

Fishponds as garden features: the example from the Archbishop's Palace, Trondheim

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Abstract

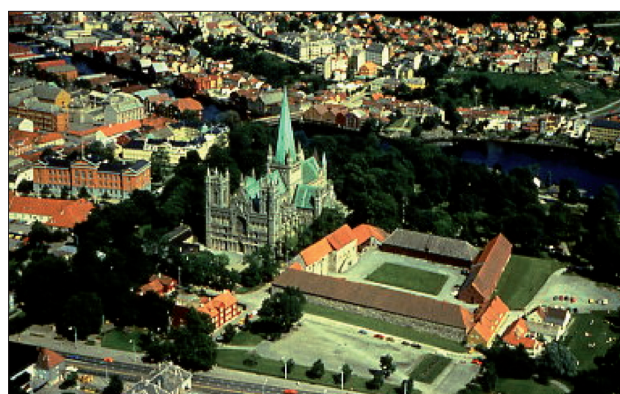
En fiskedam ble utgravd i Erkebispegården i Trondheim, et anlegg datert til 1537-1590. Dette var den tidligste utgravningen av en fiskedam for fersk fisk som er gjort i Norge. Den sensasjonelle funnet av halepartiet av en karpefisk i bunnsedimentene etterlot ingen tvil om at bruken av dammen. Artikkelen presenterer dette funnet sammen med andre data fra dammen sammen med selve opplysninger om konstruksjonen av dammen.

A garden is defined as an enclosed piece of ground appropriated to the cultivation of herbs, fruits, flowers or vegetables; commonly, adjoining a dwelling. Small playground both for children and grown-ups may exist, as well as religious elements, statues and ponds and brooks. In literature, authors have mainly concentrated on architecture and art elements. Interdisciplinary studies are mostly lacking, some few exceptions exist, like the studies on the gardens in Pompeii.

Taxonomical studies of plants and use of ponds as fashion elements are few. In some cases ponds in gardens were made for combined use of flowers and fish, sometimes separated. Despite the tradition of ponds for combined or separate use has a history of more than 2000 years, the knowledge about it is scattered. Also element in garden playgrounds is mostly lacking.

Introduction

In 1152 the English cardinal Nicholas Brekespear travelled to Trondheim – or Nidaros as it was also known – on the Pope's authority to establish the archdiocese of Nidaros (Nordeide 2003a). On the establishment of the archdiocese, building work on the palace's stone hall in the northern wing began, and several medieval extensions in stone have persisted in the northern and western wings until present (fig. 1). In 1537 the archbishop had to flee the country, and the king took over the palace. From this time on the palace was called *Kongsgården* (the Royal Palace). Until the 1990's, however, little was known of the nature of the buildings in the eastern and southern wing of the courtyard in the palace for the time until 1640. Archaeological excavations in this area in 1991-1995 have revealed that it was the site of a succession of a number of wooden buildings and constructions which housed economic-

