

# 25

## Archaeological Evidence for Achaemenid Settlement within the Mamasani Valleys, Western Fars, Iran

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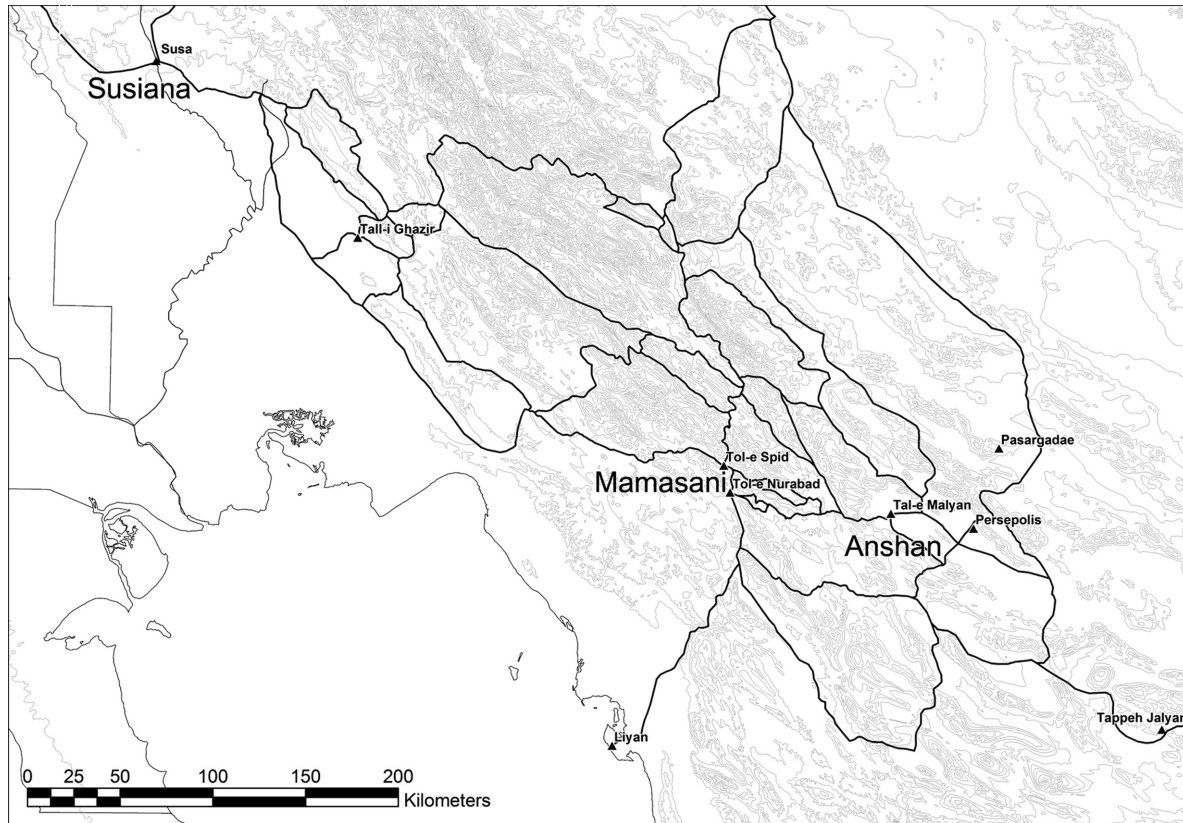
### Introduction

Our knowledge of the archaeology of the Achaemenid period in south-west Iran has been dominated by research undertaken at the royal capitals at Susa, in lowland Khuzestan, and at Pasargadae and Persepolis, in highland Fars. However, these sites are in excess of 500 km apart and are each situated in distinctive environments, and we know little about the area that lies in between.<sup>1</sup>

There have been several attempts to identify the regions and locations between Persepolis and Susa that are mentioned in the Persepolis Fortifications archive (e.g. Mostafavi 1963, 1967; Hinz 1961; Hallock 1978; Koch 1986, 1990, 1992; Aperghis 1996, 1998, 1999; Tuplin 1998). However, a comparison of the different reconstructions shows that in each case, different routes have been favoured, and specific toponyms have been attributed to different areas.<sup>2</sup> A key component that is typically lacking from attempts to establish secure

identifications of these locations is archaeological substantiation. This is partially due to the fact that only a limited amount of archaeological investigation has been carried out on the actual routes between Susa and Persepolis.

