Tel Nami, Cyprus, and Egypt: Radiocarbon Dates and Early Middle Bronze Age Chronology

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ABSTRACT

This article reviews a set of radiocarbon dates for the Middle Bronze strata at Tel Nami, Israel. Employing a Bayesian analysis based on the stratigraphy of the site, I conclude that the results generally coincide with the high radiocarbon chronology for the Middle Bronze Age southern Levant. This result is supported by radiocarbon sequences from Tell el-Dab’a (Egypt) and Tel Ifshar (Israel) and has significant historical implications for the dating of scarab seals previously attributed to the late Middle Kingdom, and for the earliest contacts between Egypt, the Levant and Cyprus during the Middle Bronze Age.

KEYWORDS

Middle Bronze Age; Levant; Egypt; Cyprus; radiocarbon dating; scarab seals; chronology; Tel Nami

Introduction: the high Middle Bronze Age chronology

In recent years, absolute calendrical dates for the Middle Bronze Age in the southern Levant have been challenged by several radiocarbon sequences. These have had significant implications for interregional synchronization, the most significant being the historical chronology of Egypt (Höflmayer 2017; Höflmayer forthcoming a). The traditional model was based on general historical associations with Dynastic Egypt, and hence absolute dates in the Levant were derived from the historical (political) chronology of the Nile Valley. The Middle Bronze I was believed to be contemporary with the 12th Dynasty, the Middle Bronze II with the 13th Dynasty, and the Middle Bronze III with the 15th Dynasty; the hyksos period (Dever 1985; 1992). This traditional model was challenged by Manfred Bietak based on his excavations at Avaris (modern Tell el-Dab’a), the capital of the Hyksos Dynasty (Bietak 1984; 1989; 1991; 2002). On the basis of finds from the Levantine Middle Bronze Age culture in well-stratified contexts at the site, and on alleged links between certain stratigraphic phases and Egyptian historical chronology, Bietak proposed a significantly lower chronology for the Middle Bronze Age. Middle Bronze I would have started in the mid-12th Dynasty (around 1900 BC) and lasted until the mid-13th Dynasty (around 1700 BC), the transition from Middle Bronze II to III would fall in the mid-15th Dynasty (c. 1580 BC), while the transition to the Late Bronze Age was envisaged as a drawn-out process that might have lasted from 1500 to 1450 BC (Bietak 2013).
In recent years both the low and the traditional chronologies for the Middle Bronze Age have been challenged based on several radiocarbon sequences, and significantly higher dates have been suggested (Fig. 1). The evidence is not isolated, but is mounting and consistent, with data now available from Tell el-Dab’a (Kutschera et al. 2012), Tell el-Burak (Höflmayer et al. 2016a; Höflmayer, Dee, and Riehl 2019), Tel Kabri (Höflmayer et al. 2016b; Höflmayer et al. 2020), Tel Ifshar (Marcus 2013), Jericho (Bruins and van der Plicht 1995), Ashkelon (Bruins and van der Plicht 2017), and Tell el-Hayyat (Falconer and Fall 2017; Fall, Falconer, and Höflmayer 2020). The data suggests that the Middle Bronze I should be synchronized with the early/mid-12th Dynasty and ends around 1850/1800 BC, the Middle Bronze II should be equated with the late 12th and early 13th Dynasty, with a transition to Middle Bronze III around 1700 BC, while the start of the Late Bronze Age should fall to c. 1600 BC in the late 15th Dynasty (Höflmayer 2017). In the meantime, employing a much-expanded dataset and the recent IntCal20 radiocarbon calibration curve, it has become clear that the transition to the Late Bronze Age started sometime around 1600 BC but lasted well into the second half of the 16th century BC.1

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**Figure 1.** Different models for Middle Bronze chronology and synchronisms.2
The high radiocarbon chronology for the Middle Bronze Age has been criticized by Daphna Ben-Tor based on the appearance of scarab sealings found in Middle Bronze I contexts at Ashkelon (Ben-Tor 2018), which allegedly date to the late Middle Kingdom (or early 13th Dynasty). An end-date for the Middle Bronze I in the second half of the 19th century BC would thus be impossible without re-dating the Egyptian historical chronology, which is itself backed by radiocarbon data (Bronk Ramsey et al. 2010). James Weinstein has recently argued along similar lines.3

