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Above: View from the Peshdar Plain north of Qaladze towards the Qandil mountains of the Zagros range (Kurdish Autonomous Region of Iraq, April 2019). Photo by Andrea Squitieri.
Below left: View of Qalat as-Sela (Jordan, October 2018). © Sela Archaeological Project, courtesy Rocío Da Riva.
Below right: View of Tel Rekhesh with Mount Tabor rising up in the background (Israel, August 2008). © The Tel Rekhesh Project.

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KAREN RADNER, SHELER AMELIRAD AND EGHBAL AZIZI
Ludwig-Maximilians-Universität München, Ruprecht-Karls-Universität Heidelberg and Archaeological Museum of Sanandaj

A first radiocarbon date for the Iron Age cemetery of Sanandaj

Dating an elite burial in the Assyrian province of Parsua

1. Introduction

There are hardly any ^{14}C dates available for western Iran in the Neo-Assyrian period. This paper presents a new radiocarbon date from a burial (A10) of the Zagros Town cemetery in Sanandaj (Kurdistan Province, Iran) whose relatively rich grave goods include a bow-shaped, or semi-circular, bronze fibula with seven block segments that has a virtual duplicate in a piece excavated at Lachish.

2. Three elite burials at the Zagros Town cemetery of Sanandaj

In November 2008, an Iron Age cemetery was discovered by chance during construction work along the road leading from Sanandaj to Hasanabad, west of Sanandaj's Zagros Town district on a slope of the Abidar mountain range (35° 17′ 15″ N, 46° 58′ 59″ E; 1,628 m above sea level; Fig. 1). As a result, the Cultural Heritage Department of Sanandaj conducted rescue excavations and unearthed 28 burials. A report on the burials and their finds was published in 2012, focusing in particular on the three richest burials A6, A10 and A12,[1] whose human remains were then discussed in a 2018 study.[2]

These three burials stand out as a group from the rest of the graves not only because of their much richer and more numerous burial goods but also because of the position in which their occupants were laid to rest. They were placed in a supine position, lying on their back with extended legs, all in the same orientation (approximately E-W, with the head in the west), whereas the other bodies buried on the cemetery were laid, in various orientations, on their sides with flexed legs.[3] Also because of their proximity to each other (Fig. 2), it is therefore reasonable to assume that the three richer burials are relatively close in date. Their analysis of the finds from the Zagros Town cemetery led Sheler Amelirad, Bruno Overlaet and Ernie Haerinck to conclude that

1 Amelirad, Overlaet and Haerinck 2012.
2 Sołtysiak, Azizi and Tawhidi 2018.
3 Amelirad, Overlaet and Haerinck 2012: 44; Sołtysiak, Azizi and Tawhidi 2018: 81.

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> "Although some of the tombs might belong to the Early Iron Age, the three best documented tombs of the cemetery (tombs A6, A10 and A12) are to be dated between the 8th–6th c. BC, most probably mainly in the 7th c. BC."[4]

The most important arguments for this dating derived, on the one hand, from the six cylinder seals from burial A12 (five made of faience and one probably of limestone, see below §3), as these can be assigned to Dominique Collon's Neo-Assyrian-period groups of "Syrian and Assyrian linear style" and "faience seals," although this does not allow a more narrow dating than to the 9th to 7th centuries BCE.[5] On the other hand, the bronze fibula from burial A10 can be assigned to a type that Friedhelm Pedde dates to the 7th century and the early 6th century BCE.[6]