The landscape between Khuzestan and the Kur River Basin is dominated by the often sharply folded ridges of the Zagros Mountains. At intermittent points throughout the range, there are alluvial plains, which are suitable for settlement (Miroshedji 2003: 18; Petrie, Askari Chaverdi & Seyedin 2005: n.14).<sup>3</sup> However, much of the intervening land between these plains is not cultivable, and there are only a limited number of routes that link the plains and provide access through the range (Speck 2002: 16–18, 142ff; also Stein 1940: 11ff.). The archaeological fieldwork that *has* been carried out in these plains, and particularly along the routes themselves, has primarily consisted of rapid rather than systematic surveys (e.g. Stein 1940: 11ff.), and there has been little in the way of controlled excavation.



**Fig. 25.1** Map of south-western Iran, showing the locations of Susa, Persepolis and Tol-e Spid and Tol-e Nurabad. The main routes through the south-western Zagros are indicated by solid black lines.

## The Mamasani region

In January 2003, a collaborative project between the Iranian Centre for Archaeological Research of the Iranian Cultural Heritage and Tourism Organization and the University of Sydney directed by Professor Daniel Potts and Mr Kourosh Roustaei, commenced a research programme focusing on the Mamasani District of western Fars, which has long been recognized as one of the more important regions on the main route between Persepolis and Susa (e.g. Herzfeld 1907, 1928; Stein 1940: 27ff.).

The Mamasani District is situated approximately 400 km south-east of Susa and 150

km west of Persepolis, and sits between *c.*880 and 980 m above sea level. It is comprised of a series of long, fertile intermontane valleys, which connect via narrow passes to form a component of one of the main north-west to south-east routes between Susa and Persepolis (Fig. 25.1).

Perhaps the first archaeologist to take an interest in the region was Ernst Herzfeld, who first visited Mamasani in 1905 (1907: 87ff.), and again in 1924 (1926, 1928: 82–85, 1935). During his brief stays he documented the rock reliefs at Kurangun that have since been dated to the Old and Neo-Elamite periods, and recorded an inscribed brick from the settlement mound of Tol-e Spid that attests to the construction of

a temple at the site during the Middle Elamite period. He also visited the Achaemenid site of Tappeh Servan (Jinjan), the post-Achaemenid rock-cut tomb of Da-u Dukhtar and the early Sasanian tower of Dum-e Mil.

The strategic location of Mamasani led Herzfeld to propose that it was a possible location for the region of Huhnur, which is referred to in Mesopotamian Ur III period texts as the Key or the Bolt to the land of Anshan, which was the ancient capital of Fars (Herzfeld 1968: §146; Hansman 1972). He also asserted that it was a possible location of the “Persian Gates”, which were seized by Alexander on his way to Persepolis in 330 BC (Herzfeld 1968: §146). Sir Aurel Stein passed through the region in 1935, and visited a number of the same sites (1940: 27–48), and Stein’s claim that the “Persian Gates” were located in the Tang-i Khas (1940: 11–27), immediately to the east of Mamasani, has since been widely accepted (e.g. Herzfeld 1968: §146; Hansman 1972: 118; Bosworth 1980: 324–329; MacDermott & Schippman 1999).

The field research that has thus far been carried out by the Mamasani Archaeological Project team consisted of test soundings at the two sites: Tol-e Spid and Tol-e Nurabad. In addition, a regional survey of two of the Mamasani valleys, which are known locally as Dasht-e Rustam-e Yek and Dasht-e Rustam-e Do, was also conducted. This field research was carried out over two six-week seasons in 2003, with a subsequent one-month study season in 2004 (see Potts *et al.* 2006; Roustaei, Alamdari & Petrie 2006; Weeks *et al.* 2006; Petrie, Askari Chaverdi & Seyedin 2006; Zaidi, McCall & Khosrowzadeh 2006).

### Tol-e Spid

The site known as Tol-e Spid is the tallest preserved site on the Fahliyan Plain, which

is known locally as the Dasht-e Rustam-e Yek. Some time after the 1970s the site was extensively damaged by bulldozers and ploughing, and what remains covers approximately 2 ha. Much of this is quite low, rising only 3–4 m above the surrounding plain. In stark contrast, the highest point of the site rises abruptly to a height of 16 m, and the steepness of the sides of this eminence suggests that much more of the mound must once have been preserved to such a height, and the mound itself may have been somewhat larger. From the top of the mound, it is possible to see the location of the relief at Kurangun and also Tappeh Servan, and these both lie within 5 km of the site (Petrie, Askari Chaverdi & Seyedin 2006).

