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PAPER

The Study of Prehistoric Artefacts in National Context: Belgian Archaeologists and the Problem of Ancient Stone Implements

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During the early nineteenth century European archaeologists were formulating new ideas about the significance of ancient stone artefacts. Some, such as Christian Thomsen in Copenhagen, believed that in Scandinavia, a Stone Age had preceded the Bronze and Iron Ages. In France some excavations had retrieved stone artefacts from deep levels of peat and cave deposits that suggested that these objects were of very great antiquity. While the collection and study of stone artefacts occurred across much of Europe, there were regional variations in their interpretation. Assisted by local institutions and motivated by patriotism, Belgian archaeologists who participated in this research, had much in common with their colleagues elsewhere in Europe, but the nature of local archaeological sites and the ideas of local researchers had an impact on the development and contributions of Belgian prehistoric archaeology.

The Geographical Context of Prehistoric Archaeology in the 1830s and 1840s

Archaeological interest in ancient artefacts of all kinds increased steadily through the early decades of the nineteenth century. Tools and weapons made from stone attracted particular attention because of the many questions they raised. Flint arrowheads and stone axes and hammers found in the ground, or dug from burial mounds, had been the subjects of scholarly discussion since the sixteenth century. In the seventeenth and eighteenth centuries naturalists and antiquaries had debated their origins, what they had been used for, and precisely when they had been made, and by whom (Goodrum 2002, 2008; Schnapp 1993). The most persistent question they raised was why ancient peoples would have used stone, rather than metal, for their weapons and domestic implements. The answer, generally, was that stone was used prior to the knowledge of metals and metallurgy, although some scholars believed that stone was simply used only in those areas where metal was scarce.

Due to a number of factors the study of ancient stone artefacts assumed a new significance in the early nineteenth century. The antiquarian research of earlier centuries was slowly being transformed into the modern science of archaeology, at the same time that archaeology was gaining more social, political, and scientific credibility. Institutions, especially museums and archaeological societies, were established throughout Europe and encouraged and facilitated archaeological research and the formation of collections. More particularly, the growing number of excavations of ancient tombs produced large collections of artefacts, and researchers paid greater attention to the contents of individual tombs. This was occurring throughout Europe, but there were distinct centers of research, and important geographical variations in the kinds of artefacts being discovered, and in the ways these artefacts were interpreted, and in how ancient artefacts were attributed to one ethnic group or another (Diaz-Andreu 2007: chapters 11–13). In the second quarter of the nineteenth century, one of the major objectives of archaeologists studying ancient tombs and artefacts was to situate them historically, often in relation to the Roman occupation of northern Europe, and to arrange different tombs and artefacts in a relative chronology.

Thus, in Germany, the antiquary Georg Christian Friedrich Lisch, a founding member in 1835 of the Vereins für Mecklenburgische Geschichte und Altertumskunde (Association for Mecklenburg History and Archaeology) as well as the director of the Grand Duke's collection of antiquities in Schwerin, had excavated tombs in the Mecklenburg-Schwerin region, assembling a substantial collection of artefacts, and an extensive knowledge of ancient burials. This led him to identify specific types of ancient tombs and to propose a chronological sequence for them based upon the kinds of artefacts they contained (Lisch 1837; Lisch and Schröter 1837).

In the Netherlands, Leonhardt Johannes Friedrich Janssen, curator of the collection of Dutch antiquities at the University of Leiden from 1835, studied ancient artefacts in the museum's collections, and excavated Dutch and

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German tombs in the 1830s and 1840s. Janssen and Lisch thought that the hunebeds (Hünengräber) or megalithic tombs containing stone artefacts were the built by the earliest inhabitants of northern Europe (Janssen 1840, 1848).

In Bohemia, the Prague lawyer Matyás Kalina excavated tombs and collected artefacts, which led him to propose a chronological sequence of ancient tombs based on the nature of their artefacts (Kalina 1836). His work was continued by Jan Erazim Vocel, Keeper of the archaeological collections at the National Museum in Prague (Vocel 1845).

Meanwhile in Britain, Thomas Bateman, a member of the British Archaeological Association, excavated numbers of barrows in Derbyshire in the 1840s and amassed a large collection of artefacts that he hoped would be useful in arranging the different types of tombs in a chronological sequence (Bateman 1848).

However, one of the most important geographical centers for this kind of research was Copenhagen, where Christian Jürgensen Thomsen was appointed the Director of the Danish Royal Commission for the Collection and Preservation of Antiquities in 1816, and then Curator of the National Museum of Denmark. Thomsen has a prominent role in the history of archaeology because of his arrangement of the archaeological artefacts in the museum, many obtained through the excavation of tombs, in a chronological sequence of Stone, Bronze, and Iron Ages. In 1836 Thomsen contributed a section to a book on Danish antiquities where he outlined his 'Three Age System' and discussed the many kinds of stone, as well as bronze and iron, artefacts found in Denmark (Thomsen, Rafn and Petersen 1836). Thomsen was succeeded at the museum by his protégé Jens Jacob Asmussen Worsaae, who not only expanded the evidence for the Three Age System through new excavations (Worsaae 1843), but also travelled widely in Europe, seeking further evidence in other museums, while trying to convince his colleagues abroad of the validity of the Three Age System. All of the archaeologists mentioned above knew of Thomsen's system at some point in their careers. However, widespread acceptance of the Three Age System came slowly, and debate over its validity continued well into the late nineteenth century (Rowley-Conwy 2007).

Stone artefacts acquired an even greater significance when they began to be discovered deep in peat beds or alluvial geological deposits, sometimes lying beside the fossil bones of animals no longer living in the region. The French antiquary Casimir Picard (1835, 1837) thought that the flint axes found in peat deposits in the Somme River Valley were made by the ancient Celts, but when the Danish naturalist Japetus Steenstrup (1842) unearthed stone artefacts from within deep layers of Danish peat beds that contained the remains of oak trees, which no longer grew there, the great antiquity of these stone artefacts became the subject of heated discussions.

