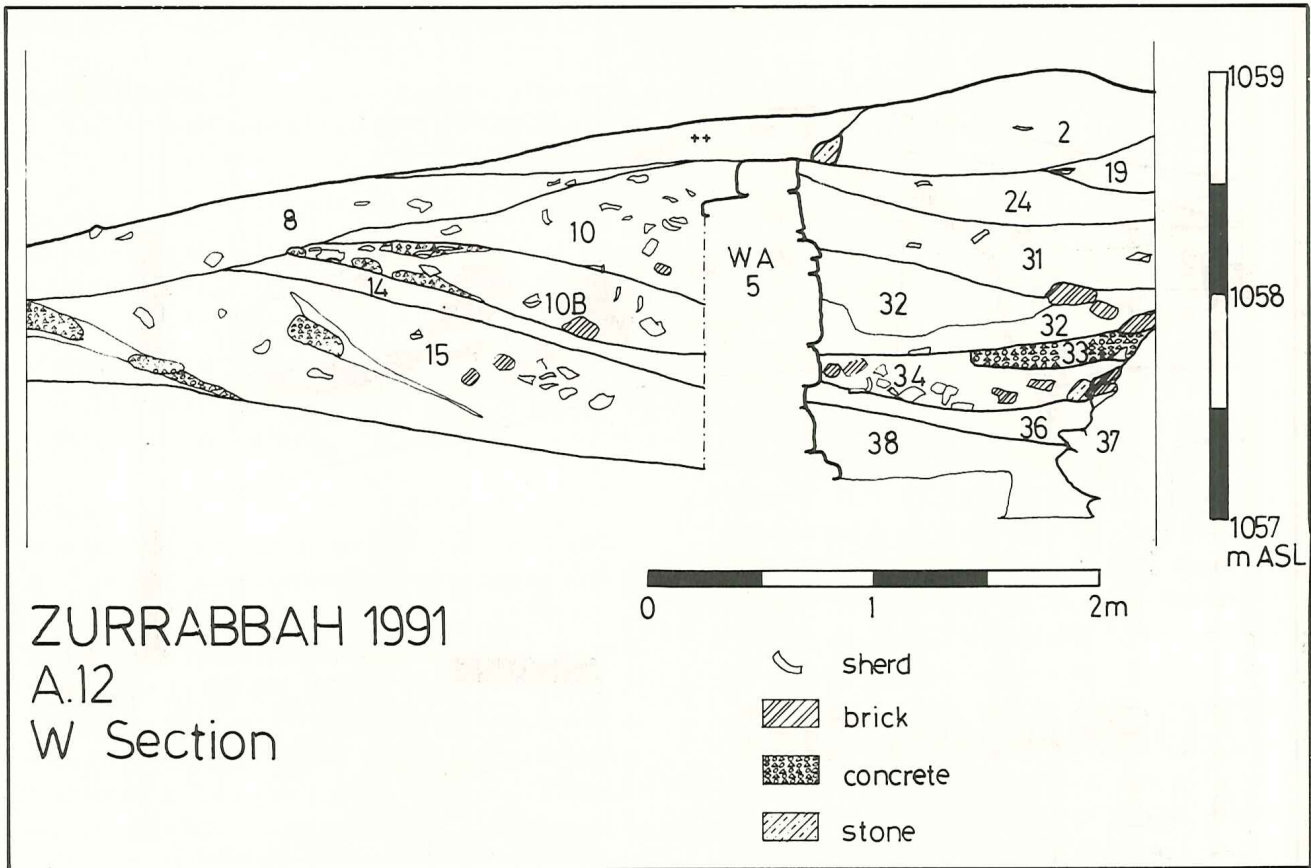


Fig. 3. Trench A.12, western section.

