Deposits of Funnel Beaker culture vessels in wells
New materials – new perspectives

Nálezy keramických nádob kultury nálevkovitých pohárů ve studnách
Nové materiály – nové pohledy

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This article presents the extraordinary discoveries of ceramic vessel deposits in wells of the Funnel Beaker culture (FBC). Such a custom is observed in all groups of this community but is of particular importance in the Eastern group of the FBC. In central Poland (Kuyavia) specifically, there are many objects of this type compared to older materials of the Linear Pottery culture. The analysis of the local contexts of these finds allows for the hypothesis that the two communities are closely related to be proposed.

wells – bog deposits – Funnel Beaker culture – Kuyavia – Neolithic – pottery

Článek pojednává o mimořádných nálezech keramických nádob ve studnách z období kultury nálevkovitých pohárů (KNP). Zvyk ukládání nádob do studní se vyskytuje u všech skupin této kultury, ale zvláště významný je u východní skupiny KNP. Zejména početné nálezy ze středního Polska (Kujavy) dovolují srovnání s podobnými nálezy z doby kultury s lineární keramikou. Analýza lokálních souvislostí těchto nálezů umožňuje navrhnout hypotézu o příbuznosti obou komunit.

studny – bažinná depozita – kultura nálevkovitých pohárů – Kujavy – neolit – keramika

Introduction

Any hierophany has a complex structure composed of such elements as energy used in its manifestation, the time of manifestation, objects related to it, myth, ritual, and place. In the oecumene of the Funnel Beaker culture (FBC), such places set aside for cult purposes included waterlogged areas, chiefly small reservoirs of stagnant water, springs, and bogs (*Koch 1999*; *Nowak, M. 2017*; *Oestigaard 2006*). Some observations indicate that these could also include anthropogenic structures in the form of wells.

Within the FBC oecumene in the Polish Lowland, evidence for such cults, known as aquatic hierophanies, manifests as places set aside for cult purposes in waterlogged areas, vessel morphology (amphorae), temper in the ceramic body (shells), vessel ornamentation, and aquatic elements deposited in terrestrial contexts, for instance layers of shells, peat and much within the mounds of megalithic tombs (*Cofta-Broniewska – Kośko 1982*, 45). Such connections can be seen in every sphere where the material correlates of FBC symbolic culture are found. Such materials include those presented below, although these were recovered from features whose purpose by design is purely utilitarian.

When classifying archaeological finds as wells, a decisive criterion is whether a pit is crossed by strata containing groundwater or whether it provided access to it in the past. Moreover, the walls of such a pit should be rather steep and symmetrical in outline. Features

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that today do not reach groundwater level are sometimes classified as cisterns – water tanks (*Weiner 1998*, 198).

Using the criterion of how they are made, today the following well types are distinguished: drilled, driven, and dug. Due to the technical limitations of the prehistoric communities in question, it can be assumed that only the latter-most method of constructing wells was available. In turn, prehistoric dug wells are divided into two types with regard to their casing: chest and pipe (*Tegel et al. 2012*, 2). In the former type, the casing has the shape of a rectangular chest, in the latter, it is round (*Hecht 2007*, 178). Moreover, it is accepted that wall casings are not necessary in all cases, especially when a well is dug into stable ground (*Weiner 1998*, 196).

Making a clear distinction between the spheres of the sacred and the mundane in terms of the fill of ancient wells may be difficult because it can be justifiably assumed that every practical action had a ritual or sacral aspect for prehistoric communities. Nevertheless, an attempt can be made to categorize a filled well according to the following two scenarios: (a) a well was filled as a result of the everyday activities of a settlement (waste, rubbish, damaged or accidentally lost objects) or (b) a well was filled as a result of making deposits. The latter comprises the deliberate and intentional exclusion of some goods from circulation by depositing them in a well or a spring or some other available water source (*Brozio et al. 2014*). In Scenario (a), we would be dealing with fine pottery shards, damaged vessels, and post-consumption remains such as animal bones. In (b), where deposits were intentional, we would be dealing with complete vessels not necessarily connected to drawing water and larger food remains that by decomposing would effectively prevent people from using the water source without endangering their health. Of course, in both cases, it cannot be ruled out that such objects were lost in the well because their owners failed to exercise due care. Similarly, fine pottery shards and post-consumption bone remains may attest to special community meals consumed close to water sources. A simple categorization is thus not possible in this context and the broader context of the deposit must be considered in each case.

The oldest anthropogenic groundwater sources – wells – have been identified at a single site dating to the Mesolithic. Three such features were recorded in Brandenburg and date to 8200 BC. At the bottom of two, wooden containers and one made of a tortoise carapace were discovered. The fact that the wells were dug in sandy soil and contained a small number of finds suggests that the features dated to 8200 BC could have been use for a rather short time (*Gramsch 1998*).

Other well-type features emerged in central and western Europe with the arrival of the first farmers represented by the Linear Pottery culture (LPC). Today we know of about 53 such features dated to the second half of the 6th millennium BC (*Vostrovská et al. 2021*). On many occasions, they may be viewed as the effects of advanced architectural projects (*Rybníček et al. 2020*).

From the beginning of the Neolithic, wells became permanent fixtures of successive prehistoric communities and made their way into FBC settlements. As not only technical features but also objects of a special non-utilitarian interest for these communities, they shall be the subject of this article. The main research hypothesis assumes that wells for prehistoric communities were not only important utility objects but were also related to the communities' beliefs in supernatural forces.

Materials

Wells within FBC groups

In 1997, attention was drawn at an international symposium held in Erkelenz, Germany, to the high potential and significance of well-type features in Neolithic archaeological sites. The symposium proceedings have subsequently been a valuable reference for the subject under discussion (*Koschik 1998*) and have stimulated further discussion that initiated more recent attempts at consolidating our knowledge of the subject (*Brozio et al. 2014*; *Bock 2016*). Owing to the considerable formal resemblance and frequent problems with distinguishing wells from natural water springs that were transformed over the course of their use, a decision was made to jointly treat both feature categories in this article and distinguishing between them in the descriptive, catalogue section.

At present, we know of 28 FBC sites in Europe where wells or the springs connected to them have been recorded and it should be noted that these are not uniformly distributed across the FBC oecumene. As seen in *fig. 1*, there is a clear concentration in the Northern group, where we know of 11 such archaeological sites and in the Eastern group, where nine such known sites are located. The other FBC territorial units have much smaller numbers of such sites: there are three in the Western group, two in the Southern group, and one in the South-Eastern group.

Below, a review of the available information about wells from these sites is provided. The review has been divided into two parts, the first describing wells from the Western, Northern, and Southern FBC groups. Greater attention has been focused on the second part which describes wells from the Eastern and South-Eastern FBC groups, for which substantial new data are presented.

Western, Northern, and Southern groups

Within the Western group, only three FBC sites are known from which wells were recorded (*fig. 1: 1–3*). More detailed information is available for two of these sites. In the Netherlands, on a site in Emmerhout, two wells about 1 m deep were discovered. Their fills were very meagre indeed and contained only fragmented FBC pottery. One structure may have been cased using birch bark (*van der Waals 1998*, fig. 7). On another Dutch site in Schipluide, a cluster of 148 pits classified as wells was recorded along the edges of a settlement (*Bock 2016*, 148). These oval pits were 0.3 to 2.4 m in diameter and about 2.3 m deep. Their fills yielded few finds, mostly fragmented pottery sherds.

On the most recently published list of wells and springs used by FBC communities within the Northern group, there are 11 sites (*Bock 2016*, 93). At five, pits were found that were interpreted as wells (*fig. 1: 4–8*), whereas pits found at six of these sites were interpreted as springs used by FBC communities (*fig. 1: 9–14*). The oldest pit from Kildevang, Denmark (*fig. 1: 5*), is dated to *c.* 3710 BC (FN Ib; *Ravn 2011*). It is also the only find of this type located next to a post-frame house. A ^{14}C date was obtained from charcoal found in a posthole from this structure. Unfortunately, the available publication is a preliminary research report and does not provide a description of the well fill. It can be assumed, however, that had an impressive assemblage of pottery been found in the well, this publication would have mention it. However, a substantial amount of significant economic and palaeo-

environmental information was supplied by a study of a well from the Oldenburg-Dannau LA site 77 in Germany. This feature, dated to 3050 BC, proves the high research potential of the Kildevang well fill, even if no complete ceramic vessels were deposited within it (*Brozio et al. 2014*). The other wells located in the Northern group date to periods after 3500 BC, while their fills yielded only fine pottery sherds; in two cases, these were accompanied by stone artifacts and small animal bones.