In 1848 this debate was augmented when the Royal Academy of Copenhagen appointed Worsaae, Steenstrup, and the geologist Johan Georg Forchhammer to

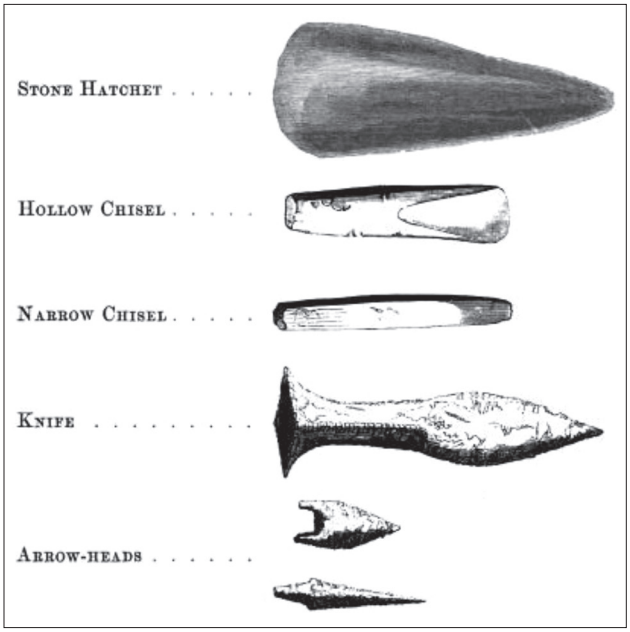

Fig. 1: Examples of types of stone implements discovered in Europe (selection from Plate 1 from Worsaae 1849).

investigate the many kjökkenmöddings (or kitchen middens) found along the Danish coast. They had attracted the attention of Steenstrup as early as 1837 when these mounds of mollusk shells and fish bones were found to also contain crudely formed flint axes and knives, along with the bones of an extinct bird (the Auk). Stone artefacts found in peat beds and in Danish middens appeared to be among the oldest artefacts known (see **Figure 1**), but there were other, and more controversial, discoveries being made at the same time.

These were the result of geologists and paleontologists excavating material in caves, usually seeking fossils, and on rare occasions, finding crude flint axes and knives, and even human bones, in the same deposits containing the remains of extinct animals such as the cave bear, mammoth, hyena, and rhinoceros. During the early decades of the nineteenth century several excavators in France, Britain, and the German states of Central Europe had recovered human bones and artefacts lying among the bones of extinct animals, but these were widely dismissed by most geologists, who thought they were either intrusive burials or the result of the mixing of materials of different ages by the action of water (Grayson 1983).

However, the careful excavation of several human skulls and many flint implements from deposits containing extinct animal fossils in a series of caverns near the Belgian town of Liége, by the paleontologist Philippe-Charles Schmerling in the early 1830s was far more difficult to dismiss (Schmerling 1833–1834). The debate over the possible geological antiquity of humans only grew with the excavations made in the alluvial deposits along the Somme River Valley near the town of Abbeville by Jacques Boucher de Perthes. From the late 1830s until the 1850s Boucher de Perthes, a customs official and member of the Société Royale d'Emulation d'Abbeville, assembled a remarkable collection of Roman and Celtic artefacts simi-

lar to those found in ancient tombs in France. But in very deep deposits he had found crude stone artefacts from stratigraphic layers that also contained extinct animal bones like those found in the caves in Belgium. Boucher de Perthes believed these were proof that humans had lived in France at a time when mammoths and rhinoceros still roamed the region, and thus humanity was far older than traditional history and biblical chronology allowed (Boucher de Perthes 1847). The questionable nature of some of his artefacts and his antiquated geological notions diminished the potential significance of his work (Grayson 1983; Cohen and Hublin 1989). But the growing number of stone artefacts found in peat beds, cave deposits, and geological strata containing extinct animal bones, focused increasing attention on these stone artefacts as evidence, not only of early European history, but also as potential evidence of the geological antiquity of the human species.

While these investigations were occurring throughout Europe, a community of Belgian scholars and archaeologists were pursuing very similar research agendas within their local context. This paper examines the contributions these Belgian researchers made to development of European prehistory, especially through their interpretations of ancient stone artefacts. It will explore the ways in which Belgian archaeologists participated in debates, and employed the theories being discussed by their colleagues in other countries, and the extent to which these two groups shared similar research practices and conceptions of the past. It also discusses the ways in which Belgian archaeologists formed their interpretations of stone artefacts, and formulated their conceptions of Belgian prehistory, that were different from those of their colleagues abroad. Was this due to the specific local nature of the discoveries made in Belgium, or because of contemporary and prevailing ideas about Belgium's ancient history? The central question this paper will attempt to answer is: to what extent is knowledge shaped by local factors (the kinds of prehistoric monuments and artefacts existing in the region), local institutions (museums, scientific societies, universities, journals), and local social and intellectual conditions, while remaining connected to the practices and ideas of the wider scientific community.

A number of social and political factors contributed to an expansion in archaeological research in Belgium in the 1830s and 1840s. After the defeat of Napoleon I, in 1815 Belgium and Holland formed the United Kingdom of the Netherlands (Pays-Bas), ruled by Guillaume I. But in 1830 Belgium rebelled against Holland and, after another war, became an independent state. The surge of patriotism and national pride that resulted from these events led to increased interest in the new nation's history, at the same time that the archaeological study of national antiquities was growing in importance throughout Europe.

