

Production in the hinterland of Petra: winepresses as a case study

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Abstract

This paper discusses production in the hinterland of Petra through the archaeological evidence of winepresses. Several winepresses were recorded in the hinterland of Petra during the study of ancient roads. The paper presents a description of the presses, their typology, and their geographic and topographic locations. The discussion also deals with other issues such as the date of the presses, the contribution of the hinterland of Petra to its economy, and the type of sites with which the presses are associated.

Keywords: Winepresses. Petra. Nabataean. Hinterland. Wine.

The Geographic and Topographic Locations

The wine presses under discussion in this paper extend geographically northward from Malghan area northeast Petra to almost the Ras Naqeb escarpment southward in southern Jordan (Fig. 01). They were noticed and recorded during the study of the ancient road networks in the hinterland of Petra initiated by the author in 2011 and 2014. Topographically, they are located within the mountainous terrain of Jebal al-Sharah with an elevation not less than 1400m above sea level. Although the area is high and mountainous the founders of the presses built them on almost flat terrains except in one case (WP 09). All of the wine presses presented in this paper are associated with settlement sites, farmsteads and hamlets mainly. The masonry, in general, is similar to the masonry of the settlement sites in terms of the architectural techniques and the type of stones.

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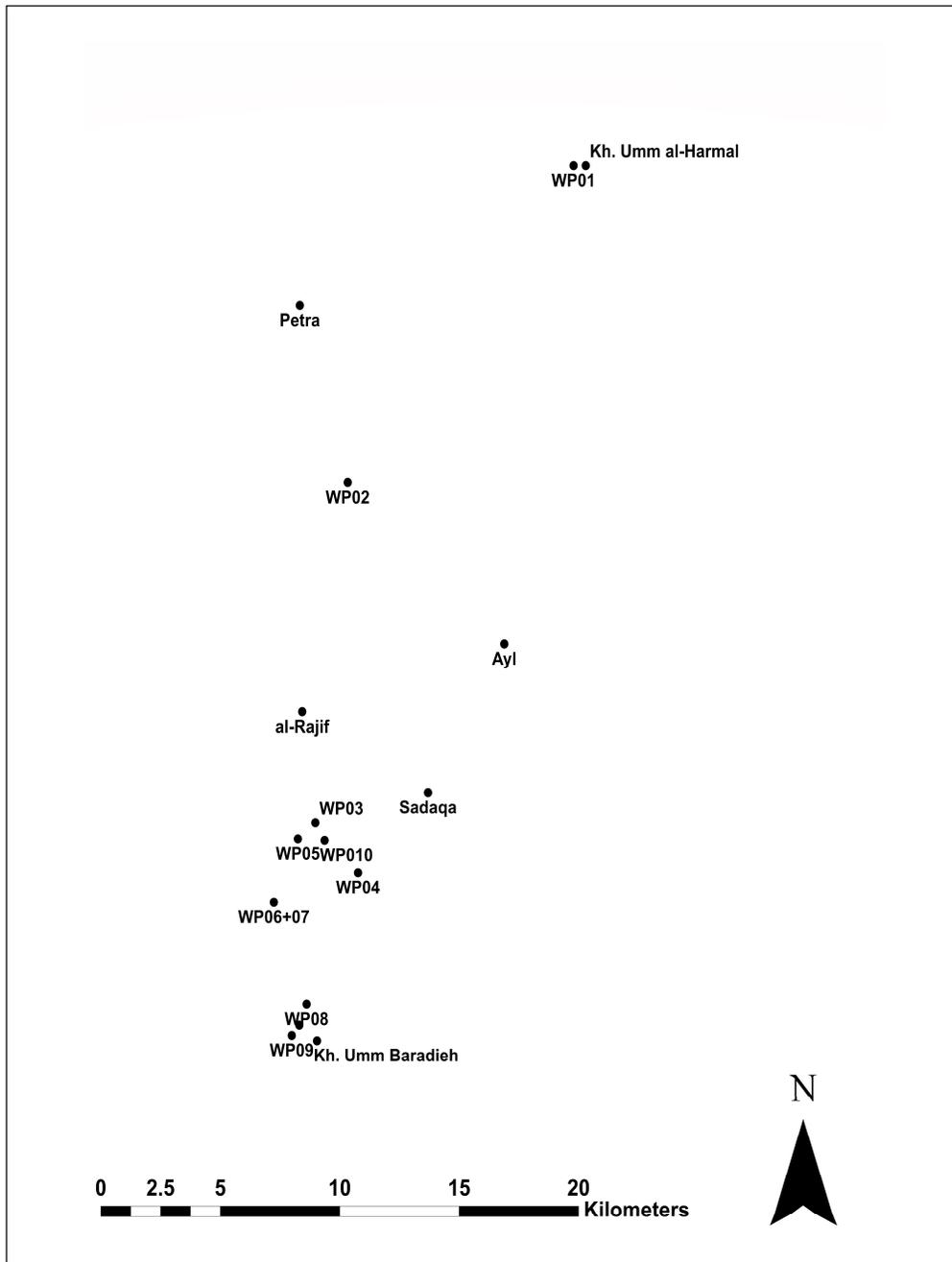


