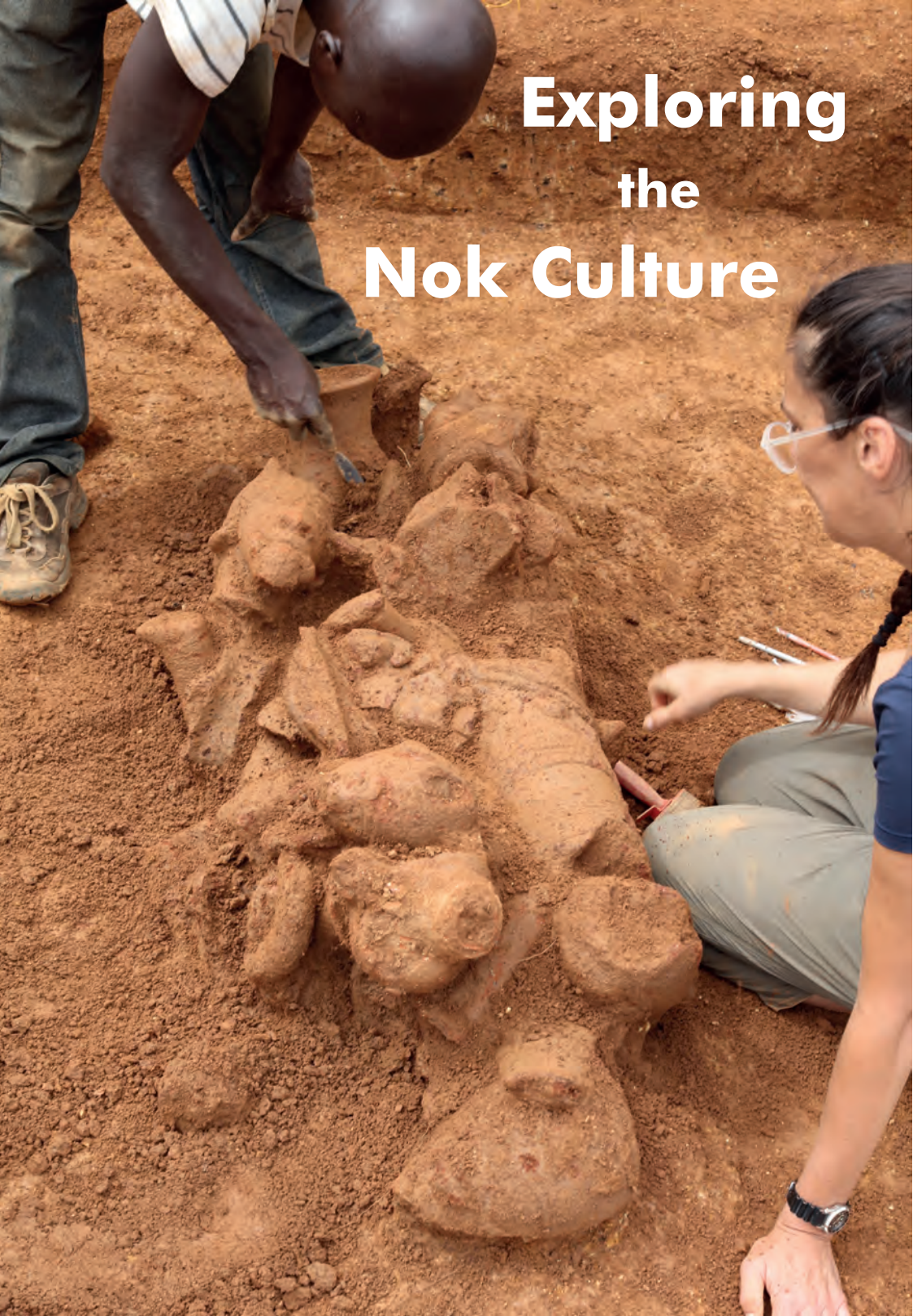

Exploring the Nok Culture

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Joint Research Project of

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A Successful Collaboration

Anyone interested in West Africa's – and particularly Nigeria's – prehistory will eventually hear about the Nok Culture. Its artful burnt-clay (terracotta) sculptures make it one of Africa's best known ancient cultures. The Nok sculptures are among the oldest in sub-Saharan Africa and represent the origins of the West African tradition of portraying people and animals. This brochure is a summary of what we know about the Nok Culture and how we know what we know.

Much of what we know comes from two institutions: the Goethe University at Frankfurt/Main in Germany, and the National Commission for Museums and Monuments (NCMM) in Nigeria. Their successful collaboration began a long time before the Nok Project. From the early 1990s until 2002, scientists from both institutions collaborated with archaeologists from Maiduguri University, working in north-eastern Nigeria's Chad Basin. An interdisciplinary project there researched the cultural development of the last 4000 years. One of the project's discoveries was the Gajiganna Culture: the earliest farming culture in Northeast Nigeria. It existed from *ca.* 1800 BCE to 500 BCE and was named after the site where the first finds were made (Breunig 2005). Then, at the end of the Gajiganna Culture, larger settlements, some fortified, suddenly begin to appear (Magnavita et al. 2006). Another significant find was an 8000-year-old dugout canoe discovered near the town of Dufuna – the so far oldest watercraft in Africa (Breunig 1996).

The NCMM and Goethe University continued their successful collaboration for field research on the Nok Culture in central Nigeria. Starting in 2005, NCMM has ever since taken care of administrative matters and arranged the participation of their archaeological experts which became valuable members of the project's team. More recently, archaeologists from Ahmadu Bello University in Zaria and Jos University joined the team. Together, the Nigerian and German archaeologists completed difficult work to gain information on this ancient culture and salvage its sites and material remains. Owing to the more than ten years of intensive research, the results of the joint project are now considered in professional circles a prime example of successful long-term international cooperation.

The Discovery Of The Nok Culture

But what does "Nok Culture" actually mean? The Nok Culture is a scientific construct, named by British archaeologist Bernard Fagg in the mid-20th century. Today, archaeologists avoid calling prehistoric entities "cultures," but when Fagg first looked at the characteristic terracotta sculptures, he was struck by their expressive style and their surmised importance for the society that created them. They were found accidentally, mostly in British colonial tin mines in the wider Nok-Jemaa region, in central Nigeria (Fig. 1) and depict people and occasionally animals, featuring clear stylistic similarities (Fagg 1977). From

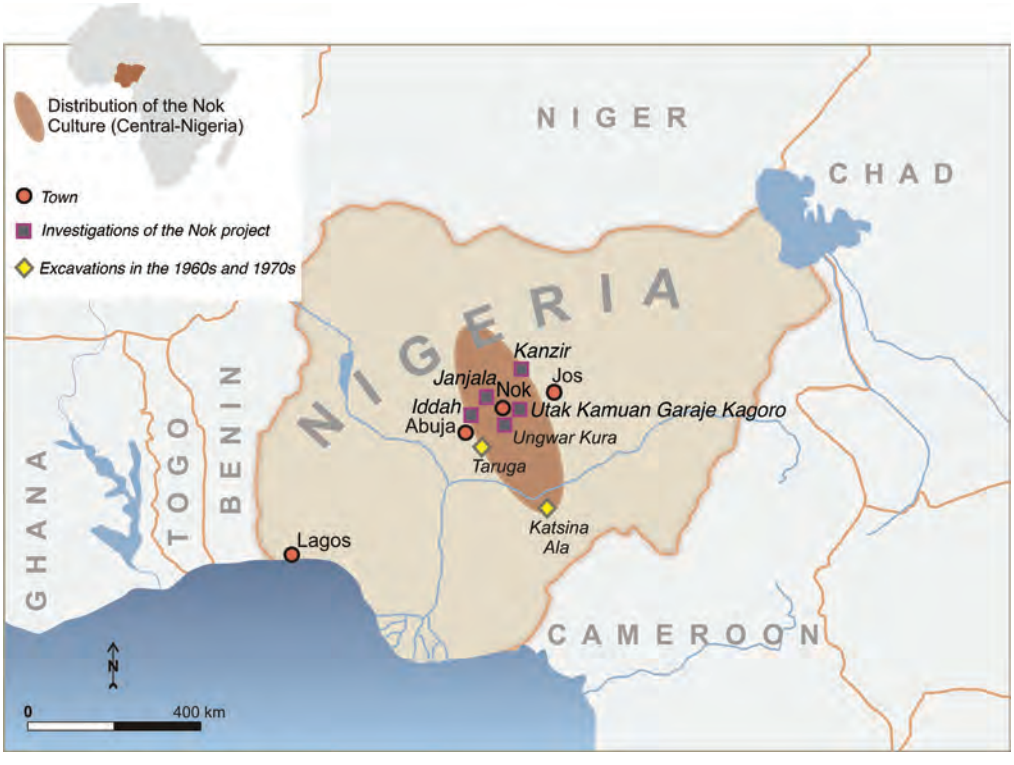


Fig. 1. Map showing the hypothetical expansion of the Nok Culture, with sites and towns mentioned in the text. For details in the Janjala area, see Fig. 17.

this, Fagg concluded that if complex sculptures were made in the same style and most likely for the same purpose, the people who made them must have been similar in other respects as well: living according to the same social rules, or sharing a joint view of the world, which could be considered the core of a "culture." At the beginning, however, Fagg did not have much more evidence than the clay sculptures. Then, in the 1960s, he discovered iron-smelting remains in the form of furnaces at the site of Taruga – possibly among the earliest iron-smelting in Africa (Fagg 1968). From today's point of view, iron-smelting and sculptures are not enough to define an archaeological culture, because there are too many

Fig. 2. Overlooking Nok village (picture taken in 2005).

unknown aspects: How did people settle? What did they eat? Were they hunter-gatherers or sedentary farmers? In what environment did they live? What did they do with their dead? Where did they come from, and what happened to them? Fagg had no answers to these questions, but examined the artful terracotta sculptures and concluded – understandably – that art and culture had to be closely connected.

So why "Nok"? The Nok Culture is named after the small village of Nok, situated about 70 km north-east of the capital city of Abuja in central Nigeria (Figs. 1 & 2). The first terracotta sculptures were found in the tin mines in its vicinity. Today, a National Museum, administered by NCMM, displays Nok and other regional cultural materials. But the Nok Culture did not originate in Nok; Bernard Fagg was just following common archaeological naming practice, which names finds after the place of their first discovery. No one knows where the Nok Culture actually originated. It is very likely that it did not happen in a single place, but that people, spread out across a larger region in central Nigeria, were in contact through relationships, trade, and traditions. They therefore probably had similar everyday objects, religious practices, and a sense of shared cultural community.

From the very beginning, Bernard Fagg – who gave Nigeria its first National Museum, founded in Jos in 1952, and later became Director of the Nigerian Federal Department of Antiquities – was interested in knowing the age of the Nok

Culture. At the time, newly developed physical dating methods suggested a time between 500 BCE and 200 CE (Fagg 1962). This must have surprised Fagg a great deal, because his discovery was a sensation: the Nok Culture became the earliest tradition of large sculptures in sub-Saharan Africa. The only place where older sculptural art was known was Egypt.