There were few scientific institutions in the new Belgium, and most discussions of archaeological subjects occurred at the Académie Royale des Sciences et Belles-Lettres de Bruxelles. The academy was originally established in 1772 by Empress Marie-Thérèse, when what became Belgium was part of the Austro-Hungarian Empire. Its meetings were suspended in 1794 after Napoleon's invasion of the Low Countries, and then re-established by Guillaume I in 1816. In 1845, the Academy was reorganized by Leopold I, the first king of Belgium, and renamed the Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique, reflecting its status as a national institution. Its purpose was to serve as a center of intellectual activity and to stimulate scientific research in Belgium, and its meetings and publications were a critical forum for promoting and communicating local scientific and scholarly research.

During the nineteenth century the Academy played a prominent role in promoting the archaeology of Belgium, but it was not the only institution that supported and publicized archaeological research. A new journal, the *Messager des sciences historiques de Belgique*, was an important forum for publishing papers on Belgian archaeology. Established in 1828 and published through a collaboration of the Société royale des beaux-arts et de litérature de Gand (Ghent) and the Société royale d'agriculture et de botanique de Gand, the journal (published under slightly different names until its demise in 1896) was dedicated to the sciences, humanities, and arts of Belgium. It had an explicitly patriotic orientation, and hoped 'to prove that the Belgian nationality did not originate yesterday, and to recover the past events and people of Belgium who have been forgotten' (Hebbelynck 1854: 1). As a consequence, many of its papers were about history and archaeology. Belgian archaeologists were particularly interested in the Medieval and Roman periods, but as excavations began to uncover ancient burial sites and monuments dating to very ancient times, prehistory could not be ignored. It was within this context that certain types of tombs, and the stone artefacts associated with them became subjects of curiosity and research in Belgium in the 1830s and 1840s.

Excavations and Artefacts in Belgium

In the 1830s, Joseph Roulez and Antoine Schayes were recognized as the leading experts on Roman antiquities in Belgium, and on the history of the Low Countries during the Roman period.

Joseph Emmanuel Ghislain Roulez (1806–1878) studied philology and Greek at the University of Louvain before traveling to Germany in 1826 to study Classical mythology at the Universities of Heidelberg, Berlin, and Göttingen. After returning to Belgium Roulez became a professor at the University of Gand (Ghent) in 1835, the same year that he was elected a member of the Académie Royale des Sciences et des Lettres de Bruxelles. Roulez was an expert on Roman antiquities and wrote extensively on the subject, his research resulting in the discovery of many Roman artefacts in Belgium and an increased interest in archaeological research in the region. Roulez was able to exert considerable influence on Belgian archaeology through his membership in the Académie d'archéologie de Belgique, founded in Brussels in 1842, and through his membership of the Société des Antiquaires de Normandie, Roulez was also in contact with French archaeologists (De Witte 1878).

Fig. 2: Antoine Schayes (plate from Chalon 1860: preceding p. 139).

Antoine Guillaume Bernard Schayes (1808–1859) studied philosophy at the Université d'État de Louvain, but his research soon turned to the study of Belgian history, antiquities, and folklore. His career as a historian received a substantial boost when Schayes accepted a position in the Royal Archives, and after establishing his reputation as a scholar he was appointed the first 'conservateur en chef' of the Musée Royal d'Armures, d'Antiquités et d'Ethnologie de Bruxelles in 1847. That same year he was elected a member of the newly reorganized Academy of Sciences (Chalon 1860; see **Figure 2**). Thus, like Roulez, Schayes was a prominent researcher connected to the leading intellectual institution in Belgium, the Academy of Sciences. Like Roulez, he was interested in Roman antiquities and the history of Roman period Belgium. One of his most significant contributions to this subject was *Les Pays-Bas avant et durant la domination Romaine* (The Low Countries Before and During the Roman Domination) published in two volumes in 1837–1838. This work was important not only because it served as an authoritative account of the earliest history of the Low Countries, but also because its references to the customs, material culture, and peoples of ancient Belgium formed the framework within which many archaeologists interpreted the tombs and artefacts excavated over the following decade.

Of particular importance for archaeologists were Schayes' references to the weapons and monuments attributed to the Celtic peoples who lived in the Low Countries in ancient times. Roman writers had described the spatha, or long sword, used by the Celts, as well as the sparus (short sword), and javelins, slings, and an iron mace called a mataris. Schayes noted that the ancient Celts also used stone axes that were fixed to sheaths made from stag antler, and that they were known to head their javelins with sharpened pieces of bone, like those used by the 'savages of America' (Schayes 1837–1838: 106–107). In addition the Celts were the people who had erected the many menhirs and dolmens found in the region, and according to Schayes, the latter were used by the Celts as altars for ritual sacrifice (1837–1838: 125). Regarding the tombs and funeral customs of the Celts, Schayes noted that the dead were burned along with their weapons, and often with their horses and dogs. Following their conquest by Caesar, the Gauls instituted grand funerals, so while the average person was simply burned or buried, the remains of distinguished persons were covered with a mound of earth, or else a stone grave was constructed consisting of two upright stones surmounted by a lintel stone. Schayes remarked that these tombs could be found throughout Belgium, citing in particular the stone tombs near the town of Namur (1837–1838: 135–136).

However, Celtic tombs were not the only kind of ancient tombs found in Belgium. In later centuries Germanic tribes entered the Low Countries and their tombs could also be found throughout the countryside, the most famous example being the AD fifth century tomb of Childeric, discovered in Tournai in 1653. These tombs also comprised mounds of earth and stone, often surrounded by a circle of stones, and inside the mound there was often a stone vault holding an urn that contained the ashes of the deceased along with other objects. Among the most interesting artefacts found in these tombs were stone axes and hammers (believed by some scholars to bear some relation to the hammer of Thor that was so prominent in Germanic mythology), as well as flint arrowheads and flint knives. Schayes remarked that Celtic and Germanic tombs were very similar in appearance, thus making it difficult to determine whether some ancient tombs were constructed by the 'Celto-Belges' or the 'Germano-Belges' (1837–1838: 309–310). Tombs containing funerary lamps, copper axes, and other copper objects, Schayes argued, dated from the Roman era.

