

The history of Cormorant fishing in Europe

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Cormorants have been trained for fishing purposes in East Asia since the third century. From the mid-16th century onwards, such activities are also documented for Europe, but in contrast to the Asian origin cormorant fishing was practised as a leisure activity at the royal courts, during the 19th century also by the lower aristocracy. The earliest reliable source stems from SCALIGER (1557), reporting from Venice. In the early 17th century, cormorant fishing was intensified in England by King James I. From here it reached other European royal courts by presenting and trading trained birds. Outside England, the "sport" was evidently only practised in France for a longer time, possibly with interruptions. Based on the analysed sources, the former, remarkably old assumption that cormorant fishing was brought to Europe by Dutch Jesuit missionaries, cannot longer be considered as valid. After the end of the "first phase" – in England about 1700 and in France after 1736 – cormorant fishing experienced a renaissance in Holland at the beginning of the 19th century, from where it came to England and once again to France before finally disappearing in Western and Central Europe about 1890. A late source from Saratow (Russia) in the year 1912 suggests a longer local existence in Eastern Europe.

In Macedonia, the cormorant was also used for fishing, but with a fundamentally different technique. This type of fishing is not related to the activities developed in the courts of nobility; it was operated for commercial purposes.

Key words: Great Cormorant *Phalacrocorax carbo*, fishing, history, Europe.

1 .Introduction

In East Asia, cormorants have been trained for fishing purposes at least since the third century. Based on previous researches, *Phalacrocorax capillatus* as well as *Phalacrocorax carbo hanedae* were used in Japan and *Phalacrocorax carbo sinensis* in China (THIEDE 2010; KINZELBACH 2010). In Europe, where the cormorant *Phalacrocorax carbo* occurs with its subspecies *sinensis* and the nominatform *carbo*, it was used for fishing too and until now it was unclear as to which subspecies were used.

At the English and French courts of the 16th and 17th century the kings practised cormorant fishing as a leisure activity. The sources mention a *Master of Cormorants* called John Wood, who carried out his tasks as trainer and keeper of the birds for James I (r. 1603 – 1625) (HARTING 1871).

There have been speculations about the origin of this "sport" in Europe. The assumption that Dutch Jesuit missionaries introduced the idea from China was widely spread, based on the historical mentioning of a "Fleming" in the beginning of the 17th century, who had performed trained cormorants at the French court

(D'ARCUSSIA 1617). A good summary of the up to then state of knowledge is given by LAUFER (1931).

A satisfying overall picture of European cormorant fishing does not exist. Ignoring this fact, the sources occasionally were abused with the intention to fabricate an introduction of *Phalacrocorax carbo sinensis* from China into Europe and make the bird into a stranger, released for extermination – a thesis which lacks any basis. Such attempts can be found in the journal "Fisch und Gewässer", in which the introduction by the Dutch was tried to be proved by a single source, which moreover was cited incorrectly (KINZELBACH 2010). Using more sources, but just as distorting and refutable, the Swede Christer OLBURS proceeded in 2009.

In the context of researches into the history of the cormorant in Europe, there were an astonishing number of mainly contemporary sources on cormorant fishing, which had not yet been exploited for this subject. This essay enables a much broader and clearer picture of this historical "sport" and its beginnings in Europe, which until now was based only on excerpts from scattered reports and secondary sources.

2. Materials and Methods

First, all hitherto published sources as well as keywords and personal names (GUDGER 1926, LAUFER 1931, JACKSON 1997, KINZELBACH 2010) were collected and entered in Internet search engines. The terms were also used in combination (eg "cormorant fishing England") to obtain subject-specific results. Thus, a first complex of historical sources was exploited and checked for relevance to the subject. The sources used by the authors were identified and copies were researched online or obtained in printed form. This procedure was continued using several sources.

Data concerning European cormorant fishing were found for a period from the late 15th to the early 20th century. Historical English state papers turned out to be particularly productive. They can be found using the integrated search engine on <http://www.british-history.ac.uk>. Part of the copies of printed works from the 19th century can also be found digitalised in other web archives. In connection with the English data a diary of the childhood and youth of the later French king Louis XIII (r. 1610–1643) played an important role.