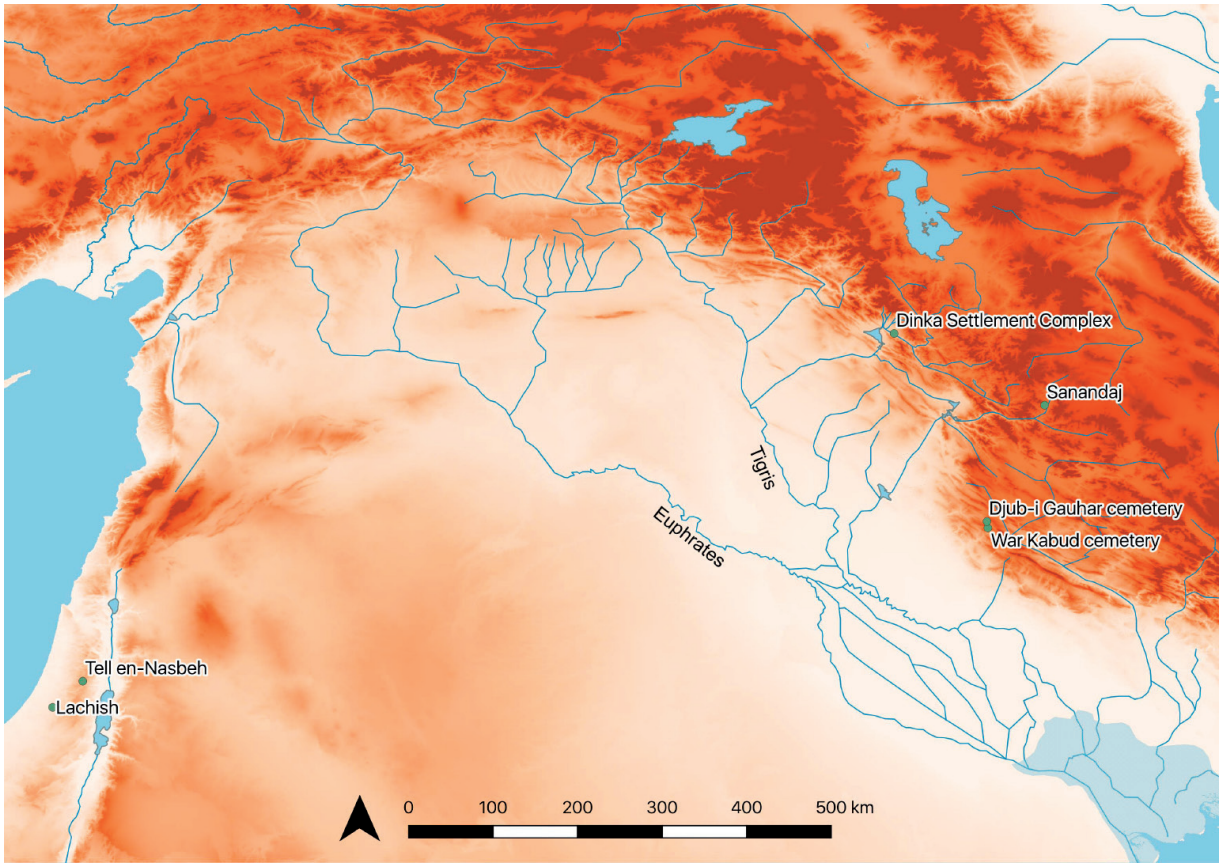


Fig. 1: Map indicating the archaeological sites discussed in this paper. Prepared by Andrea Squitieri (LMU Munich).

3. Burial A10

The focus of this paper is burial A10. Protected by a covering made of several flat, unworked stone slabs, the bodies of two adults had been laid to rest (Fig. 3). To quote from

4 Amelirad, Overlaet and Haerinck 2012: 57.
5 Collon 2001; see Amelirad, Overlaet and Haerinck 2012: 55-56.
6 Pedde 2000: 140, 369 table 24 (type B3).

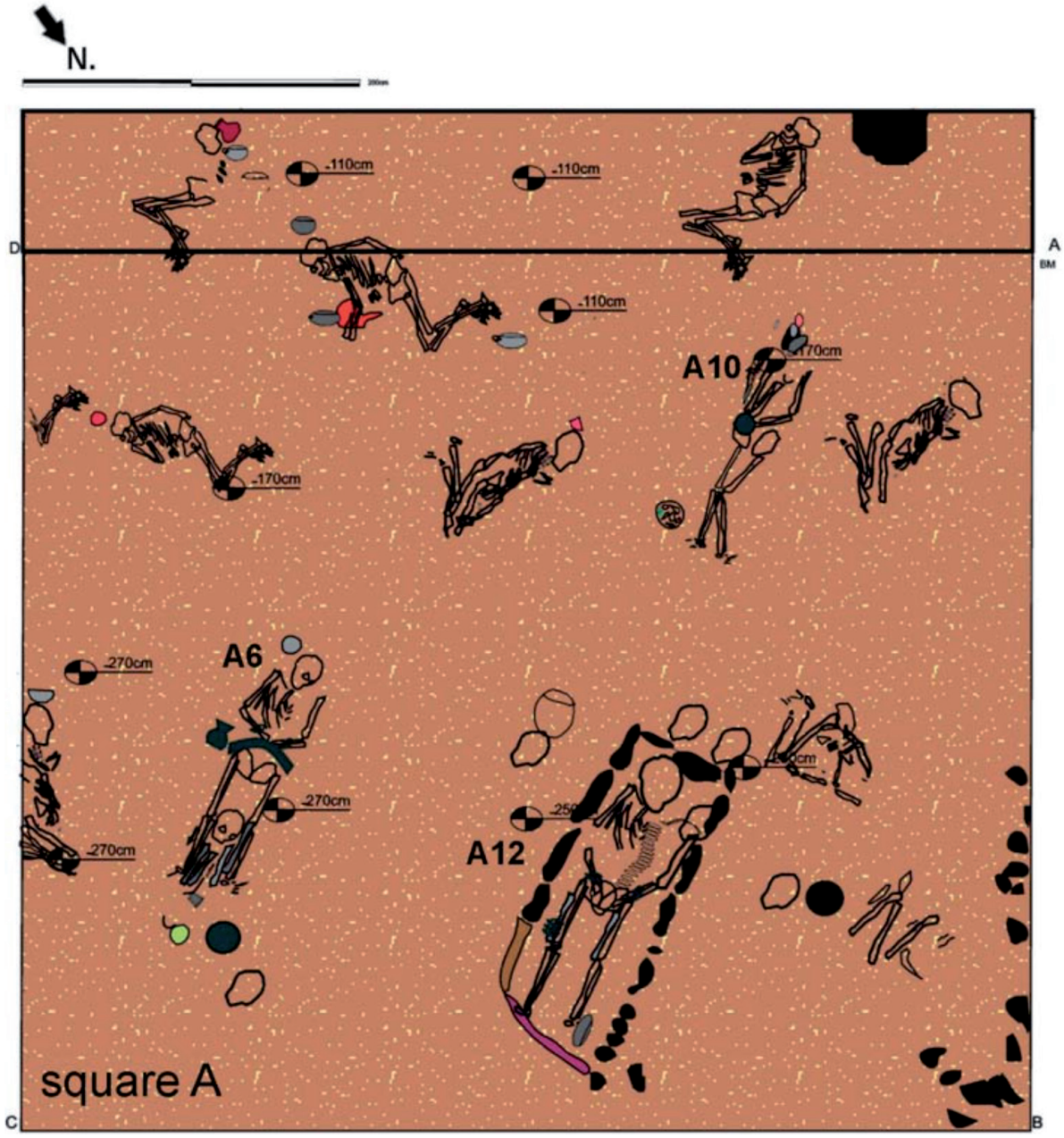


Fig. 2: The positions of the burials A6, A10 and A12 in the excavation area A of the Zagros Town cemetery at Sanandaj. Photograph courtesy of the Archaeological Museum of Sanandaj.

the 2018 report, which was able to add substantially to the information given in the 2012 article,[7]

> "Burial A10 included two skeletons, positioned one on top of the other. The lower one (A) was partially exposed to reveal some areas of cranium and perhaps the humerus that appeared to have been dislocated post mortem. The cranium belonged to an adult individual, with significantly obliterated sutures, and no reliable sex assessment was possible

7 Amelirad, Overlaet and Haerinck 2012: 45.

Fig. 3: Burial A10. Top: before the removal of the stones covering the grave. Middle: the exposed burial seen from the top. Bottom: the exposed burial seen from the side; note the two bodies lying on top of each other. Photographs courtesy of the Archaeological Museum of Sanandaj.