Although a detailed response that highlights the intricate problems of using scarabs as chronological indicators is being prepared for a different article (Höflmayer forthcoming b), I want to highlight yet another Middle Bronze I site that has produced radiocarbon dates that agree with the high chronology. These dates have been overlooked in the past, perhaps because they have only partially been published in archaeological articles, and the remainder was only accessible within the regularly released date-lists of radiocarbon laboratories. Although a final publication of the site is still pending, enough information can be gathered from preliminary reports to create a radiocarbon model based on its stratigraphy. In the following, we will summarize the most crucial information about the site, its relative chronology, and available data that pertain to external synchronisms. We will then present the radiocarbon data and a stratigraphic Bayesian model, and will finally discuss its implications for Middle Bronze Age chronology.

**Tel Nami and relative chronology**

Tel Nami is located on the southern Carmel coast on a rocky promontory, about 15 km south of modern Haifa. It was excavated in the late 1980s and early 1990s by the Tel Nami Regional Project, under the direction of Michal Artzy on behalf of Haifa University (Marcus 1991; Artzy 1995; 1993; 2008) (Fig. 2a and 2b). The site itself was inhabited during the Middle Bronze I period, after which it was abandoned and only resettled in the developed Late Bronze Age. Several sites in the vicinity show a similar pattern, such as Site 104–06 (Sharp and Artzy 2017). Area D is located on the south-eastern side of the site and shows the greatest exposure of Middle Bronze I remains (Marcus 1991, 100–10). Here, two architectural phases (Phase 4b and Phase 4a) comprising several rooms and a narrow-paved alleyway, have been distinguished, of which the latter phase (Phase 4a) ended in a violent conflagration that sealed a substantial assemblage of pottery (Marcus 1991, 133–54). There is no Middle Bronze II present on the site (Artzy and Marcus 1992, 105). Based on the pottery, the last Middle Bronze I phase at Tel Nami can be synchronized with Aphek Phase 3 (Palace II phase, corresponding to Stratum A XIV), which has been dated to the late Middle Bronze I (Marcus 1991, 133–54; Artzy and Marcus 1992, 105; Beck 2000a; 2000b, 245; Yadin and Kochavi 2000, 140; Yadin 2009a, 10 table 2.1; 2009b, 111 table 7.1).

Tel Nami is also of particular importance due to archaeological connections with Cyprus and Egypt. The Middle Bronze I strata have produced not only one of the earliest, though limited, stratified assemblages of Middle Cypriot imports (Artzy and Marcus 1992), but—perhaps more importantly for absolute chronology—also a loom weight with a scarab seal impression (Marcus and Artzy 1995). This object was found in Area D and has often been used to suggest a synchronism between the late Middle Bronze I phases at Tel Nami and the reign of Amenemhet III (late 12th Dynasty, mid/late 19th...
century BC). According to the excavators Michal Artzy and Ezra Marcus, the object in question was found ‘below Locus 420, the remains of a robbed stone surface’ and they suggest ‘that it was discarded before the floor was laid (last phase of MB IIA [our MB I, comment by the authors] habitation at the site)’ (Marcus and Artzy 1995, 136). However, they conceded that they could not rule out a later deposition ‘when the floor was robbed (perhaps during the LB IIB Age, when settlement at the site was resumed)’ (Marcus and Artzy 1995, 136).

The sealing measures c. 15 × 10 mm and depicts two red crowns of Lower Egypt facing each other above the sign nbw (gold), flanked by two ‘nh-signs (ankh) (Marcus and Artzy 1995, 137–38). In Tufnell’s classification, the design combines class 3B6 (nbw-sign in a longitudinal setting) with 3B3c (red crowns facing each other) (Marcus and Artzy 1995, 139; Keel 1995, 159; Tufnell 1984, 29) (Fig. 3).