The northern face of the high part of the mound has been cut so that there is a vertical section that stands 12 m above the lower parts of the mound. During the two seasons in 2003, a preliminary stratigraphic sounding was excavated down this upright section. This sounding revealed that the mound was comprised of at least 24 separate phases of occupation, and the ceramic material and radiocarbon determinations collected from this sequence of deposits indicate that the site as a whole was occupied from at least 4000 BC up to *c.*50 BC. The uppermost 12 phases comprise 5 m of deposit, and are almost all characterized by structural remains and the appearance of a generally conservative ceramic assemblage that has parallels with the so-called Late Plain Ware assemblage of the Kur River Basin, which is best dated to the Late Achaemenid and post-Achaemenid periods (Petrie, Askari Chaverdi & Seyedin 2006).

The earliest Achaemenid period deposits are those of Phase 12. The deposits that lie immediately below Phase 12 are particularly difficult to interpret. Phase 14 is unlike any of the other phases known from the sounding,

being a thick and consistent layer of intentionally deposited clay and degraded mud-brick fill. Immediately above this, Phase 13 is marked by a series of fill layers of pebbles and chalk, which have been cut by a sequence of pits. There is no substantial deposition between Phase 13 and the mud-brick structure of Phase 12. However, while the Phase 13 deposits are marked by mixed material with the latest material dating to the second millennium BC, Phase 12 presents diagnostic ceramics that date to the mid-first millennium BC. This suggests that there was a significant change in the cultural assemblage between these two phases. It appears most likely that the site was abandoned some time before the mid-first millennium BC, and the Phase 12 structures represent a major reoccupation (Petrie, Askari Chaverdi & Seyedin 2006).

After initial construction, the Phase 12 wall appears to have been rebuilt once before being abandoned. The deposits above the remains of the Phase 12 wall do not appear to have been levelled, as they are directly overlain by the pebble pavement, which follows the sloping ground surface created by the destroyed wall.<sup>4</sup> The sequence of structures that comprises Phases 10–1 displays evidence for regular rebuilding, and the structures of several phases follow the same wall alignments, and often show signs of the reuse of wall stubs. This suggests that there was a considerable amount of remodelling of the structures taking place at the site without protracted periods of abandonment between any of these phases (Petrie, Askari Chaverdi & Seyedin 2006).

The uppermost 12 phases at Tol-e Spid comprise in excess of 5 m of deposit and with the exception of a small number of previously unattested vessel forms, there appears to be a general continuity of vessel fabrics and forms throughout the sequence. Phase 12 is marked

by the presence of a small number of clay versions of the distinct Achaemenid tulip bowl, including examples that appear to have imitation gadroons. Also present was a distinctive grey-ware bridge spout, which is made in a fabric that is distinct from the remainder of the assemblage. A number of the complete vessels that appear in the later phases show clear parallels to Achaemenid/Late Plain Ware forms from Persepolis, but are typically smaller in size (Petrie, Askari Chaverdi & Seyedin 2006).

Out of the total of ten radiocarbon dates for the Tol-e Spid sequence, four have been collected from Phases 12 to 1. The probability range for the radiocarbon determination from Phase 12 (Wk13985: L.3063—800–200 BC) predominantly falls between 550 and 350 BC, suggesting that this phase dates to the Achaemenid period proper, and may well date towards the beginning of the appearance of Late Plain Ware. The radiocarbon determinations from Phase 10 (Wk13986: L.3050—390–170 BC) and Phase 5 (Wk13987: L.3024—400–170 BC) are virtually identical, and suggest that these phases should be dated to the Late Achaemenid or post-Achaemenid periods. The determination from Phase 3 (Wk13988: L.3009—370–50 BC) appears almost certainly to date to the post-Achaemenid period (Petrie, Askari Chaverdi & Seyedin 2006).

The number of separate structural phases that date between *c.*550 and 50 BC indicates that rebuilding or remodelling episodes were taking place at the site with considerable regularity during the later first millennium BC. In one respect, the assemblages from Phases 12 and 11 at Tol-e Spid appear to be the earliest well-dated Achaemenid assemblages yet identified in Fars; the evidence for continuity of ceramic forms from the Late to

the post-Achaemenid periods correlates well with the evidence for the Kur River Basin and Pasargadae (Boucharlat 2003; Sumner 1986; Stronach 1978). However, where the assemblages are viewed as a whole, there are several clear changes in the types of imported wares, and also in some of the vessel forms, which indicates that with further excavation it may be possible to differentiate between Achaemenid and post-Achaemenid assemblages.

