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Edited by: Yousef Hassanzadeh Ali A. Vahdati Zahed Karimi

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The Iron Age Dinka Settlement Complex in the Peshdar Plain Archaeological Exploration, 2015-2018

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مجموعهٔ استقراری عصر آهنِ دینکا در پژوهشهای باستان شناختیِ دشت پشدرَ، ۲۰۱۸ ـ ۲۰۱۵ کارن رادنر، یانوشا کرپنر، آندریا اسکویتیِری

چکیده: مجموعه استقراری دینکا از دو محوطهٔ عصر آهن به نام گرده بازار و قلات دینکا تشکیل شده که در دشت پشدر در استان سلیمانیه اقلیم کردستان عراق قرار دارد. در سال ۲۰۱۳ به طور اتفاقی یک گلنبشته به خط میخی آشوری از سطح مجموعهٔ استقراری دینکا پیدا شد که شروع کاوشهای باستانشناسی در سال ۲۰۱۵ را در پی داشت. این کتیبه بخشی از متن یک قرارداد فروش برده مربوط به تاریخ ۲۲۵ پ.م. است و باعث شد مجموعهٔ استقراری دینکا به گزینهٔ مناسبی برای انجام پژوهشهای باستانشناسی با تمرکز بر دورهٔ آشور نو تبدیل شود. حاصل پژوهشهای باستانشناسی و آزمایشهای رادیوکربن نشان داده مجموعهٔ استقراری دینکا پیش از استیلای آشوریان بر دشت پشدرَ، در سدههای ۱۳ – ۱۲ پ.م. شکل گرفته و پس از استیلای آشور بر این منطقه نیز به حیات خود ادامه داده و توسعه یافته است. هنوز نام باستانی این استقرار آشوری نامعلوم است، ولی شناخت اقدامات آشوریان در این مجموعه از مداخلات محیطی گرفته تا معماری، مواد فرهنگی برجایمانده و شیوههای معیشت آشوریان از اهداف اصلی این کاوشها بوده است.

در پروژهٔ دشت پشدرَ علاوه بر کاوش مجموعهٔ استقراری دینکا، مناطق پیرامونی و چشمانداز باستانی منطقه به طور گسترده با روشهای ژئوفیزیک، متهزنی، آزمایشهای خاک و رسوب شناختی و بررسیهای زمین شناسی مورد مطالعه قرار گرفته است. این فعالیتها با هدف شناخت تشکیلات زمین شناختی، فرایند شکل گیری نهشتههای آبرفتی دشت و ارتباط بین مجموعهٔ استقراری دینکا و بستر محیطی پیرامونش انجام شده است.

در مجموع پژوهشهای انجامشده حاکی از آن است که مجموعهٔ استقراری دینکا پیش و پس از انضمام به امپراتوری آشور در کنترل درهٔ رودخانهٔ زاب سفلی و گذرگاههای کوهستانی زاگرس نقش استراتژیک داشته است. در این مقاله نتایج حاصل از کاوش سال ۲۰۱۸ ارائه شده و به اختصار مجموعه دانستههای کنونی از مجموعه استقراری دینکا مرور شده است.

واژگان کلیدی: عصر آهن، دورهٔ آشور نو، دشت پشدرَ، مجموعه استقراری دینکا، زاب سفلی، سازههای سنگی، واحدهای دفاعی.

The geographical setting

The subject of the investigations of the Peshdar Plain Project is a major Iron Age settlement whose ancient name is presently unknown. Because its perimeter encompasses two previously identified archaeological sites (Gird-i Bazar: UTM 38S 512696 E; 3999290 N; Qalat-i Dinka: UTM 38S 511928 E; 3999154 N), we call it the Dinka Settlement Complex (DSC), after the larger of these sites. DSC is located in the Peshdar Plain in the Province of Sulaymaniyah in the Kurdish Autonomous Region of Iraq. With surface of about 350 km², this crescent-shaped plain is bordered in the southwest by the meandering valley of the Lower Zab while the curve of the Qandil mountain range encircles it. The Qandil is part of the greater Zagros chain constituting the border between Iraq and Iran, in which the highest peak, called Kuh-e Haji



Fig. 1. The position of the Peshdar Plain in the Middle East. Prepared by Andrea Squitieri.