Non-English texts are quoted in the original language followed by the translation. Especially Latin texts were translated as literally as possible. If explanations in quotes became necessary, they were inserted in parentheses, italics and marked with the abbreviation MB.

3. Results

3.1 15th until 18th century

3.1.1 Italy

The painting *Caccia in Valle* (also: *Hunting on the Lagoon*, about 1495) by the Venetian artist Vittore CARPACCIO (1453 - 1526) shows a hunting scene on a lagoon, in which cormorants are sitting on several skiffs and piles in the background (<http://www.getty.edu/art/gettyguide/artObjectDetails?artobj=801&handle=zm#0.5,0.7488,0.2617>). The image was often considered as evidence of European cormorant fishing at that time (JACKSON 1997; KNAUER 2003). But a closer look justifies doubts on this interpretation.

JACKSON and KNAUER classified the birds in the water as cormorants, too, and the animals hanging over the skiffs as fish which had already been caught. Instead, both depict the great crested grebe *Podiceps auritus*, which is hunted with ball bows. Their intact abdomen feathers, left in one piece and in German called "Greibenfelle", were a popular luxury good at that time. The balls used in this kind of hunting left the feathers largely intact (KINZELBACH 2010).

The cormorants sitting on the skiffs are inactive or rest and dry on piles. There is no communication taking place between them and the persons in this scene. Neither are there baskets or other containers for fish already caught in the boats. Thus, the painting does not show cormorant fishing. An alleged ring around the neck of one of the birds, which is said to be discernible only on the original painting (KINZELBACH 2010), cannot be verified on the high resolution digital form linked above.

The painting has symbolic character and is supposed to represent the depicted young noblemen's depraved pursuit of physical love. In the same sense, the second part of the picture shows two splendidly dressed courtesans with exotic birds and a snarling dog. Taking into account this intention of the artist, the painting therefore cannot be considered as evidence of Venetian cormorant fishing about 1500 (DITTRICH & DITTRICH 1994).

The first written report on tame cormorants in Europe comes from SCALIGER (1557) and, as the painting *Caccia in Valle*, from Venice:

„De mergo nihil equidem praeclari, nisi quod Celsus Sergius Cosentinus contubernalis meus, eques fortissimus narrabat mihi: Mergum Cicurem Venetiis vidisse. Qui ab hero e Cymba emissus, non sine spectantium voluptate, & admiratione, sub aqua sibi cibum caperet. Satur ad herum rediret.“

„About the diving bird, however, there is nothing of importance, except what my companion, the very brave knight Celsus Sergius Cosentinus, told me: he had seen a tame diving bird in Venice, which was sent by his master from the boat, and, not without pleasure and admiration of the observers, caught food under water. When satiated, it returned to its master.“

SCALIGER calls the bird *mergus* – diving bird. But he adds a prefix to the above cited text, in which he states that the *corvus marinus* was often given this name, so his description is undoubtedly to be attributed to the cormorant.

3.1.2 England

In the English state papers cormorant fishing can be reconstructed for the 17th century quite well, although the references, due to various influences such as the Great Fire of London in 1666, have become fragmentary (SALVIN & FREEMAN 1859). The first entry falls into the reign of James I. He practised this "sport" for his pleasure and his recovery, as the documents repeatedly say. James was born in Edinburgh in 1566 and already a year later officially crowned king of Scotland, here as James VI. He finally ascended the English throne as James I in 1603.

The first account of tamed cormorants appears in 1608. In December, His Majesty visited the city of Thetford in Norfolk, where he was "welcomed... by three cormorants on the church steeple" (EVERETT GREEN 1857). As we can conclude from records of the following years, the king apparently was a great friend of cormorant fishing in particular and of falconry in general. He is depicted as a boy in a portrait with a likewise juvenile sparrowhawk on his fist (NATIONAL PORTRAIT GALLERY, LONDON 2012).