### Tol-e Nurabad

Approximately 10 km to the south of Tol-e Spid is the Dasht-e Nurabad, which is dominated by the imposing mound of Tol-e Nurabad. This site is preserved to a height in excess of 24 m, and covers an area of *c.*9 ha. The excavation of a sounding into the upper levels has revealed a sequence of deposits that appear to date to the late second and first millennium BC. However, only small quantities of ceramic material were recovered from these deposits, and this has made it particularly difficult to date them using relative parallels. Phases B9–B6 contain material that appears to be Middle or possibly Neo-Elamite in character. It is possible that some of the material from these phases actually dates to the Neo-Elamite period, but the size of the ceramic assemblage and the continuity of vessel forms from the Middle to the Neo-Elamite periods in Khuzestan makes it difficult to differentiate between the two (Weeks *et al.* 2006).

Phases B5 and B4 are characterized by substantial mud-brick architecture and the associated ceramic material indicates that both are most likely Achaemenid in date. The presence of such deposits at the site is confirmed by the collection of characteristic Achaemenid tulip bowl fragments on the surface of the mound.

Phases B3–B1 have parallels to Late or post-Achaemenid ceramics (Weeks *et al.* 2006).

As for Tol-e Spid, there is clear evidence for Tol-e Nurabad being occupied during the Middle Elamite period, but at present it is not yet possible to comment on whether or not Tol-e Nurabad was occupied between *c.*1000 and 500 BC. The ceramic evidence is by no means clear-cut, and this will only be clarified by further excavation.

## Achaemenid and post-Achaemenid settlements in Mamasani

### Survey results

Concurrent with the excavations conducted at Tol-e Spid and Tol-e Nurabad, a preliminary survey was carried out in Dasht-e Rustam-e Yek and Dasht-e Rustam-e Do, which are the two northernmost plains in the Mamasani District. A total of 51 sites were recorded during this survey.

No occupation that might be dated unequivocally to the first half of the first millennium BC has yet been identified. This is partially due to the absence of deposits from the stratigraphic soundings that can clearly be dated to this period.<sup>5</sup> However, evidence for occupation during the Middle Elamite or Qaleh period (i.e. *c.*1400–1000 BC) was identified at 16 sites during the survey (Zaidi, McCall & Khosrowzadeh 2006).<sup>6</sup>

Achaemenid period occupation was identified at as many as 17 sites, several of which are large multi-period mounds that are situated close to reliable water sources and remain relatively visible in the landscape. It is notable that 12 of the 17 sites that were occupied during the Achaemenid period also appear to have been occupied during the Middle

Elamite/Qaleh period. Therefore, there does not appear to be a significant discontinuity between the location of the last Elamite phase of occupation thus far identified, and the earliest Achaemenid phase, despite the chronological separation of the two phases. While this might be indicative of a deliberate choice by Achaemenid period inhabitants to reoccupy old mounds, it also serves to highlight the sites that might contain evidence for early first-millennium BC occupation that has not been identified on the surface. Post-Achaemenid occupation was identified at as many as 12 sites. All of the sites occupied during the post-Achaemenid period had been occupied during the Achaemenid period (Zaidi, McCall & Khosrowzadeh 2006).

In addition to the mound sites that have evidence for occupation during the Achaemenid and post-Achaemenid periods, four highly distinctive sites with architectural remains have been identified at Mamasani, three of which are in the survey area, while the other lies south of the modern town of Nurabad.

### Tappeh Servan (Jinjan)

The site of Tappeh Servan or Jinjan was initially identified by Herzfeld and also visited by Stein. It is situated on the southern side of the Rud-e Fahlian, approximately 4,700 m to the south-west of Tol-e Spid (Herzfeld n.d., 1926: 258; Stein 1940: 37). It is marked by the presence of a number of column bases which resemble those from the Apadana at Persepolis, although on a much smaller scale (Fig. 25.2). This suggests that the structure was built during or after the reign of Darius I.