The second phase of Nok studies began after Bernard Fagg had returned to England. Several other archaeologists continued the research on the Nok Culture and its mysterious sculptures: Angela Fagg Rackham – Bernard Fagg's daughter and an archaeologist herself – continued her father's research and in 1970 excavated Samun Dukiya, a settlement site near Nok (A. Fagg 1972). This was a big step forward, because settlements contain finds in primary position, *i.e.* in places where people actually used and left them. This was not the case for the first terracotta sculptures that had been unearthed in the tin mines during Bernard Fagg's time. The sculptures from the mines got to their position by erosion, which meant that information about their usual context with other finds in the ground was missing.

Fig. 3. Heading for the Nok site of Kochio (picture taken in 2006).

Joseph Jemkur of the University of Jos became the local expert on the Nok Culture. He was the one who discovered that Nok sculptures were apparently re-used in more recent times as magical grave offerings (Jemkur 1992). Robert Soper made a different contribution: during an excavation at Katsina Ala, he discovered terracotta sculptures in the Nok style – sadly, no publication has been made, so that we still have very few details. Katsina Ala lies south of Benue River and to this date is the southernmost and only Nok site in this region. This suggested that the Nok Culture was spread out across most of central Nigeria, since the distance between the southernmost and northernmost find spots is a full 600 km (Fig. 1). Further finds, however, are needed to confirm whether the Nok Culture did in fact reach so far south.

These facets were more or less all the new knowledge that emerged about the Nok Culture during the second research phase, but developments in another area were far more active: art collectors discovered the Nok sculptures. Their expressive style and their place at the root of the African sculptural tradition put them in international demand. Business people began to organise non-scientific digs which are illegal under Nigerian law. To this date, they illegally retrieve and export the looted items to Europe, Asia and America. Nigeria's cultural heritage has been irreparably damaged, and archaeology nearly missed its chance to salvage this unique archaeological complex which is a part of Africa's prehistoric past. Since then, the NCMM has been implementing several programmes to limit the destruction (Hambolu 2014).

2005 – New Research

In 2005, a new phase of research into the Nok Culture began. The National Commission for Museums and Monuments in Abuja, Nigeria, and German archaeologists from Goethe University of Frankfurt/Main agreed to collaborate on a joint project funded by the Deutsche Forschungsgemeinschaft (German Research Foundation, or DFG). This "Nok Project" would study the Nok Culture for three reasons:

- Experts consider the Nok Culture an unparalleled archaeological phenomenon in Africa.

- Despite its significance, there was very little knowledge about the Nok Culture: almost all that was known was that about 2000 years ago, a group of people produced artful clay figures and iron. Archaeological research hoped to uncover more facts about the Nok Culture.

- The booming trade in sculptures and organised looting suggested that the remnants of the Nok Culture would be completely destroyed if archaeology did not attempt to salvage the knowledge about the sites and finds in their original context.

Finds in the ground are the only way archaeology has of understanding the time before writing. The first step, therefore, was for researchers to find Nok sites – a difficult task in the dense brush, fields, and trees of Nigeria's landscapes. There was no sure way of knowing where the sites would be. Nor was there any

Fig. 4. Nok site destroyed by looting (picture taken in 2006).

certain way of identifying whether a site belonged to the Nok Culture. Ceramic pots are usually the best method of identifying archaeological cultures, but hardly any Nok pots were known. The tin mines of Bernard Fagg's time had been shut down, and officials got no word of the discovery of new sites. Locals led long expeditions to places rich in ancestral tradition, but these places around the village of Nok were not generally connected to the Nok Culture in any way. Apparently, many people understood "Nok Culture" to mean any past community, not the fixed, ancient group with a specific set of characteristic markers. It turned out that the looters were the only ones who truly knew where to dig for Nok finds, so the only way to discover a site was to make contact with them. Some were happy to show places where they had found artefacts – even if the way sometimes was arduous (Fig. 3).

Successful looting for terracotta sculptures generally leaves countless holes in the ground where looters have searched for the figures. Since the holes are not closed up, they often remain visible as "dents" in the ground (Fig. 4), with untouched areas in between. Using archaeological methods, we started to systematically excavate these untouched areas. An archaeological excavation involves tracking and recording where exactly something is discovered in the ground. The goal is not finding individual objects – like looters hope to – but to understand the context in which all finds lie. Ideally, this context makes it possible to reconstruct what happened at the site, which is what archaeology wants to find out. In the case of the Nok Culture, one of the primary questions is what the many artful terracotta figures were used for. The sculpture, alone and outside the ground, cannot answer this question. The

Fig. 5. The Nok Project's first scientifically documented Nok find, near Iddah (picture taken in 2005).

answer can only come from the context of the sculpture and other finds.

The Nok Project got off to a good start: Umaru Yusuf Potiskum, whose father worked with Bernard Fagg, was familiar with the trade in sculptures and showed us numerous Nok sites in the south of Kaduna State. All had been partially destroyed by looting, but their location helped us understand the types of places the Nok Culture preferred. In addition, there were often broken fragments of Nok terracotta near the holes caused by looting, as well as potsherds, grindstones, and even stone axes. These were worthless to the looters, since they could not be sold, but they were our first contact with original finds. The first full excavation of the Nok Project took place at a site near the village of Iddah, half an hour north of Abuja, in-between looting holes. About half a metre below the surface we discovered our first finds in context, including part of the head of a human sculpture (Fig. 5) – the first scientifically documented Nok find since Bernard Fagg's pioneering work and that of others in the 20th century (Rupp et al. 2005).

2006 – New Findings

The village of Janjala lies approximately 50 km northwest of Nok in the Kagarko Local Government district (Fig. 1). Here in 2006, Umaru Yusuf Potiskum showed us several places where looters had been active. Again, we excavated around the holes from looting, and discovered new and previously unknown finds and context. At a site named after the village of Janjala, we excavated half of a terracotta head of a human figure, lying on several football-sized stones. This pattern (a Nok terracotta sculpture, buried or laid in the ground with large stones) repeated throughout our digs, and it eventually helped us understand what the sculptures might have been used for.

In a different excavation unit at the same site, we discovered three parts of another terracotta sculpture a few centimetres beneath the surface. The pieces fit together and became a statue of a woman, 42 cm in height (Fig. 6). But even this statue was not whole: because of how we found them, we knew that the parts had to have been broken before they were put in the ground. This revealed a new insight which has been confirmed many times since: no Nok sculpture survived intact; all were broken before they were put in the ground. This "fragmentation" is not specific to the Nok

Fig. 6. The only complete Nok sculpture so far found by the Nok Project. Buried broken into three pieces, excavated 2006 near Janjala. Height: 42 cm.

Culture – many other prehistoric cultures who made sculptures, statues, or idols broke these objects. Many researchers connect this with rituals in which the statue is supposed to be broken. But then how do we explain the intact sculptures in the art market? In the beginning, we thought we might simply be looking in the wrong places or with the wrong methods. But since no scientific excavation has ever found and documented an intact Nok sculpture, we are now increasingly certain that the sculptures on the art market were completed after excavation or are forgeries.

At another site, named Akura, we found our first Nok iron object: a small axe, too small to be used efficiently (Fig. 7). Much more iron has not been found to date. One reason is that iron must have been incredibly valuable in the beginning: it was a malleable substance which did not naturally occur in nature but had to be produced with specialist knowledge and a great deal of work, probably in only small quantities. We do not know what else – aside from the axe and a ring discovered later at the Ungwar Kura site – was made from iron, but we suspect that everyday items were rare. Instead of knives, hoes

Fig. 7. Iron artefacts from the Nok Culture: a small axe (top, Akura site, excavated 2006) and an iron ring (bottom, Ungwar Kura site, excavated 2007). Nok iron finds are extremely rare.

Fig. 8. A vessel with a face in the typical Nok style, excavated 2006 at the Janruwa A site. Height: 17 cm.

and axes, iron may have been used for jewellery and status symbols. If the Nok sculptures are accurate images of reality, then the people of the time loved to wear necklaces and bracelets. Some of this jewellery, such as bracelets and anklets, could have been made from iron. But whatever its use, the high value of iron meant that iron objects were recycled until they ended as rust. Again, the Nok Culture was no exception: in many prehistoric cultures which worked with metal, iron finds are rare. Most of them come from graves; items that are not protected by being buried in the ground rust and fall apart after several years. This happens particularly quickly in Africa, because the soil tends to be very acidic.

At Janruwa, another site near Janjala, we discovered stone beads. One bead was neatly placed next to another, indicating that an entire necklace had been buried. Next to the former necklace we found broken terracotta sculptures. In another excavation unit at the same site, we recovered a complete ceramic vessel decorated with an incised face in the Nok style (Fig. 8), with typical triangular/semi-circular eyes. In this early stage of the project we had not yet excavated larger areas but only done small 2 x 2 m test digs between the looting holes. Because of these limited sources and the lack of context, the finds from these digs were single observations we could not really explain. At a different site, for example, we could not determine the significance of a grindstone and the ceramic vessel next to it. However, in the second year of the project, we already knew three sites around the village of Janjala, which was a success. In the following two years, the project continued its work further east.

2007 – The Hyena's Place

The first site we excavated further east was Ungwar Kura – or "the Hyena's Place". It is near the city of Kwoi in the midst of a surreal landscape of steep inselbergs. It is also relatively close to the village of Nok, which is approximately 6 km north-east of Kwoi (Fig. 1). Looters had discovered a Nok site on two neighbouring hilltops between inselbergs, but the inhabitants of Ungwar Kura, to whom the land belonged, stopped the digging in their fields, so that the destruction was almost completely prevented. After having gotten permission to work there, we could conduct our first large-scale scientific excavation in a nearly undisturbed site, instead of having to search between the looters' holes.

We opened more than a dozen 5 x 5 m trenches, systematically spread out over the entire site, and found large numbers of fragments of broken ceramic pots, numerous stone tools (mostly grindstones and ground stone axes) and, aside from an iron ring (Fig. 7) too small to fit over a child's hand as a bracelet, a lot of small, rusted pieces of iron which could not be identified. There were also many fragments of terracotta sculptures. The fact that terracotta fragments were always found at Nok sites together with potsherds and stone artefacts had already puzzled us in previous excavations. The large number of sculpture fragments at Ungwar Kura showed beyond a doubt that these objects are omnipresent at Nok sites. There was almost no single square metre that did not contain terracotta parts. Most often, they were accumulated in pits or holes dug by the Nok-era inhabitants. The purpose of these pits is not clear.

Fig. 9. A pit filled with rocks and terracotta fragments at the Ungwar Kura site. The double-headed lizard shown in Fig. 10 was discovered in the pit as well. Excavated 2007.