The first account of cormorant fishing in England dates back to 1610. It is contained in a French-speaking report on a tour of the Duke Ludwig Friedrich of Württemberg-Mömpelgard, written by Hans Jacob WURMSER. On 8th May the German nobleman stayed in that very same Thetford, where the King was welcomed by cormorants on the church steeple two years earlier. Among other things the day proceeded as follows (RYE 1865):

„S. E. soupa derechef avecq sa Mate. Lesquel en sortans de table, entrèrent en carrosse pour aller à la rivière, ou ils virent des Cormorants, oyseau qui par signe que maistre qui les adressez leur donne, se plongent sous l'eaux et prennent des Anguilles et autre poisson; lequel aussy par signe l'on le fait rendre et vomir tous vifs, chose bien merueilleuse a voir.“

"Then His Excellency dined with His Majesty, and after leaving the table they drove to the river in a coach, where they watched cormorants - birds diving into the water on a signal of their master, who trained them, and catching eels or other fish, and are initiated by another signal to hand them over and spit them out alive – a wonderful thing to be witnessed."

Prince Otto of Hessen-Kassel visited England in 1611 and received gifts everywhere. ROMMEL (1839) lists some of them:

„Otto erhielt vom König ein Kleinod mit 120 Diamanten, vom Prinzen Heinrich vier herrliche Pferde, von anderen englischen Herren eine Armbrust, um Hirsche zu schießen, einen Dammhirsch (mit dem Wort Landgrave auf dem Halsband gezeichnet), den man laufen ließ, und einen „Commorant (*sic - MB*) zum Fischefangen“...“

„Otto received a gem with 120 diamonds from the King, from Prince Henry four magnificent horses, from other English gentlemen a crossbow to shoot deer, a fallow deer (with the word Landgrave engraved in the collar), which was released, and a "Commorant (*sic - MB*) to catch fish" ... "

Likewise, in 1619 James I sent a gift of trained cormorants to the Duke of Lorraine (DEVON 1836) and to the King of Poland in 1624 (EVERETT GREENBAUM 1859). That same year, a transport of three birds was attacked on its way to Venice(!). The birds were stolen by the Duke of Savoy (DEVON 1836). Furthermore, some birds apparently were delivered to Spain (MARTINEZ DE ESPINAR 1644):

"En Inglatierra y otras partes marítimas, los acostumbra criar mansos, y los tienen por el provecho que sacan de ellos; yo he visto dos de allá; y los sol-

taron en un estanque y sacaron muchos pescos y los traían a su amo, que los llamaba con una poca de carne; y si se tragaban algún pez, se le hacía vomitar apretándole el buche y cuello."

"In England and other maritime areas they are tamed; and they are kept because of the benefits man draws from them; I have seen two from there, they were released into a pond and they caught a lot of fish and brought them to their master, who lured them with some meat; and if they swallowed a fish, they were forced to spit it out by squeezing their crop and neck."

In 1619 the following entry is recorded in the state papers (Harting 1871):

„February 28th, 1619. – To John Wood, whom His Majesty heretofore appointed to attend the French ambassadors, with the cormorants sent by His Majesty's good brother, the French King, the sum of £ 215, for so much by him disbursed and laid out for his charges incident to the performance of the said service, over and above the sum of £ 50, impressed unto him, for and towards the said charges, appearing by his bill, of the particulars thereof, delivered in upon oath, and allowed by us and the rest of the Commissioners of the Treasury. By writ dated the 18th July, 1609, and by confirmation dated the last of July, 1618.“

A correct interpretation of the text proves to be difficult. Depending on punctuation (which differs in later quotes) and interpretation of the word *attend* the meaning of the text changes. MACGREGOR (1989), completely taking out the commas, considers the text to be an indication that the Frenchmen delivered trained cormorants to the English king in 1619. But he fails to recognize the immensely high sum of £ 265 that was paid to John Wood by James I. It is almost as high as the expenditure on the construction of nine fish ponds including a sluice and a brick building in the previous year (see below). Nor does he take into account the reference to the already 10 years old order that explains how such enormous costs could accumulate. On this basis, a donation of birds by Louis XIII to James I can also be refuted.

Therefore, the entry is some kind of "expense account" of Wood, which explains why the birds of Fontainebleau in 1625, "which all have been sent by the King of England to the King of France as a present, along with the trainers and instructors of these birds" (FABER 1649), only obeyed English commands. These two sources combined prove that assisting and instructing the French falconers in training and keeping the birds was part of the tasks of the English *Masters of the Royal Cormorants* from 1609 until at least 1625.