Figure 01: The distribution of winepresses in the study area; © F. Abudanah.

Winepress 01

This winepress is located a few hundred meters west of Khirbet Umm aHarmal, and just on the edge of an ancient road heading westward from the abovementioned site (Fig. 02). This press consists of two parts, the treading floor and the collecting vat. The treading floor is almost square measuring 3x3m approximately and protected by a built wall on the four sides. The wall is built of local hewn limestone blocks and is about one meter high. However, it is not clear if this is the original

height of the wall, and no traces of plaster were noticed on its walls. A considerable mound, created probably due to the clearance of the nearby field, is contiguous to this part of the press from the northwestern side. The founder of this press appears to have dug into the ground and reached the level of the bedrock which was obviously used as a floor for the treading floor. The second part is the collecting vat which has a rectangular opening (1.5 X 1m) and looks like a rock-cut cistern. It is about two meters deep and coated with a thick layer of waterproof plaster. At the bottom of this feature there is a small basin and the remains of few steps (Fig. 03). The treading floor is directly connected to the collecting vat by a short channel. The site of Khirbet Umm al-Harmal is a farmstead located on a lower slope of a hilly area and consists of several internal units. The stonework of the entire site is homogenous and of local hewn limestone blocks. A cistern is suspected outside the southern part of the site. Further south a water channel made of ceramic pipes was found in a small gully. The channel clearly runs to the site to the assumed cistern, but it is not clear what the water source is.



Figure 02: The winepress 01 west of Khirbet Umm al-Harmal; © F. Abudanah.



Figure 03: The bottom of the collecting vat of winepress 01 west of Khirbet Umm al-Harmal; © F. Abudanah.

Winepress 02

This is probably the biggest winepress in the hinterland of Petra. It is associated with a settlement site east of Abu Saadah traditional house east of al-Tayybah and southeast Petra. The site is on a relatively flat terrain on the southern end of a high ridge; more than 1500m above sea level. Unfortunately, the state of preservation of this winepress does not allow a detailed description of its dimensions and architecture.

Winepress 03

This winepress is located on a flat terrain several kilometres southeast al-Rajif and north of ARNAS site 096 (MacDonald *et al.* 2012, 119–120). It is not well preserved due to an illicit excavation. The treading floor cannot be surely identified but the collecting vat is still preserved. It is a shaft; about 2m deep and 1.5m in diameter and its walls are coated with a waterproof plaster. This press is evidently associated with the abovementioned site (ARNAS 096) which was recorded by the Petra Hinterland Agricultural Sites Project (PHASP) team. The site (PHASP 05) consists of a terraced building of 35m (N-S) x 24m (W-E) and a small installation north of it (Fig. 05). What appears to be a (open?) courtyard is located in the southwestern part of the building; partly built over by a modern oval installation (perhaps an animal pen). The complex was built against a gentle slope and is

apparently terraced. The walls are preserved up to two courses above the surface, consisting of limestone and flint with a thickness between 50 and 140 cm. As remains of an illegal excavation in the north-western part of the building we registered a high quantity of Nabataean/Early Roman fineware. Surface finds were collected in five pails comprising mainly coarse (kitchen) ware, some fineware, ranging from Nabataean/Early to Late Roman/Byzantine.

