

Kadesh Barnea: A Reevaluation of Its Archaeology and History

ISRAEL FINKELSTEIN

Tel Aviv University

The article reevaluates the archaeology and history of Kadesh Barnea in view of some recent publications. It argues that the finds at the site cover the entire sequence of the Iron Age and later, up to the Persian period. The main conclusions are: (1) Substratum 4c represents the earliest occupation, which dates to the Iron I in the 12th to 10th centuries BCE. The radiocarbon results from seed samples that ostensibly belong to Substratum 4b provide dates in the 10th century BCE, and should be affiliated with this settlement. (2) Substratum 4b is a settlement (rather than an oval fortress) that features at least two phases. It covers the entire sequence of the Iron IIA, between the late 10th and early 8th century BCE. (3) Strata 3–2 feature the remains of a single rectangular fortress with a solid wall built as a foundation for a system of casemates. This fortress was built in the second half of the 8th century, with the Assyrian take-over of the region, and continued to function until ca. 600 BCE. It features three construction phases.

KEYWORDS Kadesh Barnea, Iron I, Iron IIA, Radiocarbon, Negev

Tell el-Qudeirat, identified with biblical Kadesh Barnea, is located in northeastern Sinai, on the western margin of the Negev Highlands and close to the Darb el-Ghazza, which leads from the head of the Gulf of Aqaba to the Mediterranean coast. The site was first excavated by Moshe Dothan in 1956 (Dothan 1965) and then in 1976–1982 by Rudolph Cohen. Several aspects of the site, its finds and history were discussed during and after the excavations (e.g., Lemaire and Vernus 1980; Cohen 1981, 1983; Ussishkin 1995). Recently Kadesh Barnea has again attracted the attention of scholars; I refer to the publication of the final report of the excavation results (Cohen and Bernick-Greenberg 2007), the discussion of the Painted Qurayyah (Midianite) pottery from the site (Singer-Avitz 2008) and the publication of new radiocarbon dates, ostensibly from an Iron IIA context (Gilboa *et al.* 2009). These recent studies call for a reevaluation of the archaeology and history of the site.

The Iron I (Substratum 4c)

Evidence for an Iron I settlement

A relatively large number of Painted Qurayyah (Midianite) vessels and sherds were found at Kadesh Barnea (Cohen and Bernick-Greenberg 2007: 140, Pls. 11.6, 11.7). Though the excavators were aware that this ceramic group appears mainly in the LBIII/early Iron I (12th century BCE and no later than the 11th century—Cohen and Bernick-Greenberg 2007: 8; Bernick-Greenberg 2007: 140), they proposed reevaluating this chronology according to the Kadesh Barnea stratigraphy: Since according to them there is no unambiguous 12th century layer at the site, the date of this group should be extended, to cover the Iron IIA—in the 10th century BCE (Bernick-Greenberg 2007: 143; also Gilboa *et al.* 2009). Yet, Singer-Avitz convincingly showed that (1) the Painted Qurayyah ware dates to the 12th century BCE (Singer-Avitz 2004); (2) the excavation at Kadesh Barnea produced additional evidence for a pre-Iron IIA occupation (Singer-Avitz 2008).

This early layer can be detected both stratigraphically and according to the finds. Stratigraphically, in a few places remains that the excavators titled Substratum 4c (that is, predating their Iron IIA ‘oval fortress’) constituted a layer of ashes and narrow, one-course walls. They state that “no chronological diagnostic artefacts were associated with this occupation; its date is thus unclear” (Cohen and Bernick-Greenberg 2007: 7, Plan 3; also Lender *et al.* 2007: 101; Lender 2007: 113). Ceramically, Singer-Avitz (2008: 76) was referring to Iron I sherds other than the Painted Qurayyah ware. Especially noteworthy are two rims of collared-rim pithoi (Bernick-Greenberg 2007: Pl. 11.20: 16, 11.39: 12). Münger (2007) described four stamp seals and seal impressions found at the site as stylistically dating to the time of the New Kingdom, including the Twentieth Dynasty. Since the excavators reported no pre-Iron IIA layer, he looked for a way to associate them with the stratum of the Iron IIA oval fortress (for more details see Singer-Avitz 2008: 76–77). Finally, two ¹⁴C dates for charcoal samples from the site provided dates earlier than the Iron IIA even according to the traditional dating system or Mazar’s (2005) ‘Modified Conventional Chronology’: A) GrN 12330 was dated 2930±30 BP (Bruins and van der Plicht 2005: 352; 2007); B) RT-1650 was dated 2960±40 BP (Carmi and Segal 2007). They translate to calibrated dates of 1210–1050 and 1260–1120 BCE respectively (68% range; 1258–1016 and 1368–1042 respectively, 95% range). Though these dates come from charcoal samples, which may introduce an ‘old wood effect’, they are significant, as one would not expect old wood to be available in this desert environment before the beginning of occupation at the site.

To sum up this point, an Iron I (late 12th to early 10th century BCE [Low Chronology]) occupation layer at Kadesh Barnea is evident (Singer-Avitz 2008).¹

¹ A beginning of occupation in the LBIII (the first half and middle of the 12th century BCE) is also possible, though if this had been the case one would expect to see other finds typical of LBIII strata in the southern Coastal Plain.