On the list of features in the Northern group, there are also six springs (*Bock 2016*, 93). In one, a large deposit of flint tools bearing no use-wear marks was discovered. The fills of three yielded fine pottery sherds, stone and flint tools, and animal bones. Only in two springs were complete vessels found (*fig. 1: 10, 11*). In northern Zealand (Denmark), on the Hojberg Hegn site, an ornamented funnel beaker was discovered as were the fragmented remains of two or three other vessels. In the south of the island, on site Ellerødgård I, a larger assemblage of vessels was identified, consisting probably mostly of beakers, as well as stone and flint tools and animal bones, including those of deer, sheep/goat, and cattle. In the opinion of the original researchers, these were the remains of feasts held in that place. The site is dated to 3500–3300 BC (*Bakker 1998*; *Bock 2016*, 82).

Deposits of complete vessels were found only in two spring sites in the Northern group. In contrast, wells are believed to accumulate the fragmented remains of communal feasts held in their immediate vicinity (*Bock 2016*, 83). Not all features of the well type from this area have been published; nonetheless, from what is known about them, it appears that no complete or usable ceramic vessels have been identified in wells to date.

In the Southern group (Silesian-Moravian group and Baalberge group), three sites are known in which five wells were exposed (*fig. 1: 15–18*). Two such features come from the Mohelnice site (Czechia). Fragments of Eneolithic pottery and preserved pieces of wood were discovered in feature 254. Absolute dates after calibration for this well are in the range of 2460–2290 BC (68.2% probability). In another well (feature 255), fragments of a funnel-beaker vessel and a wood fragment were found. Absolute dates after calibration are in the range of 3890–3700 BC (68.2% probability). Materials from wells 254 and 255 are correlated with the existence of settlement phases documented at the site. (*Tichý 2020*, 103). In Mikulovice, Czechia, two other wells, this time without casings, were unearthed and dated to the early phase of the FBC. They yielded at least two Baalberge jugs (*Šmíd 2017*, 88). One well was also identified at the site of Holešov-Všetuly, Czechia (*fig. 1*: *18*; *Fojtík et al. 2019*). The object was dated to the Eneolithic period and contained small fragments of several pottery vessels.

In Berhna (Saxony-Anhalt, Germany), a 7 m shaft was exposed, which yielded Baalberg group vessels: several amphorae, a funnel beaker, and a bowl (*Bock 2016*, 81). In the absence of more specific information about these discoveries, the Baalberg finds from this area can be roughly dated to 3800–3300 BC (*Müller 2009*).

Eastern and South-Eastern groups

Considering the latest discoveries from the FBC Eastern group, we know of at least 20 wells located in nine archaeological sites in Poland (*fig. 1*). In 12 of these wells, between one and 32 vessels were discovered preserved intact or well enough to be classified as to their basic forms. Little information can be drawn from the older discoveries from the first four sites discussed below, which were investigated prior to the Second World War. Newer

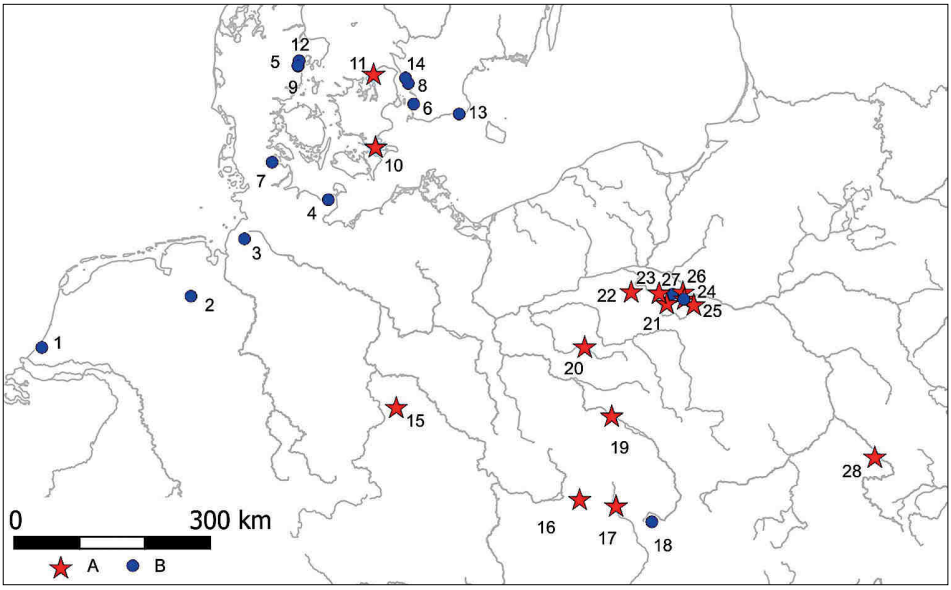

Fig. 1. Wells and springs of the Funnel Beaker culture. A – with pottery deposits; B – without pottery deposits. Sites: 1 – Schipluiden; 2 – Emmerhout; 3 – Lavenstedt; 4 – Oldenburg-Dannau LA 77; 5 – Kildevang I; 6 – Almhov; 7 – Tastrup LA 29; 8 – Saxtorp 23; 9 – Aldersro; 10 – Ellerødgård I; 11 – Hojberg Hegn; 12 – Skejby; 13 – Röekillorna; 14 – Saxtorp 26; 15 – Brehna; 16 – Mikulovice; 17 – Mohelnice; 18 – Holešov-Všetuly; 19 – Wrocław-Pracze Odrzańskie 4; 20 – Kokorzyn 7; 21 – Świątniki 3; 22 – Biskupin 15a; 23 – Karczyn 21/21; 24 – Ludwinowo 3; 25 – Grabkowo 8; 26 – Kruszyn 13; 27 – Redecz Krukowy 20; 28 – Rozbórz 28. After *Bock 2016*; *Šmíd 2017*; *Fojtík et al. 2019*; *Żurkiewicz 2019*.

discoveries of wells are clearly concentrated in Kuyavia (*fig. 2*), a region of central Poland characterized by particularly favourable natural conditions and a convenient geographic location. These advantages were initially appreciated by the first Neolithic communities (LPC) who settled this area *c.* 5400 BC. Since that time, the region was intensively inhabited by successive Neolithic communities, who developed it into a permanent settlement region with rich interpenetrating cultural traditions. For the most part, the sites discussed below are the effect of rescue excavations conducted in the region.

Wrocław, Pracze Odrzańskie, site 4, is the southernmost FBC well of the Eastern group (*fig. 1: 19*; *Seger 1916*; *Wojciechowski 1986*, 13). More recent chronological findings suggest that this feature was built no earlier than *c.* 3600 BC (*Furmanek et al. 2019*, 98). On the site, the remains of a cylindrical shaft 0.95 m deep were exposed. Relying on its description, it can be concluded that the well was cased with wood. Inside it, at least eight nearly complete vessels, including at least two amphorae, were found and associated with the early Sarnowo phase of the FBC.

In Kokorzyn, Greater Poland, in a well dug into sandy ground and cased in wood, two four-handled amphorae were discovered at a depth of 3 m (*fig. 1: 20*; *Jażdżewski 1936*, 55). In turn, in Świątniki, Kuyavia, a hypothetically wood-cased well held fragments of three funnel beakers and two amphorae, of which one bore traces of repair (*fig. 1: 20*; *2*; *Jażdżewski 1936*, 200). In a well from Biskupin, site 15a (*fig. 2*), a discovery was made of three amphorae, a funnel beaker, many sherds of least seven ceramic vessels, and a flint