(glabella 2, supraorbital margins 3). The upper skeleton (B) belonged most likely to a female (vertical head diameter of left humerus 40.6 mm), although cranial morphology was ambiguous and the left radius was relatively long (248 mm). However, the total length of the skeleton was c. 150 cm, a value perhaps slightly underestimated due to some post-mortem dislocation of cranium that was placed higher than remaining part of the skeleton."[8]

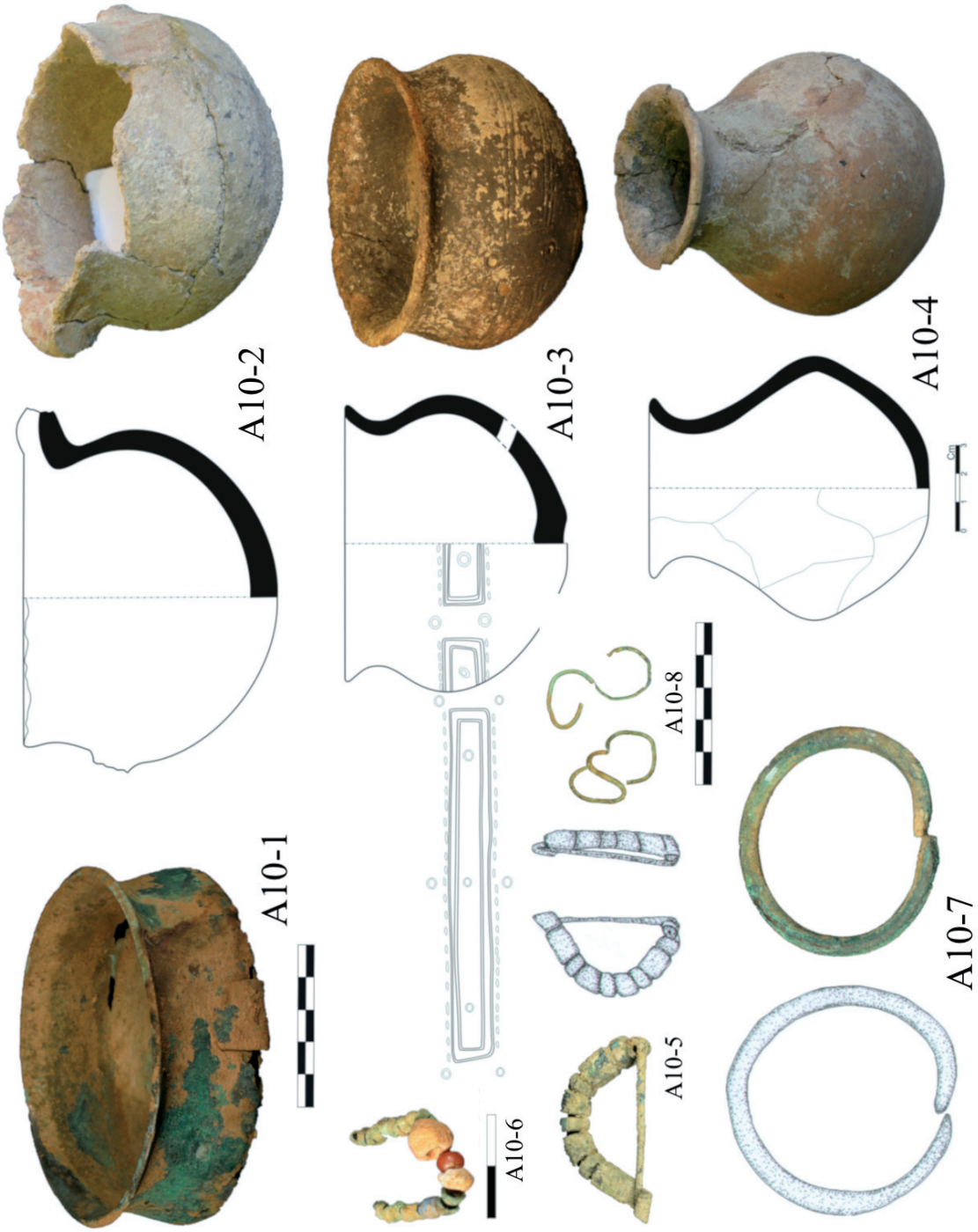


Fig. 4: The inventory of grave goods deposited in burial A10. Photographs courtesy of the Archaeological Museum of Sanandaj, drawings by Ms Zahra Ghafari.

8 Sołtysiak, Azizi and Tawhidi 2018: 81.

The burial goods that accompanied the couple included three pottery vessels, a bronze bowl, a bronze fibula and some jewellery (Figs. 4-6). While these grave goods are less opulent than those of the nearby burials A6[9] (which included a bronze belt and two bronze vessels) and A12[10] (which included a finely decorated bronze bowl and a great many personal adornments, among them a gold bead and six cylinder seals that were apparently used as beads[11]), they are still much richer than those of the other burials.