Ebrahim, reaches the impressive altitude of about 3,587 m. Several tributaries of the Lower Zab come down from their springs in the Qandil and traverse the plain to join the main branch of the river (Radner 2016) (Fig. 1).

Downstreams, the Lower Zab breaks through the mountains into the Ranya Plain through a narrow gorge, known as Darband-i Ranya and Darband-i Sangasur after the two settlements closest to it on either side. Much of the Ranya Plain is covered by the artificial lake of c. 200 km² created by damming the Lower Zab at Dokan in the late 1950s. Beyond Lake Dokan, the Lower Zab continues in southwestern direction and joins the river Tigris about 30 km south of Qal'at Sherqat, the ancient city of Ashur.

The regional centre of the Peshdar Plain is the town of Qaladze (also Qalat Dizeh or Qala Diza, UTM 38S 510320 E; 4004512 N). The impressive tell of about 1.5 ha in the centre of Qaladze has been identified with the Iron Age city of Anisu that is attested in Neo-Assyrian texts of the 8th and 7th century BC (Lanfranchi 1995; Radner 2016). DSC is located 3 km south of Qaladze in a subunit of the Peshdar Plain called the Bora Plain.

The Peshdar Plain Project

The work at the Dinka Settlement Complex was prompted by the chance find of a Neo-Assyrian cuneiform tablet at Qalat-i Dinka in 2013 (Fig. 2; Radner 2015). A slave sale contract dated to 725 BC, the text mentions as a witness a subordinate of the Palace Herald and therefore suggested that the sale took place in the Province of the Palace Herald, known as one of four defensive units established in the 9th century BC to protect access to the Assyrian Empire (Liverani 2004).

Since August 2015, the Peshdar Plain Project (PPP) has been carrying out investigations at DSC (Fig. 3). Initially thought to be two separate sites in the Bora Plain, Girdi Bazar is a shallow mound, damaged by the construction of a chicken farm in 2014 that exposed the presence of well preserved buildings close to the modern surface, while Qalati Dinka is an impressive rocky outcrop high above the Lower Zab, the end point of a crescent-shaped hill range that divides the Bora Plain from the region of Qalaze to the west. The results of some test trenches opened in 2015 for geoarchaeological purposes, the subsequent surface pottery survey conducted by Jessica Giraud's team in autumn 2015 and especially the magnetometer prospection conducted in 2016 by Jörg Fassbinder and his team made it clear that Gird-i Bazar and Qalat-i Dinka are parts of a larger settlement made up of a lower and an upper town (most recently, Fassbinder et al. 2018). Judging by the surface pottery dispersion, the settlement covers about 60 hectares (Giraud 2016).

PPP is headed by Professor Karen Radner (University of Munich) and, since 2018, also Professor F. Janoscha Kreppner (University of Münster). The work is conducted under the auspices of the Directorate of Antiquities of Sulaymaniyah, headed by Kamal Rasheed Raheem, enjoying also the support of the General Directorate of Antiquities of



Fig. 2. Fragment of a Neo-Assyrian slave sale document, dated to 725 BC (Archaeological Museum of Sulaymaniyah). Photo by Karen Radner.

the Kurdish Autonomous Region of Iraq, currently directed by Kaifi Mustafa Ali, and of the Raparin Directorate of Antiquities headed by Barzan Baiz Ismail. Staff from Sulaymaniyah, Erbil and Raniyah have greatly supported the project along these years, in all logistical and administrative matters, with several colleagues joining the project during many



Fig. 3. The results of the magnetometer prospection 2015-2018 between Gird-i Bazar and Qalat-i Dinka (Fassbinder *et al.* 2018), and the excavated areas. Drone image created by ICONEM, courtesy of Jessica Giraud. Prepared by Andrea Squitieri.



Fig. 4. The excavated area of Gird-i Bazar within the chicken farm enclosure. Prepared by Andrea Squitieri.

excavation seasons as representatives, excavation and pottery experts. We are also very grateful to work with the kind permission of the State Board of Antiquities and Heritage of Iraq, directed by Qais Hussein Rasheed. PPP brings together local archaeologists with a wide range of experts from several European and North American universities specialised in Middle Eastern history and archaeology, Assyriology, archaeobotany, archaeozoology, archaeometry, landscape archaeology, geoarchaeology, soil analysis, geophysics (magnetometer and ERT), photogrammetry, and GIS and drone mapping.