But where did they procure the birds they trained and sold “for a not low price” (FABER 1649)? In an avifauna of Norfolk from the 17th century, contained in a 1669 completed manuscript of Sir Thomas BROWNE (BRITISH LIBRARY 2012), there is the first reply. In the 19th century the avifauna was published in printed form (BROWNE 1836):

„...cormorants; building at Reedham, upon trees from whence King Charles the First was wont to be supplied.“

But this seems to have been practised only in the first years of the reign of James I. As early as in April 1612, it is once again John Wood, who is paid for his travels “into some of the furthest parts of this realm for young cormorants, which afterwards are to be made fit for his Majesty’s sport and recreation”. In the year before, Wood was already paid £ 30 for “bringing up and training of certain fowls called cormorants...” (DEVON 1836). In the years 1618, 1619 (when, corresponding to MACGREGORS erroneous conclusion, cormorants from France were allegedly introduced for a high price) and in 1622 he and his son Robert are rewarded £ 84 for their “yearly journeys to the North, in providing haggards and cormorants, for the King’s disport in fishing” (Everett Greenbaum 1858). So obtaining and training the birds was carried out entirely by the staff of the *Master of the Royal Cormorants* themselves.

Details about obtaining and the origin of the birds are given much later (ANONYMUS 1864):

„There are at least a dozen letters scattered through the collection, written about occurrences having reference to these same pestilent birds.

Eighty-four pounds per annum, with two shillings and sixpence daily fee, were paid to Wood for going annually to the Isle of Man, and other northern localities, in search of haggard and nestling cormorants. Vast numbers of these birds everywhere breed upon the shelving precipices...

Her ever-restless eye, green as the waves that dash below upon the beach, turns askance, and espies an intruder in the form of Master Wood, followed by his myrmidons.

For their intending captors have procured from a Manx rock-fowler the use of a peculiar kind of rope, about eighty yards in length, and being made of salted cow-hide, able to sustain a vast weight. In addition, there is a second smaller line tied to the fowler’s body, as a signal to those who lower the fowler that he wishes to be drawn up. By means of this rather perilous contrivance, an ample supply of cormorants could always be procured. These ropes, it may be added, are so durable that they last a family through the life of father and son. On his death-bed, the head of a family formally bequeathed them as the

two most valuable gifts he could confer on his child; and should that child have been an only daughter, the possession of this fowler’s gear rendered her in marriage quite equal to the rural bride whose heritage was in land and beeves.“

However, James I got his cormorants not only from the Isle of Man and the colony at Reedham with great expenditure of money and time. HEGENTTIUS & ORTELIUS (1630) report from a breeding colony at Zevenhuisen in Holland:

„Confluunt quotannis, ubi tempus vernum appetit, tam multae omnis generis aves in hoc nemus elegantissimum, ut plures vix in tota Belgio reperiri credas. Quatuor tamen ex iis praecipue familiam ducunt, quae sermone patrio sic appellari solent:

Quacken,
Scholfers,
Lepelaers,
Reygers.

Hae statim sub adventum suum nidos magna copia construunt, quos postea circa mens. Septembrem relinquunt. Antequam vero abitum moveant, homines passim non solum ex omni Hollandia, sed & aliis provinciis accurrunt, ut tam suavi voluptate ac raris delitiis perfruantur. Tum enim in illorum gratiam longae ultra modum perticae, quarum extremitas magnis ferreamentis armatis conspicua est, adhiberi consueverunt, ut sic arboribus circa summum fastigium, ubi optime possunt, firmiter agitatis, aves tanquam poma aut pyra in terram decidunt, quae ab adstantibus non sine jucunda interdum concertatione colliguntur. Rex Britanniarum Iacobus VI, binas naves dicitur harum avium, si tamen *Scholfers* excipias, singulis annis ex hoc nemore in Angliam non sine sumptu ac labore magno advehi jussisse.“

„Once spring time approaches, many birds of all kinds yearly flock together in this beautiful forest to such an extent, that one wouldn’t believe to find more of them throughout Belgium. Nevertheless, particularly four of those start a family, which in the local language are called as follows:

Quacken (*Night Herons* – MB)
Scholfers (*Cormorants* – MB)
Lepelaers (*Spoonbills* – MB)
Reygers (*Grey herons* – MB).