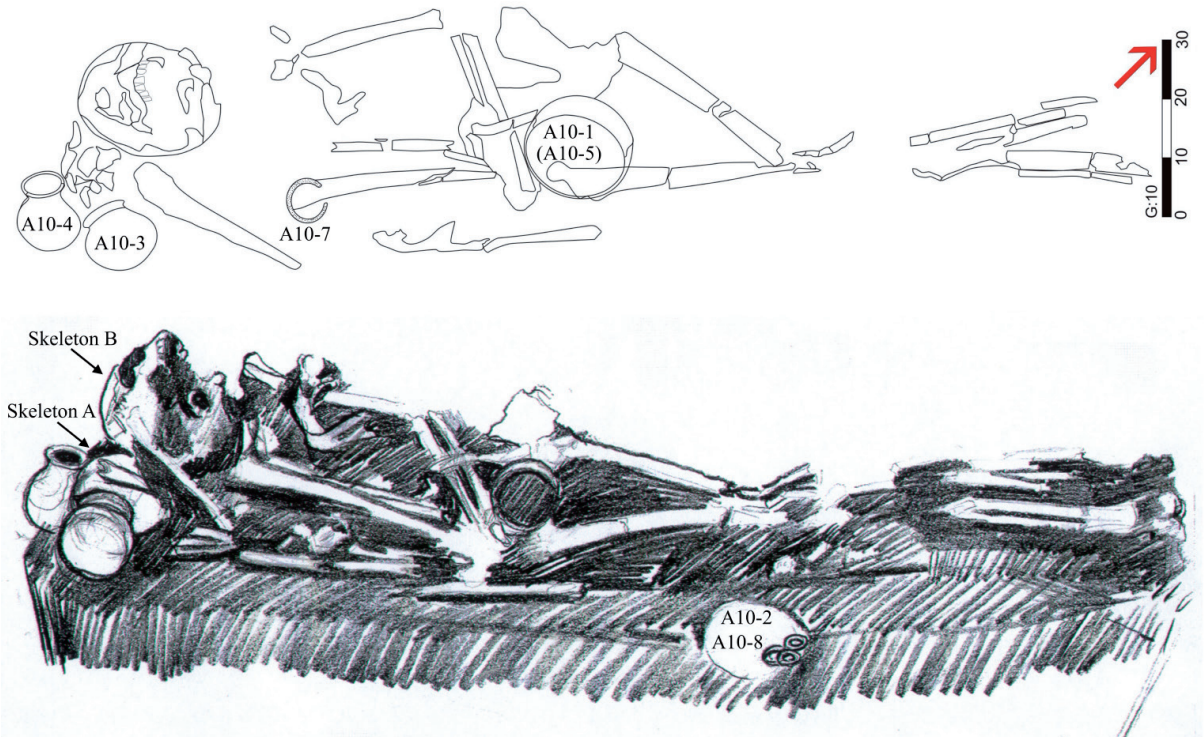


Fig. 5: The position of the two bodies and of the larger grave goods in burial A10. Drawings by Mr Mahdi Ziaedini.

The fibula (A10-5; Fig. 7, top) was found on top of the female skeleton B, inside the bronze bowl (A10-1) placed on the woman's pelvis (Fig. 6). It is completely preserved (albeit covered by a thick patina) and belongs to a type that Friedhelm Pedde termed "Bogenfibeln mit Blocksegmenten" (B3), meaning bow-shaped, or semi-circular, fibulae with block segments.[12] The fibula from A10 has seven such segments sitting along its bow, of which the two outermost elements (A and G) are the largest ones and square in section while all others are round. The narrow central segment (D) is flanked by two wider elements that are incised with deep grooves (C and E) while the two next segments (B and F) correspond in size to the central piece; these three elements appear to be undecorated. The square final elements seem to be decorated with five dots arranged in the way they would be on the faces of dice: on the segment next to the spring of the pin, the central one of these five dots is visible despite the

9 Amelirad, Overlaet and Haerinck 2012: 44-45, 65-67 with pls. 6-8.
10 Amelirad, Overlaet and Haerinck 2012: 45, 71-81 with pls. 12-22.
11 Thus also Amelirad, Overlaet and Haerinck 2012: 56.
12 Pedde 2000: 139-140.

Fig. 6: Photograph showing the position of the larger grave goods in burial A10 during excavation. Note in particular the fibula A10-5 visible inside the bronze bowl A10-1. Courtesy of the Archaeological Museum of Sanandaj.

disfiguring bronze patina. The catch is made to look like a human hand (without thumb) that wraps its fingers protectively around the pin's sharp point.

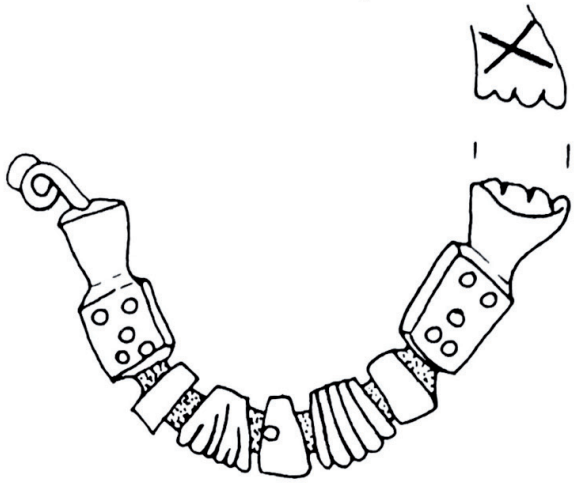
As Sheler Amelirad, Bruno Overlaet and Ernie Haerinck have already noted,[13] there are two close parallels known for this fibula, both from the territory of the kingdom of Judah: one example was found in Lachish (Fig. 7, middle),[14] and the other at Tell en-Nasbeh (Fig. 7, bottom),[15] close to Jerusalem. While the fibula from Tell en-Nasbeh has nine, instead of seven, block segments (with a ridged central element and two narrow undecorated ones in the centre instead of only one narrow undecorated segment), the piece from Lachish corresponds in every detail to the Sanandaj fibula and is virtually its duplicate.

As the distribution map of Pedde's type B3 shows (Fig. 8, with the grey dot in the east added to mark the new find from Sanandaj), these fibulae are very well attested especially in the core region of the Assyrian Empire and all its territories. It is likely due to the Empire's agency (be that increased transregional trade, or the dispersal of population groups through its policy of mass deportations[16]) that two virtually identical examples of a very distinctive fibula sub-type ended up on either end of the Empire.

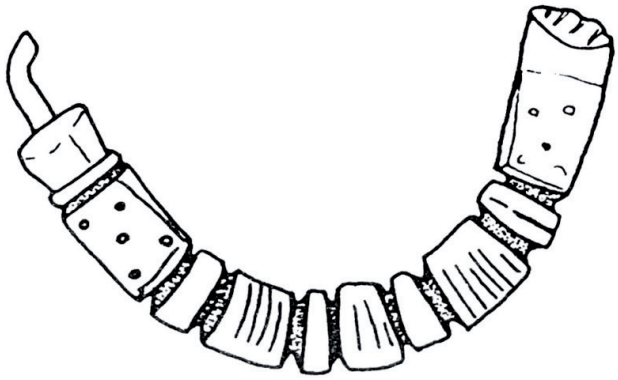
The fibula A10-5 was found inside a small, undecorated bronze bowl with a diameter of 11.3 cm and a height of 4.7 cm (Fig. 9, top). With its steep concave walls, sharp shoulder and

13 Amelirad, Overlaet and Haerinck 2012: 48.
14 Pedde 2000: 149, pl. 16: no. 209.
15 Pedde 2000: 147, pl. 16: no. 212.
16 For the latter, see most recently Radner 2018.