New ¹⁴C results

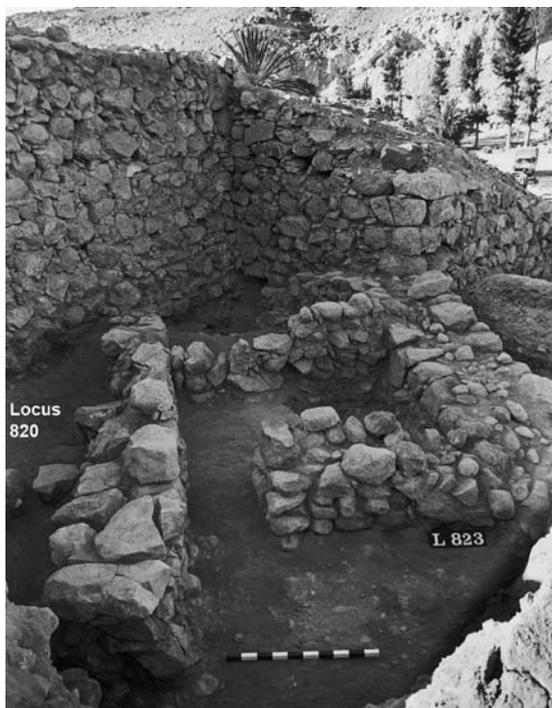
The new ¹⁴C results recently published in this journal by Gilboa *et al.* (2009) should be understood against this background.

Two samples of carbonized seeds provided 14 determinations. Their average uncalibrated date is 2826±10 BP and the calibrated date is 1005–940 BCE (68% range), 1015–920 (95% range). Gilboa *et al.* argued that the samples came from a stratigraphically reliable Iron IIA context and therefore interpreted the results as contradicting the large body of radiocarbon determinations from other sites in Israel (Sharon *et al.* 2007). This is so in the sense that the Kadesh Barnea dates, which come from a destruction in the *late* Iron IIA (that is, post-dates the desertion of the many *early* Iron IIA sites in the Negev Highlands—for the relative date of the latter see Herzog and Singer-Avitz 2004) are “higher than those currently adhered to by proponents of the ‘high’ Iron Age chronology” (Gilboa *et al.* 2009: 82). Gilboa *et al.* summarize that “an in-depth study of the Iron I–IIA pottery evolution in the Negev is called for” and that this plus additional dates from relevant sites in the south are “the only means through which this region may contribute to the chronological dilemma” (*ibid.*: 90).

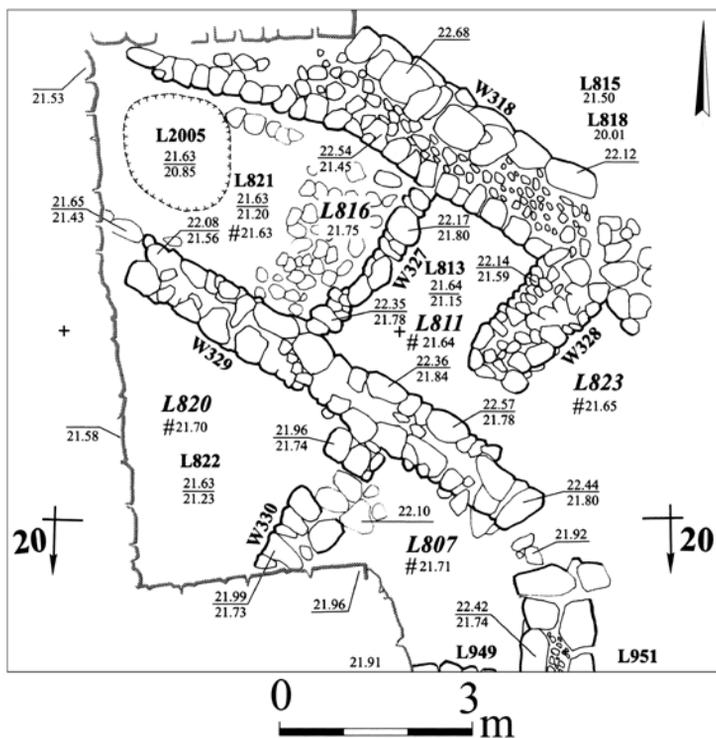
Additional in-depth study of the pottery evolution in the south is, of course, welcome; additional high-precision, short-lived ¹⁴C dates now exist for at least one more Negev Highlands site—Atar Haroa. The latter, the large body of ¹⁴C dates from sites in the sedentary part of the country, the problematic provenance of the samples from Kadesh Barnea and the clear evidence for an Iron I occupation at the site suffice to show that the Kadesh Barnea dates *do not* pose a contradiction to the many radiocarbon dates from other sites in Israel.

Provenance

The two samples that were radiocarbon dated come from Locus 820 in Squares 0/9–10 in Area E, outside the eastern wall of the rectangular fortress of Strata 3–2 (Figs. 1a and 1b). This location was conceived by the excavators and by Gilboa *et al.* as the courtyard of an oval fortress, similar in layout to oval compounds at other Negev Highlands sites, such as Atar Haroa and Ein Qadis (Cohen 1980; Cohen and Cohen-Amin 2004: 142–144). Yet, there is no unequivocal evidence for the existence of such a fortress (or compound) at Kadesh Barnea (below); in other words, the architecture of Substrata 4b and 4a seems to represent regular houses. In addition, as rightly noted by Gilboa *et al.* (2009: 84), the floor from which the samples were retrieved is four cm lower than the foundation of the wall immediately to its east (and five cm lower than the flagstone pavement in Locus 816 to its north—Cohen and Bernick-Greenberg 2007: Plan 3). More important, the triangular space created between Walls 329 and 330 is relatively small (*ibid.*), and the walls of the Stratum 3 rectangular fortress reach the level of the Stratum 4 remains, probably penetrating through its floor. Since one does not know exactly from where in Locus 820 the samples were taken, a contamination by the foundation trench of the massive walls of the Stratum 3 fortress cannot be excluded. In any event, this is far from being a safe, reliable, clean provenance.