Between 2015 and 2018, PPP has carried out seven excavation campaigns: three in Gird-i Bazar (GiB), two on the western slope of Qalat-i Dinka (QiD), one each in two separate operations in the so-called Lower Town (DLT2; DLT3) in the plain between Gird-i Bazar and Qalat-i Dinka. So far, more than 1400 m² have been excavated in total.

Moreover, PPP has intensively investigated the ancient environment of the Bora Plain with geophysical methods, coring, soil and sediment analysis and geological surveying. PPP carries out these environmental studies with the aim of clarifying the geological setting, the formation processes of the alluvial Bora Plain and the relation between DSC and its surroundings (Altaweel & Marsh 2016; Eckmeier et al. 2018). In 2018, we focused in particular on an area of the settlement where the magnetometer prospection had indicated an area without archaeological features while the structures bordering onto this area show signs of destruction (Fig. 3). Three soundings of 10 x 2 x 3 m (GA43, GA44 and GA45) were excavated in order to investigate this "empty" area, and we identified the bed of an ancient wadi, with a thick layer of small-medium pebbles. This confirmed the hydrological SAGA-GIS analysis based on a drone-created DEM, which had already suggested the presence of a water stream at some earlier point in time (Radner *et al.* 2017: 178). Combining the magnetometer data, the hydrological analysis and the results of the 2018 test trenches, we can now assume that DSC, at some point after the occupation of the lower town had been established, was traversed by a stream of water, which partially destroyed the neighbouring buildings. Whether this was after the settlement had already been abandoned or while it still flourished is to be clarified by future work.

Exhaustive preliminary reports on the results of the 2015-2017 campaigns have already been published (Radner *et al.* 2016; 2017; 2018). This article presents for the first time results from our work of 2018, together with a brief survey of what we know about DSC so far.

Dating the Dinka Settlement Complex

The particular focus of our research lies on the Neo-Assyrian period (c. 900-600 BC), and DSC was chosen for excavation because of its relevance for this period, as indicated by the recovery of the 725 BC cuneiform tablet from Qalat-i Dinka (Fig. 2).

¹⁴C dates procured from excavations have confirmed the dating of the site to the Iron Age. In 2015, two charcoal samples from a floor of the GiB excavations and from a test trench (GA42) about 500 m west of that site provided two post-quem dates of 937-829 calBC (92.2% probability) and 830-789 calBC (95.4% probability), respectively. Our strict sampling protocol allows the recovery, through flotation, of carbonized seeds from primary contexts in order to refine the chronology of the settlement. Their analysis is ongoing and provides dates pinpointing the single years of these seeds' lifespans. First dates from carbonised seeds from Gird-i Bazar floor contexts have yielded a range of possible dates spanning from 1215 to 816 calBC. Two carbonised seeds collected from the inside of a storage vessel in DLT2 provide possible

dates of 1012-894 calBC (94.4% probability) and 930-824 calBC (95.4% probability) respectively. Two charcoal samples from the QiD excavations produced possible post-quem date ranges of 1043-891 calBC (91.8% probability) and 1001-891 calBC (85.9% probability), while a human tooth yielded a possible date range of 1234-1117 calBC (92.8% probability). A human bone found in a discontinued well provides a substantially later possible date range of 748-409 calBC (95.4% probability); the long range is due to the so-called "Hallstatt Plateau" that affects all samples from ca. 800-400 BC (Plitch 2004). All these dates firmly place the excavated structures of the Dinka Settlement Complex in the Iron Age.

During that time, the annexation into the Assyrian Empire in the late 9th century BC was a watershed moment for the Peshdar Plain. The Province of the Palace Herald was created in the region under King Shalmaneser III (r. 859-824 BC) as a defensive administrative unit guarding the Assyrian Empire against its neighbours. Across the Zagros main ridge in modern day Iran lay the kingdoms of Mannea and Hubuškia, and beyond the Qandil in the Soran district of Erbil Province the kingdom of Muşaşir, with Urartu looming behind. By the time of Esarhaddon (r. 681-669 BC), the Peshdar Plain had become unsafe and Assyrian control brittle so that the Assyrian Empire may have lost the region well before 616 BC when the Medes first attacked Arrapha (Kerkuk) further down the Lower Zab (Radner 2016: 21).