The best explanation is that they were created to get clay for daubing the wattle walls of reed huts: at many places on the Ungwar Kura site, we discovered bits of this substance, known as “daub”, and they are found at most other Nok sites as well. Some pits were lined or filled with small stones, which suggests a different purpose. All, however, accumulated trash, and the trash was better preserved there than elsewhere (Fig. 9). The many broken Nok sculptures were apparently part of this trash.

One special find is a double-headed lizard, whose thick body is resting on an upturned bowl (Fig. 10). One of its two heads is missing, but a little remnant of the eye shows where it would have been. The lizard was found in a pit together with other large pieces of broken sculpture, as if the pit were a place to throw away disused terracotta.

Our over 400 m^2 of excavation in Ungwar Kura yielded new knowledge about the Nok Culture, the most important being the characteristics of Nok sites. For the first time, we had a context for a large segment of objects left behind by the people of the Nok Culture. The large number of potsherds and grindstones suggested that the place was a settlement, but we did not find any remnants of houses, fireplaces, or furnaces, which would have given clues about how the settlement was organised.

Fig. 10. Double-headed lizard, excavated 2007 at the Ungwar Kura site. Height: 37 cm.

Fig. 11. One of several finds of piles of broken Nok terracotta sculptures at the Utak Kamuan Garaje Kagoro site, excavated 2008. The large human head lies face down on top of the pile. To its right is the large shell-decorated body fragment.

2008 – Utak Kamuan Garaje Kagoro

Every excavation yielded new knowledge of the Nok Culture, but one excavation in 2008 stands out. It started with the burial of a woman in Utak Kamuan Garaje Kagoro. The village is on the eastern edge of the town of Kafanchan, not far from the Kagoro Hills in the west of the Jos Plateau. When relatives of the deceased woman began digging a grave in their yard, they discovered large fragments of Nok terracotta sculptures. Unfortunately, they were sold quickly, and our project did not receive permission to excavate and look for further clues. But one local inhabitant told us that on one of the roads in the village, he had seen something sticking

The large numbers of broken terracotta sculptures were equally mysterious. Either the place was no settlement, or the Nok Culture surrounded itself with countless statues, only to ignore and discard them later on. Why? We had made progress not because we had the answers to such questions, but because for the first time we were able to ask them precisely.

out of the ground that looked like the clay the terracotta sculptures were made of. Since we were already in the town, we took a closer look. Shortly after the start of the excavation, we were able to identify the clay object as the head of a large human terracotta sculpture lying face down in the ground. The traffic on the road had eroded the head so much that everything above the forehead was gone. Further fragments appeared, including a large body fragment decorated with several seashells made from clay. After several hours, we had reached a depth of almost one metre and unearthed an impressive amount of terracotta fragments and rocks in between them (Fig. 11). This was nothing new in itself, but the quantity and density were beyond what the Nok Project had seen so far.

Approximately two metres next to our first find, several rocks protruded from the ground. We expanded our excavation and discovered another heap of rocks and terracotta. After several more such expansions, we had discovered seven heaps in regular distance to one another across the site (Fig. 12). The terracotta fragments, it turned out, were not from a single sculpture but from several; however, we could complete none of them. Some of the fragments ended up in the ground, where we found them; but what happened with the rest of the fragments remains a mystery. What did this systematic burial of some (but not all!) pieces of apparently purposely destroyed sculptures mean? The site looked like a cemetery for terracotta sculptures. It might have been a real cemetery, but if so, where were the

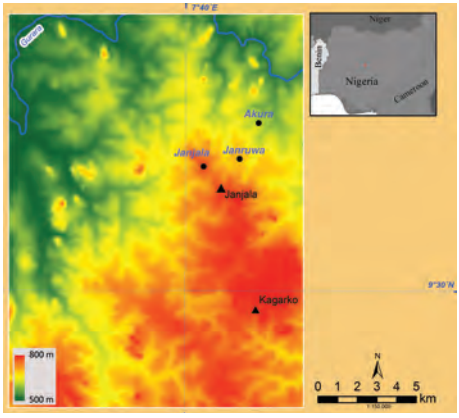
Fig. 12. Utak Kamuan Garaje Kagoro. View of the excavation area with seven heaps of broken Nok sculptures.

skeletons? Despite the new questions opened up by the Utak Kamuan Garaje Kagoro site, these contexts showed conclusively for the first time that the terracotta sculpture fragments did not simply wind up as trash accidentally, as might be deduced from the Ungwar Kura site, but that they were purposely and systematically buried. This strengthened the argument that the Nok sculptures did not have a primarily decorative or practical value, but were instead part of complex rituals (Rupp 2014a).

2009 – A New Research Phase Begins

In its first four years (2005-2008) the Nok Project had shown that there were enough Nok artefacts in central Nigerian soil to thoroughly study this important archaeological complex. As a consequence, the German Research Foundation decided to fund the collaboration for a further 12 years as a long-term project (Breunig 2009; Breunig & Rupp 2010; Rupp 2010). The first step was selecting a primary research area, since moving from site to site within the large expanse of the Nok Culture was inefficient and logistically difficult. An expanse of approximately 300 km^2 between Kagarko in the south and the Gurara River in the north was defined as key study area (Fig. 13). Since the village of Janjala was roughly in the middle of this area, the Project used it as a central base. The region itself was selected mostly because several sites within the area were already known. In addition, early on in the new phase of the project, the inhabitants of Janjala showed us several other sites. None of the areas we had visited had showed as high a density of known Nok sites, which suggested that we might be close to the centre of the Nok Culture. Cultural phenomena tend to have a centre and become less concentrated out towards the edges. If the Nok Culture was the same way, its centre – so our hypothesis – would not have been far from the area we were going to systematically explore.

Fig. 13. Map of the key study area between the town of Kagarko and the Gurara River, showing the Nok sites around the research station at Janjala known before 2009.



So far, we had lived in tents during our excavations. Because this was not possible in the long term, the second step involved building a research station. Houses in a walled-off, secured compound, access to ground water, and a generator for electricity meant that researchers could focus all their attention on their work. The community of Janjala provided the land, and the construction company Julius Berger Nigeria PLC supported the construction and many other logistical challenges. Construction was completed in

Fig. 14.a) Janjala research station. Top: ground level view of living quarters; bottom: aerial view of the station (picture taken in 2013).

Fig. 14.b) Janjala research station's field laboratory.

2010, and what had been a plot of brush-covered land at the edge of the village was now a handsome facility including huts, storage rooms, and a large, covered field laboratory for analysing the excavated finds (Fig. 14a & b).

Chronology

The research plan changed in important ways as well. So far, research had been more or less guided by chance, but the long-term funding allowed us to subdivide the project into phases and themes. The first phase centred on chronology. How old was the Nok Culture really, and how had it developed? Several dates from our previous excavations did not agree with Bernard Fagg's age estimate of over 50 years ago. Some dates were older than the start point he had given as 500 BCE. And none of them, on the other hand, fell within the supposed end period of the Nok Culture: the first and second century CE. To better understand the age of the Nok Culture, we conducted a number of smaller excavations to recover organic samples, mostly charred plant remains. These are often found in excavations, because wherever humans spend enough time, they make fires for cooking and for warmth. Charcoal and sometimes bits of charred food are left behind and can later be extracted from the sediments by using special techniques (Fig. 15). Charred plant matter is made of carbon, and one of its isotopes (C14, meaning carbon with an atomic mass of 14) is radioactive. Its decay occurs at a known speed that can be used to determine the age of a sample. Over 200 samples of charcoal and charred plant seeds from

Fig. 15. Charcoal, washed and extracted from the archaeological sediments of a Nok site.

Nok Culture sites have been dated by this radiocarbon method, indicating the age of the sites from where we recovered the organic material. We have used these ages to derive a new chronology of the Nok Culture (Franke 2016) (Fig. 16).

Let's look at the beginning first: Bernard Fagg thought the Nok Culture started around 500 BCE. We now know that the beginning is actually 1000 years earlier, around 1500 BCE. From today's point of view, this may not seem like much, but it means that the Nok Culture has moved from one age to the other – from the early Iron Age into the final Stone Age. The roots of the Nok Culture are thus in a completely different world than previously thought. The Nok Culture's beginnings reach back to a time when deep social and economic changes began. Only hunters and gatherers had lived in sub-Saharan Africa until sedentary communities organised in villages began to appear in the third and second millennium BCE. Their way of subsistence in the form of food production was completely different than that of hunger-gatherers. The new date for its beginnings makes the Nok Culture the central-Nigerian example of these changes.

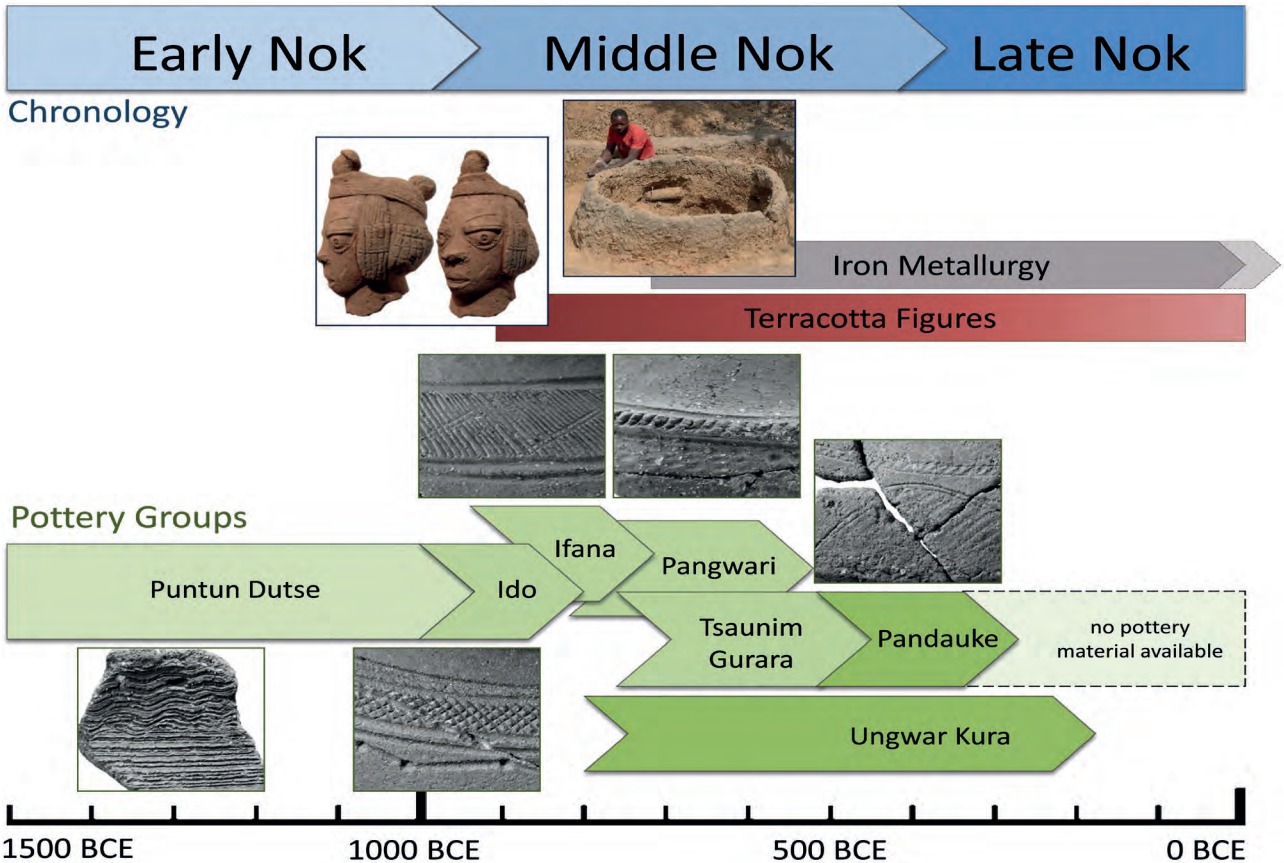


Fig. 16. Chronology of the Nok Culture (Franke 2017).