FIGURES 1a and 1b Location of Locus 820, where samples for radiocarbon dating were retrieved (Cohen and Bernick-Greenberg 2007: Fig. 7.3 and Plan 3). Photo by Nahshon Sneh. Photo and plan courtesy of the Israel Antiquities Authority.



Radiocarbon determinations from other sites in Israel

Table 1 presents the uncalibrated ^{14}C results of samples from several strata in Israel and the relative ceramic phase of their provenance.² Most of the data is from destruction layers:

TABLE 1

Uncalibrated ^{14}C Dates of Several Iron I and Iron IIA Strata in Israel*

*Note that according to the excavators and Gilboa *et al.* the Kadesh Barnea samples come from a *late* Iron IIA context.

Ceramic Phase	Site and stratum (destruction layers in <i>italic</i>)	Uncalibrated date [BP]	Reference	Comments
Middle Iron I	<i>Shiloh V</i>	2863±16	Finkelstein and Piasezky 2006a	
	<i>Megiddo K-4</i>	2851±20	Sharon <i>et al.</i> 2007; Finkelstein and Piasezky 2007a	
	<i>Yoqne'am XVII</i>	2850±23	<i>Ibid.</i>	
	<i>Keisan 9a</i>	2855±29	<i>Ibid.</i>	Single sample
	<i>Qasile X</i>	2842±18	After Mazar and Bronk Ramsey 2008	
Late Iron I	Kadesh Barnea	2826±10	Gilboa <i>et al.</i> 2009	Affiliated by the excavators and by Gilboa <i>et al.</i> with a late Iron IIA stratum
	<i>Hadar IV</i>	2798±15	Finkelstein and Piasezky 2007a	
	Rehov D3	2790±18	<i>Ibid.</i> , based on Mazar <i>et al.</i> 2005	Single sample
	Dor D2/10-9	2790±12	Sharon <i>et al.</i> 2007; Finkelstein and Piasezky 2007a	
	<i>Hammah</i>	2790±23	<i>Ibid.</i>	Single sample
Early Iron IIA	Lachish V	2775±55	Carmi and Ussishkin 2004	Single sample
	Rehov VI	2761±14	Finkelstein and Piasezky 2006b	Single sample
	Dor D2/8c	2750±15	After Gilboa and Sharon 2003; Sharon <i>et al.</i> 2007	

² Using uncalibrated dates for the sake of comparison eliminates the additional uncertainties involved with the calibration process.

TABLE 1 (cont.)

Uncalibrated ¹⁴C Dates of Several Iron I and Iron IIA Strata in Israel

Ceramic Phase	Site and stratum (destruction layers in italic)	Uncalibrated date [BP]	Reference	Comments
Late Iron IIA	<i>Megiddo H-5</i>	2781±51	Finkelstein and Piasetzky 2007b	
	<i>Rehov V</i>	2756±11	<i>Ibid.</i> based on Mazar <i>et al.</i> 2005	
	<i>Rehov IV</i>	2758±16	<i>Ibid.</i>	
	Dor D2/8b	2740±20	Gilboa and Sharon 2007; Finkelstein and Piasetzky 2007b	
	<i>Rosh Zayit</i>	2721±9	<i>Ibid.</i>	
	<i>Tell es -Safi</i>	2707±27	<i>Ibid.</i>	
	<i>Tel Zayit</i>	2708±24	Tappy <i>et al.</i> 2006; Finkelstein and Piasetzky 2007b	
	Lachish IV	2704±37	Carmi and Ussishkin 2004	
	<i>Hammah lower</i>	2666±15	Sharon <i>et al.</i> 2007; Finkelstein and Piasetzky 2007b	
<i>Hazor IX</i>	2662±24	<i>Ibid.</i>		

It is obvious that the two Kadesh Barnea samples provide a date within the range of the late Iron I, far earlier than the early Iron IIA, let alone the *late* Iron IIA from which they supposedly originated. The Kadesh Barnea dates are 3.8 SD from Rehov VI and Dor D2/8C, and 4.2 SD from Rehov V—the earliest in the two late Iron IIA destructions detected in this site.

Radiocarbon results from Atar Haroa in the Negev Highlands

Atar Haroa is a single-phase site in the Negev Highlands near Sede Boqer. It features an oval compound and a small adjacent settlement. The site dates to the early phase of the Iron IIA (Herzog and Singer-Avitz 2004, corroborated by Gilboa *et al.* 2009). It was first excavated by Cohen (1970) and was recently restudied by Shachak-Gross and Finkelstein (2008). Fifteen short-lived samples from Atar Haroa have been dated in the course of the latter project (Boaretto *et al.* 2010). They provide an average date of 2721±13 BP. This date, for an *early* Iron IIA single-phase site, is 6.5(!) SD from the date of the Kadesh Barnea samples, which supposedly originated from a *late* Iron IIA context. It is clear that the latter are out of the range of the Iron IIA and that they ‘fit’ the late Iron I better.

To sum up this issue, the Kadesh Barnea ¹⁴C dates do not come from a reliable context; they do not match the many dates from other sites in Israel; and they do not match the dates of the single-phase site of Atar Haroa. Therefore, they cannot play any role in the current debate over the date of the Iron I and Iron IIA strata in Israel. On the other hand, they seem to indicate that Kadesh Barnea was inhabited in the late Iron I.