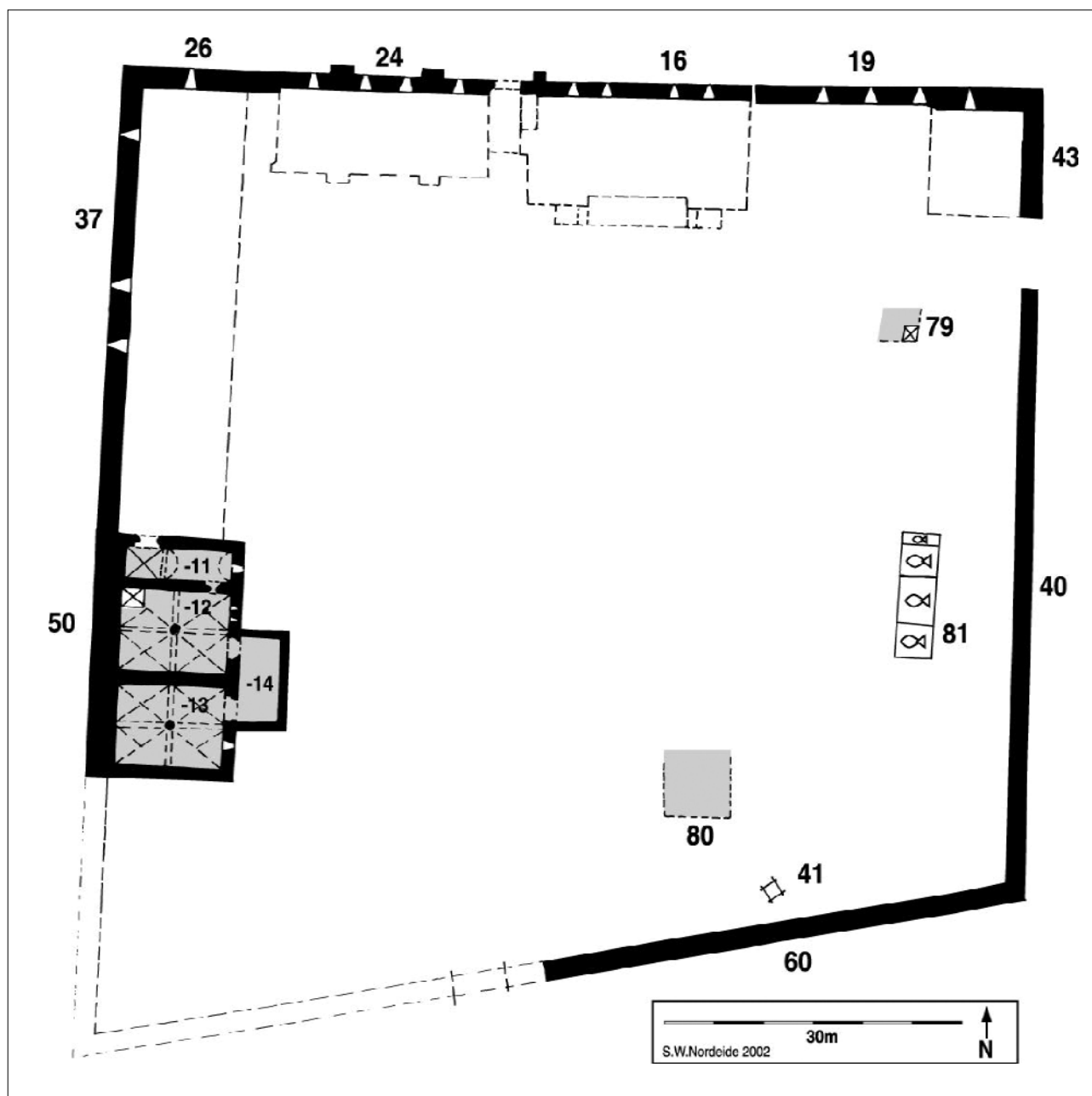


1. - The Archbishop's Palace and the Cathedral with the river Nidelven in the background (Photo: Aune Forlag).

related activities in the late medieval period and early post-reformation period, among those a fishpond. These constructions are hardly mentioned in any documentary sources, and they have mostly been demolished after a relatively short time.

The Archbishop Palace. Erkebispegården

The palace was put on fire by the king in 1532, as a penalty to the archbishop's disloyalty to the king. The wooden houses burned down, and in the years 1532-1537 the archbishop must have lived mostly in his new castle, Steinvikholm, as the palace was generally badly ruined (Wallem 1917). After the Reformation, the king's men lived at Steinvikholm as well, but they were allowed to move back into the palace in town in 1556. The fishpond dealt with in this article was impossible to date by dendrochronological dating, but it is dated by stratigraphy and artefacts to the period ca. 1537-1590 (Nordeide 2003b: 237; Olsson 2000 Nordeide 1003b: 237; Olsson 2000). Due to the history it is most likely



2. - The area where the pond was found (no.81) (Nordeide 2003b: 238).

constructed in the period 1556-1590. Analyses of animal bones from the Archbishop's Palace show, however, that the relative proportion of fish in the diet was increasing through time (Hufthammer 1999). While they were practicing Lent in the medieval time, one would perhaps expect that they would eat more fish than in the later periods, especially in the Archbishop's palace, but the opposite turned out to be the fact. This may be due to the continuation of practicing Lent even after the Reformation, or that the fish was even more appreciated in post-medieval time (Nordeide 2003b: 314-321).

In an open area in the eastern part of the precinct there was a sunken rectangular tank-like structure which is interpreted as a fishpond (fig. 2). Such ancient fishponds

had not been investigated previously in Norway, and during excavation we were uncertain as to the structure's function. It was interpreted successively as a cellar, storage tank, or latrine, but none of these theories found support in contemporary parallels. That this tank indeed functioned as a fishpond is attested by a number of pieces of evidence, for instance certain plant and invertebrate remains found during the microscopic examination of deposits excavated at the base of the tank which indicate that at some point it contained fresh water. These remains comprise eggs of water fleas (*Daphnie*, species *Ephippier*), remains of water scavenger beetles (*Hydrophilidae*, probably species *Hydrochus*), and spores of green algae (*Zygonemataceae*)



3. - The tail-end of a carp fish which was found in the pond (Photo: E. Baker, Riksantikvaren).