Winepress 04

This press is located within the limits of PHASP Site 03; ARNAS Site 061 (MacDonald *et al.* 2012, 90–91). It is located on a flat ground on the side of an ancient road approaching the site from the east. The two parts of this press, the treading floor and the collecting vat, are fairly preserved and can be described. The trading floor is defined and protected by a wall built of local hewn limestone blocks. Its dimensions are about 3X3m and its depth cannot be measured as it is almost filled with soil sediments. The fact that the upper course of the wall is hardly above the ground level supports the assumption that the builder dug into the ground and reached the bedrock level. The bedrock could have been used as a floor for the treading floor as it is naturally hard and can be easily cleaned and coated with a layer of plaster if necessary. The collecting vat is contiguous to the trading floor and directly connected to it but cannot be fully described. Its opening is traceable and almost circular; about 1m in diameter, covered with a slab and also filled in with debris and soil sediments.



Figure 04: The winepress 05; © F. Abudanah.

The site it is associated with covers a total area of 57 (N-S) x 58 (W-E) m. It comprises at least two units of rectilinear structures, deviating from each other in their orientation. The western building complex measures 20 (N-S) x 13 m. Its layout is unclear, probably consisting of two parallel units. The unit lying in the E is itself divided into two separate compartments. The eastern building measures 17 (N-S) x 12 (E-W) m and consist of a narrow rectilinear unit (12 (N-S) x 7 (E-W) m) and several compartments lying S and E of it on a lower level, representing possibly terrace walls. The site could represent some sort of installation for processing agricultural goods (Fig. 06). Surface finds were collected in 5 Pails. Late Roman/ Byzantine pottery seems to be predominant but comprising also Nabataean/ Early Roman ware.

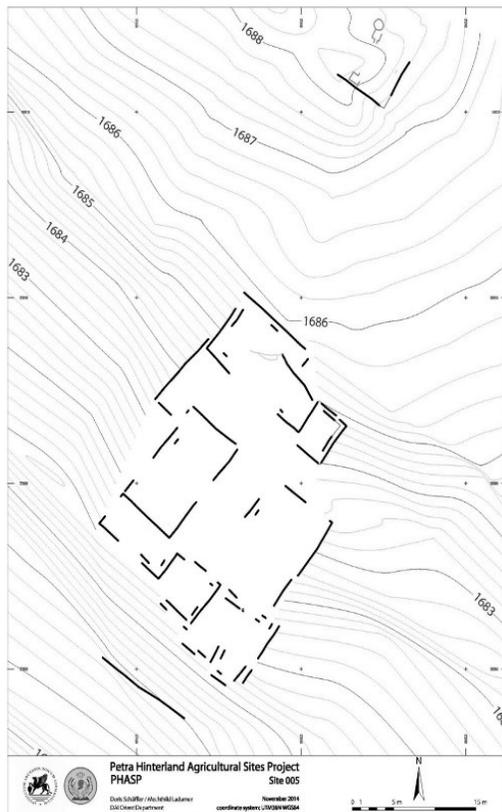


Figure 05: Plan of the site (PHASP 05) with which winepress 03 is associated; courtesy of PHASP.

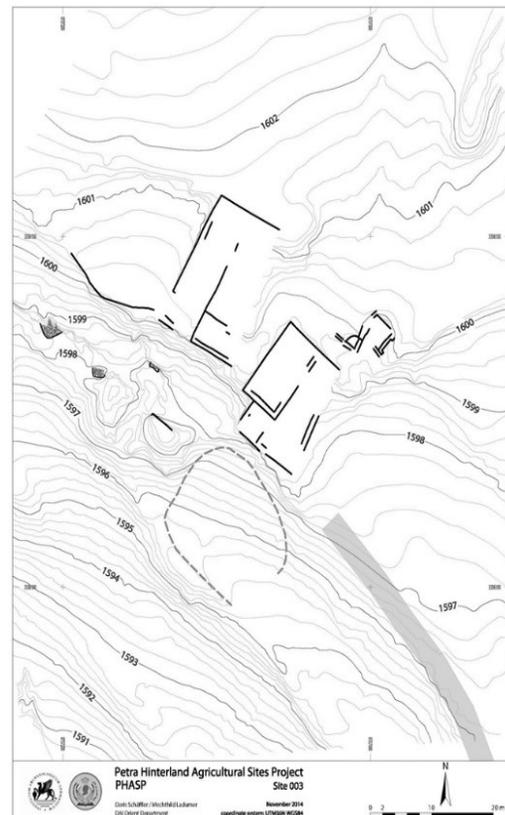


Figure 06: Plan of the site (PHASP 03) with which winepress 04 is associated; courtesy of PHASP.