It is not easy to precisely date this design. Contrary to what Marcus and Artzy believed (Marcus and Artzy 1995, 142), Tufnell stated that the nbw-sign does not occur on scarabs
of the First Intermediate Period, but only appears in the 12th Dynasty (Tufnell 1984, 120), while Othmar Keel argued that it is characteristic for the 15th Dynasty (Keel 1995, 172). A cautious dating suggestion by Tufnell regarding red crowns facing each other, however, soon became a factoid in the ensuing discussion. In her publication on the sealings found at Kahun and Uronarti in 1975 (and later reiterated in her volume Studies on Scarab Seals II in 1984), she cautiously associates red crowns facing each other with the reign of Amenemhet III based on two scarabs from the British Museum that mention his name and also show, among many other signs, such crowns (Tufnell 1984, 119; 1975, 69; Hall 1913, 14 cat.-nos. 141 and 142). She later extended the suggested date to include the combination of the red crowns facing each other above the nbw-sign (Tufnell 1984, 120). This suggestion soon became accepted as fact, after Marcus and Artzy concluded that ‘the absolute date of the scarab-impressed

Figure 2b. Map of the southern Levant mentioned in the text.

Figure 3. Scarab seal impression from Tel Nami (redrawn after Marcus and Artzy 1995, fig. 1).
weight from Tel Nami should be placed after the beginning of Amenemhet III’s reign’ (Marcus and Artzy 1995, 144). Keel was undecided. While he dated 3B3c (red crowns facing each other) generally to the 12th and 13th Dynasties (Keel 1995, 170), he also follows Marcus and Artzy in dating the scarab sealing from Tel Nami precisely to the reign of Amenemhet III (Marcus and Artzy 1995, 144; Keel 1995, 127). We will return to the issue and the implications of this date below.

**Radiocarbon data and Bayesian model**

Radiocarbon data for Tel Nami’s Middle Bronze I strata were first reported in a conference paper by Marcus, and in two radiocarbon date-lists of the Oxford Radiocarbon Accelerator Unit (ORAU), and are summarized in Table 1 (Hedges et al. 1997, 256–57; Bronk Ramsey et al. 2002, 81; Marcus 2003, 102, Table 4).

Some information is available regarding the stratigraphic position of the samples. Marcus notes that the samples from L.356 come from a burned storage room and were ‘imported before [the] final destruction’, that those from L.421 are somewhat earlier and come from the ‘early floor of [the] second phase’, and that samples from L.440 can be attributed to the earlier Middle Bronze I phase, come from a charred floor and represent the ‘harvest before [the] end of [the] first phase’ (Marcus 2003, 102, Table 4; Hedges et al. 1997, 257).

Thus, it is possible to create a Bayesian model based on the stratigraphic succession of the samples. Samples from L.440 represent the earlier Middle Bronze I phase. These are followed by samples from L.421, representing the second phase, and these are in turn followed by those from L.356, representing the final conflagration at the site. Calibration and modelling were done using OxCal 4.4 and the IntCal20 calibration curve interpolated to yearly intervals (Resolution = 1), and employing the ‘General’ outlier model for the short-lived samples (Bronk Ramsey 2009a; 2009b; Reimer et al. 2020). Results are plotted in Fig. 4 and presented in Table 2.

Based on the reported radiocarbon measurements and the stratigraphic reports, the Middle Bronze I phases 4b and 4a date to around 1900 BC, with destruction of Phase 4a occurring in the first half of the 19th century BC (with a low chance for an absolute date in the second half of the 19th century BC or after 1800 BC). Thus, based on the evidence from Tel Nami, one can conclude that an advanced stage of the Middle Bronze I should be dated to the early/mid-19th century BC, in agreement with a proposed Middle Bronze I/II transitional date between 1850 and 1800 BC based on several other sets of radiocarbon data (Höflmayer 2017). The destruction of Tel Nami would most likely

