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Georges Hasse (1880-1956): a Belgian archaeozoologist *avant la lettre*?

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Abstract
This paper discusses the contributions of pioneer archaeologist and collector Georges Hasse to the field of archaeozoology in Belgium. Hasse was an important figure in the development of archaeology in Antwerp during the late 19th and early 20th century and amassed an important collection of (pre)historic finds from Belgium. Having a background in veterinary science, Hasse paid particular attention to the collection and study of animal remains from archaeological sites. His appreciation of this type of finds, as well as his approach and interpretations, fit modern definitions of archaeozoological research. Based on several examples from his work, it is argued that Hasse should not just be acknowledged as a pioneer in Belgian archaeology, but also in the field of archaeozoology.

Keywords: Georges Hasse, archaeozoology, zooarchaeology, heritage collections, Antwerp

Samenvatting
Dit artikel belicht de bijdragen van pionier archeoloog en verzamelaar Georges Hasse aan de archeozoölogie in België. Hasse was een belangrijk figuur in de ontwikkeling van de archeologie in Antwerpen in de late 19de en vroege 20ste eeuw en bracht een belangrijke collectie Belgische (pre)historische vondsten samen. Vanuit zijn achtergrond in de diergeneeskunde, had Hasse een bijzondere aandacht voor het verzamelen en bestuderen van dierlijke resten uit archeologische opgravingen. Niet alleen zijn waardering voor dit soort vondsten, maar ook zijn benadering en interpretaties, plaatsen zijn werk binnen wat vandaag als archeozoölogie gedefineerd wordt. Op basis van enkele voorbeelden uit zijn werk wordt hier betoogd dat Hasse niet enkel als een pionier in de Belgische archeologie moet beschouwd worden, maar ook specifiek binnen de archeozoölogie.

Trefwoorden: *Georges Hasse, archeozoölogie, zoöarcheologie, erfgoedcollecties, Antwerpen*

1. INTRODUCTION

Archaeozoology is today an integral part of archaeological research. This field at the intersection between the zoological and archaeological sciences can be broadly defined as the study of animal remains from archaeological sites (Albarella, 2017). However, as opposed to palaeontology, which is primarily concerned with the animals themselves, archaeozoology distinguishes itself by explicitly emphasizing the relationship between animals and humans (Albarella, 2017; O'Connor, 2004). While its wider establishment as a discipline can be largely attributed to the emergence of the processual archaeology in the 1960's and 1970's (e.g. Binford, 1981; Higgs, 1972), earlier instances of the scientific study of archaeological fauna go back to the 19th and early 20th century (Reitz & Wing, 2008). Notable examples include Rütimeyer's investigation of the mammal remains from the Neolithic lake settlements in Switzerland (Rütimeyer & Christ, 1861), Eaton's (1898) analysis of the shell middens from Bock Island (U.S.) and Van Giffen's work on faunal assemblages from the northern Netherlands (Van Giffen, 1913; Scheele & Çakirlar, 2018).

In Belgium studies on prehistoric animal remains also date to the 19th century, with pioneers, such as Philippe-Charles Schmerling (1833/1834), Édouard Dupont (1867) and Julien Fraipont (Fraipont & Tihon, 1889), excavating and studying large amounts of Palaeolithic fauna from cave sites in the Meuse valley. However, these studies were often restricted to inventories of the fauna and are usually considered more palaeontological in nature (Toussaint & Pirson, 2007). Therefore, the advent of archaeozoology in Belgium is often put in the 1960's,

when Achilles Gautier started his archaeozoological research at the University of Ghent, under the auspices of palaeontologist Jean de Heinzelin de Braucourt (Ervynck & Lentacker, 2008; Gautier & Verniers, 2017). Later, other universities and scientific institutions followed, most notably the Royal Museum for Central Africa and the Royal Belgian Institute of Natural Sciences under the impulse of Wim van Neer (Ervynck & Lentacker, 2008).

Although there is no doubt that these institutions played a pivotal role in the development of Belgian archaeozoology, it is worth noting that some earlier work, from the first half of the 20th century, also went beyond the anecdotal description of conspicuous finds and would fit modern definitions of archaeozoological research (see e.g. Albarella, 2017). In this light, the efforts of the Antwerp veterinarian and archaeologist Georges Hasse are of particular interest. In this paper it is argued that some of his work should be acknowledged as an early example of archaeozoological research in Belgium, which fits within the wider development of the field in Europe.