Conclusion

Combining the evidence from the stratigraphy, the pottery, the glyptic finds and the radiocarbon determinations, it is quite clear that Kadesh Barnea was occupied throughout the Iron I, that is, in both the 12th century BCE (the Painted Qurayya ware and the glyptic evidence—Singer-Avitz 2008) and the 11th to early 10th century BCE (the pottery evidence and radiocarbon determinations). The remains of the Iron I settlement are meagre because much was probably destroyed during the construction of the Substratum 4b settlement and more so by the foundations of the massive walls of the Stratum 3 rectangular fortress (see, e.g., Haiman 2007: 30, Figs. 3.1, 3.2; Shor and Bernick-Greenberg 2007: 67, Fig. 5.1).

The Iron IIA (Substrata 4b–a)

Two issues should be dealt with regarding the Iron IIA occupation at Kadesh Barnea: the nature of the settlement and the length of activity during this period.

Substratum 4b: an oval fortress?

When the Stratum 4 remains were unearthed, Cohen immediately described them as representing an oval fortress similar to a major component in many of the Iron IIA sites in the Negev Highlands, such as Atar Haroa and Ein Qadis near Kadesh Barnea to the south (Cohen 1980). The final publication describes the Stratum 4 remains as representing a roughly oval fortress on the eastern side of the excavation area, which was cut by the eastern wall of the Stratum 3 rectangular fortress, and an unfortified settlement to its west (Cohen and Bernick-Greenberg 2007: 7, Plans 3 and throughout the report; endorsed by Gilboa *et al.* 2009).

The finds do not necessarily support this reconstruction:

- (1) The excavators have rightly noted that the architecture of the oval fortress is somehow different from the other Negev Highlands oval compounds (Cohen and Bernick-Greenberg 2007: 9).
- (2) Most of the Negev Highlands compounds feature an *open* central courtyard that has been interpreted as a corral for the flocks (see support in Shahack-Gross and Finkelstein 2008). Only in a few cases was a house found in the centre of the courtyard (Cohen and Cohen-Amin 2004: 80, 102, 108). In contrast, the reconstructed courtyard at Kadesh Barnea seems to be almost fully built up; remains of walls were unearthed in the east, west, south and centre of the supposed courtyard (Cohen and Bernick-Greenberg 2007: Plans 3–4, 89; Lender *et al.* 2007: 106). In fact, there are only two spots where the dig reached a Substratum 4b–a floor with no walls (Locs 114 and 302).
- (3) In the west the outer wall does not create a continuous line (Wall 363 vis à vis Wall 359).

Though one cannot exclude the possibility of an original oval compound (rather than a ‘fortress’—Shahack-Gross and Finkelstein 2008), which was later modified, with structures built in the courtyard, it is more reasonable to interpret the remains as representing a regular settlement. The layout is reminiscent of Arad, where a dispersed settlement predated the construction of the Stratum 11 fortress (Herzog 2002: 14–17). Two finds at Kadesh Barnea provide additional evidence for the distinctive nature of this settlement, compared to the Negev Highlands sites:

- (1) Well-built silos were found in Stratum 4, mainly the group of four such installations unearthed in Squares F-H/3 in the southern sector of the site (Nahlieli and Bernick-Greenberg 2007).
- (2) Flint sickles were found at Kadesh Barnea; they constitute the main flint tool type at the site (the report does not provide a breakdown according to strata). The gloss on their working edges testifies to use over a long period (Druk 2007).

No silos of this type were found at other Negev Highlands sites,³ and only a few sickles were found at the many Negev Highlands Iron IIA sites excavated by Cohen and others (Cohen and Cohen-Amin 2004: 142). This indicates that while the inhabitants of Kadesh Barnea practised agriculture in the oasis, the Negev Highlands dwellers did not grow grain (for the latter sites see the microscopic evidence in Shahack-Gross and Finkelstein 2008).

Duration of activity in the Stratum 4 settlement

The excavators raised the possibility of a gap between the final phase of Stratum 4 (Substratum 4a) and the construction of the rectangular fortress of Stratum 3, “which is plausible, considering the total change in architecture and the very nature of the site”, though the pottery hints at a cultural continuity at the site (Cohen and Bernick-Greenberg 2007: 12).

It is clear that in post-Substratum 4c days Stratum 4 should be divided into at least two phases—Substrata 4b and 4a (Cohen and Bernick-Greenberg 2007: Plans 3–4). Yet, the correlation between the two phases in the area of the oval fortress (Cohen and Bernick-Greenberg 2007: Plan 4, Square O/6; Lender *et al.* 2007: 106–107) and the two phases in the settlement to its west (e.g., Shor and Bernick-Greenberg 2007: 71, Fig. 5.6; Cohen and Bernick-Greenberg 2007: Plan 3, Square J7) is not clear (Cohen and Bernick-Greenberg 2007: 8, 89). Notably, two floors were detected in the ‘courtyard’ of the oval fortress in Area A1, the lower overlaid with destruction debris (Cohen and Bernick-Greenberg 2007: 89; in another place, “only one clear floor level was usually

³ Cohen and Cohen-Amin (2004: 153) mention a few possible Iron Age silos in the Negev Highlands, but the silos’ affiliation with this period is circumstantial (for a similar case regarding a threshing floor at Atar Haroa, now proven to be of later date, see Shahack-Gross and Finkelstein 2008).

observed”, with signs of destruction upon it—*ibid.*: 7).⁴ It is impossible to decide whether all this makes two phases or more.

The Stratum 4 pottery features both early Iron IIA (the Masos II and Arad 12 phase) and late Iron IIA forms (Cohen and Bernick-Greenberg 2007: 8–9; Bernick-Greenberg 2007: 143; Gilboa *et al.* 2009; for this classification of the Iron IIA assemblages see Herzog and Singer-Avitz 2004). Most important among the latter is a Black-on-Red juglet (Cohen and Bernick-Greenberg 2007: Pl. 11.11: 11)—a type that does not appear in the early phase of the Iron IIA (Herzog and Singer-Avitz 2004: 215).