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**Table 1. Published radiocarbon data from Tel Nami.**

| Laboratory code | Stratigraphic phase | Locus | Material | Date           | Reference                  |
|-----------------|---------------------|-------|----------|----------------|---------------------------|
| OxA-4532        | Phase 4a destruction | L.356 | *Lathyrus clymenum* | 3560 ± 60 | Hedges et al. 1997       |
| OxA-4533        | Phase 4a destruction | L.356 | *Lathyrus clymenum* | 3565 ± 65 | Hedges et al. 1997       |
| OxA-10014       | Phase 4a destruction | L.356 | *Vitis vinifera*    | 3514 ± 32 | Bronk Ramsey et al. 2002 |
| OxA-4534        | Phase 4a            | L.421 | Horsebean  | 3495 ± 65 | Hedges et al. 1997       |
| OxA-4535        | Phase 4a            | L.421 | Horsebean  | 3565 ± 65 | Hedges et al. 1997       |
| OxA-10134       | Phase 4a            | L.421 | *Vicia faba*       | 3575 ± 40 | Bronk Ramsey et al. 2002 |
| OxA-4536        | Phase 4b            | L.440 | Horsebean  | 3460 ± 60 | Hedges et al. 1997       |
| OxA-4537        | Phase 4b            | L.440 | Horsebean  | 3590 ± 60 | Hedges et al. 1997       |
| OxA-10135       | Phase 4b            | L.440 | *Vicia faba*       | 3562 ± 36 | Bronk Ramsey et al. 2002 |
Figure 4. Modelled radiocarbon dates for Middle Bronze I phases at Tel Nami.

Figure 5. Modelled end boundary of the destruction of Phase 4a at Tel Nami with reigns of 12th Dynasty rulers superimposed. Regnal dates are based on the average of the 68% modelled date range after Bronk Ramsey et al. 2010.
coincide with the late reign of Amenemhet II, the reign of Senwosret II, or the earlier part of the reign of Senwosret III (Fig. 5).

**Interregional synchronisms**

An absolute date for the developed phase of the Middle Bronze I in the first half of the 19th century BC coincides with the proposed high radiocarbon chronology of the Middle Bronze southern Levant, but the date is slightly higher than the Middle Bronze I/II transition following the traditional model (1800/1750 BC) and is more than 100 years earlier than dates proposed by the low chronology (c. 1700 BC) (Höflmayer forthcoming a). With the Egyptian historical chronology being backed with radiocarbon data, and therefore not able to accommodate any similar shift in absolute dates, one has to re-check potential synchronisms, both with the Nile Valley and with other sites in the southern Levant.

Two notable synchronisms have been proposed for the (late) Middle Bronze I strata of Tel Nami: the scarab sealing on the loom weight, and a pottery-based relative synchronism with Aphek Phase 3.

We mentioned above that Marcus and Artzy dated the scarab sealing to the reign of Amenemhet III (or later) based on the motif of red crowns facing each other (Marcus and

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**Table 2. Modelled results of the radiocarbon data and boundaries.**

| Stratigraphic phase  | Laboratory code | Start 1950–1888 (68.2%) | 2014–1878 (85.9%) |
|---------------------|----------------|--------------------------|--------------------|
|                     |                | 1858–1825 (8.0%)         | 1800–1785 (1.5%)   |
|                     |                | 1795–1787 (1.1%)         |                    |
|                     |                | 1791–1876 (85.7%)        | 1847–1824 (8.4%)   |
|                     |                | 1796–1786 (1.4%)         |                    |
| Phase 4b            | OxA-4536       | 1938–1886 (68.2%)        | 1963–1824 (94.4%)  |
|                     |                | 1797–1874 (85.2%)        | 1849–1822 (8.5%)   |
|                     | OxA-4537       | 1938–1887 (68.2%)        | 1798–1784 (1.7%)   |
|                     |                | 1971–1876 (85.7%)        | 1847–1824 (8.4%)   |
|                     | OxA-10135      | 1937–1887 (68.2%)        | 1796–1786 (1.4%)   |
| Transition 4b to 4a|                | 1931–1883 (68.2%)        | 1950–1869 (80.8%)  |
|                     |                | 1859–1820 (12.4%)        | 1797–1783 (2.3%)   |
| Phase 4a            | OxA-4534       | 1926–1879 (66.4%)        | 1940–1815 (92.9%)  |
|                     |                | 1795–1872 (2.5%)         |                    |
|                     | OxA-4535       | 1925–1880 (66.1%)        | 1852–1813 (14.7%)  |
|                     |                | 1800–1781 (3.5%)         |                    |
|                     | OxA-10134      | 1924–1880 (66.3%)        | 1847–1816 (14.1%)  |
|                     |                | 1799–1781 (3.5%)         |                    |
| Transition 4a to 4a destruction | OxA-4532       | 1921–1876 (61.7%)        | 1933–1862 (70.6%)  |
|                     |                | 1835–1826 (6.6%)         | 1852–1780 (24.8%)  |
| Phase 4a destruction | OxA-4533       | 1917–1871 (65.3%)        | 1927–1862 (62.7%)  |
|                     |                | 1838–1821 (11.9%)        | 1851–1773 (32.8%)  |
|                     | OxA-10014      | 1917–1870 (56.0%)        | 1927–1862 (62.0%)  |
|                     |                | 1838–1820 (11.9%)        | 1851–1773 (33.4%)  |
| End                 |                | 1785–1784 (0.4%)         |                    |
|                     |                | 1789–1776 (6.4%)         |                    |
Artzy 1995). Because their conclusion is based on a single motif, it is worth listing the actual parallels of the design in which red crowns face each other above a nbw-sign with flanking ‘nh’-signs.