Schayes' descriptions of ancient Celts and Germans using stone weapons conformed to views held by many scholars in the 1830s. The French antiquaries, Arcisse de Caumont (Caumont 1830–1843) attributed the stone artefacts found in tumuli in France and England to the ancient Celts, and Casimir Picard thought the flint axes fixed to pieces of stag antler belonged to the ancient Gauls. In Germany Gustav Friedrich Klemm (1836) catalogued numerous types of stone implements used by the ancient Germans and Georg Christian Friedrich Lisch attributed the stone axes and hammers found in local megalithic tombs to the ancient German or pre-German inhabitants of Central Europe. When stone artefacts began to be discovered in ever-greater numbers in Belgium there were well-established ideas about their origin, and yet there were still many questions surrounding these objects that needed to be resolved, and that were reiterated over and over again in discussions about them. Such unanswered

questions included: what people had used stone artefacts? and exactly when had they been used? how were these stone artefacts manufactured, and what had different artefacts been used for? And one persistent, unanswered and problematic question was whether stone implements had been used concurrently with metal ones, or whether stone had primarily been used only prior to knowledge about metals and metallurgy.

A series of discoveries made in the peat deposits around the city of Flanders, that came to the attention of Joseph Roulez (see **Figure 3**) in 1833, provides evidence of just how complex the interpretation of ancient stone artefacts could be. Near Destelberghe, and twenty feet deep in peat deposits human and animal bones were found, along with a bronze lance head and a bronze axe head, which raised many questions since the great depth of the discovery meant they could all be extremely old. What made this discovery even more intriguing was the fact that a few years earlier a fine flint axe, and a polishing stone, had been retrieved from the same deposit. Roulez, who knew a great deal about Roman period artefacts, investigated the matter and presented his findings at a meeting of the Academy of Sciences in Brussels in July 1837. He noted that many artefacts had been found in the peat deposits around Flanders and that some of them represented the 'most ancient monuments of our civilization' (Roulez 1838: 330–331). Given the great depth at which the Destelberghe artefacts were found, Roulez concluded they must predate the arrival of the Romans in Belgium. He supported this opinion by noting that around Flanders, Roman medals and antiquities had only been found in fields very near the soil surface, and never in peat, or at great depths. This meant that these flint and bronze artefacts either belonged to the Celts, who were the ancient inhabitants of Belgium, or to the Germans who arrived later (Roulez 1838: 331–332).

Roulez was particularly intrigued by the flint axe. The wedge-shape of the axe and the fact that it was apparently not perforated led Roulez to suggest that it was not designed to be attached to a handle but instead was gripped in the hand (an old argument among antiquaries). He acknowledged that opinions varied regarding what these stone implements were used for. Some thought they were weapons of war, others thought they were instruments used in sacrifices, and many others thought they were domestic utensils. He cited such recent authorities as the French antiquary Arcisse de Caumont and the Dutch antiquary Leonhardt Johannes Friedrich Janssen regarding this issue. Roulez believed that a combination of all three was the most rational and likely conclusion, arguing in addition, that the ritual use of stone in sacrifices might have persisted even after bronze and iron came into use, because religious traditions are slow to change, citing the myths about Thor's hammer in Germanic traditions as an example (Roulez 1838: 333, 335–336). He also speculated about how stone axes were fabricated, after inspecting them, and observing that clear evidence of how they were made remained visible on their surface. He argued that flakes were first struck off a piece of flint in order to rough out the general form of the implement, and then the resulting rough surface was polished using just the sort of polishing stone found at Destelberghe. Since the axe and polishing stone found in the peat were not indigenous to the area, Roulez believed they had been introduced through trade (1838: 335–336).

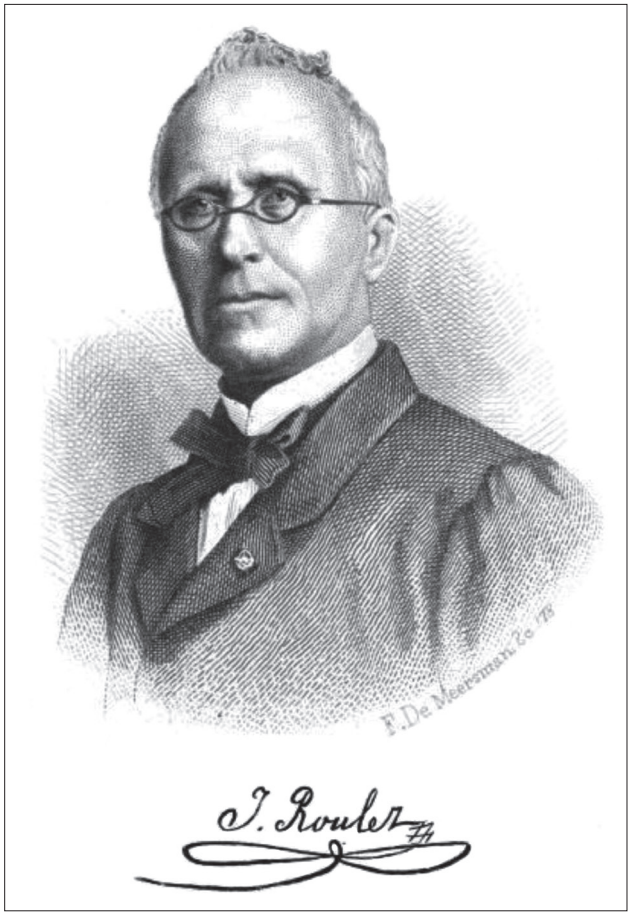

Fig. 3: Joseph Roulez (plate from De Witte 1878: preceding p. 167).