Winepress 05

This winepress is quite different from the other winepresses in the study area. It is located on the side of an ancient major road; the so-called the King's Highway (Abudanah *et al.*, 2015) on almost a flat terrain of a lower slope. It is not also directly associated with any settlement site but not far away from some other ancient settlement sites. It is not fairly preserved, only short parts of the wall that encircle

and define the treading floor are still traceable. Therefore, its dimensions cannot be measured due to its state of preservation. However, the remaining parts indicate that this press is a large one; probably about 5m each side. The collecting vat is not traceable at all but seems to have existed on the southeastern side below the treading floor. The construction of the modern road between Petra and Aqaba via al-Rajif could have caused the damage to the collecting vat (Fig. 04). Further south, there is a similar feature; partly rock cut, called Braiket al-Damm, located also on the side of the same ancient road (Abudanah *et al.*, 2015). The function of this feature cannot be confirmed but seems to be a cistern.

Winepresses 06 and 07

These two winepresses were discovered when the author was recording an ancient secondary road running westward off the King's Highway (Abudanah *et al.*, 2015). They were located on a relatively flat ground of a low and long hill overlooking a valley to the east. The presses are associated with an ancient settlement site recently disturbed by a modern building (barracks). The two presses are aligned and a space of about ten metres separates them. The first one (the northern) is better preserved than the second one (the southern) and slightly bigger. The treading floor of the first one is almost square; 3x3m approximately. It is also defined and protected by a built wall like the other presses in the study area. The wall is built of hewn limestone blocks without any traces of a mortar, mud or plaster and rises for about 0.5m above the ground. The floor itself is not exposed as it is covered with sand and some fallen stones. Besides the treading floor, the collecting vat is also fairly preserved but was disturbed by treasure hunters. It is circular in shape, about 1.5m and its walls built of small lime stones without traces of a waterproof plaster. A small channel is connecting the treading floor with the collecting vat which is on a level below the level of the treading floor (Fig. 07). The second press (the southern) is not well preserved, and only parts of the curtain wall which encircles the treading floor are fairly preserved. The latter is square; about 2.5x2.5m, and its depth cannot be measured due to the accumulation of sands and the collapse of stones from the wall. The other parts of this press, the collecting vat in particular, cannot be seen at all. Two possible explanations for the absence of the collecting vat can be suggested. Firstly, it is possible that this press was not finished for technical reason related to its location and recognised later. Secondly, it is possible that the collecting vat is covered up due to soil erosion. Nevertheless, the second suggestion is weak as there is no evidence on the existence of this feature at all.



Figure 07: The treading floor and the collecting vat of winepress 06; © F. Abudanah.

Winepress 08

This press is located in the southern part of an ancient site and therefore cannot be easily distinguished from the architectural features of the site. The site itself lies on a relatively flat ground of a gentle slope of a hilly area, west of Qurayn and south of the Qurayn junction on the Petra-Aqaba road. It is likely a settlement site in an agricultural area and surrounded by numerous fields and terraces. Of this press, only part of the curtain wall of the treading floor can be seen due to the collapse and accumulation of stone blocks. For the same reason the collecting vat cannot also be seen and its shape and dimensions cannot be known. Without a thorough investigation of the site this press would have not been discovered.

Winepress 09

This press is located on a gentle slope south of Umm Sayeh hill and about 1 Km west of Umm Baradieh sites. It is also located on the eastern side of an ancient road connecting a settlement site south of the press with the main route of the King's Highway (Abudanah *et al.*, 2015). Its plan is slightly different from the other presses. It has a treading floor; square in shape, not well preserved but encircled by a wall like the rest. The collecting vat is well preserved and has an uncommon plan in the study area. The collecting vat is a shaft, its diameter about 1.5m, dug into the ground and its walls built of stones and coated with a thick layer

of waterproof plaster (Fig. 08). From the southern side of the shaft extends a ditch-like feature for about two metres. It is also coated with a layer of waterproof layer and narrowing towards its end. The function of this part is not clear, but it can be the part from which a person can have access to the collecting vat since no traces of steps were noticed within the shaft. The original depth of the collecting vat and this feature cannot be determined due to the accumulation of soil sediments. This press is highly likely associated with the ancient site which is located on a lower slope further south.