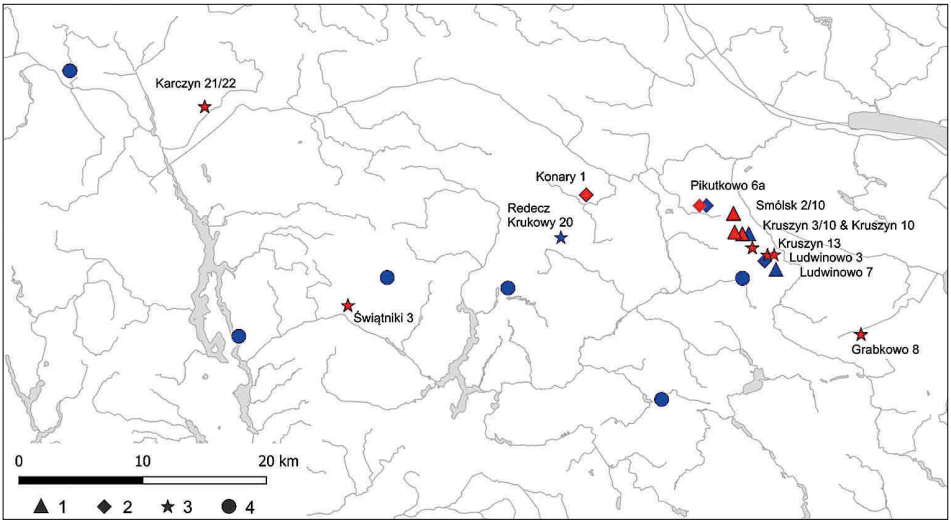

Fig. 2. Neolithic wells and bogs from Kuyavia. 1 – LBK wells, 2 – BKC wells, 3 – FBC wells, 4 – FBC bog pots. Red – wells with deposits of ceramic vessels, blue – wells without deposits of ceramic vessels.

axe (*Maciejewski 1962*, 222–223). Although these four wells were investigated prior to the Second World War, they have been assigned to the FBC Wiórek phase (*c.* 4000–3400 BC) based on a more recent the assessment of the characteristic forms of vessels recovered within them (*Wierzbicki 2013*, 237).

More recently, wells in Karczyn site 21/22 were discovered in a narrow exploration belt in the course of rescue excavations. For this reason, some of these features have not been explored. The site is situated on the edge of the vast Bachorza Valley, where it remains boggy today (*fig. 2*). Feature 114 is 2.9 m wide and tapers down to a depth of 1.65 m (*fig. 3A: 1–5*). Its fill yielded four vessels: two almost complete amphorae, one bearing an ornament, the body sherd fragment of what is most likely another amphora with a base, broken neck, and clear traces of repair using an adhesive (perhaps wood tar) and smoothing out the edge left where the original neck broke, as well as a large fragment of a container – the base and belly of another vessel. Furthermore, the feature yielded six animal bone fragments, all of which belonged to cattle. From the tar coating on one of the vessels, a radiocarbon determination was obtained and dated the well to *c.* 3510–3426 BC (68.2 %; *Żurkiewicz 2019*). Another well in Karczyn, feature 120, measured 1.6 m wide and 1.4 m deep and was located approximately 5 m from the first (*fig. 3A: 6–8*). At the bottom below the modern groundwater level, sat a funnel beaker preserved intact. In addition, the remains of at least 13 other vessels were extracted from higher portions of the feature, including at least four amphorae, a fragment of a collared flask, and fragments of a vessel made of clay tempered with shells. The feature also yielded seven animal bone fragments belonging to such species as cattle and sheep/goat. Both explored Karczyn wells were situated in a trench only 6 m wide, which widened approximately 160 m away to form a larger excavation area. Interestingly, between the wells and the concentration of FBC settlement materials, there is a clear thinning of finds, suggesting that the wells were located outside a settlement or on its edge.

The vast multicomponent site 3 in Ludwinowo is situated on the edge of the Vistula valley (*fig. 2*). Excavations on the site covered 855.6 ares (21.13 acres; about half of the site), revealing settlement from the Early Neolithic (LPC) to as late as the Middle Ages (*Marchelak 2017b*, 9). Among the 34 immovable features discovered on the site and linked to the FBC, nine were wells: eight from the Wiórek phase (early and classic) and one, clearly younger, from the Radziejów phase (*Papiernik 2017*, 85). The wells attracted visible concentrations of FBC artefacts. The older Wiórek phase concentration of eight wells was located on the slope and in the denudation valley. The smallest feature (no. 4277) measured 116 × 110 cm on the surface level, while the dimensions of the largest were 240 × 390 cm. Recording the full profiles of these features was difficult due to groundwater that began at a depth of between 80 and 186 cm below the ground level (*Papiernik 2017*, 93).

In all the wells, characteristic FBC pottery shards were recorded, numbering from 13 (feature 4277) to 89 (feature 3622). In the lower portions of three wells (features 1486, 4000, and 4277) near-complete vessels were discovered, including five amphorae and a funnel beaker (*fig. 3B: 1–4*). From six of these wells, animal bones were extracted, numbering from between 60 to 150 fragments per well. Among the bones identified to the species level, skull and limb bones dominate and originate from young cattle (aged 1.5 to 3 years; *Stefaniak – Piskorska – Pokryszko 2017*, List 21 – CD). Attempts to date these features were unsuccessful; probably due to low collagen content, the dates from the animal remains were too young (dating from the end of the Neolithic to the Iron Age), whereas the fills of all wells contained only FBC materials.

Other utility features of the studied community were few and did not indicate that this part of the site had been permanently occupied. They are rather proof of the long economic use of this space in the early Wiórek (Pikutkowo) phase and its younger sections roughly dated to 3850–3450 BC (*Grygiel 2016*, 996).

The younger well from Ludwinowo site 3, linked to the FBC Radziejów phase, is dated roughly to 3500–2600 BC (*Przybył 2017*, 179) and characterized by clear connections to the Baden culture. The settlement of this phase occupied the southern part of the site, about 150 m away from the older, Wiórek remains. There, three concentrations of Radziejów group materials are distinguishable and resemble one another. Each was found to contain a small number of ceramic fragments originating from several vessels that had been considerably comminuted. The concentrations occupied a similar space and, in two cases, contained a single feature in the centre. In one case, it was a clay-pit and in the other – a well (feature 3456; *Papiernik 2017*, 101). The large well pit measured 412 × 340 cm and its depth could be traced down to a level of 140 cm, below which the groundwater table extended. In the bottom part of the pit, a richly ornamented amphora typical of the Radziejów group was discovered along with 51 fragments of other vessels, 108 animal bone fragments (mostly pigs), and 18 mollusc fragments (*fig. 3B: 5–6*). The well fill was subjected to palaeobotanical, geochemical, and depositional analyses. Their results showed episodes in the development of local vegetation cover, which were correlated with the chronology of settlement changes at the site. The study of available ^{14}C dates and environmental factors shows that after 3050 BC, the well was nearly filled with biogenic sediments (*Nalepka 2017*; *Papiernik et al. 2017*).

Moreover, on this site, discoveries were made of seven wells of the local Lengyel-Polgár group (Brześć Kujawski culture, BKC), two wells of the Globular Amphora culture