This combination (though differently executed) is known from a (locally made) scarab found in Tomb 36 at Gibeon, which dates to the Middle Bronze II (Pritchard 1963, 46–47, 128–31 fig. 40–41, 156–57 fig. 71 no. 10). Keel dates the scarab based on Tufnell’s original suggestion to after the reign of Amenemhet III (Keel 2013, 486–87 cat.-no. Gibeon 49). There are also several parallels for the Tel Nami scarab sealing from the Nile Valley (Ben-Tor 2007, pl. 8 nos. 41, 43, 45–46, 48–50). One example was found at Kahun (Petrie 1891, pl. 9 no.50; Tufnell 1975, Fig. 5 Class 3B3c), five examples come from Uronarti (Reisner 1955, 62 nos. 253–57; Dunham 1967, 73 nos. 253–57; Tufnell 1975, Fig. 5 Class 3B3c), and two were unearthed at Elephantine from Bauschicht 13 and 14 (Pilgrim 1996, 247 fig. 103).

The town of Kahun (Petrie 1890; 1891; Petrie, Brunton, and Murray 1923) was founded under Senwosret II, either to house workmen employed in the construction of his mortuary complex or to cultivate the region shortly beforehand (Moeller 2017). Thus, this context provides a terminus post quem of c. 1890/1868 bc for the sealings in question (based on the 68% modelled date range for the first year of Senwosret II in Bronk Ramsey et al. 2010). The fortress of Uronarti is slightly younger: it was founded in the 16th year of Senwosret III (offering a terminus post quem of c. 1868/1844 bc based on the 68% modelled date range for his first regnal year in Bronk Ramsey et al. 2010) and was occupied until the 13th Dynasty or slightly later, though this has been disputed (Reisner 1955; Dunham 1967, 5; Bestock 2017). Bauschicht 13 at Elephantine is dated to the last third of the 12th Dynasty (Amenemhet III and later), and Bauschicht 14 to earlier in that Dynasty (Senwosret I until Senwosret III) (Pilgrim 1996, 15 tab. 1, 184).

One might argue that the first year of Senwosret II should be regarded as a terminus post quem for the scarab sealing at Tel Nami, based on the evidence from Kahun. The evidence from Elephantine points to sometime between the reign of Senwosret I and Senwosret III (c. 1965/1945–1844/1820 bc based on Bronk Ramsey et al. 2010). This approach would be in agreement with the radiocarbon data for the Middle Bronze I strata discussed in Section 3.