Radiocarbon results have recently shown that the late Iron IIA continues at least until the late 9th century BCE (Finkelstein and Piasezky 2007b) and that Stratum 3 at Beth-Shemesh, which features transitional Iron IIA/B forms, should probably be dated to ca. 765–745 BCE (Finkelstein and Piasezky 2007c). A transitional Iron IIA/B phase would be difficult to detect at Kadesh Barnea, as many of the finds of Stratum 4—especially Substratum 4a, which did not end in destruction—came from the construction fill of Stratum 3 rather than from floors (Cohen and Bernick-Greenberg 2007: 8). Stratum 3 was probably established in the 730s or 720s (below). All this eliminates the need to argue for a long gap between the end of Stratum 4 and the construction of Stratum 3.

To sum up this issue, there is a good case to argue for a continuity of occupation at Kadesh Barnea throughout the Iron IIA, that is, from the late 10th century until ca. 800 BCE and beyond, into the first half of the 8th century BCE.⁵

The Iron IIB–C (Strata 3–2)

According to the excavators, two large rectangular fortresses, measuring ca. 30 × 50 m, were built one on top of the other at Kadesh Barnea in the Iron IIB–C (late 8th to early 6th centuries BCE). Stratum 3 of the late 8th century features a fortress with a solid wall, ca. 4.5 m wide (the Middle Fortress), and Stratum 2 of the late 7th/early 6th century features a casemate fortress (the Upper Fortress).

Ussishkin (1995, following Dothan 1965) interpreted these remains as evidence for a single fortress with a solid foundation wall that was level at the top, with casemates above it and a glacis supporting the entire system. According to his interpretation, all components of the fortification-system were used during the entire period of activity, while inside the fortress there were several phases with the level of the floors being raised from layer to layer.

While Cohen and Bernick-Greenberg (2007: 16) saw merit in Ussishkin’s explanation

⁴ The identity of the destroyer of Substratum 4b—probably during the late Iron IIA (that is, in the second half of the 9th century)—cannot be verified. Contemporary destructions in the Shephelah are now affiliated with the campaign of Hazael, king of Damascus (e.g., Maeir 2004), but it is doubtful if a Damascene force would have attacked an isolated, remote, unfortified settlement in the inner desert.

⁵ Needless to say, in view of recent developments in biblical, historical and radiocarbon studies, affiliating the oval fortress with the United Monarchy of the 10th century and its destruction with the campaign of Pharaoh Sheshonq I in the late 10th century (Cohen and Bernick-Greenberg 2007: 9, following the initial ideas of Cohen, e.g., 1980) is out of the question.

they sided with Cohen's original interpretation of two consecutive fortresses. Their line of reasoning was based on two arguments:

- (1) The floor levels of the Stratum 2 buildings inside the fortress correspond to the floor level in the casemates.
- (2) There are two construction phases in Area F outside the fortress: the silos that correspond to the solid wall of the fortress and the glacis that covered them.

The first argument cannot resolve which of the two interpretations is correct. One could argue that the floor of Substratum 3b is about 1 m lower than the floor of the casemates, which means that whoever entered the fortress of Stratum 3 (according to Ussishkin's interpretation), probably after climbing a ramp, needed to descend in order to enter the buildings inside the fortress (Cohen and Bernick-Greenberg 2007: 10). But since there is no breach in the solid wall for an entryway, this must have been the situation in Stratum 3 also according to the excavators' interpretation.

Regarding the second argument, it seems to me that the data now published supports Cohen and Bernick-Greenberg's interpretation. The silos in Area F cut structures of Stratum 4, and the floor associated with them is ca. 1.5 m higher than the floor of Stratum 4 (the floors of the silos are 0.5 m and more higher than the top of the Stratum 4 walls). Moreover, had the silos belonged to Stratum 4 (Ussishkin 1995: 123–124), the construction of the solid wall would have destroyed them. It is impossible to envision the builders of the solid wall cutting its foundation trench in such a neat way that would leave Silo 892 and Wall 290 undamaged.

There can be little doubt that, regarding the fortification, the Dothan/Ussishkin interpretation is the correct one: the solid wall served as a foundation for the casemate wall. This is the reason why A) the top of the solid wall was preserved well-built and level; B) the casemate-wall was built exactly along the lines of the solid wall; C) no gate was found in the solid wall; D) the entrances into the casemates of Stratum 2 were not blocked by Stratum 3 walls (Cohen and Bernick-Greenberg 2007: 16).⁶ Yet, regarding the situation outside the fortification, Cohen and Bernick-Greenberg are correct. There is strong evidence here for three stages:

- (1) The construction of the solid wall and a system of retaining walls that supported the solid wall at a distance of a few metres outside it (in the north I refer to Wall 205). These elements of the fortification system were constructed over remains of Stratum 4. A fill of more than 1 m was then laid over the damaged old structures (a similar fill, 1.5–2 m thick, was laid inside the fortress—Cohen and Bernick-Greenberg 2007: 10). In order to enter the fortress, one would have had to climb a ramp.
- (2) The silos, floor between them and Structure 853 were built later, during the life of the fortress.
- (3) In a later stage of the long life of the fortress a glacis was added outside the solid wall. The construction of this support system may have been required because the accumulation of structures and fills inside the fortress over the course of the many

⁶ The earthen fill found in a few places above the stones of the solid wall and below the casemates (Cohen and Bernick-Greenberg 2007: 13) should be interpreted as the make-up of the floors of the latter.

decades of activity began putting pressure on the solid wall and threatened to tilt it.