A very brief excavation at the site was carried out in 1959 by a Japanese team, who succeeded in recording all of the visible column



Fig. 25.2 *In situ* column base at Tappeh Servan.

bases, exposing some associated floor surfaces and illustrating a selection of pottery from the site, but they were not able to uncover a coherent plan of the structure (Atarashi & Horiuchi 1963). Stein claimed that two different sizes of column bases were visible, but the Japanese excavators were only able to differentiate one size (1963: 14; after Stein 1940: 34–36). The excavators agreed with Herzfeld that this was a royal pavilion, and suggested that it was a component of the Achaemenid highway between Persepolis and Susa (Atarashi & Horiuchi 1963: 14; after Herzfeld 1926: 258).

This site was revisited during the recent survey (Zaidi, McCall & Khosrowzadeh 2006), and excavations commenced in 2007 and continued in 2008 and 2009. The remains of a multi-phase complex incorporating a monumental Achaemenid pavement and portico have been exposed at the site, and are the focus of ongoing research (Potts *et al.* 2007; Potts *et al.* 2009).

### Tappeh Pahnu

A second site with evidence of stone column bases was visited during the survey. This site,



**Fig. 25.3** Column bases removed from a ploughed field at Tappeh Servan.

known locally as Tappeh Pahnu, is situated slightly over 17 km to the north-west of Tappeh Servan, and lies close to the centre of Dasht-e Rustam-e Do. The area where the columns were found is now no longer recognizable as a site per se, as it has been heavily ploughed. However, one plain column base remains *in situ* in a field, while a number of other bases are now collected together in the village adjacent to the site. These columns occur in two distinct sizes, with the larger examples being similar in size to those from Tappeh Servan. However, the columns from Tappeh Pahnu do not show the same elaborate carving. With the exception of one column that shows some signs of fluting, the Tappeh Pahnu columns appear to be either unfinished or deliberately left smooth (Zaidi, McCall & Khosrowzadeh 2006) (Fig. 25.3).

It is not yet possible to offer a clear date for the remains at Tappeh Pahnu, but on the basis of the ceramics found in the ploughed field, it is most likely that the site was occupied in the Achaemenid and possibly also in the post-Achaemenid periods.

In addition to the architectural evidence at Tappeh Servan and Tappeh Pahnu, remains of a third structure are said to have been discovered at Tol-e Gach Garan-e Ka Khodada (Askari Chaverdi, personal communication), which is located about 5 km to the south of Tal-e Nurabad. Although these remains have not been seen firsthand by any of the authors, column bases and capitals that are similar to the Achaemenid types seen at Tappeh Servan were evidently visible at the site.

### Da-u Dukhtar

Lastly, it is worth mentioning the rock-cut tomb of Da-u Dukhtar, which is situated at the western edge of the Mamasani region. The tomb is cut high on a vertical rock face, and has four engaged columns on the façade, reminiscent of the Achaemenid royal tombs at Naqsh-e Rostam and Persepolis (von Gall 1993). Herzfeld (1935: 35) initially proposed that this was the tomb of Teispes or Cyrus I, and while this attribution was accepted for some time (Stein 1940: 47; also see von Gall 1993), Stronach has effectively argued that the tomb should be dated to somewhere between the late fifth and third centuries BC (1978: 304; see also von Gall 1993).<sup>7</sup>

The presence of a tomb in Mamasani that is so obviously modelled on the Achaemenid royal tombs at Naqsh-e Rostam and Persepolis is highly significant for what it suggests about political power and spheres of control in Fars during the post-Achaemenid period.

### Mamasani in the Achaemenid and post-Achaemenid periods

This evidence for Achaemenid and post-Achaemenid occupation in Mamasani

emphasizes the region's importance. At present, the period between the Middle Elamite and Achaemenid occupations at both Tol-e Spid and Tol-e Nurabad remains an unknown quantity, yet this period is in many ways critical to understanding the processes of acculturation that were taking place in Fars between the Elamite and Persian populations during the early first millennium BC, and also for understanding the origins of Achaemenid power in the region (Henkelman 2003*a*; Stronach 2003*a*; Alvarez-Mon 2004). The carving of additional figures on the Kurangun rock relief during the Neo-Elamite period does, however, indicate that it is more than likely that the region was inhabited during this period.<sup>8</sup>

The identification of distinctive Achaemenid levels at Tol-e Spid and Tol-e Nurabad, the discovery of Achaemenid period ceramic material on the surface of 17 archaeological sites, and the evidence for specific Achaemenid period structures at Tappeh Servan and Tappeh Pahnu emphasize that there were important social, political and economic dynamics in operation in the Mamasani region during this period. However, the work that has thus far been undertaken has only scratched the surface and further excavations of the upper levels at Tol-e Spid and Tol-e Nurabad, and new soundings at various other sites are likely to provide a completely new insight into the cultural processes that were in operation in the Mamasani region in the later first millennium BC.