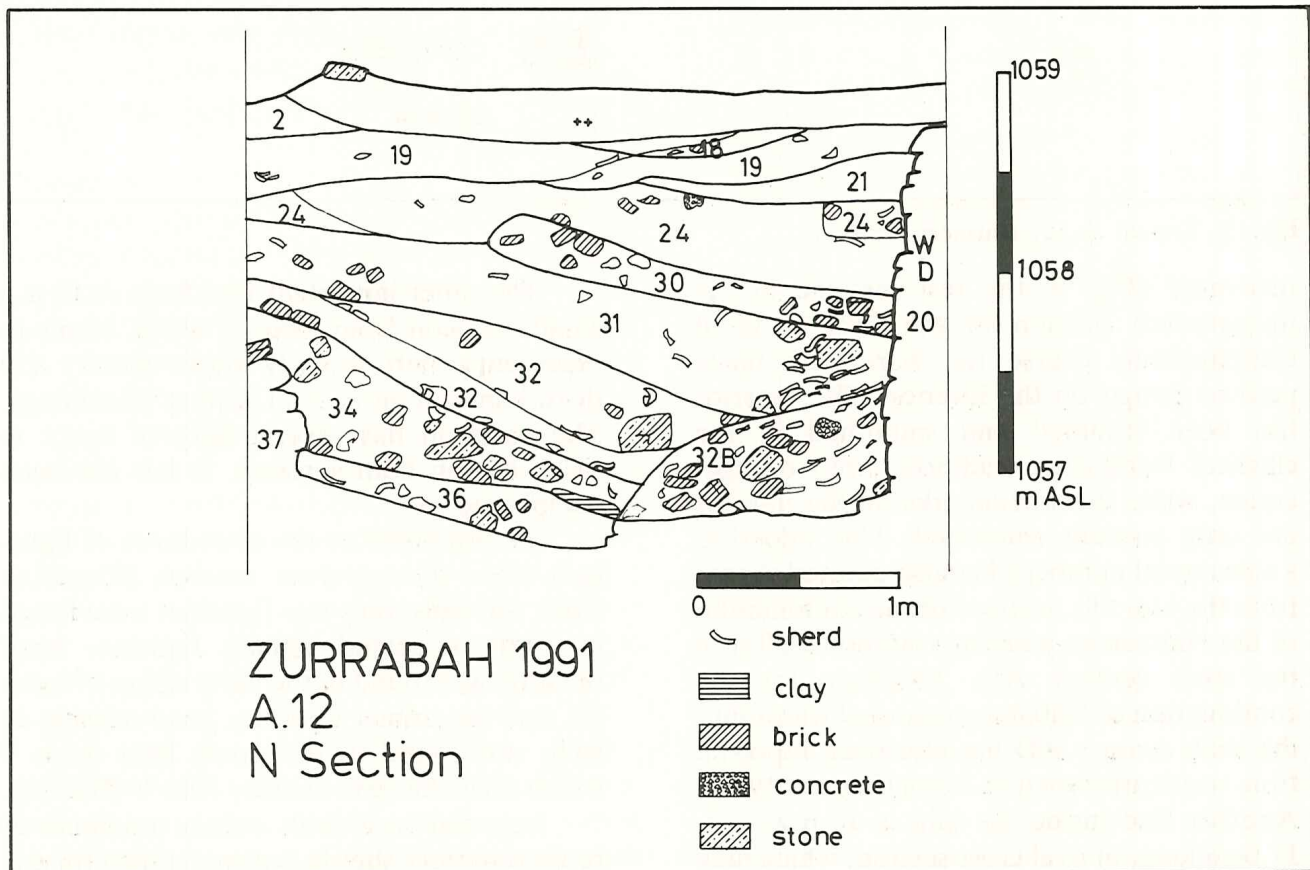


Fig. 4. Trench A.12, northern section.