(Nordeide and Hufthammer 1993). The strongest evidence is however a well-preserved rear portion of a crucian fish (a member of the carp family) that was found in the basal silt (fig. 3).

The fishpond: its method of construction

Although the central part of the fishpond was cut away by a later cellar, the rest of the pond was relatively well preserved (fig. 4, Nordeide 2003b: 237-239). It comprised a long, narrow rectangular pit, the upper edges of which were lined with a low framework of superimposed logs (fig. 5). The pond had a total length of 12.8 metres, a maximum width of 4 metres and a maximum depth of 1.2 metres. The timber framework was inserted tightly against the edges of the cut and consisted of a number of logs, interlocking at each end in the traditional Norwegian timber construction technique known as *lafting* (log-cabin construction). The timber framework rested on a narrow ledge running around the lip of the basin-like deepened interior of the pond, and also enclosed a shallower section, or platform, at the pond's northern end. The deep basin (0.6 metres deep by 11.5 metres long) was dug down into natural green clay, although its flat-bottomed interior comprised distinctive blue-grey clay which was either a deliberately applied lining or locally discoloured natural clay. The basin itself appeared to have been divided up into at least three sections or compartments. The remains of a collapsed post-and-plank-built transverse partition lay towards the northern end of the basin, while further south two post-holes situated opposite each other on the either side of the basin were all that remained of a probably similar arrangement there. The intrusive cellar deprived

us of insight into the pond's central arrangements, though it might be suggested that the two end compartments lay to either side of a relatively larger middle compartment. The function of the boxed-in platform at the northern end of the pond is uncertain. As to the depth of water which would have been contained within the pond, it might perhaps be reasonably assumed that the entire length of the timber-lined pit was filled and that the water rose to the level of the contemporary ground surface (giving a maximum depth of 1.2 metres).

Fish of the carp family are known to be voracious feeders, and if no precautions were taken they could make damaging inroads into the sides of ponds in search of food if not sufficiently fed. If, as it seems likely, this fishpond contained fish of this family, this may offer some explanation as to why such care was taken to consolidate its upper edges with a timber lining.

Ponds in which fish were raised or kept should ideally be provided with inlets and outlets to allow their periodic emptying and replenishment with fresh water. Such ponds should be cleaned out every five years (Currie 1992a). This little pond in the precinct of the Archbishop's Palace was not so equipped and it must therefore have been emptied and cleaned out manually.

This particular pond can probably be most satisfactorily classified as a *servatorium* – a reservoir or holding tank used for keeping fish alive, and therefore fresh, prior to their use in the kitchen – while the *vivarium* in which the fish were raised probably lay elsewhere. It would have been necessary to have divided the pond up into separate compartments if a variety of species of fish were being kept in it at the same time, since, for example, a pike would quite readily have eaten a carp (Nordeide and Hufthammer 1993).

The tail-end of a fish: a zoological curiosity

It has not been possible to decide whether the fish found in the pond is a crucian *Carassius carassius* (L.), a carp *Cyprinus carpio* (L.), or a hybrid of the two. Only the rear part of the fish was preserved, comprising the following parts of the body found *in situ*: 14 vertebrae, the anal fin, the back part of the dorsal fin and the tail fin. With the exception of a few cranial bones, it is difficult on osteological grounds to distinguish between a crucian and a carp, and the shape of the body alone does not provide us with any basis for a firm identification. In addition numerous scales have been preserved. They are seen in the picture (fig. 3) as beige-brown flakes, in general folded into triangles. We have tried, but have not been able to identify the species based on these scales. It is, however, possible that an expert on fish scale might be able to decide if it is a crucian or a carp.

This said, it is known that the crucian is an extremely



4. - The fishpond. The intrusive features are a well (ca. 1600) and a cellar (18th century) (Photo: E. Baker, Riksantikvaren).

hardy fish which can endure transport under very adverse conditions for some days (Winfield and Nelson 1991: 434). This characteristic is not shared by carp to quite the same degree. Given that there was no advanced technology for the transportation of carp in the medieval/early post-Reformation period, this factor may lend weight to the likeliest conclusion that this find comprises the rear end of a crucian. Growth zones in the vertebrae and scales indicate that the fish died in its fourth year. At a rough estimate it appears to have been some 15-16cm long.