In addition to the charcoal, we were also purposely searching for ceramic potsherds, particularly ones with decorations. Not only in the Nok Culture, but in all prehistoric cultures who produce ceramics, these decorations change over time. For this reason, in archaeology, ceramics are the best method of subdividing the development of a culture into phases. There is also an additional factor: if two styles of decoration are similar, then its producers were likely in contact. There are so many possible decorations that similarities are rarely coincidental. Instead, they are the signs of a tradition which humans adhere to in order to express their commonality and identity. Pottery can thus be used as a tool to recognise or define past communities of people. That is why today we no longer define the Nok Culture as a complex with typical terracotta sculptures, but as a tradition with certain ceramic vessels. Analysing many thousands of potsherds from these vessels has led to a division of the Nok tradition into seven pottery groups which existed throughout the Nok Culture's time (Franke 2017). Together with the radiocarbon dates, we were able to convert this into a chronology of the Nok Culture with an early, middle, and late period (Fig. 16).

The earliest period (Early Nok), already mentioned above, lasted from 1500 BCE to 900 BCE and is defined by pottery decorated with finely incised or impressed straight or wavy patterns covering most of the pots' surface. The Nok Culture's "Big Bang", so to speak, happened unexpectedly, as if out of nothing. So far we have not discovered a single site that could be seen as a precursor. In the key study area around Janjala, there is virtually no evidence of human habitation prior to the time of the Nok Culture. In such cases, archaeologists conclude that people immigrated to the area. The people of the Nok Culture must have come from somewhere else. So far, however, we have not found out what region, though we suspect the Sahel zone in West Africa – fairly far away from the known extent of the Nok Culture.

The Nok Culture reached its high point in the middle period (Middle Nok), lasting from around 900 BCE to about 400 BCE. Most known sites date from this period. The pottery decorations are limited to an incised or impressed band up to 5 cm in width. Only now, after the people of the Nok Culture had lived in the region for several centuries, do we see the first terracotta sculptures, the Nok Culture's key feature. The production of iron followed somewhat later. Until now, the Nok Culture had been considered part of the early Iron Age. We now know that this is only partly true, because the ceramic record shows that it existed long before the development of iron metallurgy.

The time which Bernard Fagg considered the beginning of the Nok Culture was in fact already the beginning of its end (Late Nok). We conclude this primarily from the reduction in settlement density. Only very few Nok sites are known from the last four centuries BCE. Cultural changes must have occurred, because the terracotta sculptures (and the rituals associated with them) do not appear as frequently at these sites. Even the patterns of pottery decoration look like a collapse: the formerly rigid rules of the decorations are gone. Around the turn of the Common Era, signs disappear entirely,

and the Nok Culture has left the world stage. The pottery decoration we find now is so radically different from Nok pottery that it is easy to tell apart. This poses the question of whether a new group of people immigrated or the Nok Culture underwent a fundamental change – but answering that question would require its own research project.

Settlement Patterns

Developing a chronology of the Nok Culture required excavations on many different Nok sites. This was made possible by the inhabitants of Janjala. Early on, we might have been seen as rivals, looking for Nok terracotta sculptures in the ground – just like many locals, but with methods and modern technology. But by participating in the excavations, they saw that "worthless" things such as charcoal, potsherds, and stone tools were just as interesting to us as Nok sculptures. We were not trying to do business with sculptures, as several people in Janjala had been for years. They had excavated numerous places in their area and thus knew many Nok sites, which they now started to show to the Nok Project.

What we found was shocking. The extent of destruction due to looting was far worse than we could have imagined. But it was still possible to gain two pieces of scientific knowledge from the wild search for terracotta sculptures. One such piece was the density of past settlement: after a short time, our map of the key study area was covered in points where Nok Culture objects had been found (Fig. 17). We had initially chosen the area because of the handful of known sites that we already had considered a high settlement density, but what we found was an unexpectedly higher density. The Nok Culture seemed to have been everywhere across the region. There was hardly a square kilometre where there had not been a Nok site at some point; the density seemed almost higher than it is today. The downside of this discovery was that all those sites had already been destroyed by looting.

The other piece of knowledge we gained concerned the size of the sites. Because looters only dig where they find what they are looking for and stop when they no longer find anything, the distribution of looting holes allowed us to estimate how large Nok sites were. Following this estimate, the people of the Nok Culture did not live together in several larger villages or cities, but instead lived together in many small farm- and homesteads. We only rarely discovered looted areas which were larger than 100 m in diameter. The people of the Nok Culture were certainly not less social than we are, but their most efficient economic and social organization was apparently when family units lived together in small homesteads. Current research is trying to determine the criteria according to which the places for these homesteads were selected. Many factors can play a role here: closeness to water, the quality of the soil, the topography, or perhaps even just the view. Such questions and their answers bring us closer to the people of the Nok Culture; they are no longer mysterious figures of whom we know nothing other than that they needed terracotta sculptures for some purpose. Instead, they become real people who lived their lives according to criteria that are becoming more and more specific. One of these criteria is food.

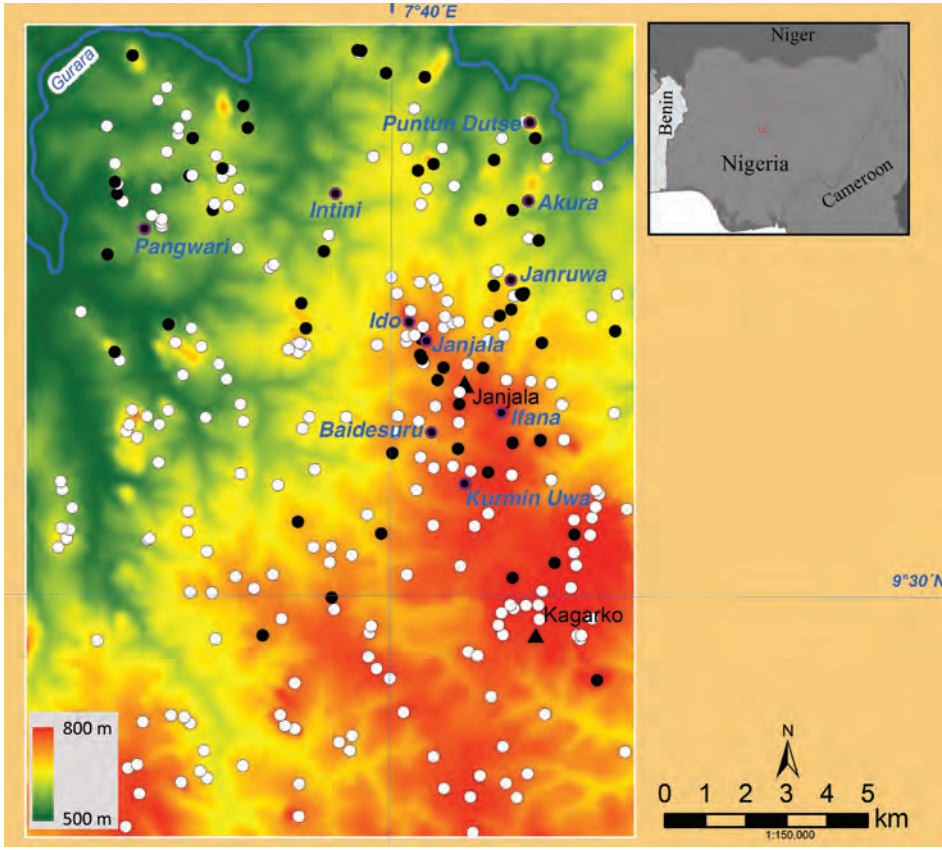


Fig. 17. Map of the Nok Project's key study area showing all recorded Nok sites (as of 2016). Excavated sites are marked with black dots, and sites mentioned in the text are highlighted.

Diet

What did the people of the Nok Culture eat? It is likely that they ate plants and meat, as most of us do today, but we do not know what role animals played in the Nok Culture, because no bones are preserved in the acidic tropical soil for archaeozoologists to study. So far, not a single bone has been discovered at any excavated Nok site. We thus do not know whether the people of the Nok Culture kept animals, and which, if any, those animals were. Our only information on animals comes from the terracotta sculptures – but those do not help us much when it comes to food because the only animals we can see are those which are not usually used as food: snakes, lizards, large cats, monkeys, elephants, and birds. There are also four-legged animals that cannot be properly identified (Fig. 18). We do not see domesticated animals, and it seems logical that if the Nok Culture had cows, sheep or goats, the sculptors, who made masterful terracotta figurines of all sorts of animals, would have depicted

Fig. 18. Animals depicted in Nok terracotta. 1. Human head with hat on which a lizard lies (Kaguni; height 15.5 cm); 2. Snake (Rafin Adada; length 32 cm); 3. Head of a snake, probably a cobra (Janruwa A; height 17 cm); 4. Head of a crocodile (Ungwar Kura 9; length 6 cm); 5. Monkey-like head (Ungwar Kura 12; height 6 cm); 6. Horned animal (Ungwar Kura 12; height 8 cm); 7. Large cat held in a human hand (Kurmin Uwa 1; height 16 cm); 8. Four-legged animal (Ungwar Kura 6; height 10 cm); 9. Elephant (Utak Kamuan Garaje Kagoro; height 15 cm); 10. Four-legged animal (Kurmin Uwa; height 26 cm).

them with their characteristic attributes. In science, however, the absence of evidence is not considered evidence of absence. For example, it is possible that depicting cattle did not fit the purpose of the sculptures. Someday, chemical analysis may help answer the question of whether and what animals were kept: cooking pots may contain traces of animal fat, and these traces can be analysed to determine what animal they came from.