Figure 08: The collecting vat of winepress 09; © F. Abudanah.

Winepress 10

Although the archaeological evidence is not strong enough to confirm that this is a winepress, but the authors included it due to its general shape. This feature is located on the north eastern side of an ancient site; about 1 km southeast of winepress 03. Only a shaft, most likely the collecting vat of the assumed press, can be noticed. The location of the shaft, on a gentle slope and at one end of the site outside its internal units, supports the assumption. Recent activities at the site enormously disturbed its architecture and make it quite difficult to trace the small features.

Typology and Date

From the discussion above, it is clear that one type of winepresses is predominantly common in the study area. This type consists of a treading floor and a collecting vat furnished with a depression at the bottom. The treading floors are rectilinear, square or rectangular, surrounded and protected by proper walls on ground level mostly. Their floors appear to be bedrocks or paved with flagstones, but their current state of preservation cannot help to determine what the case is. The collecting vats are mostly shafts, rock-cut or partly built, and their walls are coated with a thick layer of waterproof plaster. At Bayda, north of Petra, Al-Salameen (2005:117) distinguished two types of winepresses; type A and type B. The latter type is identical to the type in the study area. Type A consists of a treading floor, a collecting vat and an intermediate vat located between them. The winepresses at Bayda are mostly rock-cut (Al-Salameen, 2005) on rocky outcrops within agricultural fields (Fig. 09).



Figure 09: A rock-cut winepress at Bayda; © A. Hasanat.

A precise date of the winepresses presented in this study is quite problematic for several reasons. The sites with which the winepresses are associated were in use in many cultural periods, mainly Edomite, Nabataean and Roman including the Byzantine. The date evidence is mostly according to the surface evidence of potsherds and is rarely based on the results of systematic excavations. The continuity of human activities at the sites of winepresses and in the surrounding landscape may also suggest the continuity of use for the winepresses themselves.

The evidence from sites located in the proximity of the winepresses, particularly those which were hitherto recorded by other field projects, is also very important. Two systematic studies are consulted below for this purpose: Hart's survey in Edom and MacDonald's ARNAS survey, which partially overlap each other. Hart recorded 115 sites in the area between Tafilah and Ras al-Naqeb. His sites were categorized into three major groups: Iron Age, Classical, and Islamic, and the majority of sites dated to the classical period (Hart and Falkner 1985: 256-261). Despite the fact that Hart, following many scholars, accepted the traditional conclusion that the region declined after AD 106, he rightly concludes that "the [classical] period seems to have been one of a great prosperity and the countryside is covered with farms, hamlets and villages" (Hart and Falkner 1985: 256).

In contrast, MacDonald's study more systematically covered a smaller area and revealed more sites. The majority of these sites belong to two major periods; the Iron Age and the Classical (Nabataean, Roman and Byzantine) periods, but the latter is predominant. These two periods, besides the Late Islamic, have the highest numbers of sites in MacDonald's study area (MacDonald et al 2012). Within the classical period, there are 216 Byzantine sites, 192 Roman sites, and 77 Nabataean sites. This result does match the outcomes of previous research in the same area, but the drastic increase of Roman and Byzantine sites challenges earlier conclusions that suggest a decline in settlements following the Roman annexation of Arabia Petraea in 106 AD (i.e. Hart 1986: 51 – 56). MacDonald's conclusion concerning the continuity of prosperity in the post-annexation period is very reasonable, but the number of Nabataean sites is likely understated. Archaeological and historical evidence suggest significant and unprecedented settlement in the area during the Nabataean period. There was even high demand on agricultural lands to the extent that Nabataean settlements expanded to dry areas (Twaissi 2007). However, taking into account that MacDonald, like many other scholars, sometimes includes the Nabataean period within the Roman period, his interpretation seems acceptable. The continuity of the Nabataean material culture is evident throughout the region and at different levels. Archaeological projects in the area show that the area was densely populated by mainly rural and agricultural-based communities, supported by sophisticated water control and water harvesting systems, during the Nabataean period. Nabataean family tombs were also uncovered in the study area in the proximity of the winepresses (Wadson et al, 2016, Wadson and Abudanah, 2014, 2016). The geographic distribution of these tombs closely corresponds to the distribution of the winepresses and other archaeological features including the settlement sites (Abudanah *et al.*, 2015; Abudanah *et al.*, 2016; Abudanah 2006; Abudanah 2004). Published evidence from the area strongly indicates a continual increase in the number of the settled sites from the 1st century BC through the 1st century AD (Glueck 1935; Hart and Falkner 1985: 256; Hart 1986; Tholbecq 2001). Thus, the authors favour the Nabataean period to be the period during which the region including the study area witnessed and reached a high level of complexity and superiority in almost each aspect of development and urbanism. Al-Salameen