The remains inside the fort were divided into three layers: Substrata 3b and 3a (which were detected mainly in Area B in the northwestern sector inside the fortress, where a tripartite structure of Substratum 3a was built over dwellings of Substratum 3b), and Stratum 2. In “a few isolated places” there were several superimposed floors in Stratum 2 (Cohen and Bernick-Greenberg 2007: 15). These layers represent continuous occupation, with a total accumulation of about 1 m between the elevations of the floor of Substratum 3b and Stratum 2 (ca. 24.00 and 25.00 respectively), plus ca. 0.5 m of destruction accumulation of Stratum 2 (Cohen and Bernick-Greenberg 2007: 14). No destruction was detected in the Stratum 3 sequence.

The inside of the fortress was fully built-up, with a water system occupying the entire southwestern sector. This water system, which was constructed in Stratum 3, resembles in its location, water-collection system and layout the system found at Arad, which was cut/dug in Stratum X (Herzog 2002: 72)—roughly contemporary to Stratum 3 at Kadesh Barnea. At Arad the northwestern sector of the fortress in the days of Strata X–VIII was occupied by a temple. It may be interesting to note that the two miniature altars found at Kadesh Barnea (Gera 2007) were found in two nearby squares (G/9 and G/8) in Area B in the northwestern sector of the fortress.

Based on the pottery, Cohen and Bernick-Greenberg (2007: 12) dated the construction of the fortress to the second half of the 8th century and in doing so aptly corrected Cohen’s initial dating in the first half of the 8th century (e.g., Cohen 1981: 103). In this they follow Na’aman (1991: 48), who reached similar chronological conclusions based on historical considerations. Cohen and Bernick-Greenberg (2007: 13) identified the fortress as a Judahite administration centre built along the trade route that led from the Red Sea to the Mediterranean coast, while Na’aman (1991: 48–49; 2001: 268) argued that the construction of the fortress was initiated by the Assyrians and that it was staffed by garrisons from the Assyrian vassal kingdoms.

The Iron IIB–C fortresses in the south feature two distinct layouts. The first is represented by the fortresses of ‘En Haṣeva in the northwestern Arabah and Tell el-Kheleifeh at the head of the Gulf of Aqaba. These are large square fortresses with comparable plans, measuring 100 × 100 m and ca. 60 × 65 m respectively, built on raised platforms, with elaborate four-entry gateways.⁷ They were no doubt built by the Assyrians, though the garrisons were probably manned by locals (Na’aman 1991: 48). The other type is represented by the smaller fortresses of Arad (50 × 50 m), Ḥorvat ‘Uza (ca. 50 × 40 m) and Kadesh Barnea (ca. 50 × 30 m), which feature a different plan. The latter are not comparable in the details of construction, but they demonstrate certain similarities in their fortification and layout. The first two were constructed by Judah in order to defend the southern frontier of the kingdom and the main trade route which came from Arabia and crossed the Beersheba Valley on the way to the Mediterranean and Judah. Arad was built in the 9th century and continued to be in use until ca. 600 BCE.

⁷ A similar fortress may have been built at Khirbet en-Naḥas, but was probably never finished (Finkelstein and Piasezky 2006b contra Levy *et al.* 2004).

The fortress of Ḥorvat ʿUza—further to the south—was built in the 7th century. The latter may have been constructed by the Judahite authorities under Assyrian auspices. There is good reason to suggest that the same holds true for the fortress of Kadesh Barnea.

Until the direct involvement of Assyria in the southern part of the Levant, the main trade road from the Gulf of Aqaba to the Mediterranean coast seems to have gone via the Darb el-Ghazza, that is, to the west of the Negev Highlands. The site of Kuntillet ʿAjrud, though not necessarily a road-station, and not located on the main course of the ancient road (Naʿaman and Lisovsky 2008) must have been frequented by people passing along it. The site is dated to the first half of the 8th century (Lemaire 1984; Ayalon 1995; Finkelstein and Piasezky 2008, contra Singer-Avitz 2006). Starting in the days of Tiglath-pileser III, with the Assyrian take-over of the southern Coastal Plain and with Judah turning into an Assyrian vassal, the main trade route was diverted to the Edomite plateau and the Beersheba Valley. In order to guard and administer the road, a major Assyrian centre was built in Buseirah and Assyrian fortresses were constructed at ʿEn Haṣeva and Tell el-Kheleifeh. It seems to me that Kadesh Barnea was built at the same time, in the late 8th century, in order to control the movement of people—though the flow was now more meagre—in the west. Whether the territory between the Beersheba Valley and Kadesh Barnea was considered Judahite one cannot tell from the finds.⁸ The only clue is the mention of Kadesh Barnea in a late 7th century source as a spot along the southern border of Judah (Joshua 15:3). And even then, it is obvious that the southern Coastal Plain, including the Besor region, was directly ruled and administered by Assyria.

The three layers inside the fort, with an accumulation of ca. 1.5 m, attest to a long and continuous period of activity. Hence there can be no doubt that Kadesh Barnea also functioned in the first half of the 7th century, in the heyday of Assyrian rule in the Levant. And taking into account the overall geo-political situation in the Levant in the second half of the 7th century, it is reasonable to assume that Egypt of the Twenty-sixth Dynasty took control in the south, including Kadesh Barnea, from the withdrawing Assyrians. The destruction of Stratum 2 can be affiliated with the Babylonian assault on the southern Coastal Plain in 604/603 BCE, or with the fall of Judah in the early 6th century. Given the remoteness of the site from Judah and the weakness of the kingdom at that time, the first option seems a more logical one.