The bronze lance and axe were also interesting and Roulez described them in detail, noting that the latter were common throughout northern Europe where Celtic or Germanic peoples lived. But the presence of bronze and stone artefacts in the same peat deposits raised yet another contentious question debated among antiquaries, had stone and metal been used at the same time among the early inhabitants of Europe? or had stone been used for an extended period prior to the use of metal? Roulez appeared to be unaware of Christian Thomsen's recently proposed Three Age System, but antiquaries, from as early as the eighteenth century, had asked the same questions. Stone and bronze implements were occasionally found together in tombs, lending support to the idea that they had been used concurrently. The presence of stone and bronze artefacts in the Destelberghe peat deposit was relevant to this discussion, and Roulez suggested that the rarity of stone axes from the Flanders region could be explained by the absence in the local area, of the right kind of stone for the manufacture of axes and hammers. So bronze, which he thought

was already in use, or would soon be in use, at the time the country was first inhabited, would have been used instead of stone (1838: 332–333).

This raised the question of when the stone and bronze artefacts found at Destelberghe, and stone implements in general, had been used. Roulez reasoned that 'peoples in their first infancy, incapable yet of submitting metals to the preparation necessary for their use, made use of implements and weapons of stone' (Roulez 1838: 332). This view had been expressed by many antiquaries since the early eighteenth century and for Roulez, the many stone implements found in ancient tombs throughout northern Europe supported his view that the stone implements found in Belgium dated to a very remote antiquity.

The meaning of 'a very remote antiquity' was elucidated by Roulez's explanation for how the human and animal bones, as well as the stone and bronze artefacts found at Destelberghe, came to buried among the trunks of oak trees deep in a peat deposit. Roulez admitted this was a difficult problem to solve, and that one could only conjecture, but the most likely explanation was that this had once been a sacred grove of oaks that served as a temple to the gods of the ancient Celts and Germans. Citing the Roman historian Tacitus, as well as evidence from Schayes' recent book, Roulez imagined the early inhabitants of Belgium using stone or bronze axes (Roulez 1838: 341) to make animal, and even human, sacrifices in this oak grove. In this way these artefacts could be accounted for within the framework of accepted history and chronology. They belonged to known Celtic or German tribes and originated, at the earliest, only a few centuries before Julius Caesar's invasion of northern Europe.

The accidental discovery of ancient artefacts resulting from road construction, the cutting of peat, or other commercial activities, also lead to intentional excavations. The most notable cases of this sort occurred at Bois de Saint-Pierre, which lay between the Belgian towns of Renaix (Ronse) and Escornaix. Ancient burials came to light while workmen were clearing the land, and were brought to the attention of Edouard-Joseph Joly (1812–1887). After studying law at Renaix, Gand, and Louvain, Joly became an advocate (or lawyer) in his native town of Renaix and a liberal politician, serving briefly as the mayor of Renaix from 1840 to 1841, and as a deputy magistrate beginning in 1847. As a young man Joly and his brother Louis were interested in archaeology and they began excavating prehistoric tombs around Renaix in the 1830s. Despite Louis' premature death, Edouard continued to practise archaeology into the 1850s, excavating numerous burials and amassing a large private collection of antiquities (Devillers 1887).

Joly became one of the best-known archaeologists in Belgium and lead the call for laws to protect national antiquities, and for the establishment of a museum of national antiquities. He was a corresponding member of the Société des Sciences, des Arts et des Lettres du Hainaut (a regional scientific society) and of the Société historique et archéologique de Tournai, and later in his career he became a member of the Cercle archéologique de Mons (founded in 1856) (Devillers 1887; Joly 1846: 117–118). Like many of his colleagues, Joly was motivated by patriotism and an interest in his nation's past. He bemoaned the state of knowledge of national antiquities in Belgium, as compared to that of other nations such as France, England, Germany, Holland, Scandinavia, and even Russia. In these countries, Joly explained, the study of antiquities was a 'positive science' that utilized accurate data based upon observations and active research. But he was encouraged by the fact that intelligent men, motivated by patriotism were forming groups in the major Belgian cities in order to conduct truly scientific archaeological research (Joly 1848: 223–224).

During the spring of 1839 Joly dug extensively in the fields of Bois de Saint-Pierre and was richly rewarded: unearthing a total of 283 urns from sixty-four separate burials, as well as three sepulchers constructed from rough stones that only contained ashes, and a large quantity of pottery and other debris, apparently from two domestic structures (Joly 1845: 399–404). Assisted by hired workmen, Joly continued to search for additional burials, and over the next decade retrieved many vases and urns along with numerous bronze and a few iron artefacts. In May 1842 he and his workmen discovered what Joly referred to as 'the most curious monument' his excavations had yet revealed. It comprised eight stone implements arranged in a circle around two urns, a pot, and a pitcher. Several weeks later they uncovered more urns along with a bronze ring. Then in August they unearthed the broken fragments of an urn among ashes and bones, and lying nearby, they found a small axe made from black flint as well as other stone implements (1845: 99–100).

From Joly's descriptions of these discoveries, it is clear that he was intrigued and amazed by them. He 'dared to believe' that burials consisting of stone implements arrayed with urns were rare, but given the range of other artefacts found at Bois de Saint-Pierre he did not believe they dated to a period different from the other urn burials he had discovered, and he was convinced that they were all from the Gallo-Roman period. To support this view he noted that a bronze medal found in one such burial came from the time of the Roman Emperor Trajan, and the bronze objects as well as the few iron fibulae found among the urns at Bois de Saint-Pierre all pointed to the time of the Roman occupation (1845: 105–111). Joly began publishing the results of his excavations in installments in the *Messager des sciences historiques de Belgique* in 1844 and as excavations continued more urns, bronze artefacts, and pottery were collected (Joly 1844, 1845, 1846, 1848, 1849, 1851).