(2005: 118-120), depending on the collective archaeological evidence from his study area, appears to prefer the Nabataean period as a date of the winepresses in Bayda. The typology of the winepresses discussed in this paper is closely similar to type B of Bayda's winepresses. This type of winepresses is also attested in other areas of southern Jordan such as the one at Khirbet al-Dharih; where Nabataean temple, tombs and other features were discovered (Frankel 1999: 55). Therefore, the production of wine seems to be common in the Nabataean period and the historical evidence clearly corresponds to the archaeological evidence. Strabo, the Greek historian, refers to social and ritual meetings (*symposia*) the Nabataeans used to hold and wine was being consumed during these events (Ref). Evidence, in form of a late 2nd–early 1st century BC olive press from Petra (Kolb and Keller 2001: 317-319) and a 150 BC domesticated grape pip (Jacquat and Martinoli 1999: 2-29) suggests intensive agricultural practices since the beginning of the 1st century BC, at the very latest. Similar evidence was also recorded in Wadi el-Hisa (site WHS 419) and dated to Late Hellenistic/Early Roman period (MacDonald 1988: 2). The production of wine appears to have been an economic resource for the local inhabitants, particularly in the agricultural areas (Al-Salameen, 2004). The density of winepresses in Bayda and their existence in the hinterland of Petra may strongly point to the high demand on this product, not only for home or personal consumption but for commercial purposes judging from the number of winepresses and the amount of wine they produced (Al-Salameen 2005: 120-121). The production of wine is not the only example on the economic contribution of Petra's hinterland. The latter is dotted with tens of threshing floors, clearance mounds, agricultural fields, roads, and water installations. It clearly contributed to the development of the Nabataean kingdom and supplied the markets of Petra with a variety of materials. Meanwhile, the markets of Petra attracted customers from its hinterland, particularly to buy the products that cannot be obtained or made locally such as the vessels and objects of the Nabataean fine ware ceramic.

Conclusion

The information presented in this paper evidently show that our knowledge regarding the archaeological evidence is limited and is totally based on the results of general fieldwork projects. The paper shows that the hinterland of Petra witnessed the same socio-economic development that Petra reached during its flourish. Not only was the idea of producing wine common in its hinterland but the same typology of winepresses was common too. The date of the winepresses may not be decisively designated, but it seems quite reasonable that they were initiated in the Nabataean period and remained in use in later time periods. The existence of winepresses is one example of the obviously several ancient activities, mostly agricultural, in Petra's hinterland.

Contributors

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الإنتاج في ريف البترا: معاصر النبيذ - حالة دراسية

فوزي أبو دنة، أحمد حسنة

ملخص

تتناقش الدراسة الإنتاج الزراعي في ريف البترا من خلال الدليل الأثري الخاص بمعاصر النبيذ؛ حيث جرى توثيق العديد من المعاصر في هذا الريف خلال دراسة الطرائق القديمة، وتقدم وصفاً للمعاصر وأنواعها ومواقعها الجغرافية والطبوغرافية، وتناقش أيضاً قضايا أخرى، من مثل: تاريخ المعاصر، ومساهمة ريف البترا في اقتصادها، ونوع المواقع الأثرية التي ترتبط بها هذا المعاصر. الكلمات الدالة: معاصر العنب، البترا، الأنباط، الريف، النبيذ.

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