As soon as they arrive, they build their nests in large numbers, leaving it later about the month of September. Before they begin to migrate, people rush over not only from all over the Netherlands, but also from other provinces, to enjoy the sweet pleasure and rare delights. Hereafter, for this sake they usually use exceedingly long rods, which are standing out with a big, strong armament on their extremity, [and] as soon as the trees have been

shaken hardly around the highest peaks, where it can be done best, the birds fall to the ground like apples or pears, which are sometimes collected by the bystanders not without a funny dispute. It is said that the King of Britain, James VI (*of Scotland* = *James I of England* - MB), has ordered to import yearly two ships full of these birds, provided that Scholfers are caught, from this forest to England with high costs and great difficulty.”

John Wood is currently the only royal falconer from England who has until now received bigger attention as *Master of the Royal Cormorants* in essays on European cormorant fishing. He is mentioned in 1611, when he was paid for training cormorants (EVERETT GREENBAUM 1858), until 1625, when he attended the funeral of James I. (BRUCE 1858). But it was not only he. John's already above-mentioned son Robert first appeared in 1617 in an annual financial statement (SCOTT 1809). In 1618, at the behest of James I, he built a brick building along with nine ponds in Westminster for the purpose of cormorant fishing, which caused costs of £ 286 (DEVON 1836). Previously, James I kept the birds on his favourite hunting lodge Theobalds in Hertfordshire, north of London (HARTING 1883), or fished from a boat on the Thames (HINDS 1909). The ponds in Westminster were filled with 100 carps, tenches, barbels, roaches and whitefish and were supplied with water from the river, using sluices made of elm boards (HARTING 1883). Five years later, Robert Wood was paid a compensation for the loss sustained on the cormorant transport to Venice. According to the state papers, the travelling companion of the cormorants was Luke Wood (DEVON 1836), probably another son of John. The exact family relationships cannot be dissolved completely anymore. Especially not after taking note of the following story:

In May 1660, immediately after the enthronement of Charles II., a petition of a man named Richard Wood reached the king (HARTING 1871).

"A prayer of Richard Wood, of Walton-on-Thames, Surrey, to Charles II., for restoration to his place as cormorant keeper, which he held, he says, from King James's first coming to England, to the late wars, in which he served as a soldier, but being now ninety-five years old, has been forced to retire to a dwelling at Walton."

At the end of the 1630s disputes arose regarding alleged fraud by Robert Wood in connection with the sale of his appointment. Robert had promised it to a man named Richard Makin, who in turn had cancelled Woods debts of £ 600 and added £ 250. At least this was lamented by Makin in a complaint to the king from 1640. He accused Robert to have sold the appointment illegally a second time to a Mr. William Melyn and so "fiddled"

£ 250 more (TEAGUE 1998). But the matter obviously petered out, undoubtedly caused by the beginning of political tensions in the country which led to the English Civil War from 1642 to 1649. Makin's complaint is at the same time the last mention of a member of the Wood family as *Master of the Royal Cormorants*. Whoever followed him before the war, if at all, cannot be determined.

During the Civil War the military called up every available man (Richard Wood must have already been 75 years old) and so the appointment was apparently discontinued. During the following time of the Commonwealth (1649 - 1659), there are no indications of cormorant fishing either. But immediately after the accession to the throne by Charles II in May 1660, the sources effervesce again. The above-mentioned petition of 95-year-old Richard Wood was also during this time and was not accepted, probably because of his age. Immediately after the coronation, the king announced that he has instructed his "servant" Richard Edes, "to keepe and breed three cormorants for our recreation and disport in fishing, and [we] are pleased to allow unto him an yearly pension of two shillings and six pence..." (TET 1855). Cf. the identical amount of money before the war.

However, Edes, if at all, did not remain in office for long. Only three months later, on 7th August, an invoice for payment to "George Hutchinson from the site of the *Master of the Cormorants*" appears. This happened again a month later. In December, the state papers speak of a "refusal" of the appointment by Richard Edes (EVERETT GREENBAUM 1860). In Hutchinson's period of office the procurement of cormorants from the North for the royal pastime is documented, too, for the same amount of money as before the war (EVERETT GREEN 1861):

„June 15 [1661]. Warrant to the Treasurer of the Chamber to pay to George Hutchinson, cormorant keeper, 84l. yearly, for going to the north of the kingdom with two servants, to take haggard cormorants for the King's disport.“

Finally, Hutchinson was replaced in 1662 by John Harris, for whom nothing changed regarding the procurement of birds and payment etc. (EVERETT GREENBAUM 1861).