In January 1845 workmen at Bois Saint-Pierre found two broken flint axes at a depth of more than two feet, and in April two urns were found nearby (Joly 1848: 214–215). Joly was convinced that these artefacts, like all the others discovered so far, dated from the period of Roman rule in Belgium and thus were Gallo-Roman. He rejected the notion, proposed by some, that the remarkable assemblage of burials he had uncovered should be attributed

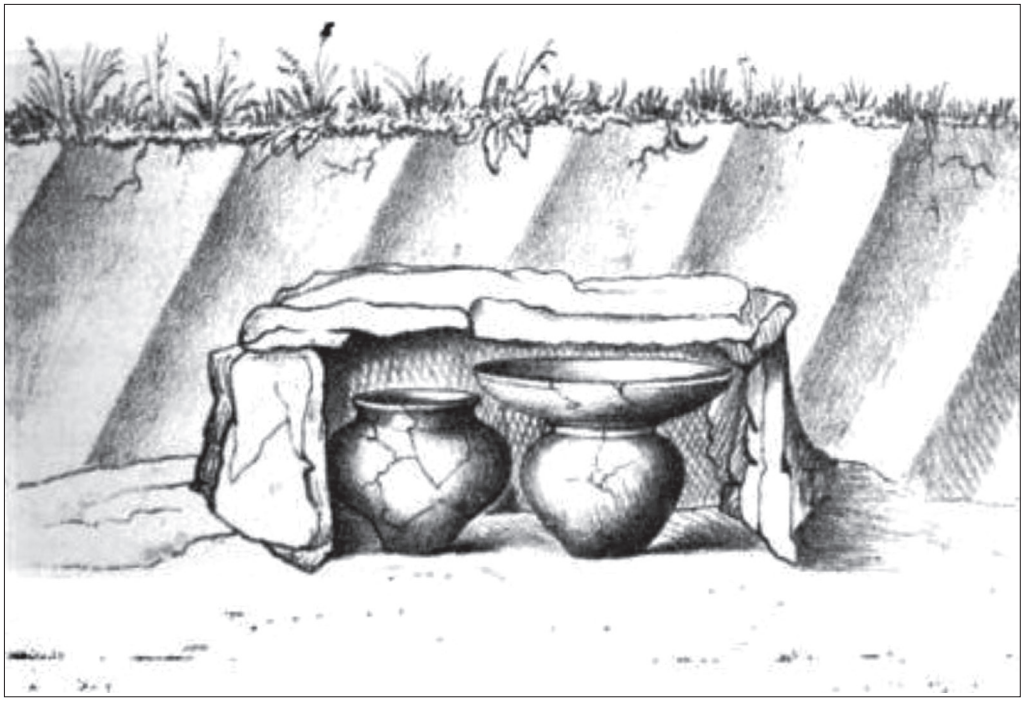

Fig. 4: Illustration of an urn burial excavated by Joly (close up from Plate XII from Joly 1848).

to the Romans and argued instead that the urns, vases, bronze, and stone weapons contained in these burials belonged to the Nervii or the Menapii, the indigenous inhabitants of Belgium at the time of the Roman invasion of northern Europe. Citing Roulez's 1838 paper to support this idea, Joly suggested that over time the Nervii and Manapii gradually adopted the funeral practices of the Romans, and thus the burials in Bois Saint-Pierre dated from this later period. Although some scholars believed that northern Belgium was never conquered by the Romans, Joly argued that the wild and barbarous inhabitants of ancient Belgium would have quickly adopted the more civilized culture of the Romans and that this explained the many urn burials in the region (Joly 1848: 227–233; see **Figure 4**).

Viewed within the context of similar archaeological research being conducted throughout Europe, Joly's discoveries, and his interpretation of them, contributed to the wider discussion about ancient burial practices and ancient artefacts. He accepted as a matter of fact that stone implements were sometimes found along with bronze objects and therefore, that stone and bronze were used concurrently for at least some period of time. The additional evidence of urns, vases, and even medals, led to the ready conclusion that these, as well as the stone and bronze implements, dated to the period of the Roman occupation of Belgium that was described by Roman historians and more recently by scholars such as Schayes and Roulez. Joly even went so far as to attribute many of these burials to the AD first and second centuries on the basis of coins and medals found at these sites that depicted the Roman Emperors Trajan, Hadrian, and Marcus Aurelius (Joly 1851: 57). Furthermore, on the basis of evidence from ancient authors and modern historians, it was possible to identify the people who had used these stone and bronze implements and who had left these urn burials as probably the Nervii or Menapii. As such, they contributed more to an understanding of Belgium's national history than they did to some notion of European prehistory. However, there were other researchers in Belgium, who viewed ancient stone artefacts as part of this latter, and different perspective.

Désiré Toilliez and the Analysis of Stone Artefacts

Edouard Joly was so impressed by the stone implements that he unearthed in 1842 that he promised his readers a separate paper on them (Joly 1845: 111–112). This task fell to a young associate named Désiré Toilliez.

Désiré-Nicolas Toilliez (1820–1852) was born in Mons and enrolled at the School of Mines in 1838, but left after only a year to begin his career. As a young man he was interested in geology and archaeology and by the time he was thirty he had assembled a substantial collection of fossil plants and shells. Toilliez was promoted to the position of Aspirant-Ingénieur des Mines second class in 1845, but he had also established a reputation as a geologist and archaeologist, and was a member of several scientific societies, including the Société des Sciences, des Arts et des Lettres du Hainaut and the Société des Gens de Lettres Belges, as well as the Société géologique de France (Pinchart 1852; Guibal 1852). He was also an active collaborator on the journal *Messager des Sciences historiques de Belgique* and seemed destined to achieve a great deal, but he died from an illness at a young age.