By contrast, we know much more about the plants the people of the Nok Culture ate (Kahlheber et al. 2009). Almost all excavations recovered charred remains of plants which served as food. Pearl millet is the primary such plant (Fig. 19). The people of the Nok Culture were the first in central Nigeria to farm pearl millet in their fields. They did so from the beginning of the Nok Culture around 1500 BCE – around the same time that farming spread elsewhere in West Africa as well. Unlike hunter-gatherers, who take their food from nature, they produced their food themselves. This may sound unimportant, but it is a central change in the history of humanity and has consequences for all later history. In central Nigeria, it was the Nok Culture that first made this step with millet originating in the Sahel zone, where wild forms are common and the earliest evidence of its farming can be found.

In addition to pearl millet, the people of the Nok Culture also cultivated the cowpea and used wild plants, such as the fruits of the tree Canarium schweinfurthii, known in Hausa as “atili”. That same fruit is still used as a source of fat even today. The oil palm was also used in the later phase of

Fig. 19. Pearl millet (*Pennisetum glaucum*) was the main staple of the Nok Culture’s diet.

the Nok Culture to supplement or replace "atili". Is this search for new food sources an explanation for the decline of the Nok Culture? After several centuries of dense settlement, clearing wood and brush to make fields and produce charcoal for iron smelting, the soil may have become barren and the natural vegetation damaged. It is also possible that the climate changed, so that pearl millet was harder to farm. We wonder whether the Nok Culture's traditional way of life collapsed because the people of the Nok Culture did not know how to respond to a change in conditions (Höhn & Neumann 2016).

Made From Clay

In 2008, the Nok Project began to study the making of the Nok terracotta sculptures and ceramic vessels. The central aspect of the research was the clay from which both are made. First, the clay was analysed using thin sections. Thin sections are samples, taken from the objects and cut until they are so thin they let light through. Looking at thin sections under a microscope gives researchers information about the components of the clay – both the natural components and those added by the makers (temper). Later, we employed a high-tech device that uses X-rays to determine chemical elements contained in the clay. Both methods led to a remarkable discovery: the clay used for the statues was fundamentally different from the clay used for the pots. The clay of the terracotta almost always had the same composition, whereas the clay of the pots was different from site to site. We concluded that the clay used to making the terracotta statues came from a single source and the vessels' clay came from many different sources. Pots were probably produced locally and the sculptures in a single, central workshop.

Most villages probably had potters who made whatever was needed, and took the clay for pots from whatever clay deposit was close by. This would explain why different sites have pots made from different clays. But the terracotta sculptures have only one kind of clay, and the explanation might be that they were made in central workshops. Central production and distribution would go well with the skilled specialists presumably necessary for making such sophisticated sculpture; sculptors would have sat together in workshops and exchanged and passed on their skills. They also could have decided on strict rules for making their sculptures. One of these rules was about style: the eyes, complex hair and head dress, the heavy jewellery, and the limited number of poses in which the figures are portrayed. But there seem to have been another rule for a specific clay. We will never know why this rule was in place. There is no physical reason for using a special clay – which suggests that rituals or tradition were the reason.

Even though the idea of a central workshop and central clay deposits seemed good, after years of searching, we found neither. Today we do not believe that they existed. Central clay deposits and organised workshops fit in the original idea of the complex society of the Nok Culture. But over time, we discovered that the social organisation was not very complex, but characterised by small, self-sufficient farming and hamlets. Instead of exploiting central clay deposits, today we

Fig. 20. Clay samples from deposits used by today's Nigerian potters helped us in searching for the deposits that were used by the Nok Culture.

think that the potters simply knew where to find the right clay for the sculptures – but that the skills and rules were still highly specialised and led to the oldest sculptures in sub-Saharan Africa. The study on the material composition of the clay, which was completed in 2015, may seem like a tiny piece of information, but it is a perfect example of how little things can yield unexpected insights (Beck 2017).

Did The Nok Culture Invent Iron?

For many years, archaeologists have been debating the beginnings of metallurgy in Africa (*e.g.*, Killick 2004; Alpern 2005). There are two sides: the first side believes that iron smelting was brought to Africa from elsewhere, most likely by the Phoenicians from their base in Carthage (founded at the turn of 9th to the 8th century BCE in what is now Tunisia), or from the Kingdom of Meroë in Sudanese Nubia, where large amounts of iron were produced after 500 BCE. Those who believe this side argue that iron smelting is a complex process that could not have been invented without metallurgical predecessors. In Europe and the Middle East, several thousand years passed between the production of bronze and copper and the final production of iron. These previous stages are missing in Africa: apart from a few local exceptions, metallurgy in Africa starts directly with iron.

The other side thinks it is possible that ironworking was independently invented in Africa. Their argument is based on age: if iron in Africa appears before it does in Carthage or Meroë, then it cannot have been imported from there. But archaeological dating is so imprecise that neither hypothesis can be supported by evidence. This is where the Nok Culture becomes important, because one piece of evidence for early iron comes from an excavation Bernard Fagg conducted in the 1960s at the Taruga site near Abuja. Fagg found iron-smelting furnaces which, using the radiocarbon method, he dated to as early as 500 BCE. But this did not solve the question, since this was also approximately the age of iron from Carthage and Meroë. But we now know that the Nok chronology began much earlier. Might not iron have begun earlier as well – before Carthage and Meroë?

2010 offered an opportunity to investigate this question. At a site called Intini, several kilometres north of Janjala (Fig. 17) we discovered iron-smelting furnaces. Their bottom parts – a circular wall of burnt clay about one metre in diameter – had been preserved (Fig. 21), and several bits of iron slag lay next to them. The Nok Project had excavated furnaces before, but all had been significantly younger than the Nok Culture. At Intini, looting holes nearby suggested that the site might be from the Nok Culture. Charcoal from inside the furnaces dated between 700 and 400 BCE confirmed their association with the Nok Culture period. We thus knew what Nok Culture iron-smelting furnaces looked like, and continued actively looking for them.

The furnaces we discovered in the process are very different from those which Bernard Fagg discovered in Taruga

Fig. 21. An iron-smelting furnace of the Nok Culture at the Intini site (excavated 2010).

more than 50 years ago (Junius 2016a). While the diameter of the Taruga furnaces varies from 50 to 100 cm, the Janjala furnaces tend to be one metre or more in diameter. One attribute of Nok furnaces is their appearance in groups. In two small excavation trenches of 9 x 2.5 m (2013) and 3 x 3 m (2016) at the Baidesuru site, we discovered seven furnaces and one furnace respectively, all lying next to each other (Fig. 22). Evidently, a furnace was used for only a single smelting process, because it was destroyed when removing the smelted iron. The next process required building a new furnace directly next to it. In most cases, the only thing left from the Nok furnaces is their base and several centimetres of the lower wall. The walls were originally higher because the space needed for the ore and the charcoal. Close to the furnaces, we often found tuyères, which is what archaeologists call the circular clay nozzles let into the furnace walls. They were used for pumping in (or sucking in via a vacuum) air to raise the temperature to the 1250 °C needed to melt iron. Another characteristic of Nok furnaces is the lack of iron slag (a waste product created in the production of iron). By contrary, the furnaces of later periods are surrounded by piles of slag, which suggests mass production of iron. Though the Nok Culture certainly did not mass-produce iron, we still do not know why there is quite so little iron slag near the Nok furnaces. On the one hand, iron slag is generally still high in iron, and might have been reused until no iron

Fig. 22. View of the seven Nok-Culture iron-smelting furnaces excavated 2013 at the Baidesuru site.

content remained. It is also possible that the iron ore used by the Nok Culture contained a high concentration of iron and therefore produced very little slag. The second theory, however, would mean that West Africa's earliest iron producers knew sources of higher quality ore than later producers. This would raise new questions.

Iron slag gives us more information on those questions than iron objects – and we only have very few iron objects anyway. But analysing the slag gives us insights into technical details of the smelting process (Junius 2016b). For example, we now know that different ores were smelted at different sites and even at the same sites in furnaces directly next to each other. We also know that the bloom (the term for the lumps of hot iron produced in the furnaces) were beaten out directly next to the furnaces.

Since Intini, the Nok Project has discovered approximately 70 sites with furnaces (Fig. 23). 27 of the furnaces were excavated at 9 sites and largely dated to the Nok Culture period. But the question of the origins of African iron-smelting remains unanswered. The C14- or radiocarbon method, almost the only

Fig. 23. Iron-smelting furnaces in the Janjala area, exposed by erosion (photographed in 2010). The size of the furnaces and the relative absence of slag suggest that they date to the Nok Culture period.

reliable dating method available under the circumstances, is unfortunately not very exact for precisely the time when Africa's earliest iron must have been produced. Almost all experts on iron agree that this time is somewhere in the first half of the first millennium BCE. But for complicated reasons involving the physics of the earth's atmosphere, samples between 800 BCE and 400 BCE cannot be dated any more precisely than between 800 and 400 BCE. We therefore do not know whether Nok iron is older than that of Carthage or Meroë. None of the dates for the furnaces (by now there are many) is before the critical interval, only during or after. This means that Nok iron was produced at some point between 800 BCE and 400 BCE. We will only know whether it was independently invented or learned from elsewhere once we discover a more exact dating method for those centuries. Even that will not rule out an independent development of iron smelting, since it is hard to prove that the regions had contact between one another at that time or even later. But one thing we know already: the oldest Nok sculptures are dated before 800 BCE. The sculptures were probably first produced between about 1000 BCE and 900 BCE, and are thus older than iron. Their appearance has nothing to do with iron smelting. Iron, on the other hand, might have come from the working knowledge of pyrotechnics developed by firing the terracotta sculptures.

The Terracotta Finds At Ifana

In 2011, the Nok Project excavated many sites. One of those sites was Ifana, a place at the bottom of one of the inselbergs next to the Janjala research station. Several looting holes showed that others had already searched for sculptures here. But between the holes there were also large, untouched areas. When we excavated the area, we immediately found the head of a human terracotta sculpture, only a few centimetres below the surface. It was very poorly preserved: erosion had removed most of the detail. Sculptures found close to the surface often have that appearance; the lower down a sculpture, the better it is preserved. Below the head, another large piece of a terracotta sculpture surfaced, which was better preserved. By the time we had excavated the area of 6 x 10 m to a depth of one metre, six large human terracotta body parts were lying close and on top of one another (Fig. 24).

Our first find, the head, fit on a sculpture lying further down in the pile. On its back, the figure has two protrusions which look like wings and gave the sculpture its name: "the winged man" (Fig. 25). It is not clear whether the wings have a symbolic function, as they do for Christian images of angels, or whether they were just unusual decoration. Myths of winged beings appearing as divine messengers, spirits of the air, or demons and magicians exist across many cultures. The winged man also has another significant attribute: small horns appearing under the figure's headdress, which might symbolise the power and strength of the figure.

Fig. 24. The terracotta deposit of Ifana, excavated 2011.