Excavations at Gird-i Bazar: some high-lights

Excavations were undertaken on the shallow mound of Gird-i Bazar from 2015-2017, after it had been severely damaged by the construction of a chicken farm and its enclosure within a metal fence. Excavations in this area have been completed. We excavated about 1100 m² and revealed remains of a large central open space (Outdoor Area 8), various alleys and at least 11 buildings, each composed of several rooms arranged around a central stone-paved courtyard (Fig. 4).

The bases of the walls are made of medium-sized cobblestones set directly onto the virgin soil; no evidence was found of their original superstructure (but see below on DLT2). Houses typically have stone installations (presumably benches or supports for wooden furniture) and small bread ovens. The rooms have beaten-earth floors. Pottery was abundant on the floors of some rooms, while only small quantities in very fragmented state were found in others. Overall, the houses yielded a limited repertoire of small finds, mostly consisting of simple stone tools such as pebble mortars, pounders and polishers.

Several drains, covered by flat stones, were identified that transported waste water from the buildings into the alleyways. Three wells were excavated in private courtyards and one larger well in a publicly accessible open area. The spaces around these wells were paved with stones or pebbles to improve impermeability. A circular stone with a polished circular cavity was sunk into the floor next to the well in Courtyard 21, and we interpret this as the support for a wooden pole of a water lifting device (*shaduf*).

The large public well in Outdoor Area 7 has been excavated to a depth of about 7 m but without reaching its bottom. While the upper fill of the well was mixed with modern material, the undisturbed lower fill was very rich in pottery sherds. This collection contains the best preserved ceramics found in Gird-i Bazar, much more complete than those excavated from the floors. This fill also contained a partial donkey skull, a tooth of which provided a possible ¹⁴C date range of 1006-901 calBC (95.4% probability).

So far, the fill of the private well in Room 49 produced 6 disarticulated human skeletons:

The Iron Age Dinka Settlement Complex in the Peshdar Plain, Archaeological Exploration, 2015-2018



Fig. 5a-b. Overview of the Iron Age pottery from DSC, showing (from top to bottom) the fashioning techniques arranged by stages, the morphological types, the fabric groups and the techno-petrographic groups, as currently understood. Prepared by Jean-Jacques Herr, Abdullah Bakr Othman and Hero Salih Ahmed.

four adults (of which two have been securely identified as women), one juvenile and one stillborn baby. ¹⁴C analysis of one of the femur bones yielded a possible date range of 748-409 calBC (%95.4 probability; see above for the "Hallstadt Plateau"), substantially later than the other radiocarbon dates so far available for DSC. These individuals are probably linked to the end of the occupation of the houses at Girdi Bazar, and possibly the entire DSC. Excavation work here was continued in 2018 but the bottom of the well has not been reached.

The excellent water supply and management with wells and drains was certainly very useful for the local pottery production. Three pottery kilns were uncovered in this part of the settlement: two in the central public Outdoor Area 8 and one in Room 31 (Fig. 4). Two of these kilns are of the same type, with a lower combustion chamber (yielding ashes in the excavation) and an upper chamber where the pots were fired. The last pottery load of Kiln 1 was found *in situ* on the remains of the perforated kiln floor that separated the lower from the upper chamber. Kiln 2 is of the same type, but was found in much worse condition as the bricks of the kiln superstructure (likely vaulted) had collapsed into the lower part. Kiln 3 is of a different, much shallower construction, and its fill yielded sherds of fine ware pottery.

The presence of these pottery kilns clearly indicates that pottery was made locally in and around the buildings of Gird-i Bazar. One pottery workshop was situated in Room 46 of Building I. It was equipped with a large stone bench and drainage, and floor stone tools used for pottery production (Squitieri 2018: 157, 160-164) as well as pottery sherds were found on the floor. The most exciting find is a pivoted stone that we interpret as part of a slow-wheel device: together with a lower socked stone, it once served to give momentum to the slow-



Fig. 6. Orthophoto of DLT3. Prepared by Andrea Squitieri and F. Janoscha Kreppner.



Fig. 7. Orthophoto of DLT3. Prepared by Andrea Squitieri.