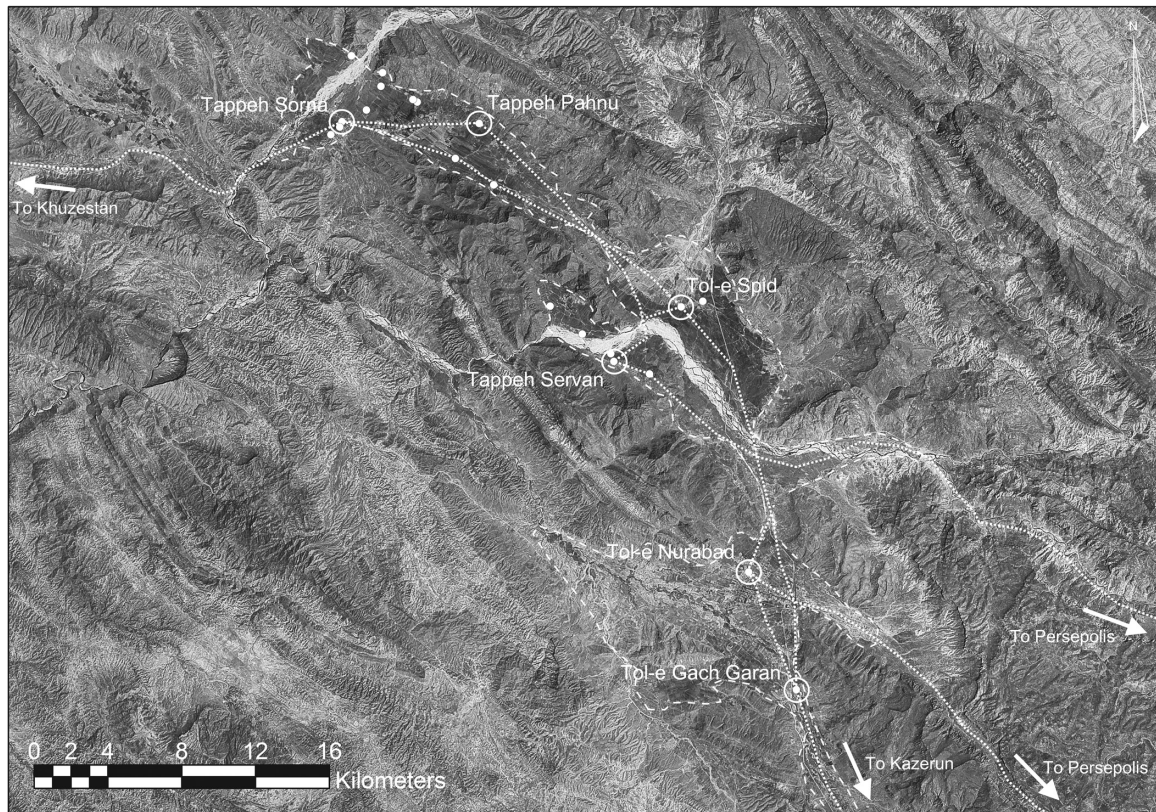
In terms of attempting to interpret the structures at Tappeh Servan and Tappeh Pahnu, the idea that there were royal way stations and potentially storehouses along the route between Persepolis and Susa is of particular interest (Koch 1986, 1990; Tuplin 1998; Aperghis 1998, 1999).<sup>9</sup>

The structure at Tappeh Servan has traditionally been interpreted as being a royal pavilion, way station or regional storehouse such as those discussed by Aperghis (1998, 1999).<sup>10</sup> It is not yet possible to establish the function of Tappeh Pahnu. In any case, both structures are likely to have been important components on the royal route between Susa and Persepolis, and in the taxation and administration of the Mamasani region. If the structure at Tol-e Gach Garan-e Ka Khodada is in fact similar, then this is also likely to have served a similar function. It is particularly noteworthy that each of these sites is situated in a different valley. They lie 17–18 km apart from each other and each is located away from the other major sites on the respective plain (Herzfeld 1926: 258; Atarashi & Horiuchi 1963: 13).<sup>11</sup> The distance between each structure correlates well with the expected distance between stations and storehouses (Koch 1986, 1990; Aperghis 1999; Tuplin 1998: 106), and also suggests that there may have been multiple routes through Mamasani that were used for travel between different sites (Fig. 25.4).