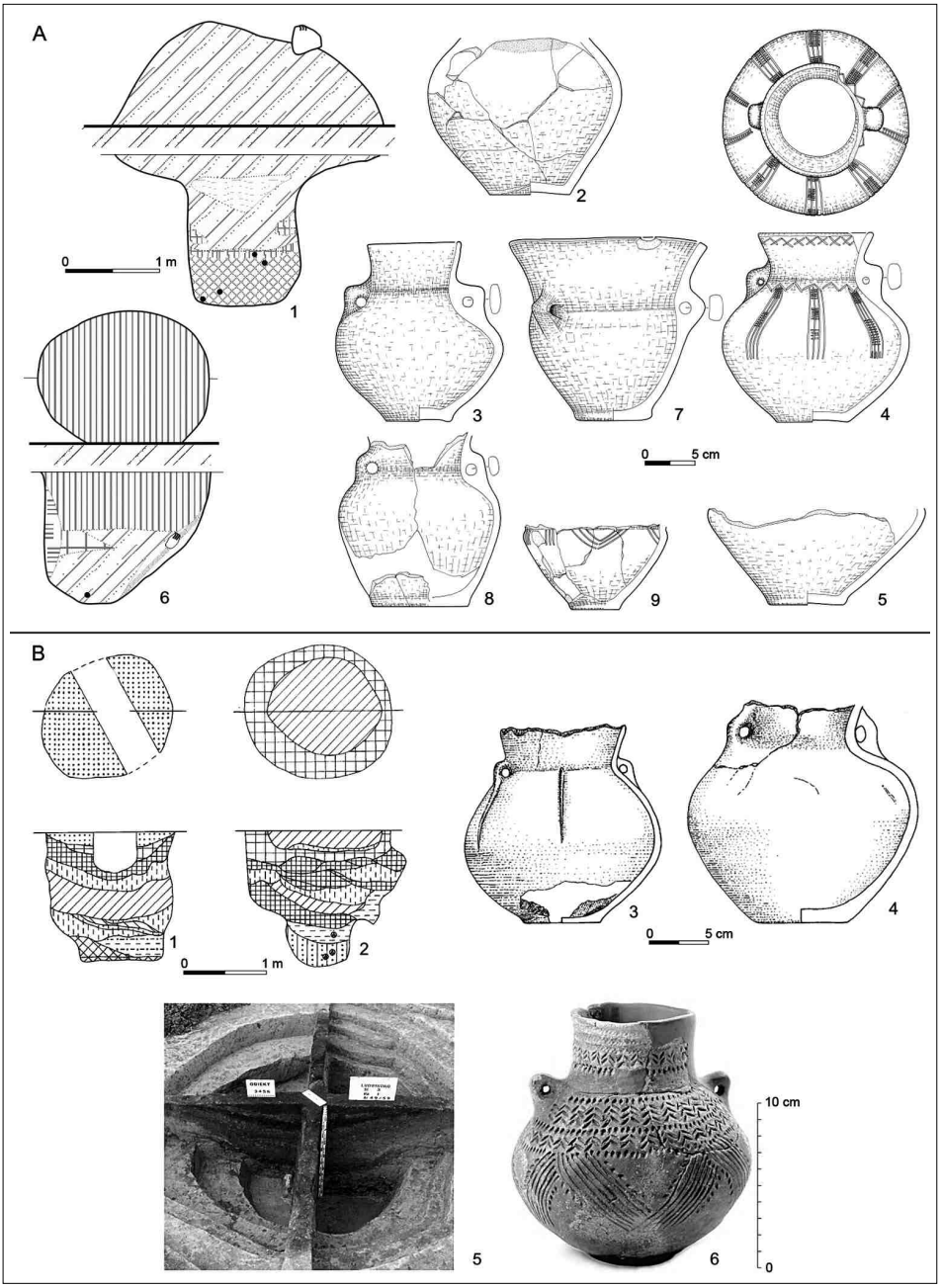

Fig. 3. FBC ceramic deposits recovered from Kuyavia wells. A – Karczyn 21/22: 1 horizontal and vertical profiles of feature 114; 2–5 ceramic vessels from feature 114; 6 – horizontal and vertical profiles of feature 120; 7–9 ceramic vessels from feature 120; B – Ludwinowo 3: 1 – horizontal and vertical profiles of feature 1485; 2 – horizontal and vertical profiles of feature 1486; 3 – ceramic vessels from feature 1486; 4 – amphora from feature 3456; 5 – feature 3456 during exploration. After *Marchelak 2011*; *Wiśniewski – Kotlewski 2013*; *Żurkiewicz 2019*.

(GAC), 30 wells of the Przeworsk culture and nine features of this type linked to the late Middle Ages or modern times.

The most unique of the entire set is the discovery of a well in Grabkowo, site 8, located on the valley edge of a small watercourse (*fig. 2*). The vast multicomponent site covers about 5 ha (12.36 acres), but only about 210 ares (5.18 acres) has been excavated. As a result, nine settlement phases from the Early Neolithic up to modern times were recorded (*Kaczor – Żółkiewski 2012*). FBC remains are found on this site in two distinguishable concentrations: a larger one consisting of settlement materials and features and another, located some distance from the former, linked to feature A 145 – a well measuring 360 × 190 cm and 452 cm deep (*Siewiaryn-Mikulska 2012*).

The well fill was found to contain a complete skeleton of a child aged *infans I*, the remains of a child aged *infans II*, and those of a woman aged *adultus* at their times of death, the complete skeletons of three hares, three dogs, and two young pigs, and many post-consumption bones. The discovered pottery included almost solely vessels preserved intact or those broken after deposition in the well. These were three collared flasks, five beakers (four complete forms), and three amphorae (incomplete and with a damaged neck; *fig. 4A*). One of the amphorae was repaired using tar as an adhesive. There were also smaller beaker fragments and bowls. The well was probably partially cased with stones. The author of the excavation report believes that the bodies of humans and animals made their way into the pit while it was being built. This belief is supported by the fact that they were placed outside the stone casing in purpose-built niches. A radiocarbon date obtained from the human bones places the chronology of this feature between 3630 and 3550 BC (*Siewiaryn-Mikulska 2012*, 87). FBC settlement materials, found about 60 m away from the well, are most likely traces left by a small group of people who bivouacked on this site on several occasions. Several other features were documented on the site which provided valuable information on the occasional life of Middle Neolithic communities.

Site 13 in Kruszyn is situated on the edge and slope of the vast Vistula Valley about 10 km from the modern riverbed (*fig. 2*). Excavations explored a small portion of the site equal to 358 a (8.46 acres). Settlement remains of the LPC, FBC, GAC, and Bronze and Iron Age communities were recorded (*Sobkowiak-Tabaka – Kabaciński 2012*, 15). A small concentration of FBC settlement materials showed that it must have accumulated in two chronological stages covered by the Wiórek phase. A well – feature I 80 – was at least 200 m from the settlement remains (*Szmyt 2011*). The top of the feature was shaped like an irregular oval and measured 320 × 314 cm, while its profile, resembling a funnel, reached 230 cm below the level at which it was first recorded. At a depth of 170 cm, a wooden well casing was exposed – a fragment of a hollowed tree trunk 80 cm in diameter. This part of the well yielded 32 complete or reconstructed vessels, including 31 amphorae and a single funnel beaker (*fig. 4B*). Altogether, the feature fill was found to contain 1429 pottery sherds, a single flint artifact, and five animal bone fragments. Among the latter, cattle bones were identified. All of these artefacts are dated to the Wiórek phase – FBC IIB. The dating of an organic sample from the inside of a vessel further refines the estimated time of well use to between 3980 and 3790 BC.

Site 20 in Redecz Krukowy is situated on a high, flat plateau on eolian sands (*fig. 2*). Its exploration covered approxiamtely 75 a (1.85 acres) and exposed settlement remains from the Mesolithic, LPC, BKC, FBC, GAC, and Corded Ware culture (CWC), as well as the Bronze and Iron Ages. The exploration was slightly different in character, as from