However, in recent years Ben-Tor has argued for significantly lower dates for scarab seals, which if correct would have considerable implications for the scarab sealing from Tel Nami (Ben-Tor 2007); they would render the low Middle Bronze Age chronology impossible (see below). Ben-Tor correctly noted stylistic similarities in the assemblages of Kahun and Uronarti. Originally, George Reisner dated the seal impressions from Uronarti to the early 13th Dynasty (Reisner 1955), but Ben-Tor and Susan Allen have opted for a significantly later date. Based on pottery analysis and comparisons with Tell el-Dab’a, they argue that the final occupation (and the sealings) of Uronarti should date to the late 13th Dynasty (Ben-Tor, Allen, and Allen 1999, 57). As Ben-Tor assumes that the Kahun sealings are approximately contemporary with those from Uronarti, she also radically lowered the date for the sealings of the former site and suggested a 13th Dynasty date ‘for the bulk of the Kahun sealings’ (Ben-Tor 2007, 8–9) and therefore also for the design on the seal impression at Tel Nami (Ben-Tor 2007, 19).

It is important to note, though, that her date is based on Bietak’s absolute dates for the stratigraphy of Tell el-Dab’a (Bietak 2013), which has been challenged in several
publications by radiocarbon data from the site itself (Kutschera et al. 2012) and on archaeological grounds (Manning et al. 2014; Höflmayer 2015; 2018). As the site of Tell el-Dab’a is almost devoid of epigraphic material, it was linked to the Egyptian chronology via a few questionable historical assumptions (for details cf. Höflmayer 2015). To use a contested site such as Tell el-Dab’a to re-date seal impressions from sites with substantial epigraphic evidence (such as Uronarti and Kahun) is methodologically highly problematic.

Allen and Ben-Tor also start from false premises when assessing the data from Uronarti. While most scholars reiterate the opinion that the sealings found in Uronarti represent the final administrative cycle of the occupation, and that the floors of the fortress would have been periodically swept (Dunham 1967, 5; Kemp 1986, 125), the current excavators have found abundant evidence for the accumulation and movement of refuse material. The sealings cannot therefore be dated any more precisely than to the second half of the 12th or the 13th Dynasty (post-16th year of Senwosret III). Thus, all we can conclude is that the sealings found in Uronarti were used some time after the 16th year of Senwosret III. This in turn devalues Ben-Tor’s attempt to lower the dates for the Kahun sealings to the late 13th Dynasty; there is no reason to assume that a hypothetical date for the Uronarti sealings would change the date of the Kahun sealings.

Ben-Tor also claimed that Cornelius von Pilgrim dated the Bauschicht 13 and 14 at Elephantine too early. She mentions that Dorothea Arnold examined the pottery from Bauschicht 13 and dated it to the late 12th and early 13th Dynasties, and that Teodozja Rzeuska confirmed this dating (Ben-Tor 2007, 6). Neither of these studies has been published. This assessment seems to be partly based on a misunderstanding of the (architectural) concept of Bauschicht, which refers to the date of construction rather than the abandonment/last use of a certain building unit. In the case of Elephantine, there are clear stratigraphical grounds that Bauschicht 13 started with Amenemhet III, as this Bauschicht can be linked to the chapel of Ameni-seneb of the sanctuary of Heqaib. Bauschicht 14 can be linked (again on stratigraphic grounds) with construction works at the temple of Satet of Senwosret I. However, von Pilgrim pointed out in 1996 that two almost complete Tell el-Yahudiyyah juglets from Bauschicht 13 can be compared with material from Tell el-Dab’a Stratum F (which Bietak dates into the mid-13th Dynasty) (Pilgrim 1996, 189). Again, the lower dating is based solely on pottery comparisons with the disputed stratigraphy of Tell el-Dab’a. Based on radiocarbon evidence, Stratum F dates to the second half of the 19th century BC, and thus to the late 12th Dynasty and not to the mid-13th Dynasty (Kutschera et al. 2012) (Fig. 6). Thus, the evidence from Elephantine is compatible with the (historical) dates for Kahun and Uronarti, and with the radiocarbon data for the scarab seal impression from Tel Nami.

Ben-Tor’s late 13th Dynasty date for the scarab seal impression at Tel Nami would be too low even for researchers who opt for a low Middle Bronze Age chronology and ignore the mounting scientific evidence. According to the low chronology, the Middle Bronze I/II transition would fall to c. 1700 BC (Stratum F at Tell el-Dab’a, mid-13th Dynasty). If Ben-Tor’s low date for the Uronarti sealings (late 13th Dynasty) is accepted, she would still need to explain how a late 13th Dynasty sealing (post-1700 BC) could show up in a late Middle Bronze I context in Tel Nami (pre-1700 BC).