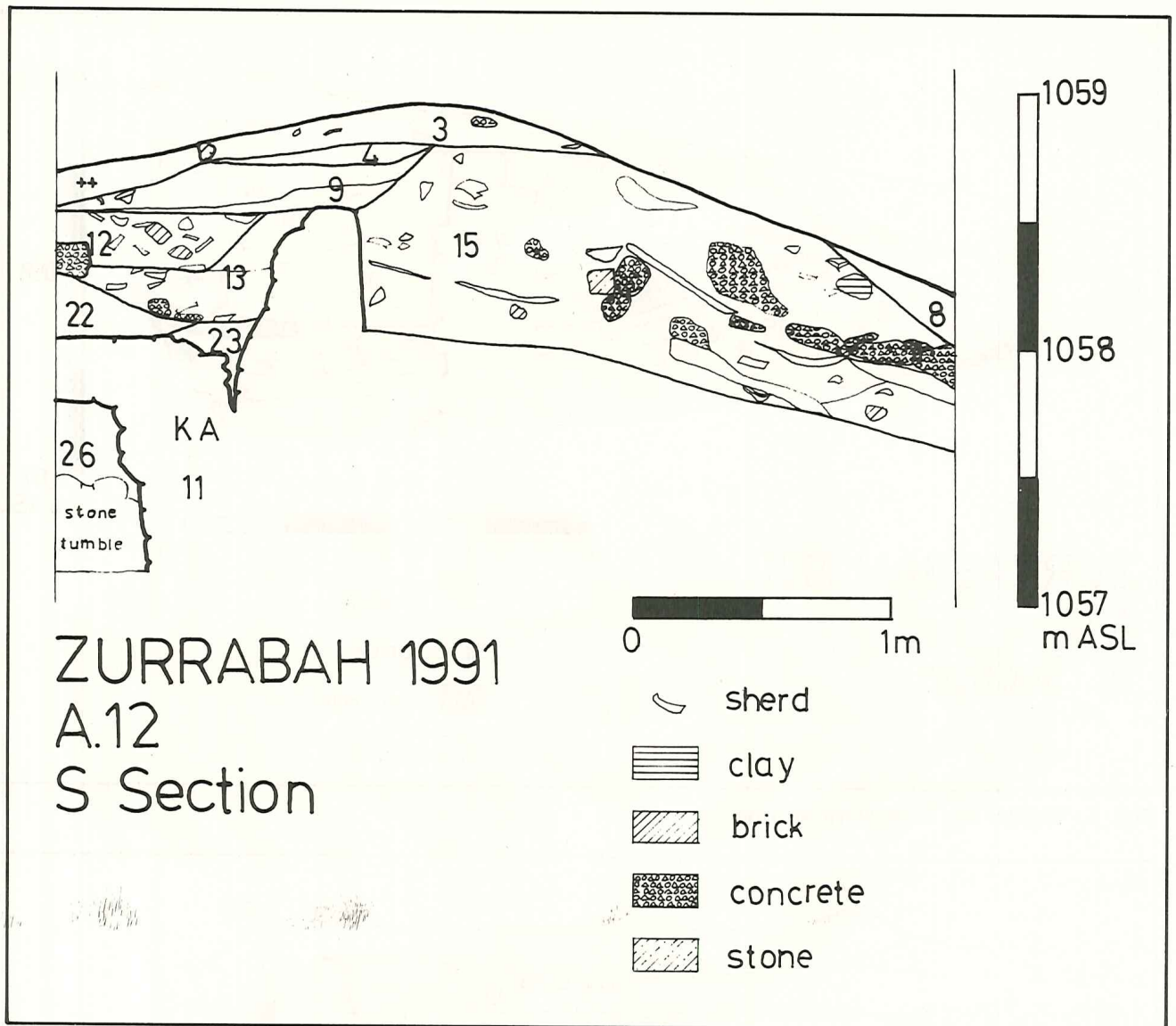


Fig. 5. Trench A.12, southern section.

recovered (Fig. 6; the rest may lie in the unexcavated portion of the fill). It is of comparatively coarse red ware with black painted design on the interior. The exterior has been trimmed and smoothed in the classical Nabataean tradition, fired orange-cream, while the wheelmarks on the interior are only partially smoothed. This, added to a substantial number of coarse painted sherds from the kiln fills, is proof of the continuation of the Nabataean painting tradition well into the sixth century AD. Evidence for the continuation of Nabataean painted wares into the sixth century AD has also been reported from residential areas in Petra (Russell 1990). Another find inside the kiln is an iron rod, 17.0cm long, of oval cross section, which may have been a potter's tool.