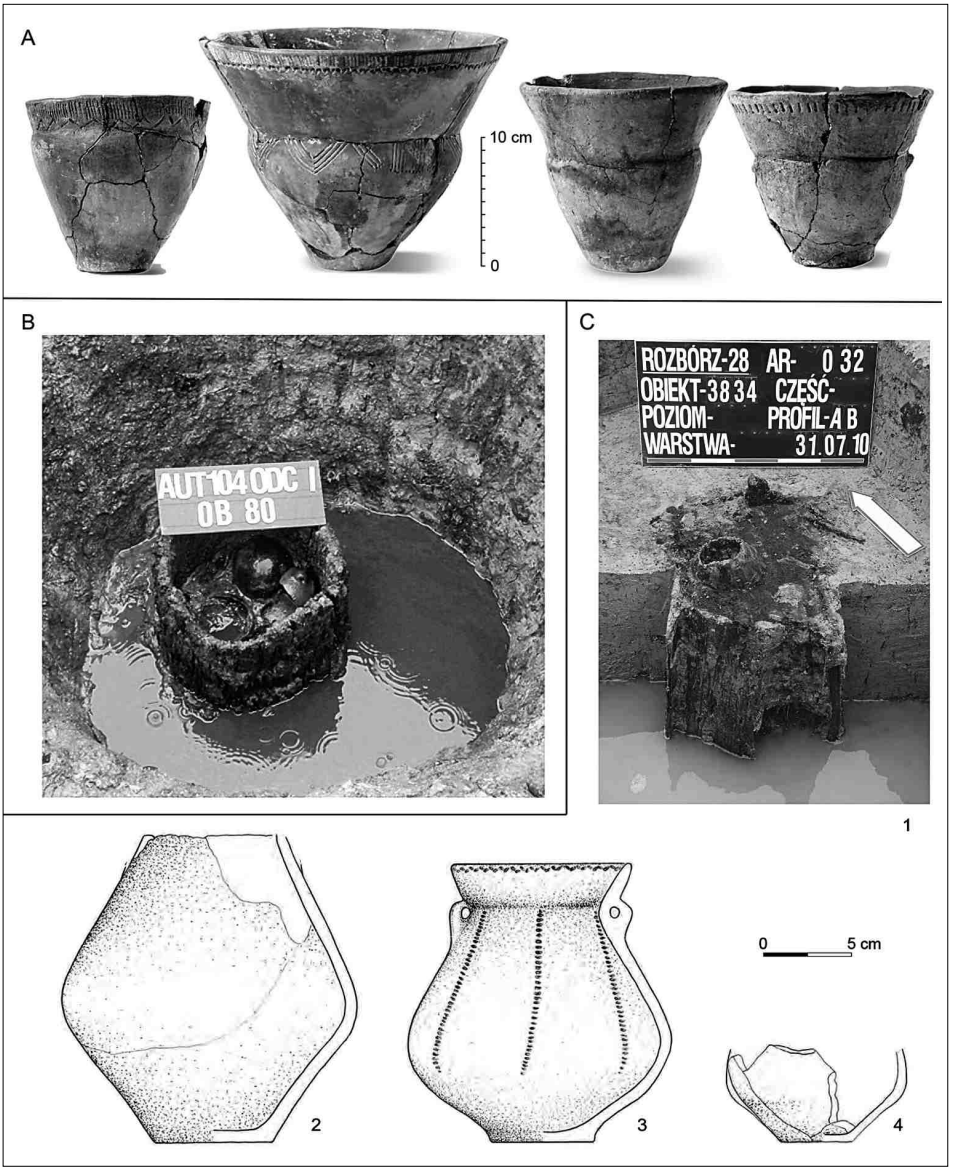

Fig. 4. FBC ceramic deposits from Kuyavia wells. A – Grabkowo 8: selected vessels; B – Kruszyn 13, feature I 80 during exploration; C – Rozbórz 28: 1 – feature 3834 during exploration; 2–4 vessels from feature 3834. After *Sobkowiak-Tabaka – Kabaciński 2012*; *Mazurek – Okoński – Rybicka 2013*; *Wiśniewski – Kotlewski 2013*.

the start it aimed to identify the oldest FBC settlement (*Papiernik – Brzejszczak 2018*). Excavations covered almost the entire area of a settlement from the Sarnowo (first) phase of the FBC. The size of the settlement was estimated to be approximately 1 ha. Within it, several settlement clusters were recorded that comprised artefacts obtained from the cultural layer and features. These yielded over 118,000 FBC pottery sherds, of which most

were linked to the oldest settlement phase. Two wells were located on the edges of two settlement clusters, each made up of a single dwelling structure and several utility features, while a third was located at a considerable distance from the nearest buildings. The maximum dimensions of the wells measured 160 × 125 cm and they did not exceed 100 cm in depth. Their fills yielded highly fragmented pottery sherds numbering from two to 16. In two wells, three or four flint goods each were recorded. It was not possible to directly date the wells, but a series of ^{14}C dates obtained from other contexts at the site place the oldest FBC settlement at this site in the age bracket of 3950–3700 BC. The unearthed FBC remains, together with the wells, attest to the considerable stability of such an early FBC settlement in Kuyavia (*Papiernik – Brzejszczak 2018*, 272).

The list of FBC wells is completed by the only discovery of those known to the present author of a well from the FBC South-Eastern group, feature 3784 from site 28 in Rozbórz, Subcarpathian Province (*fig. 1: 28*). The site is located on the edge of a plateau descending towards the Subcarpathian Urstromtal, in a waterlogged and boggy area. The exploration of the site exposed settlements of the following cultures: LPC, Malice, Trzciniec, Tranobrzeg, Lusatian and Przeworsk (*Mazurek – Okoński – Rybicka 2013*). Feature 3784 was located in a low-lying, peaty part of the site. Its diameter at the level at which it was first recorded was 180 cm and its depth reached 44 cm. Close to its bottom, it was rectangular in horizontal projection, measuring 30 × 40 cm. Its walls were cased with wood. The well yielded two amphorae, including one without a neck, and two fragments of other vessels (a base and handle; *fig. 4C*). The stylistic traits of this assemblage correspond to the early stages of the FBC South-Eastern group and, interestingly, the well is not connected to settlement materials from this site. Radiocarbon dating of wood samples taken from the well casing indicates that the well was used between 3660 and 3370 BC.

Wells with ceramic deposits from other Neolithic communities in the Kuyavia region

The current discussion of the function of wells in FBC communities and the origins of the custom of depositing ceramic vessels in them will benefit from a review of local Kuyavia analogies from the sites of other Neolithic communities (*fig. 2*). These include the LPC, BKC, and GAC communities who also deposited ceramics and other artefacts within wells.

The earliest wells found in the region are linked to the LPC. There are nine such features known from four sites. In all, pottery remains were documented. For example, at site 7 in Ludwinowo, as many as five wells were recorded in which single pottery sherds were found. These were mostly small fragments numbering from 1 to 13 that were accompanied by fragmented animal bones (*Pyzel – Pilarska – Cyganiewicz 2019*, 23).

At the remaining eight sites, LPC wells yielded shards that could be assembled to reconstruct complete vessels. For example, at a settlement in Kruszyn, site 10, 38 sherds representing the remains of three vessels (a cup and two thick-walled vessels) and 14 animal bone fragments, including those of an aurochs, were found inside a single well (*Płaza 2016*, 56; *Stefaniak – Piskorska – Socha 2016*, 345). The well was located next to a utility pit in a central empty space about 30 m from the nearest surrounding settlement clusters.

At the neighbouring site of Kruszyn 3/10, two LPC wells were discovered, situated a few meters apart. At the bottom of Well A42, eight pottery sherds were discovered, originating with four vessels – goblets shaped like spherical sectors. Three were almost completely preserved (*Rzepecki 2014*, fig. 7). The pottery shards were accompanied by a grindstone

and five fragments of a cow femur. The other well – A42 – held only seven small pottery sherds near the top of the shaft. It was situated on the settlement edge, about 40–50 m from the remains of LPC houses that flanked it on both sides (*Rzepecki 2014*, fig. 2).

On site Smulsk 10, LPC settlement features were found in two clusters about 400–500 m apart that thus formed two settlements, northern and southern, with differing chronologies (*Muzolf – Kittel – Muzolf 2012*, 47). Within one cluster, 21 complete or only slightly damaged vessels such as pails/amphorae, bowls, cups, and vases were retrieved from the 5 m deep well shaft of feature 1709 (*Wiśniewski – Kotlewski 2013*, 18–22).

Another Middle Neolithic community that settled in the Kuyavia region, the BKC, also dug wells within their settlements. The builders of characteristic long trapezium-shaped houses located wells in empty central spaces or in the immediate backyards of the structures. In the region under discussion, we know of 14 BKC wells from three sites (*fig. 4*: marked in blue). In Ludwinowo, the BKC site 3 dates to 4790–3990 BC and is linked to seven wells of varied sizes and considerable depths. No well bore traces of the use of wooden casing. Their fills yielded single fragments of indeterminate vessels. In two wells (features 1080 and 4076), animal bones belonging to red deer were recorded. In the case of feature 1080, these were antler fragments comprising tool blanks and manufacturing waste. Additionally, the same well yielded cereal macroremains and charcoal from ash and maple (*Marchelak 2017a*, 72).

In two BKC wells discovered on site Pikutkowo 6a, large sherds of three (feature 6) and two (feature 5) amphorae were recorded. The other features at this site related to water resources were classified as cisterns. Their fills yielded pottery sherds numbering from six to 56. The wells and cisterns were located in the spaces between long trapezium-shaped houses. The BKC settlement at this site is dated to 4400–4000 BC (*Grygiel 2008*, 344, fig. 289).

An absolutely unique BKC structure was discovered on site Konary 1, where at the bottom of a 4.5 m-deep well shaft, a richly stroke-ornamented amphora and a neck fragment of certainly another specimen of the same kind were found. This vessel type supposedly indicates close connections to the late phase of the Stroke Ornamented Pottery culture from Bohemia. The only bone fragment retrieved from the well was a long bone epiphysis of a deer. The well was exposed at the southern front wall of a trapezium-shaped house and, in the opinion of the author of the research report, it was functionally connected with the dwelling. The BKC materials from this site are dated to 4400–4000 BC (*Grygiel 2008*, 1182, 1236, fig. 1008, 1010).

Only three Neolithic wells discovered at two GAC sites are chronologically younger than FBC ones. Two wells from Ludwinowo, site 3, located about 50 m apart, respectively held nine and 12 uncharacteristic GAC pottery sherds (*Nowak, I. 2017*, 103). Additionally, in one of the wells, a discovery was made of animal bone fragments, belonging to such species as cattle, sheep/goat, bear, horse and deer. The wells were located in a settlement zone clearly separated from a sepulchral one distinguished on the site. The latter discovered human and animal inhumation burials. The nature of the remains indicates that a temporary GAC camp functioned on this site in Phase IIIa (2900–2400 BC) at Kuyavia (*Szmyt 2017*, 219, fig. 5).