We can therefore conclude that the design on the seal impression at Tel Nami, radiocarbon dated to the first half of the 19th century BC (mid-12th Dynasty), finds parallels in
archaeological contexts in the Nile Valley that are roughly contemporary or slightly younger.

The other synchronism of chronological significance is the regional link with Tel Aphek. According to pottery analysis, the Middle Bronze I strata at Tel Nami should be equated with Tel Aphek Phase 3 (Aphek Palace II, corresponding to Stratum A XIV), dated to the late Middle Bronze I (Marcus 1991, 133–54; Artzy and Marcus 1992, 105; Yadin and Kochavi 2000, 140; Beck 2000a; 2000b, 245; Yadin 2009a, 10 table 2.1; 2009b, 111 table 7.1). Although Aphek lacks a sound radiocarbon sequence, this synchronism (and in turn the radiocarbon dates for Tel Nami) can be cross-checked with

Figure 6. Modelled radiocarbon data for Tell el-Dab’a Stratum F (the figure shows only a section of the full model), with 12th and 13th Dynasty lengths (based on Kitchen 2000) superimposed and Bietak’s original date indicated.

Figure 7. Modelled radiocarbon determinations for Phases E and G at Tel Ifshar, after Marcus 2013 and Höflmayer 2017.
a third site, Tel Ifshar in the Sharon plain. According to Marcus, who has worked extensively on the stratigraphic sequence, pottery, and radiocarbon record at Tel Ifshar, Phases E–H (late Middle Bronze I) can be synchronized with Tel Aphek Phase 3 and should thus be contemporary with Tel Nami Strata 4a and 4b (Marcus 2003, 96 tab. 1). Modelled radiocarbon data for Tel Ifshar Phases E and G actually fall to the mid-19th century BC (reigns of Senwosret III or Amenemhet III) and appear to be slightly later than Strata 4a and 4b at Tel Nami, but for a regional synchronism this is still compatible with Aphek Palace 3 (Fig. 7). Tel Ifshar thus independently confirms the validity of a proposed synchronism of the sites based on pottery analysis and radiocarbon data and is therefore strong evidence for the high Middle Bronze I chronology.

Conclusions

The high date for the Middle Bronze I layers at Tel Nami has two important historical implications. The early 19th century BC radiocarbon dates for the late Middle Bronze I strata at Tel Nami show that the design on the seal impression had appeared by the mid-12th Dynasty, probably sometime during the reigns of Amenemhet II, Senwosret II, or Senwosret III. Red crowns facing each other are therefore not representative of the reigns of Senwosret III or Amenemhet III and appear to be slightly later than Strata 4a and 4b at Tel Nami, but for a regional synchronism this is still compatible with Aphek Palace 3. Tel Ifshar thus independently confirms the validity of a proposed synchronism of the sites based on pottery analysis and radiocarbon data and is therefore strong evidence for the high Middle Bronze I chronology.
of Amenemhet III or later, as cautiously suggested by Tufnell and later reiterated by Keel, Ben-Tor, and others. This assessment is consistent with the parallels known from Kahun (founded under Senwosret II), Uronarti (founded under Senwosret III), and Elephantine Bauschicht 14 and 13 (12th Dynasty, on stratigraphic grounds). Attempts to attribute these assemblages to the (late) 13th Dynasty are based on pottery synchronisms with Tell el-Dab’a, and ultimately on the excavator’s low dates for the site which have been shown to differ from the radiocarbon data.