The other important find from A.12 is a small ostrakon from locus 8, which seems to represent a third to early fourth century AD disturbance of the second century kiln dumps. The ostrakon has several lines of script in black ink on both surfaces. It has not been deciphered yet.

As compared to the abundance of figurines from the previous seasons (Zayadine 1982: 386-389), only two figurines were found in 1991: a seated female figurine, head missing, was found in the early dump of locus 10, and an animal figurine, head missing as well, was found in the much later locus 9 which seals the sixth century Kiln V (KA/11).

Less elaborate finds include a number of re-used pottery sherds, some trimmed for use as lids or game pieces, while others were

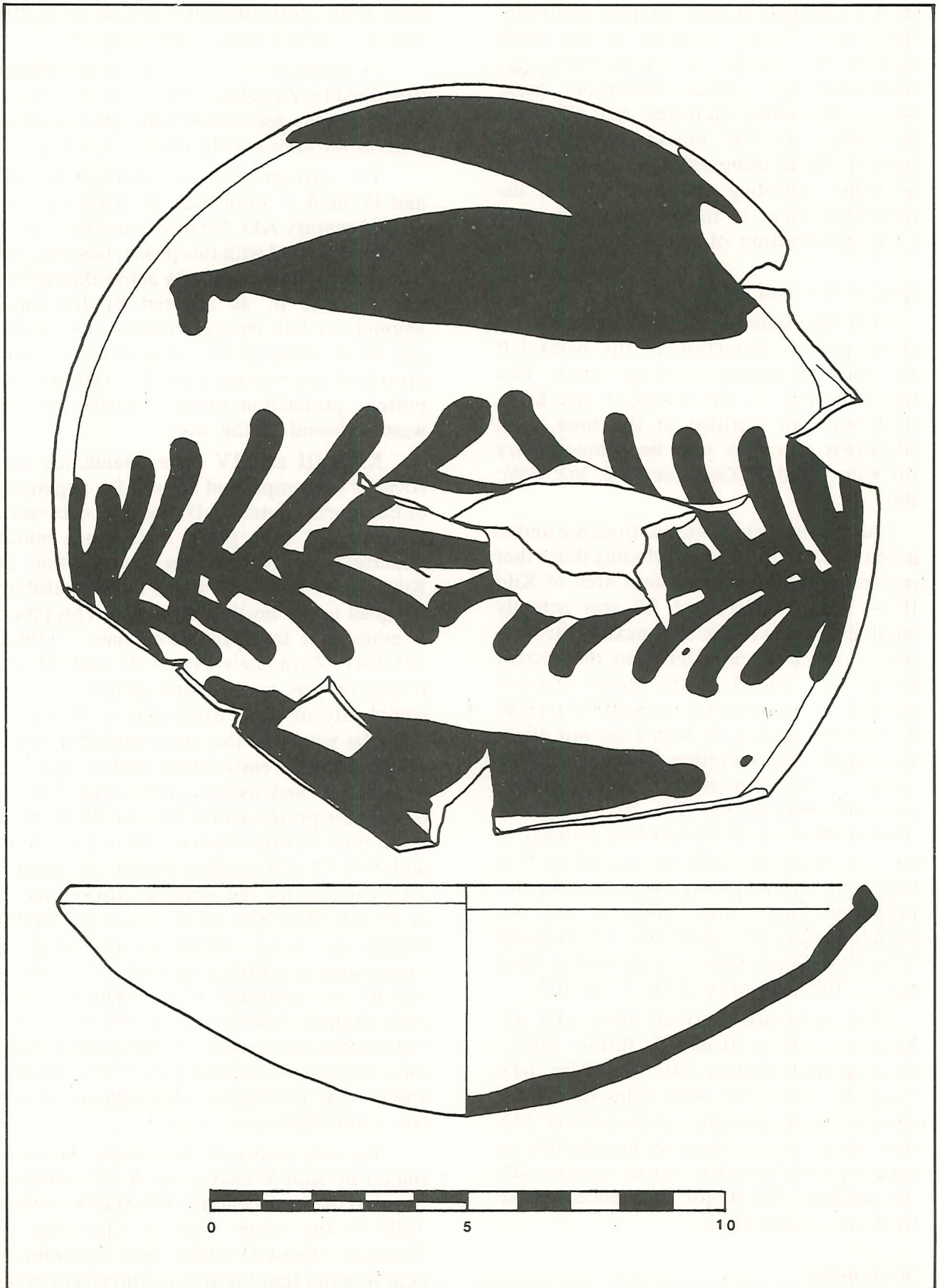


Fig. 6. Painted Nabataean bowl, ca. mid sixth century AD.



actually knapped to form scrapers and tools. These were more common in the early deposits. My thanks to Ina Kehrberg for confirming my doubts concerning these pieces. The other mundane but abundant finds were concrete blocks, found in all deposits, made using ash and wasters from the kilns, indicating a side industry at the workshops. Some of these blocks were used in the construction of the walls.

#### *Squares A.6 and A.7*

The exposure of Kilns III and IV involved partial excavation of the balks left after the first season of salvage work. This shed new light on the dating of the kilns, which was not clarified at the time, with indications that they may be contemporary with Kilns I and II (Zayadine 1982: 382; 1986: 186).

All the material retrieved from the undisturbed levels in the balks, including those that were *covering* the roof (dome) arch of Kiln III — some undisturbed fill was actually found left on top of the arch next to the west balk — dated to no later than the second century AD. Fig. 1 clearly shows that the assumed connection between Kiln IV and the blocked passageway of Kiln I do not align. Additionally, the elevation difference