Sanandaj



Lachish
(Pedde 2000: no. 209)



Tell en-Nasbeh
(Pedde 2000: no. 212)

Fig. 7: The fibula A10-5 from the Zagros Town cemetery at Sanandaj and parallel pieces from Lachish and Tell en-Nasbeh. Photograph courtesy of the Archaeological Museum of Sanandaj; drawings reproduced from Pedde 2000: pl. 16. Not to scale.

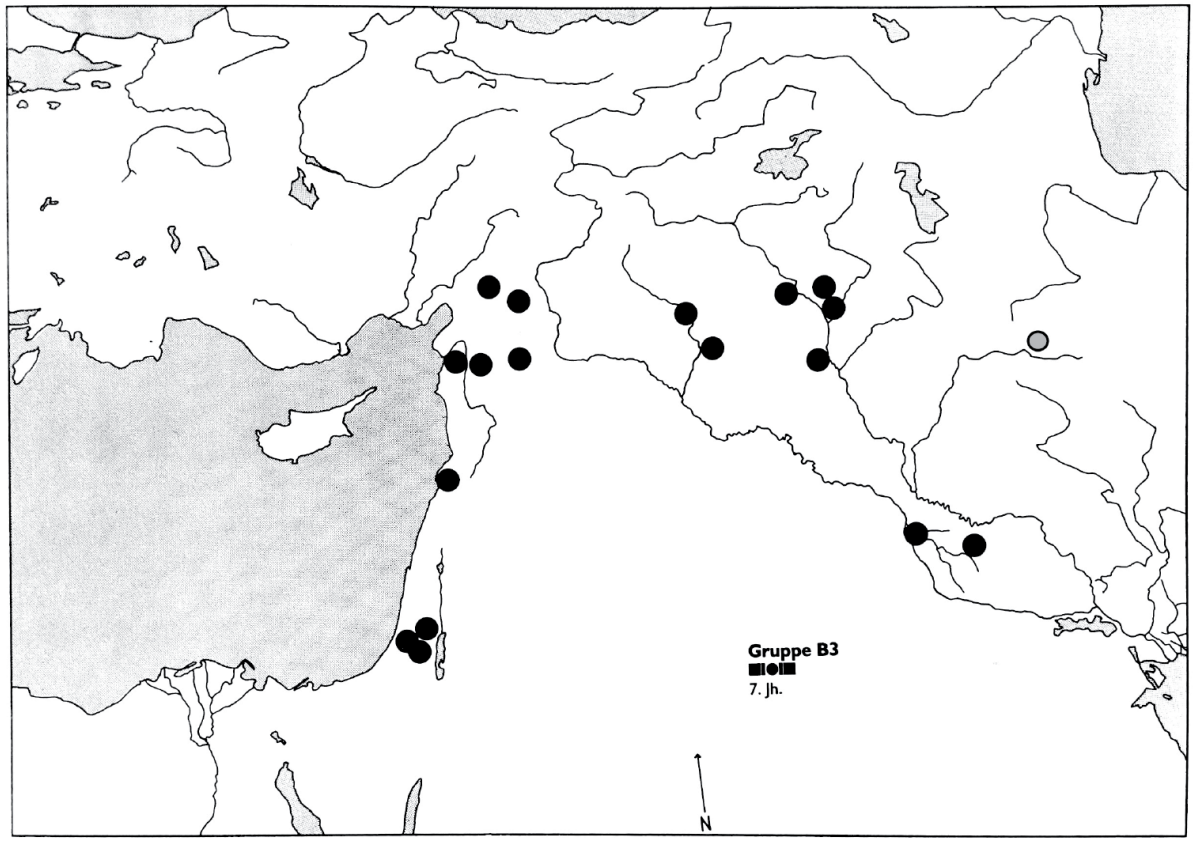


Fig. 8: Distribution of Friedhelm Pedde's fibula type B3 ("Bogenfibeln mit Blocksegmenten"), with the new addition of Sanandaj (grey dot). Adapted from Pedde 2000: 141 Karte 15.

rounded base,[17] this deep carinated bowl has close parallels in two Iron Age III cemeteries in Pusht-i Kuh (literally "behind the mountain"; Ilam Province, Iran), the western part of Luristan to the west of the Kabir Kuh mountain range, the last major ridge of the Zagros before reaching the Mesopotamian lowlands.[18] As noted by Sheler Amelirad, Bruno Overlaet and Ernie Haerinck,[19] two pieces from the cemeteries of War Kabud and Djub-i Gauhar (Jub-e Gowhar) can be compared to the bowl from A10. The bowl from War Kabud (burial A37; Fig. 9, middle)[20] is slightly larger, with a diameter of 12.7 cm and a height of 5.3 cm, but constitutes a close match for the Sanandaj specimen in the overall proportions. With a diameter of 13.8 cm and a height of only 4.5 cm, the bowl from Djub-i Gauhar (burial 48; Fig. 9, bottom)[21] is not quite as deep as these two bowls. A hole in the Sanandaj bowl had been mended by applying a small sheet of bronze at some point before the piece came to be deposited in the grave, where it was placed on the pelvis of the female skeleton B (Fig. 6).