Similarly fragmented pottery material was found in a well in Janowice dated to *c.* 2900 BC (*Szmyt 2016*, 160). From the well fill, 36 GAC pottery sherds were retrieved together with a single FBC sherd and nine daub lumps. The well was located outside the GAC settlement

material clusters, about 70–80 m from the nearest dwelling structure. The well and features connected with it represent GAC Phase IIb and are dated to the end of the 4th millennium BC (3017–2903 BC; *Goslar – Szmyt 2016*, 371).

FBC pottery deposits in bogs

To properly interpret the significance of pottery deposits in artificial wells, it is necessary to refer to FBC tradition of also depositing pottery as well as tools, ornaments, and/or food in natural waterlogged environments. Deposits retrieved from modern peat bogs, lakes, ponds, bogs, and rivers are permanently connected to the picture of the FBC. Such finds have been previously discussed in the classic works on this culture by *C. J. Becker* (*1947*) and *K. Jażdżewski* (*1931*; *1936*), and so more recent discoveries are reviewed here. A consolidated picture of FBC pottery deposits in bogs specifically is owed to *Bakker*'s (*1998*) work (*fig. 5*). However, the fact that this work lacks a detailed catalogue of listed sites leaves us only with works on this subject confined to smaller territorial units. Staying within them, it is possible to discuss regional differences in pottery deposits in waterlogged areas and, with respect to the lands of modern Poland, supplement the catalogue.

In present-day Poland, FBC deposits are linked to the Wiórek phase, depending on the region, to *c.* 4000–3400 BC (*Wierzbicki 2013*, 237). This does not rule out the possibility of recording 'Luboń' style finds in waterlogged contexts, but the intensity of the custom in question was much lower at that time.

We know of 53 sites in Poland where deposits of FBC vessels and tools were discovered (*Woźny 1996*, 50–56). The vast majority were found in peat layers and the waterlogged valleys of smaller watercourses (43 sites). Five were recovered during land-improvement projects on small ponds, while six surfaced from the erosion of rivers or on riverbanks. Most deposits comprised pottery. From 33 sites, a total of 41 vessels were discovered preserved intact or in large portions. These were dominated by amphorae (26 specimens or 67 %), followed by beakers (11 specimens or 28 %) and jugs (2 specimens or 5 %). Only rarely was pottery accompanied by other goods such as stone tools or human or animal bones (i.e., the skull of an ox or goat, or smaller fragments). In turn, 20 deposits without pottery included mainly stone shaft-hole axes, flint axes, and two flint knives (long blades). Exceptional across the scale of the entire FBC, a deposit from site Witkowice 6 is known as the Bytyń hoard. Found in a peat bog on Lake Bytyń, Greater Poland, it comprised two copper figurines of oxen and six copper axes (*Woźny 1996*).

Works of a general character stress the spatial and temporal relationship between megalithic unchambered long barrows (of the Kuyavian type) and bog deposits (*Adamczak 2013*). In this work, the author studies the intriguing property of most amphorae found in Polish bog deposits. Such vessels often have intentionally (?) broken off or cut off necks. *Adamczak* (*2013*) associates this practice with the ritual destruction of deposited property, embodying the female aspects of FBC beliefs in imitation of traditions radiating from Danube societies and involving ritual destruction of female figurines. However, such suggestions have not been supported yet by detailed regional studies, referring to local settlement networks and a scrupulous analysis of the vessels themselves, and damage recorded on them.

From the FBC Western group in the Netherlands, information comes about 82 finds of stone and flint tools and five deposits of single pottery artifacts. These contexts are

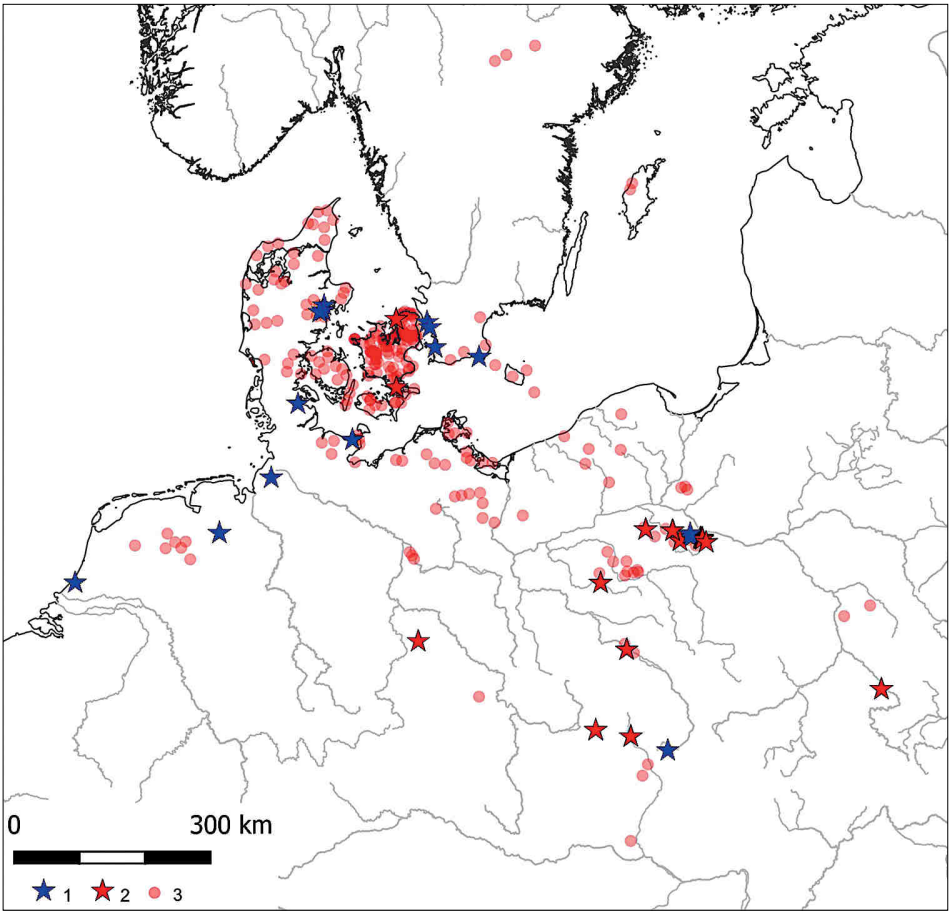

Fig. 5. Wells, springs, and bogs utilized by the Funnel Beaker culture: 1 – wells and springs without pottery deposits; 2 – wells and springs with pottery deposits; 3 – pottery deposits in bogs. After *Woźny 1996*; *Bakker 1998*; *Bock 2016*.

generally designated as ritual, however excluding grave finds, but including ones in waterlogged environments (*Bakker – Van der Sanden 1995*, 132–148; *Wentink 2006*, 51).

Neolithic FBC ritual finds from all contexts in Scania (Sweden, FBC Northern group) include a total of 1372 single specimens and 364 collective finds dated from the Early Neolithic to Middle Neolithic II (EN-MNII 4000–2950 BC). However, only six vessels classified as single finds were recovered from waterlogged contexts in this region, including three peat bogs, two small water reservoirs and one bog (*Karsten 1994*). Earlier Ertebølle culture deposits in southern Scania show that peat bogs as places to make deposits grew in importance in the Late Mesolithic (*Tilley 1996*). Deposited objects included elk skeletons, ornamented antler fragments, antler and bone tools, stone axes, and antler shaft-hole axes, but interestingly few ceramic vessels. These deposits are often found in bogs where later deposits of funnel beakers were laid, suggesting the FBC continued the deposition of few ceramics in these contexts from earlier periods.

In southeastern Scandinavia, the greatest concentration of deposits coincides with the occurrence of megaliths. Over half of the deposits of stone and flint tools are found at a distance of 500–1500 m from a megalith. A use-wear analysis showed that most deposited tools bore no traces of use. Furthermore, blanks abandoned at various manufacturing stages were allegedly frequently deposited, which argues in favour of a manufacturing centre supposedly located near such finds (*Karsten 1994*).

The Danish islands of Zealand, Møn, Lolland, and Falster yielded deposits of which *Koch* (*1998*) made an inventory, listing 700 vessels in 253 deposits from 100 sites (*fig. 5A*). These are chiefly FBC vessels, but several were assigned to the Ertebølle culture. They differ in the context of their discovery: FBC vessels are found away from settlements, whereas Ertebølle ones occur together with settlement remains (*Koch 1998*, 15). Moreover, FBC bog deposits remain in a close spatial relationship with settlements (which are often located about 500 m from them) and megalithic tombs (400–500 m from a deposit; *Koch 1999*, 125–127). These finds are clearly dominated by beakers (80 %, *Koch 1998*, 225).