We have more certainty about the symbolism of a different sculpture. It is practically covered in snakes. Of all the terracotta sculptures, snakes are the most commonly portrayed animals and have often been found by the Nok Project. But the Ifana sculpture shows, better than any previous sculpture, the close connection the Nok Culture saw between people and snakes. Three snake heads stick out between the arms and the body on each side, and on the back these snakes combine to form a single downward strand. As if to demonstrate his total control of snakes, the man holds what can be identified as remains of an additional snake in each hand (Fig. 26). A similar sculpture was found at the Minoan palace at Knossos on Crete. The sculpture holding a snake in each hand is thought to be either a "snake goddess" or a priestess conducting a ritual. Almost everywhere in the world, snakes have a special place in early myths and religious ideas. In Africa's traditional societies, they are often connected with ancestors because they live on and close to the ground, which is where ancestors dwell (unlike the heaven of Christian imagination). They also renew their life by shedding their skins, which suggests the immortality the ancestors have already achieved. The snake sculpture thus offers the important clue that the Nok Culture might have had similar ideas, and that the terracotta sculptures might have been connected to rituals of ancestor worship.

Another one of the six sculptures has a strange mouth, taking up half the

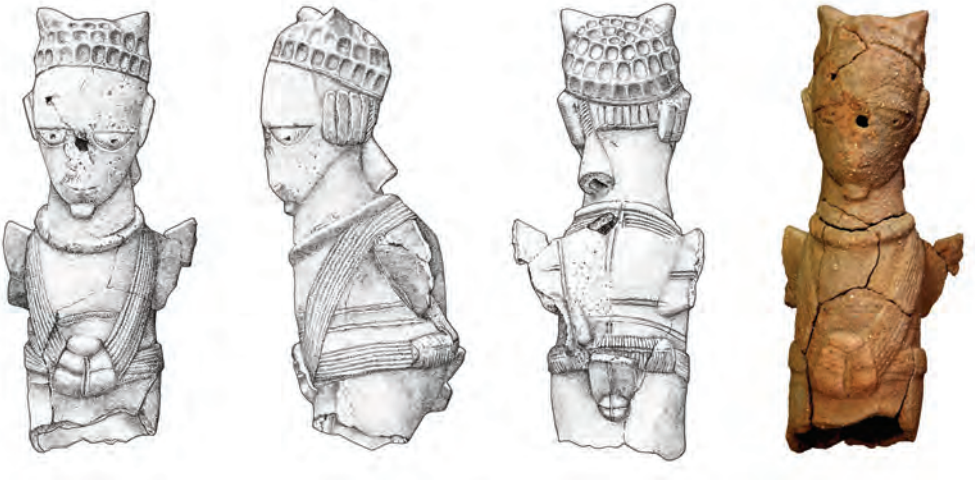


Fig. 25. Male terracotta sculpture with horned headdress and wing-like protrusions on his back. Height: 43 cm; excavated 2011 at Ifana.

Fig. 26. Terracotta sculpture of a person with snakes under its arms and in its hands. Height: 30 cm; excavated 2011 at Ifana.

Fig. 27. Terracotta sculpture of a man with an overlarge mouth and typical Nok faces incised onto the lower body. Height: 68 cm; excavated 2011 at Ifana.

head and stretching from one side of the face to the other (Fig. 27). There are thin teeth between the lips. The mouth is clearly not human, but looks almost like a catfish with its breadth and teeth. There are catfish of the genus Clarias living across Africa. Is it possible that fishes, who live in another world just like snakes, were connected with ancestor worship as well? Such interpretations are always speculative, of course; as is another interpretation that the figure is a wise man, communicating rich traditional knowledge through his broad mouth. This fits with the faces incised onto the sides of the figure, which might mean that the figure sees everything, and that therefore the knowledge comes from a rich store of experience. This, too, might be connected with the ancestors and their power to reach into the lives of the living.

The Ifana finds led us a step forward in our search for the purpose of the terracotta sculptures. We now had two sites – Ifana and Utak Kamuan Garaje Kagoro – which suggested that the sculptures were at least sometimes buried intentionally. Two examples are not many, but it is probably not a coincidence that the sculptures were broken in both cases, maybe as part of a ritual. Although several of the fragments from Ifana fit together, no statue could be fully completed. What happened to the missing fragments, the ones which were not buried? We do not know what the ritual looked like in detail; but we now know that the sculptures ended in one of two ways. They were either thrown away

Fig. 28. The Pangwari site before excavation, photographed in 2012. The Nok Culture finds stretch over the entire hillside.

together with other trash, broken into small parts, or broken into large pieces and carefully and purposely buried.

Pangwari: Looking For The Structure Of Nok Sites

After the phase concerned with the chronology of the Nok Culture, the Project examined the structure of Nok sites. The central questions concerned the organisation of Nok sites and their interpretation. Were they all settlements? Or are there indications that they were ritual sites? Or did they have some other purpose that we do not know? The small sites we had examined did not really help answer these questions, because they reveal only a small part of the entire picture. Complete excavations of entire sites are needed. In 2012, we discovered Pangwari, a place that seemed perfect for larger-scale excavation. Because Pangwari was over an hour's drive from Janjala and hidden away in the woods (Fig. 17), Pangwari had not been looted. Test excavations showed that cultural layers reached across a hillside, from its foot to a saddle between two ridges (Fig. 28).

Before starting excavation, experts examined the ground with geophysical probes. Sometimes, former settlements leave measurable magnetic traces, or the electrical conductivity of the ground is different. In the best case, houses, pits, and hearths can be identified and selected for specific investigation. But in Pangwari, we were not so lucky. The only way to understand the structure of the site was to excavate all of it. To do this, we applied the same method which we had used for all other excavations of Nok sites: carefully recording the exact position of every single find with digital surveying and measurement equipment. The information we gained justified the large amount of work, because a find is never at its position by accident. It arrives there by the actions of people who used or interacted with it. One such example is daub, which we discussed above. Daub is used to make walls of huts, and is usually found in the form of lumps of clay which look like they have been fired. These lumps show us that the walls were made using "wattle", woven mats of branches or weeds, because we can see the imprint of the wattle in the daub (Fig. 29). If the hut is abandoned or burns down, all that remains is the daub which has fallen on the ground. Charting all excavated bits of daub in a site plan showed us not a regular distribution across the entire site

Fig. 29. Daub from the Nok site of Puntun Dutse, with impressions of the wattle against which it was smeared.

Fig. 30. Aerial view of the excavation trenches at the site of Pangwari. In trenches E and I, a terracotta deposit and graves were only a few metres apart.

but several areas where they occur more frequently. Somewhere within these areas is probably where the huts were. Maybe not all houses were built from wattle and daub. Some may have been built from stone: we found an example of this on a mountain called Puntun Dutse. There, a circle of stones dating back to the Early Nok period is interpreted as the foundation of a tent-like house (Rupp 2014b). Since it is the only find of its kind, however, it seems to be an exception. Finds of fired daub in different areas show, however, that other huts in Puntun Dutse were probably built with wattle and daub.

The excavation of Pangwari extended over two years. Then, after having excavated – with 2500 m^2 – almost the complete site (Fig. 30), we began the precise analysis of the over 10,000 catalogued finds. As often happens in science, this answered some of our original questions but opened up many others. We had been looking for the structure of the site, but Pangwari told us little. Analysing the three-dimensional distribution of the finds showed that those in the upper layers were no longer lying where the inhabitants of Pangwari had left them: they had been carried down the hill by more than 2000 years of rain. What archaeologists call the "occupation layer" is probably not preserved on any of the Nok sites – the Nok Project has not found a single site where the finds remain in the position where they were left. The one exception are the pits which the people of the Nok Culture made. The things which fell into the pits were protected from being washed away by rain and simply stayed in the pits. Apart from that, the people apparently lived in a way that did not leave many broken pots, fragments of terracotta sculptures, or stone tools behind. We cannot even find where fires or cooking were done, let alone the location of huts or storage spaces for the harvest. In fact, we had noticed that any such features were missing from the very beginning of Nok research – but until Pangwari, it was possible that these finds were simply outside the small excavation trenches excavated so far. Pangwari disproved that. The overall picture of the site suggests that Nok settlements did not last long. Perhaps the settlements were moved with the people to new fields when the soil of the old fields was depleted. This puts the high density of settlements discussed above into a different perspective, because frequent shifting of settlements can artificially increase the number of sites recorded.

We also discovered something interesting about the history of Pangwari: The pottery analysis and radiocarbon dates off charred plant material suggested that the site was inhabited across several phases, beginning in the early period of the Nok Culture. This was confirmed by radiocarbon samples dating as early as the 14th century BCE a well as by potsherds which are decorated in the Early Nok style and distributed across the entire excavation area.

Afterwards, in the middle phase, people returned. Most of the pits are from this period, including one particularly exciting find: a flat pit filled with stones, charcoal, and numerous terracotta fragments (Fig. 31). This was the third deposition of purposely buried terracotta fragments we had found, after Ifana and Utak Kamuan Garaje Kagoro (Männel & Breunig 2016).

One of the most impressive pieces is a mixture of a person and an animal. It is a human head wearing a hood, but having the powerful fangs of a predatory animal (Fig. 32). A different fragment shows a male person wearing a clay seashell on his head as ornamentation (Fig. 33). The seashell is so carefully portrayed that it is possible to determine its origins in the Atlantic Ocean – even though the ocean is over 500 km away from the site! This means that the Nok Culture must have been in contact with people far beyond its area through exchange or trade, which brought it exotic objects such as seashells.

In addition to the Middle Nok period, we also have finds from after the end of the Nok Culture. Pangwari has shown that Nok sites were visited and inhabited several times over longer periods. This explains why for many of the sites, the charcoal samples rarely date to the same age but often spread out over centuries: people kept leaving and returning to a place where their ancestors had been. This may not have happened by accident but had some sort of reason. The Pangwari site hints at what this reason might have been: while the Early Nok finds are scattered all over the site, the Middle Nok finds are concentrated in a few pits, the most marked being the terracotta deposit. It is possible that the people of the Middle Nok period returned to the home of their ancestors in order to bury the terracotta fragments there.

Fig. 31. The lower portion of the terracotta deposit in trench E of the Pangwari site. The upper layer of terracotta sculptures has already been removed (excavation January 2013).