17 Not a "flat base," as stated in Amelirad, Overlaet and Haerinck 2012: 47.

18 Haerinck and Overlaet 2006.

19 Amelirad, Overlaet and Haerinck 2012: 47.

20 War Kabud A 37-4 = WK 65/360. For the grave and its inventory, see Haerinck and Overlaet 2004: 12, pl. 19 (burial A37); for the bowl, see Haerinck and Overlaet 2004: 61, 88, pl. 138 (A37-4). The bowl was not among the specimens that underwent alloy and composition analysis using proton-induced x-ray emission (PIXE) spectrometry at the Museum Applied Science Center for Archaeology (MASCA), University of Pennsylvania (for results see Fleming et al. 2006).

21 Djub-i Gauhar 48-3 = DjG 77/473. For the grave and its inventory, see Haerinck and Overlaet 1999: pl. 33 (burial 48); for the bowl, see Haerinck and Overlaet 1999: 31 with fig. 15: 7, pl. 77b (48-3).

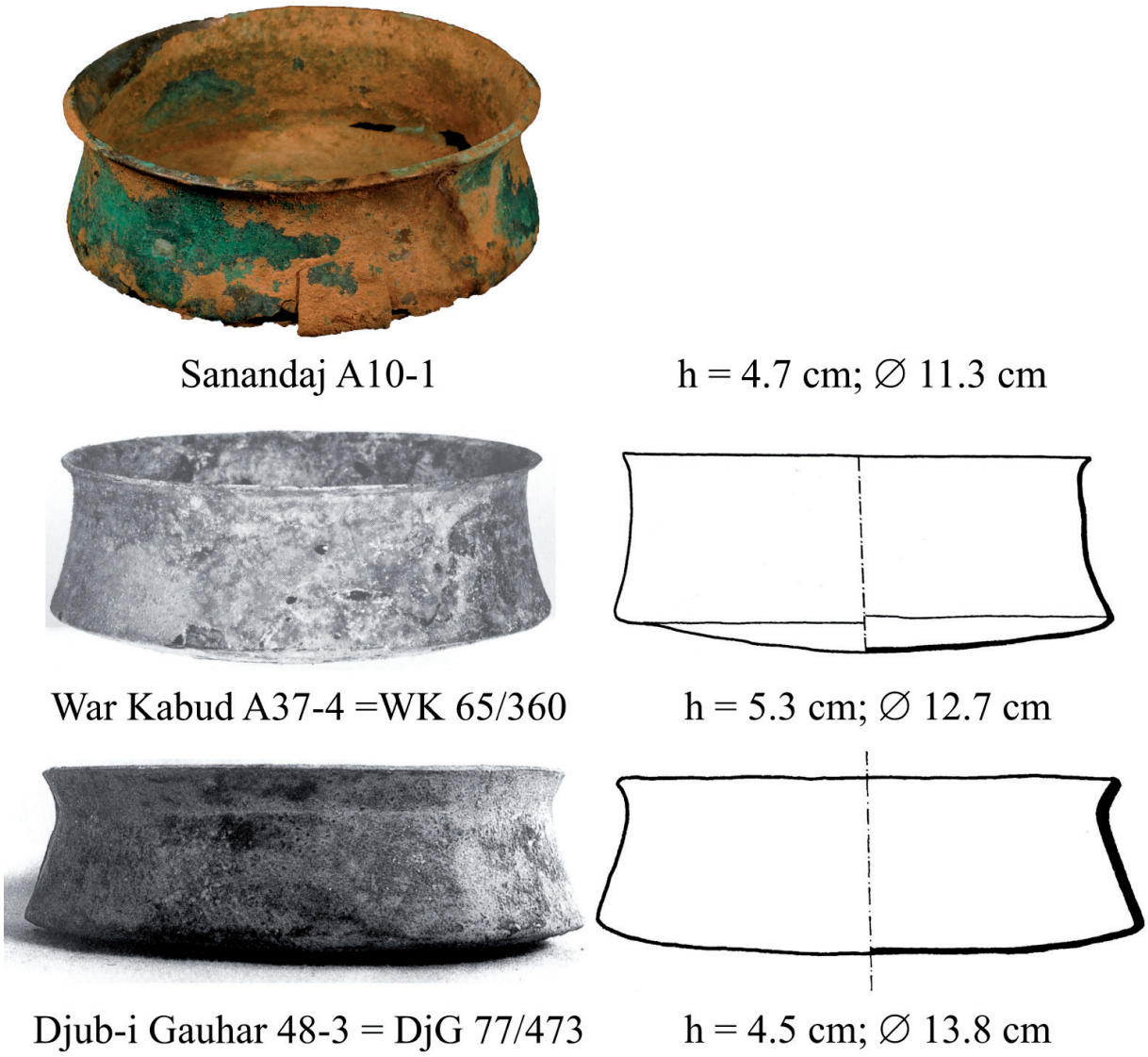


Fig. 9: The bowl A10-1 from the Zagros Town cemetery at Sanandaj and parallel pieces from the Iron Age III cemeteries War Kabud and Djub-i Gauhar (Jub-e Gowhar) in Pusht-i Kuh (western Luristan). Photograph of A10-1 courtesy of the Archaeological Museum of Sanandaj. Photograph and drawing of War Kabud A37-4 reproduced from Haerinck and Overlaet 2004: pls. 19, 138. Photograph and drawing of Djub-i Gauhar 48-3 reproduced from Haerinck and Overlaet 1999: pls. 33, 77b. Not to scale.