In April 1847 Toilliez presented a remarkably comprehensive and insightful paper on ancient stone artefacts before the Academy of Sciences in Brussels. As part of his research he examined many public and private archaeological collections throughout Belgium. Among these

were the communal museum in his hometown of Mons, the museum attached to the public library of Tournay, and the Musée d'armures in Brussels, as well as several private collections including Edouard Joly's in Renaix (Toilliez 1847a: 363). From these thorough examinations Toilliez hoped to be able to compose a systematic survey of all types of stone implements found in fields, in ancient tombs, in peat deposits, and in cave deposits, throughout Belgium. His objectives were: to determine the kinds of stone used to make these implements; to explain how they were fabricated and what they were used for; and to consider the historical questions of who had made them, and when. Toilliez consulted some of the major French and Belgian publications on ancient stone artefacts, but to a considerable extent he relied on his own line of reasoning, and his wide-ranging understanding of prehistoric stone artefacts.

From his extensive knowledge of stone implements in Belgian collections Toilliez observed that they were generally made from four kinds of stone, among them flint and diorite, and while these artefacts could be found throughout Belgium, the kinds of stone they were made from occurred only in specific locations (1847a: 367–368). Most stone artefacts were axes, wedges, and knives, and Toilliez described each of these in detail, noting that axes (which possessed a hole to receive a handle) and wedges (which did not have such a hole) were generally finely made and their surface polished smooth, while knives were not polished. There were some examples, though, of cruder axes and wedges that were only roughed out and unpolished. Toilliez was impressed by the skill and forethought that ancient peoples demonstrated in choosing the most appropriate type of stone to be used, ones that were hard and durable, but capable of being shaped into the desired form (1847a: 367–370).

Toilliez agreed with Arcisse de Caumont and Joseph Roulez that some stone implements were used as domestic utensils while others were weapons of war, with some serving as instruments used in religious rites (Toilliez 1847a: 374–375). Stone axes, he reasoned, might have been used in two ways. Those that were elongated and pointed or rounded at one end were most likely fixed to a piece of stag antler that was attached to a handle through a hole. Other axes could have been stuck into a notch cut in a wooden handle and held in place by cords tied around it. He supported this idea by citing several 'Indian weapons' that were displayed at the Museum of Antiquities in Brussels and at the Musée de Douai.

Toilliez was following a long tradition of using ethnological artefacts and reports of how they were made and used as sources of evidence for trying to understand ancient artefacts. Stone wedges, he proposed, might have been used in the same way that metal wedges were used in modern times, although Toilliez noted that Caumont thought they were used as 'casse-têtes' (1847a: 374). The large numbers of stone artefacts found in tombs, under dolmens, and near menhirs were more likely to be instruments used in sacrifices made to the gods and spirits of the dead. Toilliez noted the many traditions from across Europe that treated these objects as 'thunderstones' and emblems of such pagan gods as Thor among the Germans, whose symbol was a stone hammer, and Hesus, the Celtic god of war whose symbol was an axe. Joly's curious burial of two urns placed in the middle of a circle of stone implements unearthed in 1842, probably belonged to this category. The animal bones often found in tombs or near dolmens could be the remains of sacrificial animals, thus supporting the view that stone knives, axes, and hammers were ritual instruments (1847a: 377–378). Toilliez noted, as other antiquaries had before, that the use of stone implements in religious rituals continued for centuries after the introduction of metal implements, and even after the spread of Christianity in northern Europe, which of course had implications for the question of how old some of these artefacts were.

Antiquaries not only disagreed over how these objects were used but also there was growing discussion over how they were fabricated. The discovery of artefacts broken during their manufacture, or ones that apparently had never been completed, provided insights into the process, but reasoning and ethnological accounts of contemporary stone tool using peoples were used to reconstruct ancient methods. Toilliez recognized that ancient people would have first needed to choose rocks that were durable yet easy to hew into the correct shapes. Making a stone implement would have required a great deal of experience and practice, given the high quality of many of these artefacts. Axes were probably made by using a hammer stone to strike a rock against an anvil stone, chipping away pieces to rough out the general shape and then polishing and sharpening it into the finished form, although Toilliez raised the possibility that stone axes might have been made with the aid of iron tools since iron had been found with stone artefacts in some cases. This raised the question of when iron had first been used in Belgium. Toilliez noted that the Gauls in France had mined iron before the Roman conquest and some scholars believed the Belgae had done so as well, and the use of iron would have expanded after the arrival of the Romans (Toilliez 1847a: 370–372). All of this highlights just how difficult it was to reconstruct the cultural and historical context of ancient stone artefacts.

Beside the questions of how these stone artefacts were made, and how they were used were bigger questions relating to which ancient people had produced them and when. From his reading of the archaeological literature Toilliez knew that stone implements were found throughout France, Belgium, the Netherlands, Denmark, Sweden, and England. Naturalists in America had even found them buried in the alluvial deposits of rivers. What was remarkable was that everywhere all of these kinds of objects had the same shapes, were generally the same size, and were made from the same kinds of stone. Moreover, they resembled the stone implements still used by 'savage peoples' around the world. Toilliez concluded, therefore, that the various people that had inhabited Belgium, beginning from a very remote period, had used stone implements, perhaps successively.