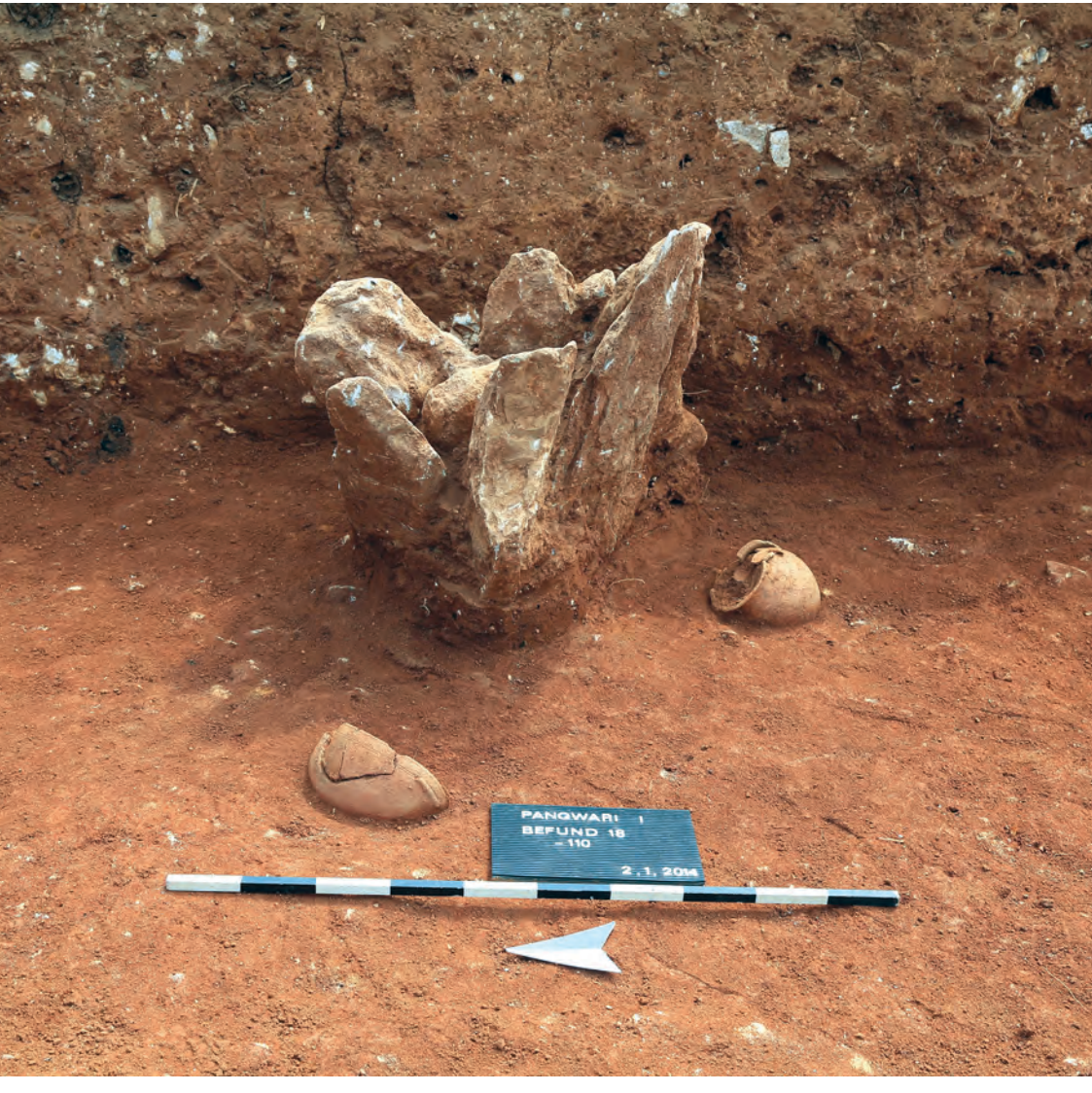
Fig. 32. Head of a male terracotta sculpture with fangs and a hood. Height: 23.5 cm; excavated January 2013 at Pangwari.

Fig. 33. Male figure with a headdress made from seashell. Height: 31 cm; excavated January 2013 at Pangwari.

This suggestion might be supported by another find, made a year later.

Several metres next to the terracotta deposit, we discovered something that we had noticed at a few other sites before. Fairly deep in the ground (deeper than the other finds) we found two groups of upright stones (Fig. 34), some of which were grinding stones. That – and three complete, artfully decorated ceramic pots standing between the stones – showed without a doubt that it was a man-made arrangement, not a coincidence or a natural occurrence. In 2009 we had discovered the same at a site called

Fig. 34. Find of upright stones and ceramic vessels, interpreted as a grave. Excavated January 2014 at Pangwari.



Ido, and in the following year, we found it again at Kurmin Uwa. In Ido, we also found a necklace of stone beads next to the stones and the pot. The necklace was similar to the one we had discovered in Janruwa at the beginning of the project. There is hardly any doubt that the stones, pots, and sometimes stone beads marked graves. The best evidence would be the skeletons of the deceased – but the bones, like any in the acidic soil, have dissolved over time. The discovery of the graves gave us an idea that might solve the puzzle of the Nok Culture. That puzzle was: for what did the Nok Culture need or use these countless sculptures? The idea grew slowly, while we investigated other questions.

Kanzir: A Terracotta Style On The North-Eastern Border Of The Nok Culture

We visited the north-eastern border of the known Nok area in the first year of the Nok Project. The nearest larger town is Kachia. In the two relatively close villages of Anzah Gida and Kanzir (Fig. 1), locals showed us terracotta sculptures that they had found in their fields. The sculptures depicted people, but despite similarities, they were less finely worked than the Nok sculptures we had seen so far. This was particularly obvious in the faces, which seem distorted and blurred. This local difference was a good topic for the Nok Project to investigate after Pangwari. Until that point, most of the work had focused on the relatively small key study area around Janjala. Now, with the help of local informants, we started to systematically catalogue Nok sites outside this area. To the south and the west, the sites extended all the way to Abuja, and to the east almost to the Jos Plateau. At this point, several hundred sites have been pinpointed, and we have a better idea of the Nok Culture's geographical extent. This paved the way for seeing whether the Nok Culture was the same everywhere, or whether it had regional differences. Knowing this for all aspects of the culture would require many more years of research projects, but at least for the terracotta sculptures it seemed sensible to search for hypothetical regional differences in style. So we returned to Anzah Gida and Kanzir in 2015 to see what differences we could find.

Farmers at a farmstead called Zuturung Tinta'a, close to Kanzir, brought us sculptures which they had found several weeks earlier while ploughing a cornfield. Putting together three of the fragments yielded a fascinating sculpture (Fig. 35): two men and a woman stand back to back, forming a circle with their angled arms touching each other. Their heads, and the base on which they are standing, is missing. At nearby Kanzir, locals showed us a similar but more complete sculpture which characterises the regional style now called Kanzir (Fig. 36). It also depicts two men and a woman standing shoulder to shoulder on a base that is shaped like an upturned vessel. There are snakes, one with a decorated body, between the bodies. While the many decorative details are similar to the other known Nok terracotta sculptures, the partially preserved heads have fierce facial expressions that clearly show the difference in style.


10 cm


10 cm

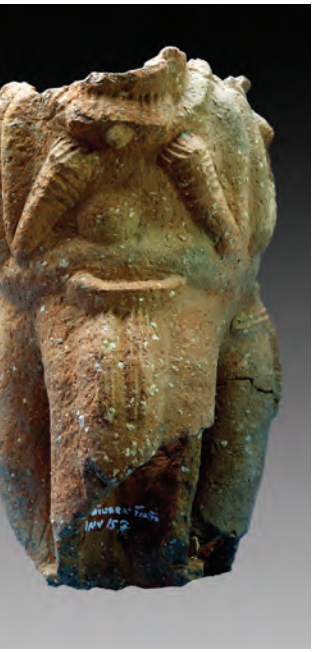


Fig. 35. Terracotta sculpture of three people standing back to back, found 2015 at Zuturung Tinta'a.

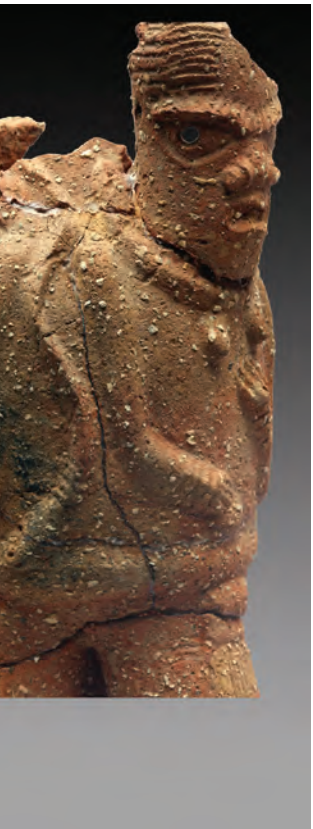


Fig. 36. Terracotta sculpture of three people standing shoulder to shoulder, found 2015 at Kanzir.

The terracotta parts contained earth and a little bit of charcoal. That charcoal was dated to the Middle Nok phase using the radiocarbon method. This establishes that the Kanzir style is part of the Nok Culture and that at least in its terracotta sculptures the Nok Culture shows regional differences. These differences might have developed primarily at the edges of the former extent of the Nok Culture. This is also suggested by the Katsina and Sokoto styles farther to the north, though these have not been archaeologically studied yet and are only known from the art market. There have been no explorations of other directions. Kanzir will continue to be studied as an example for regional differences.

Have We Solved The Enigma Of The Nok Culture?

To answer this question, let us take another look at Pangwari. Before the excavation there, terracotta deposits and graves had never been found together, only separately: the graves in Ido and Kurmin Uwa and the deposited sculptures in Ifana and Utak Kamuan Garaje Kagoro. The fact that both were so close to each other in Pangwari might mean that graves and sculptures were connected. This idea was not suggested by other sites, where the small excavation areas meant that only the one or the other was found. In 2016, we decided to revisit previously excavated sites to check the possible connection between graves and terracotta deposits. In Kurmin Uwa we were too late: looters had been to the site and destroyed it. But in Ido we dug next to the place where, seven years

earlier, the first graves came to light: as suspected, not only were there further graves but also the predicted terracotta fragments. Between stones lay the head of a human sculpture of the "philosopher" type, so called because the head rests on folded arms. We had found another piece of evidence for the connection between burials and terracotta fragments.

This idea now became a scientific hypothesis: Where there are graves from the Nok Culture, there are buried terracotta fragments nearby. Consequently, the reverse must be true as well: that there are graves where one finds buried terracotta fragments. In two cases we could check this hypothesis, Utak Kamuan Garaje Kagoro and Ifana. The first gave no results when we revisited the site in 2011. That may be a different kind of regional variation, since the site is on the eastern edge of the Nok Culture's area of expansion. Ifana, on the other hand, confirmed the hypothesis in August 2016. We re-examined the ground around the old excavation, where a large deposit of terracotta fragments surfaced in 2011. The results exceeded all expectations.

Another terracotta deposit appeared only a few metres from the old one (Fig. 37). As with all the other deposits, all statues were broken and incomplete. The topmost statue, a complete seated body of the "philosopher" type with the head missing, seemed almost beheaded. Then, other terracotta sculptures appeared at other places – and finally we found what we were looking for: graves. At one

Fig. 37. Terracotta deposit (Feature 3) at Ifana 3, excavated August 2016.