4. A radiocarbon date for burial A10

When Karen Radner visited the Archaeological Museum of Sanandaj in November 2019, the three authors of this paper came together to discuss the possibility of radiocarbon-dating the group of elite burials from the Zagros Town cemetery. This was considered important as there are very few Iron Age ^{14}C dates available for Western Iran while the correlation of the regional chronologies with those used on the other side of the Zagros in Iraq, and beyond, is fraught with difficulties. After their discovery, the three burials had been relocated to the

museum where they now form the centrepiece of the newly designed Iron Age section, and therefore sampling them is a logistical and administrative challenge as it requires partially dismantling the purpose-built glass-metal installations displaying and protecting the individual burials.[22] We therefore decided to sample only one burial (by removing a tooth) and prioritised A12 due to the fibula with its narrow date range. It was clear from the outset that the resultant radiocarbon date range was highly likely to fall into the time of the "Hallstatt Plateau," a flat area on the radiocarbon graph affecting the dating of samples from the period c. 800–400 BCE.[23]

Once a molar from the lower jaw of skeleton B had been sampled and exported to Germany by Sheler Amelirad, it was first submitted to the Department of Archaeogenetics at the Max Planck Institute for the Science of Human History in Jena for DNA extraction and inclusion in its database,[24] according to the wishes expressed by Jebrael Nokandeh, General Director of the Iranian Cultural Heritage, Handicrafts, and Tourism Organization (ICHTO), and Yousef Hassanzadeh, Head of the Research Center of the National Museum of Iran, during a meeting in November 2019 in Teheran. Subsequently, in March 2020, the molar was sent to the Curt-Engelhorn-Zentrum Archäometrie at Mannheim where collagen was extracted and prepared for radiocarbon analysis. As expected, the sample yielded a long range of possible

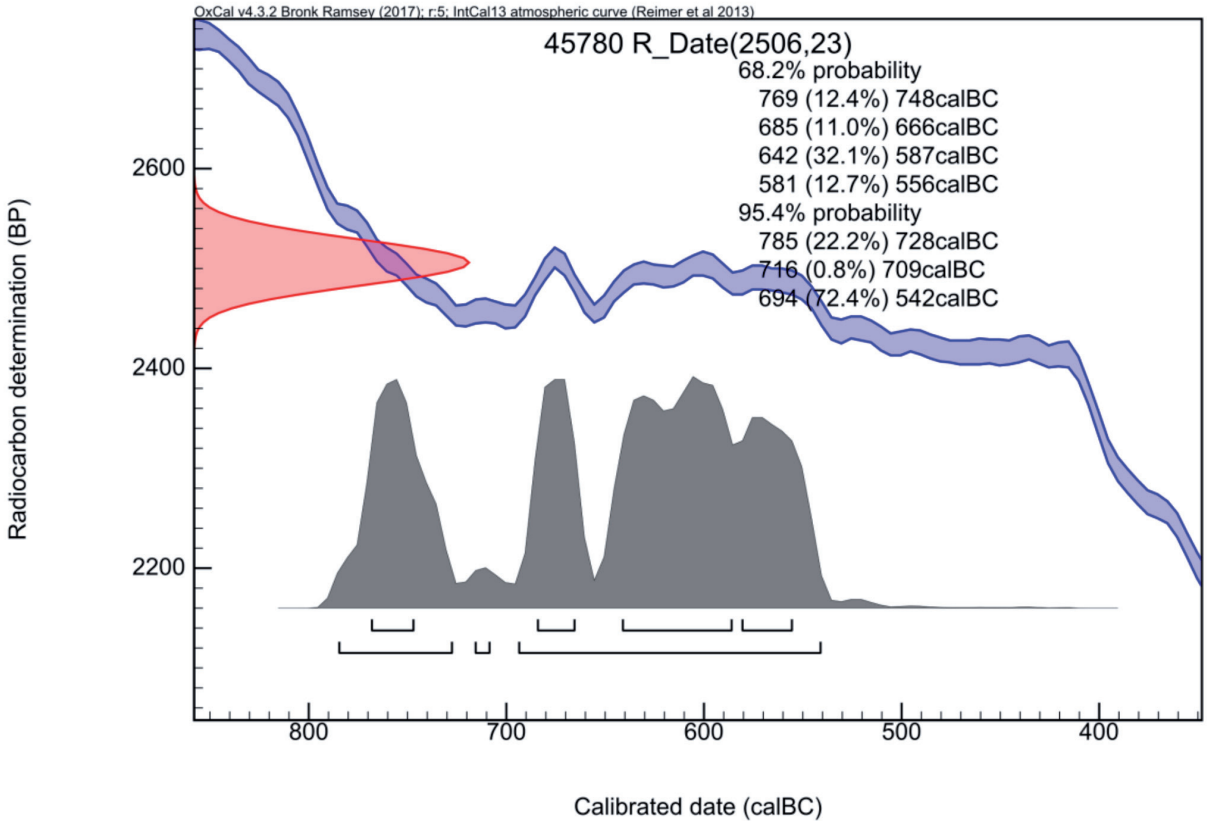


Fig. 10: Calibrated radiocarbon dating obtained from a molar of skeleton B of burial A10. Calibration software OxCal 4.3.2. Prepared by the Curt-Engelhorn-Zentrum Archäometrie, Mannheim.

22 These showcases are depicted in Sołtysiak, Azizi and Tawhidi 2018: 82 fig. 1.

23 van der Plicht 2004.

24 Our thanks are due to Philip Stockhammer (LMU Munich / Max Planck Institute for the Science of Human History in Jena) for making the necessary arrangements at short notice.

dates from 769−556 calBCE (68.2% probability) and 785−542 calBCE (95.4% probability), respectively; within the latter range, a dating to 694−542 calBCE has a 72.4% probability (Fig. 10).

In the wider region, this date has a relatively close match at Gird-i Bazar (Dinka Settlement Complex) in the Peshdar Plain in the Kurdish Autonomous Region of Iraq (located in the Province of the Palace Herald in the Neo-Assyrian period). There, a date range of 730−431 calBCE (68.2% probability) and 748−409 calBCE (95.4% probability), respectively (Fig. 11, top), was derived from the femur of a human body deposited in the uppermost filling of a well located inside a private house (Building I), which must have been abandoned by that time.[25] Also at the Dinka Settlement Complex, but on the citadel of Qalat-i Dinka, radiocarbon analysis of a human bone from Grave 110, one of the burials excavated in 2019 around the monumental Building P,[26] produced ranges of possible dates from 751−504 calBCE (68.2% probability) and 767−488 calBCE (95.4% probability), respectively (Fig. 11, bottom).