Fig. 8. Baked brick with fragmentary Neo-Assyrian cuneiform inscription (PPP 226922:010:004) excavated in DLT3. Photo by Karen Radner.

wheel, likely made of wood, on top of which pots were shaped. The use of the slow-wheel for making pottery is also indicated by macroscopic and microscopic observations of the pottery recovered on site (Herr 2016). Furthermore, petrography has shown that the clay used was locally sourced (Amicone 2016). The pottery production at Gird-i Bazar likely served the entire DSC community.

The majority of pottery shapes are hemispheric bowls, carinated bowls, jars and cooking pots. Lids, trays, stands and tripods are attested more rarely. Most of fabrics are medium-coarse to medium-fine. Pottery was made by combining of coiling, slow-wheel and burnishing techniques. In many cases, there is also a red slip. These shapes and techniques connect the DSC pottery (Fig. 5a-b) to the material culture attested in the piedmont area of the Zagros, in particular the region stretching from the Ranya Plain to the Sharizor Plain, but also to the material culture of northwestern Iran, in particular from Hasanlu (Amicone 2017; 2018; Herr 2016; 2017; Herr *et al.* 2018).

Much later in the Sasanian period, Gird-i Bazar served as a cemetery (Downey 2018). 94 graves were identified, cutting into the Iron Age structures, and 34 of these graves were excavated (Fig. 4), yielding a total of 62 individual skeletons. ¹⁴C analysis on a tooth from one of the burials provided a possible date range of 389-535 calAD (95.4% probability). The graves were simple pits covered by a row of stones (reused from the Iron Age walls). The burials are usually devoid of grave goods, except for the occasional personal adornment: the glass and stone beads, earrings and bracelets recovered have parallels elsewhere in the Sasanian Empire.

Further excavations in DSC's Lower Town: testing the waters

Excavations started in two areas (called DLT2 and DLT3) about 400 m west of Gird-i Bazar. Magnetometer prospection had indicated the existence of three large free-standing buildings at DLT2, whose layout differed substantially from the much smaller buildings at Girdi Bazar. In 2017, a trench of about 65 m² was opened that cut all three buildings (Kreppner & Squitieri 2018) (Fig. 6). These test excavations showed that, unlike Gird-i Bazar, the area had neither been significantly disturbed in antiquity nor by modern activities although ploughing comes dangerously close to the top of the remains uncovered.

The Iron Age structures were built on the virgin soil. In one building, large storage vessels were found still *in situ*, although not completely preserved. Two carbonised seeds from the fill of one of these vessels yielded possible date ranges of 1012-894 calBC (%94.4 probability) and 930-824 calBC (95.4% probability)that are consistent with those from Gird-i Bazar, indicating contemporaneity of the oc-



Fig. 9. The large building in Qalat-i Dinka (QiD 1). Photo by Jean-Jacques Herr.

cupation. This is supported by the pottery sherds recovered from the floors of the buildings, which according to macroscopic analysis closely march the ceramics found in Gird-i Bazar. Also the general building technique and the small finds repertoire are very similar. Because the walls at DLT2 were preserved at a greater height than at Gird-i Bazar, the use of pisé (rammed earth) for the walls' superstructures could be observed (Kreppner & Radner 2018: 52). We hope to continue work in DLT2 in the near future.

In 2018, a second test excavation of 80 m^2 (called DLT3) was opened about 150 m south of DLT2 (Fig. 7). Here, a geoarchaeological test trench (GA42) dug in 2015 had



Fig. 10. Fragment of a decorated ivory piece (PPP 181909:004:059) excavated in QiD 1. Photo by Andrea Squitieri.

provided a charcoal sample that was radiocarbon-dated to 830-789 calBC (95.4% probability). As this range of possible dates falls within the period of the Assyrian control of DSC, excavations at DLT3 were undertaken to provide a clearer context to this data. Our work uncovered rooms of the same stone architecture observed elsewhere at DSC, with the same pottery as at Gird-i Bazar and DLT2 on the floors. Unlike in the previously excavated areas, however, two distinct architectural phases were observed, which are connected to a change of function in the case of Building S (part of which was covered by Building Q in the younger phase) whereas Building R attests to continuity.