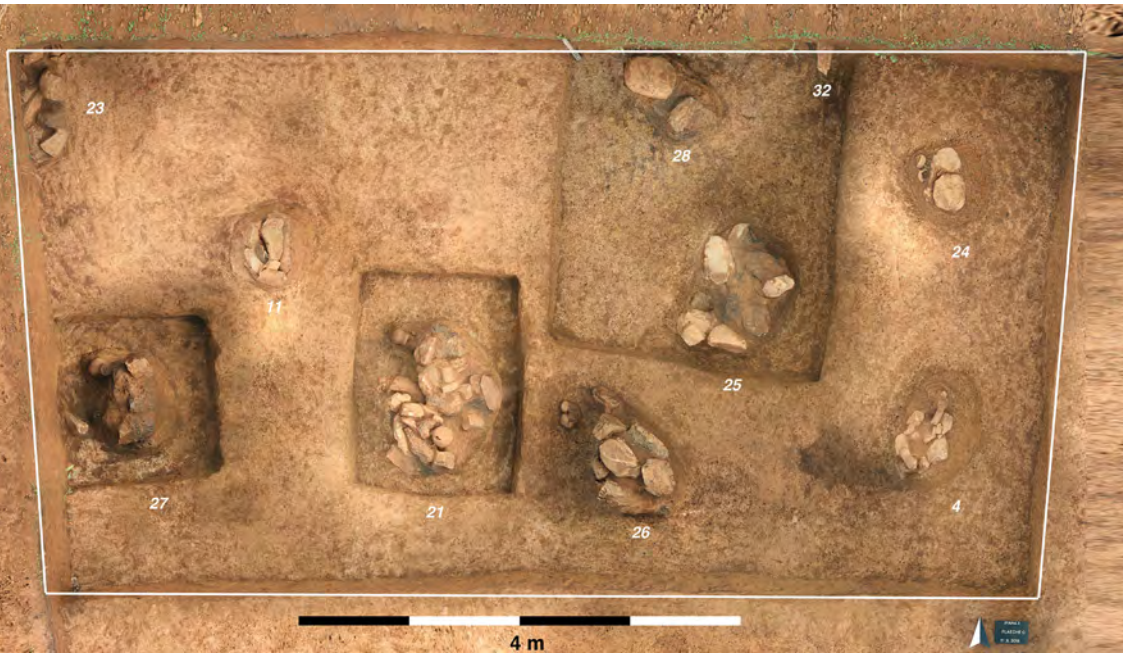


Fig. 38. Section C at Ifana 3, including ten features of stones and ceramic vessels, interpreted as graves. Excavated August 2016.

Fig. 39. Three-part necklace of stone beads next to a small ceramic vessel, excavated August 2016 at Ifana 3.

place, several graves all lay next to each other and were similarly constructed (Fig. 38). They consisted of several mostly flat stones, often with a grindstone among them. Next to or sometimes much deeper in the ground we found one or two ceramic vessels. In one of the graves, as in Ido, we found a complete necklace consisting of three rows of stone beads (Fig. 39).

Overall, the team excavated more than 20 graves. This made it clear that the Ifana site was a burial ground of the Nok Culture. The graves surrounded the terracotta deposit we had discovered in 2011. In addition, we discovered three further deposits with a large number of in some cases large and well-preserved terracotta heads, torsos, and other body parts. Our hypothesis was correct, and the enigma of the Nok Culture has been solved to some extent. The terracotta sculptures were part of complex burial rituals. But there are many details we can still only guess at. For example, the burial rituals do not explain the many small sculpture fragments which we find outside the deposits and why the deposited sculptures are all broken. Archaeology can answer many questions, but not all of them, and so we can only guess. It is conceivable that the sculptures guarded the graves of the newly buried, eventually fell over and broke and were then collected in a ritual where some fragments were buried with the dead and other fragments taken back to the village, where they eventually were left lying and

Fig. 40. Relief of two people sitting in a boat. Height: 9 cm, excavated 2013 at Pangwari.

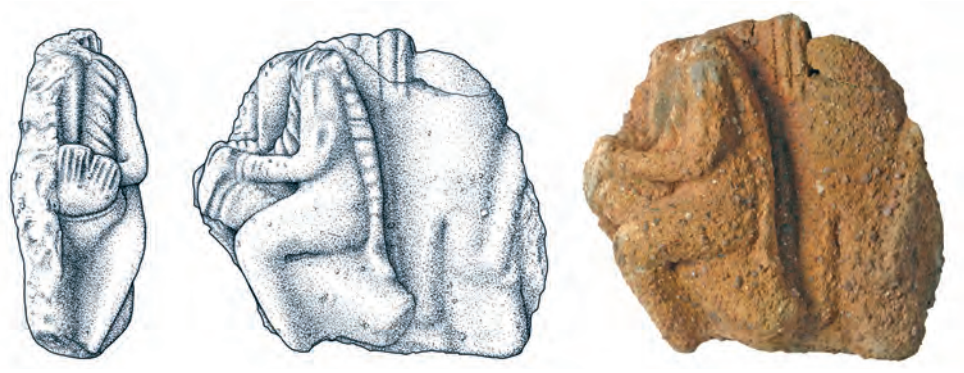


Fig. 41. Fragment of a depiction of a drummer. Height: 13 cm, excavated 2007 at Ungwar Kura.

then seemed discarded like trash when we excavated.

The idea of a relationship between the terracotta sculptures and some notion of ancestors also fits with the now established hypothesis that the Nok sculptures were related to burial rituals. The sculptures do not appear as life sculptures of people. Despite their different decorations, they are all identical in their stiff posture and expressionless faces, which seem as dead as those of deceased ancestors, whom they may represent (Breunig 2012, 2014).

But sometimes the terracotta sculptures also tell stories from life, particularly in the form of reliefs, which probably decorated special vessels. In Pangwari we found a fragment of such a relief showing two people sitting in boat (Fig. 40). This is the only evidence that the Nok Culture produced and used watercraft. It would be pure coincidence if an excavation revealed any preserved remains of one.

Another fragment, this one from Ungwar Kura, shows a person beating a drum (Fig. 41). A drum suggests a passion for rhythm and music and thus brings us closer to the people of the Nok Culture than any other find. But the drum might also have been used for less emotionally charged purposes, such as communication. There are many historical records of drums being used to communicate messages over long distances in West Africa. It is possible that the Nok Culture settlements had a communication network by drumming messages through the woods.

Epilogue

When the Nok Project of the Nigerian National Commission for Museums and Monuments and Germany's Goethe University Frankfurt/Main began in 2005, the Nok Culture was already an impressive archaeological phenomenon, but it had been studied in very little detail. Over the last few years, research now allows us to see this 2000–3500-year-old culture in all its facets. The long path described here shows that studying an archaeological culture takes many years of financial support and hard work before it gives really significant results. We are grateful to the German Research Foundation, which has been funding the Nok Project since the beginning in 2005.

We are also grateful to their reviewers, who made many helpful suggestions. An important result of this work is the knowledge that the characteristic element of the Nok Culture – the oldest large-scale sculptures in sub-Saharan Africa – were a part of complex burial rituals. But we also know more than ever about chronology, economy and environment, settlement patterns, iron technology, and the material culture of the Nok Culture. It is now a much better understood phenomenon of Africa's prehistory. Many questions, however, are still open and so research will continue to find more answers.

The results presented here have been made possible by hard work from many sides: From Frankfurt's Goethe University, Dr. Nicole Rupp is one of the pioneers who helped lead the Nok Project from the very beginning. The plant analysis, as well as the reconstruction of economy and environment, has been conducted by Prof. Katharina Neumann and her colleagues Dr. Stefanie Kahlheber and Dr. Alexa Höhn. Using ceramics and the many C14 dates, Dr. Gabriele Franke has established the chronological framework and sub-division of the Nok Culture into different phases. Dr. Christina Beck used thousands of X-ray fluorescence (XRF) measurements to determine the manufacturing differences between ceramics and terracotta sculptures. Dr. Henrik Junius compiled and expanded our knowledge of the Nok Culture's iron-working. Eyub F. Eyub M.A. has used environment analyses with geographical information systems to find out where the Nok Culture preferred to settle. The cataloguing and stylistic assessment of the countless terracotta fragments is thanks to Tanja Männel M.A.; and Annika Schmidt M.A. has contributed the structural analysis of finds and features at Pangwari and is now applying the XRF method to soil samples from grave sites. André Burmann M.A. examines and compares the contexts of the terracotta sculptures with those of other West African sculptural traditions. Johannes Behringer M.A. used thermal imaging to try to visualise new finds. Armin Bies contributes interesting explanations for several pictured details on terracotta sculptures. We are also grateful to technical assistants Gaby Försterling, Monika Heckner and Barbara Voss for the graphical work used in this and other publications and to Jennifer Markwirth for botanical laboratory work and the contribution of Figure 19.

Equally important is the work done by members of our Nigerian partner institution, the National Commission for Museums and Monuments. We are grateful to the Commission's General Director Yusuf Abdallah Usman for shepherding the Nok Project over the years. Our colleague and friend Dr. Musa Hambolu was part of the project from the very beginning, and his successor as Director of Research, Planning and Publication, Jafaru Dauda, has continued to support the project. James Ameje MSc contributed to early field work with his excavation of post-Nok iron-smelting sites. Fatima Namiji has extracted many years' worth of plant charcoal remnants from excavation samples. Victor Sarko carefully catalogues and documents the finds in lists. Adeniyi Aribido MA, Ann Adamu BA, and Oluwasegun Adebayo BSc have contributed valuable work to the excavations. We are also grateful for the contributions of our partners from the University of Jos, Prof. Joseph Jemkur

and Dr. Joseph Mangut, and from Amadu Bello University in Zaria, Prof. Muhammad K. Aliyu and Aliyu Adamu Isa MSc.

His Royal Highness the Sarki of Kagarko, Alhaji Sa'ad Abubakar received and supported us enthusiastically in the Janjala area. We are grateful to him for his warm welcome, as we are to the Hakimi of Janjala, Alhaji Ahmadu Shittu for giving the Nok Project a home base. Gideon Zomo Bala, who has been an informant and talented excavator with the project for many years, has made many essential contributions. The inhabitants of Janjala, as well, have moved many cubic metres of earth for 10 years of excavation. The project would not be where it is today without their efforts and their willingness to do as we asked, even when it seemed absurd.

The German side of the Nok Project is also indebted to the Goethe University of Frankfurt/Main for all necessary support. Particular thanks also goes to Julius Berger Nigeria PLC, without whose generous help the Nok Project could not have been realised. We thank the firm's large staff, naming all of whom would fill even more pages. We are also grateful to the German Embassy in Abuja, who supported and followed the Project from the very beginning, and to the William Buller Fagg Charitable Trust in the United Kingdom, who, with the help of Angela Fagg Rackham, made it possible to procure a mobile X-ray fluorescence device which helped the Project to new methods.

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