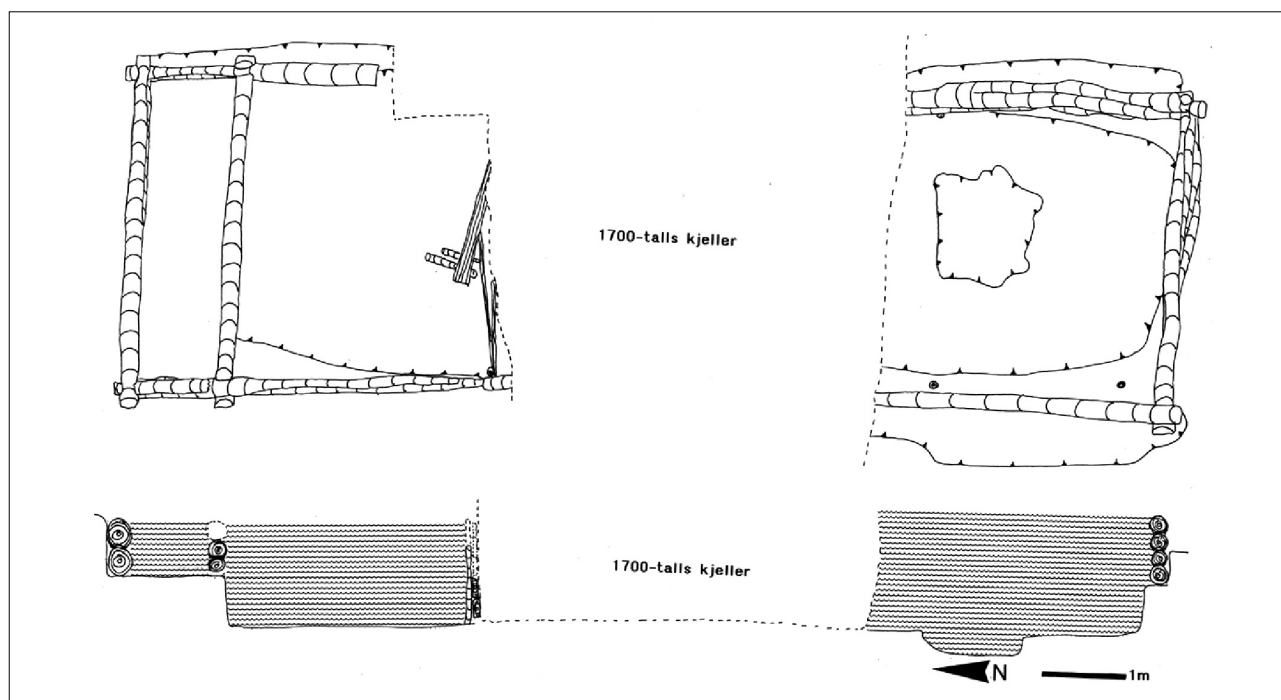
Norwegian written sources of the 16th and 17th centuries make reference only to *karuss* (crucian), and Archbishop Olav Engelbrektsson's menu from 1532 employs the plural form *karuser* (Seip 1936: 1). There are no menus known which mention both carp and crucian. Nonetheless, it cannot be ruled out that in Norway the term *karuser* was customarily used to refer to both crucian and carp, with no formal distinction being made between the two. No "archaeological" bones of carp fish have been found in Norway previously, so we have no material evidence against which this can be weighed.

Hoffmann (1994) gives an overview of the Holocene history of carp in Europe. There are no references to the distribution of the domestic crucian in the paper, but it is likely that some of Hoffmann's 'verbal' or 'bone remains' registrations might refer to crucian. Often in literature "Carp" refers both to carp and domestic crucian, sometimes even to grass carp, silver carp or bighead carp.

Hoffman found no indications, written records or bone remains of the presence of carp in northern Europe before the twelfth century. Only a few excavations have produced carp remains that can be dated to before AD 1350; two sites in the Netherlands (Brinkhuizen 1979, 1983; Seeman 1989), one in Northern Germany (Paul 1978) and one in Northern Poland (Dabczewski 1952). Except for some bone remains from Surrey, Southern England, the distribution pattern is very similar in the late Middle Ages as before the Black Death. At present the bones from the Archbishops site is the only carp/crucian bones that have been excavated in Scandinavia.