2. BACKGROUND

Georges Hasse was born in 1880 in Antwerp, as the son of architect Jean-Laurent Hasse (1849-1925), who was already known to have collected archaeological finds at the construction sites he visited (Inventaris Onroerend Erfgoed, 2024). This passion was clearly passed on to Georges (**Fig. 1**), who would become one of the most important collectors of archaeological antiquities in Antwerp during the first half of the 20th century (De Vos & Wouters, 2013). Living at a time during which large scale development took place around Antwerp, including regular dredging in the Scheldt River and the construction of harbour docks and canals, Hasse was able to procure large quantities of palaeontological and archaeological finds that surfaced during these works (De Vos & Warmenbol, 2019). In addition, Hasse also purchased a range of objects from elsewhere in Flanders, including from localities like Broechem (Warmenbol, 1986), Melle (Warmenbol, 2019) and Wichelen (Meylemans & Perdaen, 2017). By the end of his life (1956), Hasse had accumulated thousands of finds, which were mostly kept in his house in the 'Kardinaal Mercierlei' in Berchem (Antwerp) (De Vos & Wouters, 2013). Although Hasse had already donated a substantial portion of his palaeontological materials to the Royal Museum of Natural History in Brussels (now Royal Belgian Institute of Natural Sciences) (see e.g. Hasse, 1939a), some time before his death, he arranged for the majority of his archaeological finds to go to the city of Antwerp (De Vos & Warmenbol, 2019).

Fig. 1 – Portrait of a young Georges Hasse with his wife Marthe Falize, date unknown, Antwerp (adapted after photo OF#7194 from Stadsarchief Antwerpen).

This collection, currently kept at the 'Museum aan de Stroom' (Antwerp), consists of more than 9000 objects dating between the Palaeolithic and the Postmedieval period (De Vos & Warmenbol, 2019). Together with his collection, the museum also holds Hasse's archive, which includes important notes from his research, extensive documentation about his fieldwork and part of his personal library. Despite the significance of Hasse's efforts, his work was largely ignored in the decades following his death. This was in part because Hasse lacked formal training in archaeology, leading some in the scientific establishment to consider him an amateur (Warmenbol, 2017), but also because certain finds that Hasse had

purchased for his collection, ultimately proved to be forgeries (De Vos & Warmenbol, 2019). It wasn't until the 1980's that Hasse's work was rehabilitated and parts of his collection realized to be of major scientific importance (Warmenbol, 1987).

Although more recently, some of his more important finds have featured in publications about the pre- and protohistoric period of the region (e.g. Meylemans & Perdaen, 2017; Warmenbol, 1983, 2009, 2010), major parts of the Hasse-collection remain understudied. Similarly, most of George Hasse's own research has fallen into obscurity. However, both in terms of the collections he amassed, as well as for some of the hypotheses and interpretations he formulated around these materials, Hasse's work deserves mentioning in the annals of Belgian archaeozoology.

3. CONTRIBUTION TO THE FIELD OF ARCHAEOZOOLOGY

At a time when most archaeologists still considered (more recent) animal remains of little consequence to the archaeological endeavour (Uerpmann, 1973), Hasse took a particular interest in this type of finds. In several instances he even explicitly expressed his frustration about the limited attention such materials were afforded by most researchers: *Les chercheurs se sont toujours préoccupés des pièces archéologiques et fort peu des ossements…* (Hasse, 1939a: 66), and elsewhere: *Il devient de plus en plus nécessaire de recueillir soigneusement avec les restes archéologiques armes et poteries, tous les restes osseux qui les accompagnent…* (Hasse 1935a: 196). This interest can be explained in a number of ways. Having graduated in 1904 from the Veterinary College of Anderlecht (Brussels) (De Vos & Warmenbol, 2019), Hasse was trained as a veterinarian and evidently had the anatomical expertise to properly identify and appreciate the value of archaeologically excavated faunal remains. In any case, his skills were put well to use and resulted in a large number of publications dealing with worked and non-worked animal bone (e.g. Hasse, 1936, 1938, 1939a, 1939b, 1940 b, 1948).

As an active member of the *Société Royale Belge d'Anthropologie et de Préhistoire* Hasse was also familiar with the work of other important pioneers in Belgian and Dutch prehistory, archaeozoology and palaeontology, including Marcel de Puydt, Albert Eggers Van Giffen and Eugène Dubois (Hasse, 1908a, 1932, 1935a, 1940a). Van Giffen was a zoologist turned archaeologist, who wrote his dissertation on animal remains from the Dutch terps (artificial dwelling mounds) in the area of Groningen (Van Giffen, 1913). He later founded the 'Biologisch-Archeologisch Instituut', that would become a major centre for archaeozoological research in Europe. Dubois, on the other hand, who is now mostly remembered for his discovery of *Homo erectus* in Java, was also known for his meticulous collection and analysis of large amounts of mammal remains found in association with this hominin (Leakey & Slikkeveer, 1993). Seemingly inspired by these pioneers, Hasse acknowledged the value of studying archaeofaunal remains in order to understand the ecological context of (pre)historic human behaviour (e.g. Hasse, 1932, 1948).