While the possibility that these sites were way stations or storehouses is provocative, it must be put into context of the known routes through this part of Iran. There have been various discussions of the main routes through the southern Zagros, but a study of the routes between Susa and Persepolis by Henry Speck (2002) throws into question many prevailing assumptions. Having spent several years in the 1970s exploring these routes on the ground, Speck has assessed the classical texts that relate to Alexander's seizure of the Persian Gates, and presented a somewhat radical interpretation of the routes.

The traditional interpretation of Alexander's route has been primarily based on Stein's initial proposal (1940; see e.g.





**Fig. 25.4** Map of the plains of Mamasani, showing the location of the major sites discussed in the text, and possible routes of egress through the region.

Herzfeld 1968: §146; Hansman 1972: 118; Bosworth 1980: 324–329; MacDermott & Schippman 1999: 294), which envisaged that Alexander split his force in the Mamasani region and sent Parmenio to Persepolis via Kazerun, while he advanced to the Persian Gates, which lay in the Tang-i Khas, to the east of Mamasani (Stein 1940: 11–27). However, drawing on historical accounts of people who travelled from Bushire to Shiraz (e.g. Curzon 1892), Speck has proposed that the route via Kazerun and the Dasht-e Arjan was not viable in the Achaemenid period. He also suggests that a route via Firuzabad involved too much of an extensive detour to the east for it to have been used as the royal route (Speck 2002: 142ff.).

In contrast to the prevailing view, Speck has proposed that the Persian Gates were located in the elevated Beshar Valley, close to the modern town of Yasuj (2002: 16–18, 142ff.). While he does not agree that Mamasani was the location of the Persian Gates, he does suggest that the main winter route between the lowland and highland capitals lay through this region (Speck 2002: 16–18, 142ff.), and this would suggest that the structures at Tappeh Servan and Tappeh Pahnu were almost certainly on the main royal route through the south-western Zagros. If Speck's reinterpretation of the routes through the southern Zagros is correct, then a complete re-evaluation of the geographical information contained in the Persepolis Fortification archives will be

required, and this will benefit enormously from systematic archaeological surveys of the intermontane valleys that lie on these routes.