Two years later, in May 1664, the staff changed again and a man called Ralph Leek became the new *Master of the Royal Cormorants*. The payment for the procurement of the birds "in the north" remained constant with 2 shillings and 6 pence as salary and £ 84 for travel (EVERETT GREENBAUM 1862). In 1667, for the first time, there are indications of a fundamental change. The appointment of the *Master of the Royal Cormorants* was to be abolished in order to save the money (SHAW 1916). This was certainly caused by the

Great Fire of 1666, which destroyed a large part of the city of London, including St Paul's Cathedral, 87 parish churches, and about 13,000 houses (BRITANNICA ONLINE ENCYCLOPEDIA 2012a). Whether and how long the office was suspended, cannot be determined, but for the period between 29th September 1673 and 29th September 1674 the usual sum of £ 84 was charged for the procurement of cormorants as expenditure for the "cormorant keeper", just as in 1679 (SHAW 1916). Despite the considerations on cancellation, Ralph Leek was again or still in office three years later (CHAMBERLAYNE 1682).

As from here, the sources from England thin out. Under James II (r. 1685-1689) there are no cormorant fishing activities detectable. On 3rd May 1689, shortly after the double coronation of William III and Mary II, a man named Benjamin Colinge appears as cormorant keeper (SAINTY & BUCHOLZ 1997). However, this is the last available source for royal cormorant fishing in England. Apparently, its reintroduction after the war and Commonwealth was pursued only half-heartedly and it probably extinguished completely before 1700. A chronological depiction of the mentioned *Masters of the Royal Cormorants* is shown in Figure 1.

3.1.3 France

Jean HÉROARD (1551 - 1628), a physician at the French royal court portrays the childhood and youth of Louis XIII. in a diary. Three days before the eighth birthday of the prince in 1609 he writes (HÉROARD 1868):

„Le 24, jeudi. - Il part de Brie à huit heures trois quarts, arrive à onze heures et un quart à Melun, y dine et arrive à Fontainebleau à trois heures et demie. Il va chez la Reine; le Roi, qui étoit à la chasse, arrive à quatre heures et demie; mené avec LL. MM. au grand jardin, où il voit pêcher un cormoran aux canaux.“

“Thursday, 24 [September 1609] – He leaves Brie at a quarter to nine, arrives at Melun at a quarter past eleven, dines there and arrives at Fontainebleau at half past three. He goes to the Queen; the King, who was on the hunt, comes at half past four; being lead into the big park with the Majesties, where he watched a cormorant fishing in the canals.”

After having "written, fenced, danced" and completed more lessons suitable for children the next day, the royal boy went back "into the park with the canals to watch the cormorants catch fish." Apparently, the future ruler could work up enthusiasm for this pastime, because cormorant fishing is once again mentioned on 24th July 1617, when Louis XIII., now king, practised it himself (HÉROARD 1868).

Likewise in 1617, a report was published by D'ARCUSSIA (1617):

„O. Vive donc nostre Roy, puisqu'il s'affectionne à un si honorable exercice et qu'il en donne l'exemple à ses sujets.

E. Vous ne sçauriez mieux parler: car c'est un roy debonnaire, et les plus belles inventions en ce mestier se sont trouvées depuis sa naissance. combien de sortes il fait voir jusques dans le ciel le pouvoir qu'il a sur tous les oyseaux, ny combien d'especes les siens en ont mis à bas, que nul du passé n'eust osé attaquer; mais encores il voit prendre le poisson dans l'eaudes oyseaux; chose qu'on n'avoit jamais pratiquée en France.