In the early 20th century, Belgium saw large scale infrastructural development, including the construction of a strategic defensive belt of fortifications (Vaessen, 2011) and the canalization of rivers (Valke, 1958), requiring the digging of meters deep trenches. In Flanders, this would often result in the exposure of Pleistocene formations, like those of the so called 'Flemish Valley', which contain Quaternary vertebrate fossils (Gautier, 1985). Hasse showed a strong interest in these finds and wrote on the topic in multiple instances (Hasse, 1937a, 1938, 1939a, 1940b, 1948). From his writings it is clear that his interest was not purely palaeontological though, as on several occasions he expressed the hope that one day such fossils would be found in association with traces of Palaeolithic human activity (Hasse, 1938, 1940b). It seems likely that, along the lines of Dubois' work (1891, 1907), Hasse had envisioned to use these fossils as a guideline to find and better understand traces of early human prehistory. Unfortunately, clear evidence of Pleistocene mammals in association with human activity, would never be found in Flanders during Hasse's lifetime (but see Bringmans *et al.*, 2003). It is conceivable that this led Hasse to turn his attention towards more recent animal bone assemblages, which were altogether more common in the region, and often clearly of an anthropogenic nature. In any case, Hasse produced a range of publications dealing with Holocene skeletal remains from Wichelen (Hasse, 1935b), Antwerp (Hasse,

1936), Mechelen (Hasse, 1937b), Damme (Hasse, 1939b) and elsewhere in Belgium. Much of these studies can, at least partially, be considered archaeozoological works.

Contemporary archaeozoology deals with multiple facets of ancient human-animal relationships, including subsistence strategies, the use of animal products as raw materials and the effect of humans on the environment (Reitz & Wing, 2008). Although Hasse's work on (pre)historic animal remains is at times more descriptive in nature, in many instances he also touched on the above themes and aimed to explain wider trends in human history and behaviour. This can be illustrated using several examples, including his treatise on the Late Neolithic and Bronze Age of Antwerp (Hasse, 1908b), his paper on the history of the beaver (*Castor fiber*) in Belgium (Hasse, 1925) and his discussion on the archaeological record of Damme (Hasse, 1939b). In the latter case Hasse only briefly touched on the fauna but argued that a collection of 14th to 15th century animal remains from the city represented consumption waste in the form of bones of sheep, pig, cattle, and large sized oysters of a type that were then still cultivated in Ostend (Hasse, 1939b). Hasse's review of the history of the beaver (Hasse, 1925), on the other hand, deals more extensively with themes like human induced extinction and environmental change. In an attempt to reconstruct the history of this species in Belgium, Hasse combined historical, archaeological and toponymical evidence. After providing an overview of the broader history, ecology and (sub)fossil record, Hasse concluded that this large rodent must have been fairly common in the region from the Neolithic until the early Middle Ages but was extirpated as a result of hunting (Hasse, 1925). This estimation was broadly accurate. Although some authors (e.g. Halley *et al*., 2012) have erroneously suggested an extinction date of 1848 AD, more recent work has demonstrated that the species only persisted until the late medieval period in Belgium (Govaerts, 2022).