5. Sanandaj as part of the Assyrian province of Parsua

The Assyrian province of Parsua, with the provincial capital at Nikkur (location unknown), was established in 744 BCE by Tiglath-pileser III (r. 744−727 BCE).[27] The position and extent of all the Assyrian provinces established in western Iran is still very unclear. For the province of Parsua, it remains to be clarified whether it was situated mainly within the modern Kurdistan province of Iran, extending from the region of Sanandaj in the east (corresponding very broadly to the northeastern headwater region of the Diyala / Sirwan) to the area of Lake Zeribor in the west, as Karen Radner recently argued,[28] or whether it also occupied regions in a more southern location in Kermanshah province, taking up "an area in the mountains of the central western Zagros north-west of the Mahidasht, and including the northern end of the Mahidasht itself," as Louis D. Levine suggested in a contribution that forms the foundation of all later discussions of the matter.[29] In any case, there would seem general agreement that at the time when their occupants were laid to rest in the three burials A6, A10 and A12, the Zagros Town cemetery of Sanandaj was situated in the Assyrian province of Parsua.

25 Kreppner and Radner 2018: 56-58 with fig. D5: d.

26 Cf. also Squitieri 2020: 125. The grave is published in Radner, Kreppner and Squitieri 2020.

27 Reade 1978: 138-139; Radner 2003: 57.

28 Radner et al. 2020: 91.

29 Levine 1974: 112. Note that he is open to the assumption that the province extended as far as Lake Zeribor, see Levine 1974: 105 fig. 2, 110: "Parsua is located once again in the area between Zeribor and the Mahidasht." Cf. Zadok 2001: 30 who seems to reconsider the possibility of locating Parsua the northern reaches of west of Lake Urmia (because of the possibility that the toponym may have survived in the name of Qal'eh Paswē near Solduz) – but Levine 1974: 106-112 has demonstrated conclusively that this is impossible, concluding: "In summary, it is suggested that there is no evidence for the location of Parsua in the north on the shores of Lake Urmia at any time." (Levine 1974: 112).

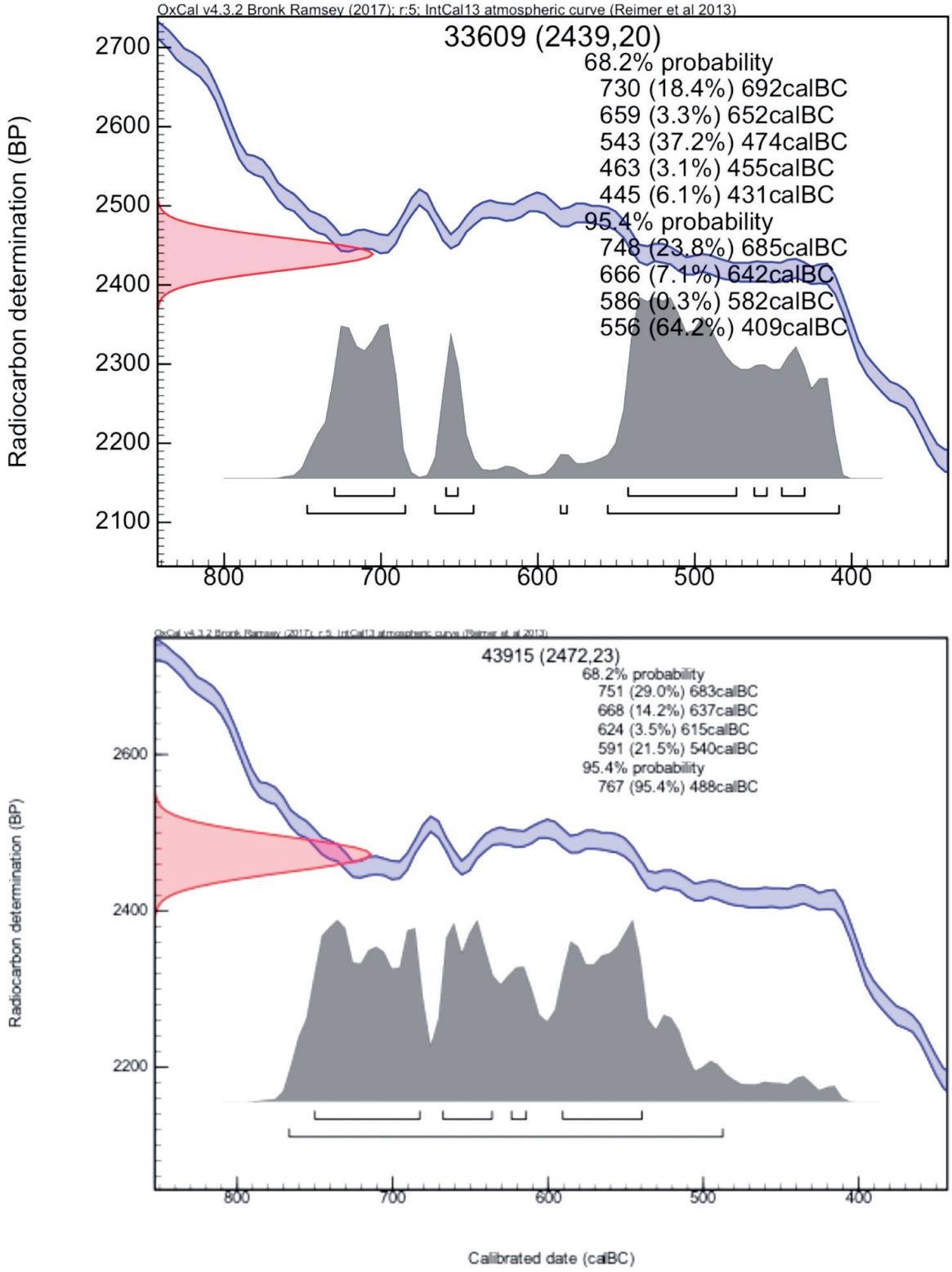


Fig. 11: Comparable calibrated radiocarbon datings from the Dinka Settlement Complex: (top) from a bone of a skeleton deposited in the well of Building I in Gird-i Bazar; (bottom) from a bone of the skeleton buried in Grave 110 on Qalat-i Dinka. Calibration software OxCal 4.3.2. Prepared by the Curt-Engelhorn-Zentrum Archäometrie, Mannheim.

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