O. Je vous prie, dites-nous ce miracle.

E. Pendant que j'ai été à la cour, il y arriva un Flamand qui avoit deux cormorans qui était dressez de la façon que je vous diray. Il alloit au bord des marais ou viviers qui était abondans en poisson, ayant ses oyseaux sur son poing, ausquels il faisoit lier le col par son homme le plus près du corps qu'il pouvoit, en sorte que ces cormorans pouvoient seulement respirer, mais non avaler le poisson. Ces oiseaux estoient si bien dressez à cela que, lors qu'ils avoient rempli leur gorge ou sachet, qu'ils ont extrêmement grand à proportion de leur corps, ils était contraints, pour ne pouvoir avaler, de revenir à leur maistre, lequel aussi tost leur deslioit le cordon, et venoient à luy lors qu'il leur crioit, comme qyseau de poing. Mais il ne les deslioit qu'ils n'eussent premierement vidé leur sachet, puis il les paissoit de leur prise. Or, il ne falloit que leur faire voir du poisson dans l'eau, et jusques au poids de quatre livres il n'en eschappoit pas un, tant ils avoient la veuë bonne. Et si il y avoit un grand plaisir à les voir fouiller dans l'eau, fustelle claire ou trouble, allans le prendre jusques au plus profond. Et, lors que ce Flamand les rappelloit, s'il n'avoit du poisson, il leur donnoit coupées par pieces, les jettant dans l'eau. Par ce discours jugez si nostre Roy n'a pas quelque fatalité d'estre obey jusques hors de son element."

“O: So, long live our King, because he devotes himself to such an honourable task, being an example to his subjects.

E: You couldn't speak more appropriate, because he is a lenient King, and the most beautiful inventions in this field have been made since his birth. In how many ways he reaches heaven, the power he has over all the birds, how many species his people have made themselves subject, that nothing from the past dared to harm him, and in addition he makes birds catching fish out of the water – something that has never been done in France before.

O: Please tell us about this miracle.

E: When I was at court, a Fleming appeared, who had two cormorants, which were trained as I have just described. He went to the banks of marshes and ponds, which were rich in fish, carried the birds on