Lepiksaar is of the opinion that in Sweden "the use of fishponds is in all probability to be associated with more recent impulses within the area of household management" (Lepiksaar 1969). Also in Poland the carp as a breeding fish is of fairly recent date. Makowiecki (1999) suppose that the introduction of carp as a breeding fish could not take place earlier than the 15th century. In the 16th century a fish economy based on the breeding of carp was established in the country. Heinrich has suggested that the lack of carp bones in 11th- to 14th-century deposits in Schleswig is indicative of the absence of carp farming in this area prior to the 14th century (Heinrich 1987).

However, the lack of carp/crucian bones in Norwegian contexts need not necessarily be interpreted in the same way. Osteological material has been collected from 47 excavations in the medieval towns of Oslo, Tønsberg, Bergen and Trondheim. To date, more than 62,000 fishbones have been analysed from the Norwegian medieval and post-medieval periods. Much of the material derives from a time when contemporary documentary sources record that *karuss* formed part of the diet of the wealthier citizens in these towns, although this crucian fish from the Archbishop's Palace is as yet the only find of its kind. Consequently there is an apparent discrepancy between the testimonies of the written sources and the excavated osteological material. An explanation for this might be that in Norway the particular deposits with the potential for producing evidence relating to the exclusive diet described in the documentary sources have not yet been excavated (i.e. in the vicinity of the wealthier residences). Another explanation might be that these menus present an idealized picture of what was considered proper to serve



5. - Plan and partly reconstructed section of the fishpond. The pond is shown containing the maximum possible water level and the intrusion by the 18th century (Nordeide 2003b) (1700-talls kjeller= Cellar dated to 18th century).

at table, but that in reality carp/crucian was by no means customary fare amongst these social classes.

Also mentioned with crucian on Archbishop Olav Engelbrektsson's menu from 1532 was pike *Esox lucius* (L.) (Seip 1936: 1). Some 2032 recognizable fishbones have been recovered from pre-1672 deposits at the Archbishop's Palace. The bones of saltwater fish, such as cod (*Gadidae*) and herring *Clupea harengus* (L.) predominate, although the remains of freshwater fish were also found: for example, three cranial bones and a vertebra of a pike and a cranial bone of a dace. The diversity of fish species at the menu was in general much larger in the Archbishops castle, than in the medieval towns further south in Norway (Hufthammer 2003).

The fishpond: a purely functional construction?

A fishpond could be part of the means of food production, or form an important feature of a formal garden. Fish was generally regarded as a high-status food in medieval Europe (Currie 1992b) also known back in to early Roman Period (Varro 1934). In Norway, with its long coastline, fish constituted one of the major export commodities during the medieval period, and since there was such ready access to both saltwater and freshwater species, fish was not normally regarded as a high-status food here.

In general freshwater fishes were rare on the menus in Norwegian Medieval towns (Hufthammer 2003). On

the other hand, the continental species of farmed fish such as the carp and the pike were certainly an obligatory part of the menu of the Norwegian upper class. Likewise, only the wealthiest members of society commissioned formal gardens containing fishponds. Royalty, aristocrats, the Church – in the person of its bishops – and, most particularly, the monastic institutions, would appear to have been pioneers in the art of creating formal gardens (Varro 1934; Schnitler 1916: 28ff; Moe 2005). This fishpond in the palace precinct was therefore undoubtedly a status symbol, regardless of whether one sees it as either a food source or part of a formal garden.

When the last archbishop in Trondheim, Olav Engelbrektsson (archbishop from 1523 to 1537) had both *karuser* (crucian/carp) and dried pike on his menu, the fish was probably raised in the close vicinity. It is also known that there was a *karuss* pond at his up-to-date, newly-built castle at Steinvikholmen further east along the Trondheim fjord (Wallem 1917: 2). A contemporary of his, Madame Inger of Austråt, also had a *karuss* pond at her manor house near the mouth of the Trondheim fjord (Ree and Wallem 1916:21). Their social standing demanded that in addition to other high-status foods such individuals should be able to have crucian/carp and pike served at table. The fishpond from late 16th century is evidence showing that this was still important, and a map from 1658 in addition to documentary sources demonstrate that it was still important with fish breeding during the 17th century in Trondheim (Nordeide 2003b: 257-258).

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