of over a metre — 1055.85m asl for Kiln IV passageway, 1055.96m asl for Kiln III passageway and 1056.94m asl for the blocked doorway in Kiln I passageway, with no indication of a slope in any of the passageways — make this connection highly improbable (it was not possible to clear the area between Kilns I and IV due to the presence of a protective shed built in 1980, covering Kilns I and II).

The evidence derived from the re-exposure of Kilns III and IV further refines the suggested Roman date for Kilns I-IV (Zayadine 1982: 386), with Kilns III and IV dated to no later than the second century AD, while Kilns I and II dated to the late third or more probably the early fourth century AD. This explains the major differences in the structures of the kilns.

#### **Conclusions**

Despite the limited duration and expo-

sure of the 1991 excavation at Zurrabah, the season clarified some interesting facts.

In addition to the occupational phases described by Zayadine (1982: 382-386), three major phases associated with the constructions of the kilns may be defined (see Fig. 1).

The earliest excavated kilns, Kilns III and IV in A.7, were used no later than the second century AD. No other structures were found associated with this phase, however the potters must have been very active during and shortly after it, as attested by the large amounts of kiln dumps dated to the second and third centuries AD. This phase was also preceded by an active early first century AD pottery production phase, attested by the wasters found at the site.

Kilns III and IV were abandoned and covered by dumps, and around the beginning of the fourth century AD, the next excavated "kiln phase" took place. This was a major undertaking, involving the construction of Kilns I and II in A.1 and a large workshop complex to the north of the kilns. This phase is equivalent to Zayadine's Phase I (1982: 382-384). Zayadine's Phases II and III are re-use of this construction phase (see the complexity of walls excavated in A.10).