Scanty remains, apparently associated with pottery typical of the end of the Iron Age, were found in Area B over the destruction of Stratum 2. Haiman (2007: 51) associated them with a Babylonian period activity at the site. Persian period remains were found above the Stratum 2 destruction in other sectors of the site. A Yehud seal impression found at Kadesh Barnea belongs to Vanderhooft and Lipschits's (2007) Group 14, dated to the 4th–3rd centuries BCE. This means that the Persian period activity probably lasted until the 4th century BCE.⁹

⁸ The excavators describe the pottery assemblage of Stratum 2 as “distinctly Judahite” (Cohen and Bernick-Greenberg 2007: 13, 15). Yet, deciding the borders of Judah according to the pottery of Kadesh Barnea seems to be a risky task.

⁹ The second item identified as a Yehud seal impression (Cohen 2007: 253) seems not to belong to this group (O. Lipschits, oral communication).

Summary

It is reasonable to assume that the finds at Kadesh Barnea cover the entire sequence of the Iron Age and later, until the Persian period:

- Substratum 4c represents the earliest occupation. Painted Qurayyah vessels and other Iron I sherds found at the site must have originated in this settlement. They probably date to the 12th century BCE. Other finds date to the 12th to 10th centuries BCE. The radiocarbon results from seed samples that ostensibly belong to Substratum 4b provide dates in the late Iron I, in the 10th century BCE, and should also be affiliated with the settlement of Substratum 4c.
- Substratum 4b is a settlement (rather than an oval fortress) that features at least two phases. It covers the entire sequence of the Iron IIA, between the late 10th and late 9th/early 8th centuries BCE.
- Strata 3–2 feature the remains of a single rectangular fortress with a solid wall built as a foundation for a system of casemates. This fortress was built in the second half of the 8th century, with the Assyrian take-over of the region, and continued to function until ca. 600 BCE. It has three construction phases inside, and three construction phases outside its walls.
- If indeed the post-Stratum 2 remains (Stratum 1) can be divided into two groups—one dating to the Babylonian period and one to the Persian period—then habitation at Kadesh Barnea continued uninterrupted until the 4th century BCE.

References

- Ayalon, E. 1995. The Iron Age II Pottery Assemblage from Horvat Teiman (Kuntillet ‘Ajrud). *Tel Aviv* 22: 141–205.
- Bernick-Greenberg, H. 2007. The Ceramic Assemblages and the Wheel-Made Pottery Typology. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 131–186.
- Boaretto, E., Finkeltsein, I. and Shahack-Gross, R. 2010. Radiocarbon Results from the Iron IIA Site of Atar Haroa in the Negev Highlands and Their Archaeological and Historical Implications. *Radiocarbon* 52: 1–12.
- Bruins, H.J. and van der Plicht, J. 2005. Desert Settlement through the Iron Age: Radiocarbon Dates from Sinai and the Negev Highlands. In: Levy, T.E. and Higham, T., eds. *The Bible and Radiocarbon Dating: Archaeology, Text and Science*. London: 349–366.
- Bruins, H.J. and van der Plicht, J. 2007. Radiocarbon Dating the “Wilderness of Zin”. *Radiocarbon* 49: 481–497.
- Carmi, I. and Segal, D. 2007. Radiocarbon Dates. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 303–306.
- Carmi, I. and Ussishkin, D. 2004. ¹⁴C Dates. In: Ussishkin D. *The Renewed Archaeological Excavations at Lachish (1973–1994)*, Vol. 5 (Monograph Series of the Institute of Archaeology of Tel Aviv University 22). Tel Aviv: 2508–2513.
- Cohen, R. 1970. Atar Haroa. *‘Atiqot* 6: 6–24 (Hebrew).
- Cohen, R. 1980. The Iron Age Fortresses in the Central Negev. *BASOR* 236: 63–75.
- Cohen, R. 1981. The Excavations of Kadesh Barnea 1976–1978. *BA* 44: 93–107.
- Cohen, R. 1983. *Kadesh Barnea: A Fortress from the Time of the Judaeon Kingdom* (Israel Museum Catalogue 233). Jerusalem.
- Cohen, R. 2007. Inscriptions. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 245–253.