According to Toilliez, these ancient peoples included the Celts, the Celto-Germans, the Gallo-Romans, and the Franks (Toilliez 1847a: 374–375, 1847b: 239). Although he believed the stone artefacts unearthed by Joly were probably from the Roman period, Toilliez had also examined the stone implements discovered by Schmerling in the caves outside Liège in the 1830s, which were found among the bones of extinct animals. From the latter Toilliez concluded that stone implements were first used by the early primitive inhabitants of Belgium, who were already present in the region before the 'catastrophe' that caused the last great extinction of animals, and produced the geologic deposits of the caves that contained fossil animal bones, human remains, and stone implements. This made these stone artefacts extremely old, but stone artefacts found in alluvial deposits, in peat bogs, and in ancient tombs were more recent. However, the evidence suggested that stone implements were used for a very long time in Europe (1847a: 376).

The kinds of stone artefacts themselves could also reveal something about the culture of the ancient peoples who made and used them. Toilliez argued that ancient peoples had only one instinct, self-preservation, and they possessed only one means to achieve this, brute force and violence ('la force brutal et la violence'). To achieve this end they employed stone axes, hammers, and arrows that resembled in every way, the stone weapons used by many people in various parts of the world in modern times (1847a: 376). Toilliez also imagined that the knowledge, and tool-making skills of the early inhabitants of Belgium would have improved over time. Thus, in the most remote times ('époques reculées') before the use of metals, implements were made from wood, horn, bone, and stone. Toilliez supposed that at first, ancient peoples would have chosen naturally shaped stones that could be put to a particular use with only slight modification. Later people would put more effort into hewing stones into some desired shape and then polishing them. As they learned that only certain types of stone worked best as the raw material for implements, and as stone became the favoured material for utensils and weapons, stones from some regions were traded widely (1847a: 370–371), and became part of commerce.

The transition from stone to metal, a subject much discussed by archaeologists throughout Europe at this time and already raised by Schayes, Roulez, and Joly was also explored by Toilliez. He noted that the stone axe was replaced during the Middle Ages by the battle axe and that stone continued to be used even after the introduction of metal. Since ancient Europeans loved their weapons they often buried them with the dead, and there were tombs from the AD third and fourth centuries of the common era, where flint weapons had been found along with bronze and iron weapons. Toilliez argued that bronze and iron weapons would have been costly when they first came to be used, and as a result their use spread slowly among the barbarian tribes of ancient Europe, including those tribes in Belgium, and so stone weapons would have been used concurrently for some period of time. In support of this he pointed to historical sources that describe stone weapons being used as late as the AD ninth and tenth centuries, while Guillaume de Poitiers stated that sharp stone points attached to pieces of wood were used during the battle of Hastings in the eleventh century (Toilliez 1847a: 377, 1847b: 239). With regard to the burial of stone weapons in tombs, like those excavated by Joly, Toilliez remarked that Christianity only began to be preached in Belgium in the AD seventh and eighth centuries, but the German practice of burying axes and hammers with their dead had continued long after that (Toilliez 1847b: 340–341).

Thus, unlike Joly, Toilliez viewed the whole problem of ancient stone artefacts from a much broader context, and one that took into account the evidence for the geological antiquity of humans, and the related argument that the earliest inhabitants of Europe, and Belgium, were primitive and uncivilized. The stone artefacts found in many different contexts, from cave and peat deposits to ancient tombs, were evidence of the culture of ancient peoples over a long period of time.

However prehistoric archaeology was still in its infancy, and the geological antiquity of man had not yet been accepted, and neither had the Three Age System. For good empirical reasons, given the state of knowledge at the time, Roulez, Joly and Toilliez, and many of their colleagues, accepted that stone tools were used alongside bronze and even iron implements. Despite the fact that Roulez, Joly, and Toilliez accepted stone artefacts as the earliest types of artefacts and that they had been used at a very early date, chronologically and historically they still could only imagine that these were Celtic or Germanic tribes who lived in Belgium and in northern Europe, and only for a few centuries before the Roman invasion, and that many of the stone artefacts found in Belgium actually dated from the time of the Roman occupation.

Artefacts found in caverns with animal fossils, or in peat deposits, were beginning to be interpreted archaeologically and in some cases, geologically. Toilliez also utilized ethnological information about contemporary stone tool using peoples in order to reconstruct how the ancient Belgians had manufactured and used stone implements. But both artefacts and the people who created them were still situated within a historical and chronological framework that accepted them as ancient, but not belonging to what, in just a few decades, would be described as the deep time of European prehistory.

Conclusion

By the 1830s European archaeologists were trying to interpret the significance of prehistoric stone artefacts, but this research took on local characteristics in different countries. The research of Belgian archaeologists was not only motivated by scientific interest, but also by patriotism, and was facilitated by local institutions. When confronted by stone artefacts they asked many of the same questions, and came to many of the same conclusions, as their colleagues elsewhere in Europe. They relied on local historical and archaeological traditions to attribute these artefacts and tombs to the ancient Celts or Germans. They

were familiar with some of the major French archaeological literature, but rarely cited archaeologists from other regions of Europe, and made no reference to Thomsen's Three Age System. This fact, combined with the types of tombs being excavated in Belgium, probably contributed to the belief that stone artefacts were used concurrently with bronze ones. While Joly was concerned with the specific tombs and artefacts he was examining, Toilliez subjected prehistoric stone artefacts to more comprehensive examinations. He united artefacts from different contexts and time periods (cave deposits, peat beds, and ancient tombs) and compared them with contemporary stone artefacts from ethnological collections, in an attempt to answer questions about their manufacture and use. Like later prehistoric archaeologists, he also used these artefacts to speculate about the culture of the ancient people who made and used them, and their progress over time. The opinions held by European archaeologists in the 1840s formed the background for the debate over the archaeological evidence for the geological antiquity of humans in the 1850s and 1860s.

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