The whole of the main workshop complex built in the early fourth century AD was constructed and used underground. This is despite the preserved variance in elevation of up to three metres between the walls in A.10 and A.11/12. The modern surface elevation is 1057.25m asl for the southeastern corner of A.10, and 1058.92m asl for the northeastern corner of A.12. Although the modern topography is partially created by bulldozer activity, the positions of the staircases and arch springers indicate that the fourth century topography was roughly similar to the present one. At least the eastern part of the building was used as a convenient dumping area in the late fourth/fifth century AD.

The last excavated "kiln phase" is represented by Kiln V (KA/11 in A.12), which is dated to the sixth century AD, and two rough walls to the north. This is equivalent to Zayadine's Phase IV (1982: 384). It should be kept in mind that the site at Zurrabah covers an area of around 0.5km<sup>2</sup>, only a small albeit



central portion of which was excavated. The wasters and extensive dumps indicate a profusion of uninterrupted production from the first up to the sixth century AD. Any gaps presented by the excavated "kiln phases" are certainly due to the position and extent of the excavations.

The structures of the excavated kilns show a progression from building deep, rather narrow kilns towards wider and more shallow constructions with more sophisticated fireboxes.

During the 1991 season, Trench A.12 produced approximately 250,000 sherds and only one complete vessel, a small slightly warped bowl from locus 10. Preliminary analysis of the wares shows a clear tendency of moving from the production of mainly red wares in the early phases toward a predominance of cream surfaces by the late phases. This is due not only to applied cream slips but also to higher firing temperatures, perhaps achieved by the changes in kiln design mentioned above. Another clear tendency is that although painted sherds continue well into the sixth century AD — with the painted bowl in Fig. 6 being evidence for the production of Nabataean painted ware then — their relative frequency decreases through time.

As for the forms, these seem to be quite limited within each phase, although a variety of household vessels such as bowls, cooking pots, jars and jugs was represented. A conspicuously rare Nabataean vessel at Zurrabah is the typical unguentarium. This indicates specialisation in the production. Another indication of specialisation comes from the fact that

no clearly warped rouletted wasters were found, actually very few rouletted sherds were recovered, as opposed to several thousand painted sherds and wasters. This is clear evidence that the Zurrabah potters produced large amounts of painted pottery, but no rouletted vessels. No clearly "foreign" wares, such as the classical Terra Sigillatas, the Late Roman Reds or any glazes were found.

An interesting fact is that in all the excavated ash in A.12, comprising most of the layers, no charcoal or charred plant remains were found. The conclusion should be that wood was not used for firing the kilns and any shrubs that may have been used would have been restricted to the initial stages. This is in contrast to the abundance of olive stones from earlier seasons, especially from A.10 (Zayadine 1982: 384).

The absence of charred plant remains, combined with the fact that very few animal or bird bones were recovered from the layers in A.12, is further confirmation of the pure industrial nature of the area.

Obviously, much more work still needs to be done at the Zurrabah workshops. Although much of the site was built on since the 1981 season, a substantial portion is owned by the Department of Antiquities, offering convenient access to what is the largest and longest operating industrial area known in Jordan.

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**References**

Mason, J.R.B. and 'Amr, K.

In press A Study of Nabataean Pottery Manufacturing Techniques. *ARAM* 2.

Russell, K.W.

1990 Household Excavations at Petra. Paper presented at the 92nd Annual Meeting of the Archaeological Institute of America. San Francisco, 27-30 December 1990.

Zayadine, F.

1981 Recent Excavations and Restorations of the Department of Antiquities (1979-80). *ADAJ* 25: 341-355.

1982 Recent Excavations at Petra (1979-81). *ADAJ* 26: 365-393.

1986 The Pottery Kilns of Petra. Pp. 185-189 in D. Homès-Fredericq and H.J. Franken (eds), *Pottery and Potters - Past and Present*. Tübingen.





1. Exterior faces of walls WA/5 (to the left) and WB/6. View to NE.



2. Interior faces of walls WA/5 (to the right) and WB/6. View to SW.