- Cohen, R. and Bernick-Greenberg, H. 2007. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem.
- Cohen, R. and Cohen-Amin, R. 2004. *Ancient Settlement of the Negev Highlands*, Vol. 2. *The Iron Age and the Persian Periods* (IAA Reports 20). Jerusalem (Hebrew).
- Dothan, M. 1965. The Fortress at Kadesh Barnea. *IEJ* 15: 134–151.
- Druk, M. 2007. The Flint Assemblage. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 269–272.
- Finkelstein, I. and Piasezky, E. 2006a. The Iron I–IIA in the Highlands and Beyond: ¹⁴C Anchors, Pottery Phases and the Shoshenq I Campaign, *Levant* 38: 45–61.
- Finkelstein, I. and Piasezky, E. 2006b. ¹⁴C and the Iron Age Chronology Debate: Rehov, Khirbet en-Nahas, Dan and Megiddo. *Radiocarbon* 48: 373–386.
- Finkelstein, I. and Piasezky, E. 2007a. Radiocarbon Dating and the Late-Iron I in Northern Canaan: A New Proposal. *UF* 39: 247–260.
- Finkelstein, I. and Piasezky, E. 2007b. Radiocarbon, Iron Age Destructions and the Israel – Aram Damascus Conflicts in the 9th Century BCE. *UF* 39: 261–276.
- Finkelstein, I. and Piasezky, E. 2007c. Radiocarbon and Philistine Chronology with an Addendum on el-Ahwat. *Egypt and the Levant* 17: 74–82.
- Finkelstein, I. and Piasezky, E. 2008. The Date of Kuntillet ‘Ajrud: A ¹⁴C Perspective. *Tel Aviv* 35: 175–185.
- Gera, A. 2007. The Small Finds. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 211–235.
- Gilboa, A., Jull, A.J.T., Sharon, I. and Boaretto, E. 2009. Notes on ¹⁴C Dates from Tell el-Qudeirat (Kadesh Barnea). *Tel Aviv* 36: 82–94.
- Haiman, M. 2007. Area B: The Western Part of the Strata 3–2 Courtyard. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 29–52.
- Herzog, Z. 2002. The Fortress Mound at Tel Arad: An Interim Report. *Tel Aviv* 29: 3–109.
- Herzog, Z. and Singer-Avitz, L. 2004. Redefining the Centre: The Emergence of State in Judah. *Tel Aviv* 31: 209–244.
- Lemaire, A. 1984. Date et origine des inscriptions hébraïques et phéniciennes de Kuntillet ‘Ajrud. *Studi Epigrafici e Linguistici* 1: 131–143.
- Lemaire, A. and Vernus, P. 1980. Les ostraca paléo-hébreux de Qadesh-Barnéa. *Orientalia* 49: 341–345.
- Lender, Y. 2007. Area F: The Area North of the Strata 3–2 Fortresses. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 113–120.
- Lender, Y., Nahlieli, D., Eldar-Nir, I. and Bernick-Greenberg, H. 2007. Area E: The Area East of the Strata 3–2 Fortresses and the Eastern Part of the Stratum 4 Fortress. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 101–112.
- Levy, T., Adams, R., Najjar, M., Hauptmann, A., Anderson, J.D., Brandl, B., Robinson, M.A. and Higham T. 2004. Reassessing the Chronology of Biblical Edom: New Excavations and ¹⁴C Dates from Khirbet en-Nahas (Jordan). *Antiquity* 78: 865–879.
- Maeir, A.M. 2004. The Historical Background and Dating of Amos VI 2: An Archaeological Perspective from Tell es-Safi/Gath. *VT* 54: 319–334.
- Mazar, A. 2005. The Debate over the Chronology of the Iron Age in the Southern Levant: Its History, the Current Situation, and a Suggested Resolution. In: Levy, T.E. and Higham, T., eds. *The Bible and Radiocarbon Dating: Archaeology, Text and Science*. London: 15–30.
- Mazar, A. and Bronk Ramsey, C. 2008. ¹⁴C Dates and the Iron Age Chronology of Israel: A Response. *Radiocarbon* 50: 159–180.
- Mazar, A., Bruins, H.J., Panitz-Cohen, N. and van der Plicht, J. 2005. Ladder of Time at Tel Rehov: Stratigraphy, Archaeological Context, Pottery and Radiocarbon Dates. In: Levy, T.E. and Higham, T., eds. *The Bible and Radiocarbon Dating: Archaeology, Text and Science*. London: 193–255.

- Münger, S. 2007. Stamp Seals and Seal Impressions. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 237–243.
- Na'aman, N. 1991. The Kingdom of Judah Under Josiah. *Tel Aviv* 18: 3–71.
- Na'aman, N. 2001. An Assyrian Residency at Ramat Rahel? *Tel Aviv* 28: 260–280.
- Na'aman, N. and Lissovsky, N. 2008. Kuntillet 'Ajrud, Sacred Trees and the Asherah. *Tel Aviv*: 186–208.
- Nahlieli, D. and Bernick-Greenberg, H. 2007. Area H: The Area South of the Strata 3–2 Fortresses. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 125–130.
- Shahack-Gross, R. and Finkelstein, I. 2008. Subsistence Practices in an Arid Environment: A Geoarchaeological Investigation in an Iron Age Site, the Negev Highlands, Israel. *Journal of Archaeological Science* 35: 965–982.
- Sharon, I., Gilboa, A., Jull, T.A.J. and Boaretto, E. 2007. Report on the First Stage of the Iron Age Dating Project in Israel: Supporting a Low Chronology. *Radiocarbon* 49: 1–46.
- Shor, P. and Bernick-Greenberg, H. 2007. Area C: The East-Central Part of the Strata 3–2 Courtyard. In: Cohen, R. and Bernick-Greenberg, H. *Excavations at Kadesh Barnea (Tell el-Qudeirat) 1976–1982* (IAA Reports 34). Jerusalem: 67–85.
- Singer-Avitz, L. 2004. The Qurayyah Painted Ware. In: Ussishkin D. *The Renewed Archaeological Excavations at Lachish (1973–1994)*, Vol. 3 (Monograph Series of the Institute of Archaeology of Tel Aviv University 22). Tel Aviv: 1280–1287.
- Singer-Avitz, L. 2006. The Date of Kuntillet 'Ajrud. *Tel Aviv* 33: 196–228.
- Singer-Avitz, L. 2008. The Earliest Settlement at Kadesh Barnea. *Tel Aviv* 35: 73–81.
- Tappy, R.E., McCarter, K.P., Lundberg, M.J. and Zuckerman, B. 2006. An Abecedarium of the Mid-Tenth Century B.C.E. from the Judaeen Shephelah. *BASOR* 344: 5–46.
- Ussishkin, D. 1995. The Rectangular Fortress at Kadesh Barnea. *IEJ* 45: 118–127.
- Vanderhooff, D. and Lipschits, O. 2007. A New Typology of the Yehud Stamp Impressions. *Tel Aviv* 34: 12–37.