Most of these finds were single vessels. In a few cases, traces of food remains were found on them (*Koch 1999*, 127). This is borne out by isotopic analyses that revealed animal and milk lipids on vessels deposited in bogs (*Robson et al. 2021*). Most of these vessels bear traces of use. Some pottery retrieved from bogs is accompanied by goods made of wood, animal bone, amber, and human bone (in over 50 of 100 studied sites). There are also animal bones found and it should be noted that finds of shaft-hole axes and axes together with pottery are very rare. Single finds of tools constitute for the most part unused and even unfinished specimens. Shaft-hole axes or axes that occur together with pottery are always specimens bearing traces of use. Vessels are found in bogs most often about 2 m below the peat bog surface. This means that they were deposited in water while axes usually occur at shallower depths – closer to the bog edge.

In the contexts of bog deposits, the oldest FBC beakers known as Type A are found. The other stylistic markers correspond to phases from the beginning of the Neolithic to the end of the Middle Neolithic Phase A in Scandinavia (*Koch 1998*). Relying on the absolute dating of the remains of organic substances on vessels and of animal bones from the same contexts as the pottery, *Koch* (*1999*) dated the horizon with the greatest intensity of this phenomenon to 3950–2900 BC.

Results and Discussion

The information collected and presented above provides the basis to discuss the origins of the tradition shared by FBC communities of depositing ceramic vessels in wells and possibly, draw preliminary conclusions.

Well chronology, including wells with pottery

Unfortunately, only a small portion of the catalogued wells may be placed on a time axis with any greater accuracy by indicating a precise point or a narrow bracket due to limited absolute dates (*fig. 6*). It nevertheless is suggested that well-type features appeared relatively early in the first half of the 4th millennium BC within the following groups: Northern (Kildevang – 3710 BC, *Ravn 2011*), Southern (Mohelnice 3775 BC, *Bakker 1998*, 162) and

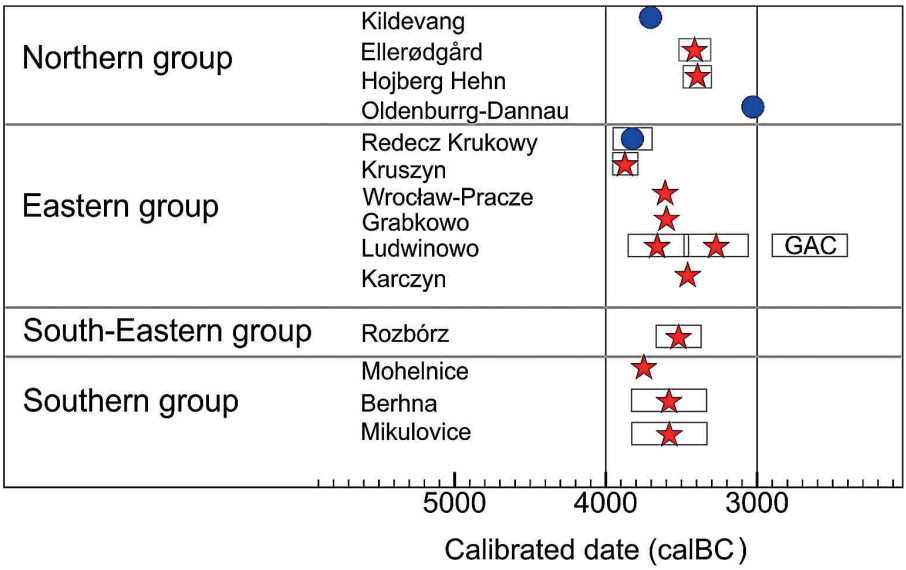

Fig. 6. Approximate chronology of finds from wells and springs of the Funnel Beaker culture. Star – wells and springs with pottery deposits; circle – wells and springs without pottery deposits; rectangles – chronological intervals. After *Bakker 1998*; *Ravn 2011*; *Szmyt 2011*; *Siewiaryn-Mikulska 2012*; *Mazurek – Okoński – Rybicka 2013*; *Bock 2016*; *Papiernik 2017*; *Šmíd 2017*; *Papiernik – Brzejszczak 2018*; *Furmanek et al. 2019*; *Żurkiewicz 2019*.

Eastern (Kruszyn 3980–3790 BC, *Szmyt 2011*, 126; Redecz Krukowy – 3950–3700 BC; *Papiernik – Brzejszczak 2018*, 272; Ludwinowo 3850–3450 BC, *Grygiel 2016*, 996; Grabkowo 3630–3550 BC, *Siewiaryn-Mikulska 2012*, 87). Cautiously, the features from Kildevank, Mohelnice, Kruszyn and Redecz Krukowy can be considered as the oldest wells. These include both wells with pottery deposits and those without. A certain limitation of this line of thinking is the fact that few available dates are from samples collected directly from wells and the determination of the age of the wells must, therefore, rely on the correct interpretation of site chronology.

Well location rules

In the case of the Kildevange well, it has been assumed that no complete vessels or larger vessel forms occurred within its fill. In the other regions, the earliest FBC wells held ceramic deposits – in many cases, very complex ones such as, for instance, the deposit on the Kruszyn site. Although the same region and chronological bracket are represented by the Redecz Krukowy wells, their fills yielded no ceramic deposits. This suggests that in the same region and period, different rules prevailed as to the probably intentional deposition of pottery in wells. Another feature that differentiates the two sites is their location in the landscape. Redecz Krukowy lies on a high, flat plateau while Kruszyn is situated on the edge and slope of a vast valley. It appears that it is such places that are associated in Kuyavia with well locations and not only by the FBC, but also the LPC, BKC, GAC and other much younger ones as well. This opinion is borne out by the situation found on site Ludwinowo 3, where in an area of 855 a, discoveries were made of seven BKC wells, nine FBC wells, two

GAC wells, 30 Przeworsk culture wells, and 10 others dated to the late Middle Ages and modern times. This argues for the existence of extracultural and lasting causes for digging wells in this space. Only the FBC, however, tied these causes to the non-utilitarian practice of depositing pottery within them.

Furthermore, the available pool of information supports yet another study of well location contexts. As regards settlement remains, a conclusion can be drawn that the smallest distance separated dwelling structures from wells on the Kildevang and Redecz Krukowy sites. On the former, the distance did not exceed several metres; this is at least what follows from the very general published site plan. On the latter, the distance was 20 to 40 m. It is worth remembering that both sites belong to the earliest horizon of well emergence and that no pottery deposits were recorded in them. The Kruszyn well, dated to a similar age bracket as the previous sites, is about 200 m from a potential settlement; a similar situation is observed with the Karczyn well (160 m), albeit the data in this case is slightly less reliable. The same layout is imitated by other wells with pottery deposits. It can be cautiously assumed that the FBC's non-utilitarian interest in wells centred solely on features located further away from the zones of everyday activities. However, such a location for wells could also have been necessitated by technical factors: they had to be located in waterlogged areas that are not conducive for building houses (*see* above on digging wells on valley edges and slopes). A major shortcoming of this conclusion is that the scope of excavations of the relevant sites frequently only covered the area of interest for the construction project and therefore may not reflect the actual context of all wells.

Intentional or accidental? Pottery deposits in wells

The finding of complete vessels in wells may be interpreted as the result of (a) an accidental loss of a vessel while drawing water or (b) a purposeful action with a symbolic meaning to it. Below, a review of arguments follows, illustrated by the studied cases of wells presented above.

An argument in favour for the accidental loss of water-drawing vessels in a well may be the fact that mostly amphorae (76 % of vessels from wells) are found in this context in the Polish Lowland. This vessel type is interpreted as a container for transporting water. In a deposit from Biskupin, allegedly an amphora was even found with a preserved piece of cord threaded through its handle presumably for lowering the vessel into the well (*Maciejewski 1962*).

More arguments can be offered against the accidental deposit of pottery in wells, one being that vessel types other than amphorae, such as collared flasks, have also been found in wells. These are believed to be special-purpose vessels (Grabkowo 8, Karczyn 21/22). Moreover, most wells are located outside dwelling areas, as indicated above, and so the discovery of waste materials in their fills may be interpreted as a sign of a special activity held next to a well (e.g., occasional feasts) rather than the gradual accumulation of materials from everyday activities.