As for his study on prehistoric Antwerp (Hasse, 1908b), it could be argued that not all materials on which Hasse based his study, actually dated to the Neolithic or Bronze Age. Its interest, however, lies in its approach and premise, which was often archaeozoological in nature. In his discussion of late prehistoric lifeways in Antwerp, Hasse emphasized the environmental context and proposed a combination of fishing, hunting and animal husbandry as the primary subsistence strategies: *Les plaines étaient le domaine des chevaux nomades et du petit bœuf; les forêts abritaient l'urus (peu abondant), l'élan, le cerf et le chevreuil ainsi que le loup, le sanglier, le renard, le blaireau, le lièvre et les oiseaux; le bord des rivières était habité par le castor; la chèvre et le chien partageaient la vie des hommes dans les huttes* (Hasse, 1908b : 216). Further discussing the role of fishing and animal husbandry, Hasse surmised the following : *Les poissons entraient pour 40 % dans le régime à l'époque qui nous occupe, tous les animaux pour 55 % et les végétaux pour 5 % seulement. Tous les poissons de nos rivières actuelles : le brochet, la perche, la tanche, l'anguille, etc., étaient consommés. Quant aux animaux, voici, en ordre décroissant, la fréquence de leur utilisation: 1. Equus caballus; 2. Bos taurus, Cervus, Canis; 3. Cervus elaphus, Cervus capreolus, Capra; 4. Sus scrofa, Castor, etc, oiseaux.* (Hasse, 1908b: 217). Some of these interpretations now seem outdated, e.g. domestic horse probably did not play a major role as a meat provider during the Bronze Age in Northwestern Europe (Toulemonde *et al.*, 2018), but based on the data that was then available, Hasse's efforts were commendable as early archaeozoological explorations of past human-animal relationships.

Other ideas of Hasse have better withstood the test of time. Intriguing in this sense, is his 1935 treatise *Ostéologie primitive et débitage des os et bois de cerf à l'époque romaine, franque et carolingienne*, where he attempts to synthesize the then known archaeological evidence from Flanders with his own archaeozoological inferences. In fairly modern fashion, the approach taken here is both qualitative and quantitative. Discussing the animals used for the production of bone tools, Hasse provides percentages of the relative importance of each species, comparing the Bronze Age, Iron Age, Roman period and Middle Ages (Hasse, 1935a). Interestingly, Hasse also presents some measurements of cattle bones, and concludes the following about the size of these animals: *…pendant la fin de l'âge du fer et la période romaine, l'élevage bien compris donne des types d'animaux plus lourds; l'époque franque marque une régression dans l'élevage et ce ne seront que les 12^{e}-13^{e} siècles qui nous donneront des animaux de types domestiques qui ne varieront plus beaucoup jusqu'à nos jours* (Hasse, 1935a : 196) and further down *A voir la taille maximum des os du Bos taurus romain, nous devons supposer que les armées romaine sons amené avec elles dans*

leur ravitaillement des bovidés de plus grande taille, probablement du midi... (Hasse, 1935a: 201). The idea that domestic mammals, such as sheep, pig and cattle changed substantially in stature from the Neolithic to the Modern Era, is now widely accepted in archaeozoology (e.g. Gautier, 1990; Clavel, 2001). It was, however, not until years after Hasse's death, that the timing and mechanisms behind these evolutions were better understood. As Hasse correctly pointed out, the size of cattle was generally smaller from the Neolithic to the Iron Age, than during the Roman period (Groot & Albarella, 2024; Lepetz, 1996). This is thought to be related to the introduction of larger, improved types of animals by the Romans, presumably for economic reasons (Grau-Sologestoa *et al.*, 2022; Groot & Albarella, 2024). As a result of the disintegration of the empire, these large animals would disappear by the early Middle Ages (Clavel, 2001). Broadly in line with Hasse's estimation, the improvement of domestic mammals to increase productivity, probably only started again in the late medieval period in Northwestern Europe (Clavel, 2001; Gordon, 2015; Grau-Sologestoa & Albarella, 2018).

Finally, it is worth emphasizing that Hasse's collection in Antwerp still contains a sizeable amount of animal remains that have never been described in detail and that would benefit from reanalysis. Preliminary observations by the author seem to confirm that part of the collection may consist of faunal remains of pre- and protohistoric age. As this period is still poorly known in archaeozoological terms in Flanders (Ervynck & Lentacker, 2008), such materials merit further attention and should be prioritized in future studies. This would, nevertheless, require substantial research into Hasse's archive, as no up-to-date collection inventory is currently available and relevant contextual data is not always readily available. However, the value of such an approach has already been demonstrated by a reanalysis of Hasse's unique collection of Mesolithic and Neolithic worked antler fragments from Wichelen (Meylemans & Perdaen, 2017). Here the authors highlighted the use of re-evaluating such older collections and show that they can still provide insights into poorly known aspects of archaeology, such as the production and use of animal raw materials during that period.

4. CONCLUSION

Using a number of examples, we demonstrated that some of George Hasse's work can be counted among early examples of archaeozoological research in Belgium. Combining his background in the veterinary sciences with his interest in archaeology, Hasse touched on a number of themes that are now at the core of archaeozoological research. Although some of his ideas are now obsolete, others are today part of archaeozoological canon. In addition to his own research, Georges Hasse left us with an important collection of animal remains, which may prove to be of significant scientific value.

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