### Notes

1. This paper is the product of ongoing collaborative research between the Iranian Centre for Archaeological Research (ICAR) of the Iranian Cultural Heritage and Tourism Organization (ICHTO) and the University of Sydney, which is directed by Professor Daniel Potts and initially Mr Kourosh Roustaei. None of this work would have been possible without the support and encouragement of Mr Seyed Mohammad Beheshti, the former Director General of the ICHTO, Mr Jalil Golshan, Deputy Director of the ICHTO and Dr Massoud Azarnoush, the Director of the ICAR. The other authors of this paper were involved in the excavation of the sounding at Tol-e Spid (Askari-Chaverdi, Petrie and Seyedin), the excavation of the sounding at Tol-e Nurabad (Khosrowzadeh, Weeks and Zaidi) and the surface survey carried out in Dasht-e Rustam-e Yek (Khosrowzadeh, McCall and Zaidi). This paper makes use of material that has now been published in a project monograph (Potts & Roustaei 2006). The authors would like to thank the organizers of the conference *The World of Achaemenid Persia*, for accepting this paper, and delegates who asked questions during the session and afterwards. This paper was completed while Cameron Petrie was the Katherine and Leonard Woolley Junior Research Fellow at Somerville College Oxford (2003–2006) and the Research Fellow in South Asian Archaeology at the Department of Archaeology, University of Cambridge (2005–2010).
2. In trying to interpret these documents, there are certain fundamental assumptions that must be made about the point of origin for some journeys, the actual routes taken, the distance between locales and the time taken to travel those distances, which make secure identification of specific locations difficult (see Potts 2005*a*). In some instances, fundamental information that has been used as key components of some analyses, such as the distance between Susa and Persepolis, is often incorrect (e.g. Tuplin 1998: 104–105).
3. For the location of some of these plains, and the archaeological investigations that have thus far been conducted see <http://web.arch.ox.ac.uk/archatlas/web/contributions/Petrie/RoutesandPlains.htm>
4. The deposits overlying the pavement were densely compacted and showed signs of burning, which was presumably an aspect of the use of this part of the site at this time.
5. Without comparative material from these soundings, it is difficult to identify such material on the surface of other sites. Evidence for settled occupation dating to this period is virtually unknown in the Kur River Basin (Sumner 1994; Carter 1994; Boucharlat 2003: 262), so there is also an absence of comparative material in the surrounding regions. Although Neo-Elamite vessel forms are known from Susa (Miroschedji 1981), and have been identified on sites and in graves at Tal-i Ghazir in Ram Hormuz (Carter 1994), no such forms have yet been identified in Mamasani. One of the authors of this paper (McCall 2009: 203–203) has undertaken detailed study of the survey ceramics from Mamasani using more recently available comparanda from Chogha Zanbil (Mofidi Nasrabadi 2007), and has argued that up to six sites have evidence for a Neo-Elamite presence.
6. This correlates with the evidence from Tol-e Spid (Phases 14–13) and Tol-e Nurabad (Phases B9–B6).
7. Although there are the remains of a number of stone structures visible at the base of the rock face, the ceramic evidence from the surface suggests that these buildings date to the Early–Middle Islamic period *c.*ninth–eleventh centuries AD (Whitcomb 1991). As noted in Zaidi et al. 2006, these structures were revisited in 2003 and no evidence of ceramics earlier than the Islamic period was found.
8. More recent work on the reliefs at Kurangun has indicated that the main panel was carved in the *sukkalmah* period (Vanden Berghe 1984, 1986; Seidl 1986; Miroschedji 1989), and additional figures were added during the Neo-Elamite period (Vanden Berghe 1984, 1986: 162–163; Henkelman 2003*a*: 189; *contra* Seidl 1986; Miroschedji 1989). Potts has recently argued that the main deity shown on the relief can be identified as a conjunction of Inshushinak/Ea/Napirisha while the female deity is Kiririsha (Potts 2004). This relief, taken together with the brick from Tol-e Spid attesting to the construction of a temple to Kilahshupir at this site, which is less than 4 km from Kurangun attests to a protracted Elamite heritage for this region—spanning at least from *c.*1900 BC up to *c.*700 BC (Vanden Berghe 1986: 162–163).

9. Using evidence from the Persepolis Fortification texts, Tuplin has argued that the royal way stations at Parmadan should be located at Fahliyan (1998: 106). However, Tuplin's calculations are based on incorrect estimations of the distance between Persepolis and Susa. He proposes that the distance via Kazerun is 850 km and the distance via the Persian Gates is 750 km (1998: 104). However, these distances are incorrect by in excess of 200 km in each instance, which encourages us at least to question his attributions. In contrast, Aperghis has proposed that Parmadan should be located at Kazerun (1999: 154), and he does not identify Fahliyan per se. Instead, he suggests that Shullakke should be located at Nurabad (1999: 154). It has also been argued that it is possible to establish the underlying ethnicity of the populations of certain regions involved in the Persepolis Fortification network on the basis of whether Elamite or Persian months were being used (e.g. Razmjou 2004; after Hallock 1969). While this is entirely possible, it might also be a simple reflection of the ethnicity of the individual doing the recording, and the fact that it was acceptable to use either system at this stage of Darius' rule.
10. As a result of a comprehensive analysis of the PF texts using a database, Aperghis has proposed that there is evidence that a large number of the texts (over 25 %) are receipts at storehouses of commodities supplied by producers, that these producers are linked with both royal estates and holdings of Persian nobles and commoners, and that the produce that was being collected was a form of taxation on the populace of Persis and Elam, which was entrusted to a Supply Officer who might have jurisdiction over several supply houses (Aperghis 1998, 1999: 157–161). One particular individual who appears to have been active in the area close to the border between Elam and Persis is Irtuppiya, between Hidali and Kurdushum, including Hunar, Zakzaku, Shullakke and Liduma (Aperghis 1999: 181–182).
11. It is interesting that the columned structure at Tappeh Servan appears to have been established in a part of the Dasht-e Rustam-e Yek that had not previously been settled, but one that was in direct line of sight of the relief at Kurangun. Boucharlat has noted that there appears to have been an area in the immediate neighbourhood of Persepolis where there was an absence of settlement, possibly as a result of the king having intentionally emptied out this zone so that it could be used for the military and agricultural activities needed to support his court (2003: 262). Perhaps similar principles of isolation were in operation in relation to the royal way stations?