The radiocarbon evidence from Tel Nami also indicates that Middle Cypriot imports reached southern Levantine shores as early as the early 19th century BC. Further Cypriot imports from late Middle Bronze I layers have been unearthed at Tel Akko (Dothan 1976, 9, 12–13 fig. 8; Maguire 2009, AKK 621–630, AKK 632–638), Tel Gerisa (Jerishe) on the southern bank of the River Yarkon (Geva 1982, 36–37, 40 fig. 31, 41 fig. 32, 56 fig. 40; Maguire 2009, JER 707, JER 709–711, JER 713–716), and Tel Megadim on the Carmel coast just a few kilometres north of Tel Nami (Wolff and Bergoffen 2012). Although no radiocarbon data have been published for these sites, based on the consistent radiocarbon dates from Tel Nami and Tel Ifshar, we can posit that these imports will also date to the early/mid-19th century BC.

Middle Cypriot imports were also found in Ashkelon from Phase 14 onwards (late Middle Bronze I) (Bergoffen 2018). No radiocarbon dates have been reported for the earlier Middle Bronze Age phases at this site (Bruins and van der Plicht 2017), but Phase 14 has been synchronized with Tell el-Dab’a Strata H and G/4 (developed Middle Bronze I) based on pottery comparisons (Bietak et al. 2008; Stager and Voss 2018). These strata at Tell el-Dab’a were originally dated by the excavator to the late 12th and early 13th Dynasty (c. 1830–1750 BC) (Bietak 2013), but they produced radiocarbon dates coinciding with the late 20th and the first half of the 19th centuries BC (Fig. 8) (Kutschera et al. 2012).

Stratum G/4 also yielded the first Tell el-Dab’a connection with Cyprus, as seen in certain locally made Tell el-Yahudiyah vessels. In these vessels, the handle was pinched through the wall, as was common in Cypriot pottery production. Louise Maguire has argued that Cypriot potters were likely present at Tell el-Dab’a during Stratum G/4, while Cypriot imports proper, of the White Painted class, arrived during the subsequent Stratum G/1–3 (Maguire 2009).

The radiocarbon data for the first contact with Cyprus is of particular interest, because it is in this period (the reign of Amenemhet II) that we learn from this king’s Annals that an Egyptian expedition reached Cyprus and brought back a substantial amount of copper and bronze objects, as well as a number of ‘Asiatic’ captives (Altenmüller 2015; Helck 1989). While some scholars, such as Marcus, have noted that such an early contact, in the first half of the 19th century BC, is not substantiated by the first appearance of Cypriot connections at Tell el-Dab’a following Bietak’s dating (Marcus 2007), radiocarbon dates show that the first Cypriot influences and imports at the site Tell el-Dab’a date exactly to this time period. Thus, we may safely conclude that eastern Mediterranean trade included Cyprus from at least the early 19th century BC.

Independent radiocarbon sequences from three different sites—Tel Nami, Tel Ifshar, and Tell el-Dab’a—provide reliable evidence that the late Middle Bronze I dates to the first half of the 19th century BC, and is consistent with the high radiocarbon chronology for the Middle Bronze Age southern Levant. Further synchronisms with Ashkelon and
Aphek provide additional corroboration for that picture. The first appearance of Cypriot pottery in Egypt and the Levant during that time is independently backed by textual evidence from the *Annals* of Amenemhet II, and the first appearance of the specific seal design stamped on the loom weight at Tel Nami coincides with historically dated archaeological assemblages in Kahun, Uronarti and Elephantine.

**Notes**

1. These results are currently being prepared for publication by Lyndelle Webster.
2. Note that absolute dates for Egyptian kings in the left column follow Kitchen 2000. While the high Middle Kingdom chronology is in agreement with the modelled radiocarbon dates of Bronk Ramsey et al. 2010 for the first half of the 12th Dynasty, modelled radiocarbon dates are about 20 years younger for the second half. While this discrepancy is of interest, it does not affect the conclusions of this paper.
3. Lecture by James Weinstein presented at the Annual Meeting of the American Schools of Oriental Research (ASOR), San Diego, CA, November 2019.
4. Christian Knoblauch, e-mail, 1st of May 2020.
5. Rzeuska’s recent contribution to the *Handbook of the Pottery of the Egyptian Middle Kingdom* makes no mention of them in a stratigraphic table with revised dating: Rzeuska 2012.
6. Except for two charcoal samples for Tel Megadim that were probably intrusive: Wolff and Bergoffen 2012.

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