None of the above precludes the principal use of wells as water sources. In the case of one of the most spectacular discoveries of this type made in Grabkowo, the practical aspect of the use of water from such a source is incomprehensible. Depositing animal carcasses and human bodies within the well during the building stage must have contaminated the water with putrefactive bacteria, making it fatally dangerous to people who would drink it.

Hence, it must be assumed that the considerable effort of digging an over 4.5-m-long shaft was made only to satisfy the occasional, not daily needs of its builders. The closest discovered analogies to the Grabkowo known to the present author are from the Balatonőszöd site on the Southwestern shore of Lake Balaton, Hungary (*Horváth – Juhász – Köhler 2003*; *Horváth 2014*, 25; *2017*). There, two wells located about 3.5 m apart were dug far from a contemporary Eneolithic settlement of the Balaton-Lasinja culture dated to 4050–3700 BC. At the bottom of each lay a dog skeleton and single vessel. At a later stage of their use related to the Boleraz, Baden, or Kostolac culture (3500–2300 BC), the bodies of ten humans were interred within one of the wells. Many formal similarities and a similar chronological bracket argue in favour of including this feature in the current discussion.

It is to the tradition of southern cultures that earlier analogous well deposits known from Kuyavia refer. The most spectacular instance of the custom of depositing pottery in wells is the discovery made on site Smulsk 2/10, where 21 vessels, including amphorae as well as bowls and cups, were found (*Muzolf – Kittel – Muzolf 2012*, 47). In chronological terms, immediately preceding the rise of the first FBC wells in Kuyavia, BKC features held fewer pottery deposits (Konary, site 1, *Grygiel 2008*, 1182, 1236, fig. 1008, 1010). Moreover, the wells of Early Neolithic communities seem to have been dug in a different settlement context, being a kind of a communal, universally shared fixture placed in a central empty (i.e., not occupied by houses) space. From a pan-European perspective, the oldest FBC wells with pottery deposits mentioned in this article are found in the areas that had been settled by earlier LPC and Lengyel-Polgár populations.

Well context and FBC water-bog deposits

Danube cultures certainly cannot be linked to the tradition of depositing pottery and other goods in aquatic environments other than wells in FBC settlements. The intensity of the practice and chronological markers unambiguously trace the origins of this tradition to the Southwestern shores of the Baltic Sea coextensive with the range of the FBC Northern group. It is there that the tradition was preceded by a similar practice observed in Ertebølle culture deposits. It is also to this community that the basic vessel form – funnel beaker – is traced, which defines the material picture of the culture under investigation (*Nowak, M. 2017*, 148).

A collation of data for the purpose of detailed processing of bog deposits from Denmark (*Koch 1998*) and that made in this article bring to light important differences in their character (*tab. 1*).

It can therefore be assumed that the domination of beakers among Danish deposits and amphorae among Polish ones is not accidental. Both vessel types had different functions. Beakers were used for cooking or storing food while amphorae were designed to carry water (*Henrickson – McDonald 1983*). These vessel functions are borne out by the recent studies of lipids from funnel beakers that formed parts of bog deposits in Denmark (*Robson et al. 2021*). With respect to artefacts from modern Poland, such studies are less advanced. However, the examination of a small sample of vessels from an FBC settlement in the Polish Lowland also revealed the presence of animal fats on the only examined amphora from that site. In turn, a series of 12 examined funnel beakers has revealed the presence of lipids characteristic of ruminant dairy fat (*Roffet-Salque – Evershed 2015*). What this data show is the need to intensify analyses that can reveal the functions of particular vessel

	Collard flask	Beaker	Amphora	Jug	Bowl	Total
Water-bog deposits in Poland		11	26	2		39
		28%	67%	5%		100%
Wells deposits in Poland	4	13	55			72
	6%	18%	76%	0%		100%
Water-bog and wells deposits in Poland sum	4	24	81	2	0	111
	4%	22%	73%	2%	0%	100%
Water-bog deposits in Denmark	9	258	36		21	324
	3%	80%	11%	0%	6%	100%

Tab. 1. Wells, springs and bog deposits of the Funnel Beaker culture. Comparison of the two main regions of distribution: Denmark and Poland. After *Woźny 1996*; *Koch 1998*; *Żurkiewicz 2019*.

forms in local FBC communities. It does not, however, support any general conclusions at present.

It can therefore be summarised that deposits from Northern and Eastern FBC groups share similar locations, with bog finds dominating, the custom of depositing vessels with clear traces of use, damage, and repair, and the rare practice of depositing vessels together with stone and flint tools – especially ones showing no traces of use. This may suggest that it was not the vessels themselves that were the key elements of these rituals, but rather their content or symbolic meaning, origin, or history. This intangible information is, however, inaccessible to us today.

In the FBC Eastern group, similar properties are shared also by vessels extracted from wells. Hence such deposits ought to be included in the current discussion.

The discussion of the question of the origin and significance of pottery deposits in the FBC inevitably drifts towards the subject of the origins of this culture. It was no doubt a very complex process, the first stages of which have now been recorded along the South-western shores of the Baltic Sea within the Northern group. It could have been there that the first forms of ceramic markers of a new social group – funnel beakers – emerged via evolution from earlier Late Mesolithic/Early Neolithic cultures. However, this picture of the FBC would still be incomplete and, as shown by data from many regions, it began to take shape thanks to very intensive contacts between the north and south along the cultural frontier – between the descendants of Mesolithic communities and the first Neolithic farmers (*Midgley 2005*, 12, 79–81). In Kuyavia, to the close relations between both communities testify the following facts: the impact of long houses seen in the megalithic barrows built there, population continuity as shown by DNA tests, series of chronometric data (*Fernandes et al. 2018*) and, possibly, 'aquatic' rituals carried out on settlement edges, being an aspect of the occasional life of Early Beaker communities. This discussion, however, goes beyond the scope of this paper.

Conclusion

The hypothesis that wells are not just utilitarian objects, but have other, deeper meaning for Neolithic communities, may be confirmed in several presented cases. Most of the FBC

wells in Central Poland that contained ceramic deposits were located outside settlement zones. Many undamaged vessels were found in the wells (the largest set of 32 vessels). Animal bones were also found in some of the wells, as were the whole skeletons of animals and humans in one case.

Well design is familiar to all local FBC groups, but the deposition of vessels within wells was not equally common across this oecumene. The largest number of well finds is recorded in the Northern (11 wells) and Eastern (9 wells) groups. The remaining regions contain fewer finds of wells (from 1 to 3 finds). However, in the largest concentration of wells and springs in the Northern FBC group, these facilities are not commonly used for depositing whole vessels. Only two water sources in this group were places where whole vessels were deliberately deposited. In the Eastern FBC group, 20 wells were discovered, of which 12 contained deposits of vessels. This speaks for the high frequency of this custom in central Poland. Within the range of the European FBC, there is one time horizon, around the first half of the 4th millennium BC, with which most ceramic deposits in wells can be associated.

In Kuyavia, the earliest wells appear with LPC communities. In Early Neolithic wells in Kuyavia, ceramic vessels found in their entirety or almost in their entirety (in quantities from 3 to 21 pieces) can be noted. The practice of depositing vessels in wells does not seem to have continued among the younger BKC communities. In Kuyavia, 14 wells associated with the BKC settlement are known so far, only one of which contained an intact vessel. Also, this habit does not seem to be continued by the younger GAC community that followed FBC. Only three GAC wells were recorded in Central Poland, and no complete vessels were found within them.

Deposits of vessels in wells are also associated with similar deposits in natural bogs, rivers, and lakes. A large concentration of these finds occurs in Poland. Interestingly, although bog deposits are most numerous in the Northern FBC group, large concentrations of these finds in Denmark or northern Germany are not associated with wells or ceramic vessels deposited within them. The difference in the types of vessels deposited in water is also striking: in Denmark, most of them are beakers, while in Poland, amphorae definitely dominate.

This discussion outlined here does not pursue all the possible interpretations of the phenomenon of vessels deposited in FBC wells. The principal interpretation method should obviously be one that considers each find individually and attempts to place it in the local cultural landscape. Nor does it take up the questions of the potentially interesting social and symbolic aspects of pottery itself. Beliefs related to aquatic rituals could have been an element of the worldview of both Mesolithic cultural groups and early Neolithic farmers in northern Europe. A broader interpretation of the presented finds might be able to draw the boundaries of a common semantic field of a 'rapprochement' between the two different worlds of the north and south, and in so doing, make use of the abundant sources documenting it that are found in Kuyavia.

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