At the level corresponding to the later architectural phase, a fragment of an inscribed fired brick (PPP 226922:010:004; Fig. 8) was found that bears an Assyrian inscription. Admittedly, very little of it is preserved. But as the end of the first line ends with the sign KIŠ, the logogram for kiššatu "universe; world", we can assume with confidence that the line reads "PN (strong king), king of the universe", continuing in the second line with "king of Assyria," and the genealogy of the ruler. The brick inscriptions of Shalmaneser III from Ashur (Grayson 1996, no. A.0.102.99) are good parallels. The brick surely dates to the time of the Neo-Assyrian occupation of DSC. It is the first textual evidence for an Assyrian presence in the Lower Town. We intend to continue work in this area, especially at Building Q.

First excavations on Qalat-i Dinka: security and luxury on top of DSC

The ancient occupation of Qalat-i Dinka was first investigated in 2016 with a 42 m^2 test trench (Kreppner & Squitieri 2017). This was then enlarged in 2018 by an additional 52 m^2 . This excavation area, called QiD1, is situated on the western slope of the hill.

Our work uncovered the remains of large building of impressive dimensions, with wide stone walls featuring stone pilasters and a paved floor of alternating baked bricks and stone slabs; a large stone threshold was found, but not *in situ* (Fig. 9). The monumentality of its architecture sets this building apart from those unearthed so far in the Lower Town. A charcoal sample from the paved floor yielded a possible *post-quem* date range of 1001-847 calBC (85.9% probability), which matches dates obtained so far in the Lower Town. The pottery, too, suggests contemporaneity with the occupation of the Lower Town.

The fill within the building yielded fragments of ivory objects, including some decorated with a guilloche motif (PPP 181909:004:059; Fig. 10), iron arrowheads of an Iron Age type attested in Northern Mesopotamia and Western Iran, and two Egyptian Blue beads (determined by chemical analysis). None of these items has counterparts among the finds so far uncovered in the Lower Town. The finds as well as the monumentality of the building suggest that high status individuals lived on Qalat-i Dinka. A human skull was found in an are where the brick and stone pavement was not preserved. One of its teeth was radiocarbon dated to a possibly date range of 1234-1117 calBC (92.8% probability). It is possible that this body was buried before the construction of the floor. However, the entire building, including its floor, was severely damaged by modern looting pits, and the building's fill was found contaminated with much modern material left by the looters (including biscuit wrappers). This complicates the reconstruction of the stratigraphy and the relative chronology of the area.

About 40 m west of QiD 1, further down the slope, we opened a 10×2 m trench (called QiD 2). The remains of a sloping stone structure took up most of this trench, covered with the same pottery encountered elsewhere at DSC. Because of the sloping, we interpret the massive stone structure as a glacis, a feature frequently used in antiquity to reinforce defensive walls.

A third trench (called QiD 3), was excavated at a distance of 40 m to QiD 2. Here, a long wall made of loosely attached stones was unearthed, possibly once supporting a wooden structure. A charcoal sample from this area was radiocarbon dated to a possible *post-quem* date range of 1043-893 calBC (91.8% probability).

The 2016 and 2018 results suggest that we are dealing with a well defended citadel where an elite segment of DSC's population resided. The available radiocarbon dates do not allow us to pinpoint when the monumental building was constructed. The charcoals only provide *post-quem* dates that in theory allow for an Assyrian foundation. The skull provides an earlier date but unfortunately comes from a disturbed context. Further work is needed to clarify whether the structures on Qalat-i Dinka were founded before the arrival of the Assyrians, like those in the Lower Town, or whether they are an expression of the Assyrian take-over of the Peshdar Plain. In any case, the building can be interpreted as a fortress that serves to guard the Lower Zab route and passage across the Zagros Mountains.

Conclusions

The combination of the evidence from textual records, including from DSC, and the current ¹⁴C date ranges suggests that DSC was founded before the Assyrians took over the Peshdar Plain and continued its life under the Empire.

Establishing the contribution of the Assyrians to the settlement, including environmental interventions, architecture, material culture and food production, processing and consumption, is one of the main goals of our work. But what is already clear now is that before and after its inclusion into the Assyrian Empire, DSC played a crucial strategic role in controlling the Lower Zab river as well as the passes across the Zagros Mountains.

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