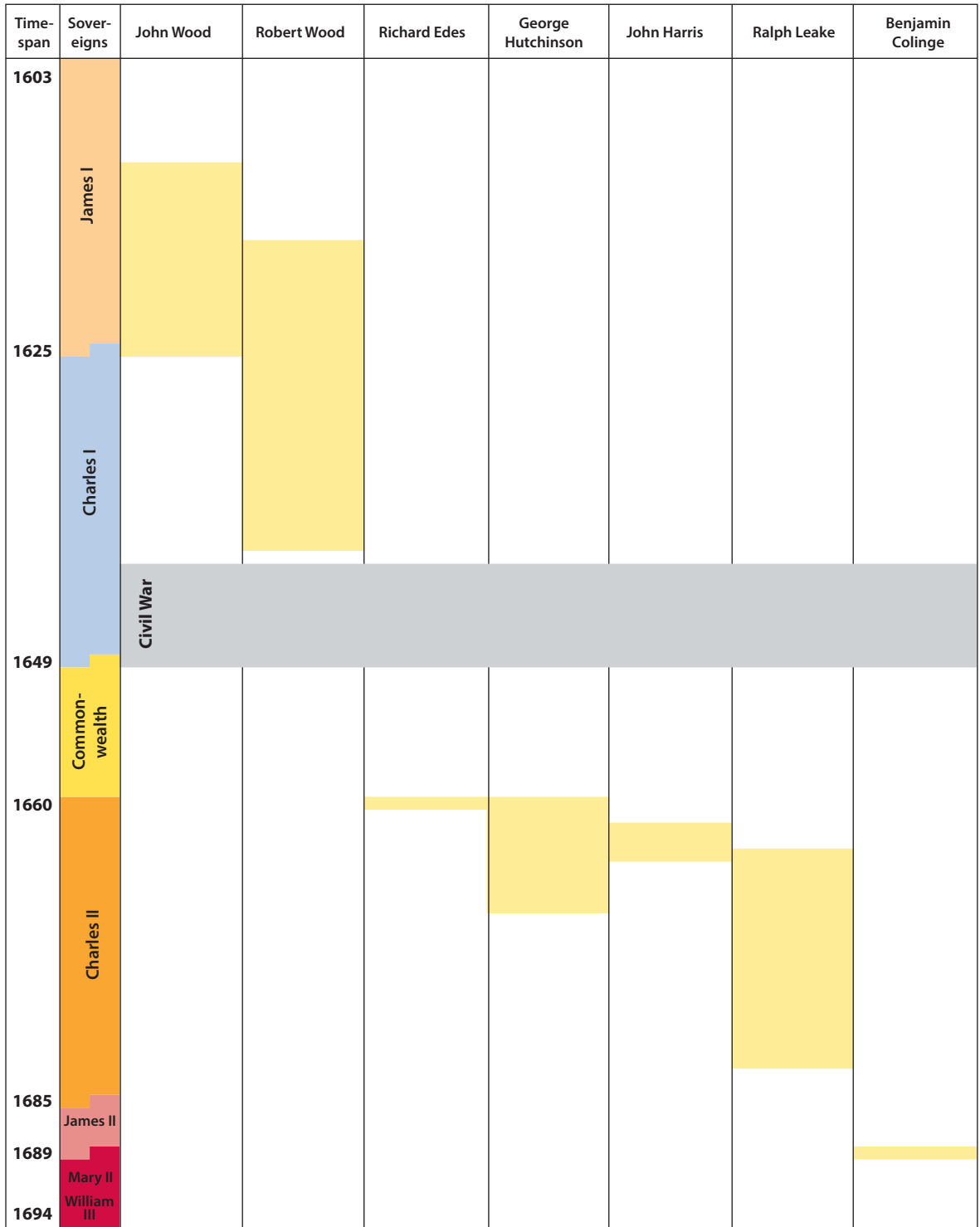


Fig. 1: Timeline of Masters of the Royal Cormorants based on first and last record.

his fist and then he had their necks tied up so tightly by one of his men, that they still could breathe but not swallow the fishes. These birds were so well trained that they – once they had filled their throats or their crops, which in relation to their body turn out extremely large – were forced, unable to swallow the fish, to return to their Master, who for the moment did not remove the lacing around their necks, and they came to him whenever he called them, like hawks. However, he didn't take off their lacing before they had not emptied their crop, and then he fed them from their prey. You only had to show their shrewd eye the fishes in the water, of which not a single one to the weight of four pounds escaped. And what a pleasure it was to see them comb the water – whether clear or murky – and bring up the fish from the deepest depths! And when the Fleming recalled them and they had no fish, he threw to them some [fish] cut into pieces, and let them plunge into the water. Decide for yourself from this account whether our king is not chosen by fate that creatures even outside of his element obey him.”

A text by Johann FABER (1649) reports on a fishing demonstration, which can be dated back to 1625, since the mentioned cardinal acted as the Pope's mediator between France and Spain and visited Paris in this very year (SIEBERT 2008).

„Avem dictam Cormorant, antiquorum Mergum appellari, de qua necesse prorsus iudico hic illa enarrare, quae Carolus Antonius Puteus observavit in piscatione, quem avis haec exercebat in Galliis, praesentibus huic ludicro spectaculo Christianissimo Rege, et Illustrissimo Cardinale Barberino; hoc verborum tenore ad me perscripsit.

Solent in Anglia assuefacere Corvos marinos ad piscium praedam, non aliter atque nos in Italia volucres rapaces ad avium rapinam edocemus. Venduntur autem ita edocti Corvi marini pretio non exiguo. Huiusmodi piscatoriam venationem in gratiam Legati Cardinalis Barberini exhibitam, et Corvos seu Cormorants simul piscantes in Fontebellaquensi, Gallicè Fontenablo, dicto loco quatuor vidimus, qui omnes cum vulture quodam maximo Galliarum Regi ab Angliae Rege dono missi fuerant, unà cum harum avium magistris et instructoribus. Corvi hi saepius in canali ibidem in Truttarum piscatione exercebantur. Dum autem è cubiculis suis ad piscinas transportarentur, capita et oculi ipsis obvelabantur, ne in transitu perterreferent. Detrahit igitur ubi ad flumina perventum erat, obvolucris illis, et ima colli parte prius per ligulam coriaceam leviter astricta, ne deglutire quos caeperant pisces, valerent, in torrente praecipitabantur. Hi repente aquis sese immergebant, diuque sub his pisces velocitate mirabili sequebantur fugientes, quas ubi rapuissent

ex aquis emergebant, piscemq. quilibet rostro suo leviter compressum deglutiebat, donec quatuor vel sex pisces hoc modo quivis ingurgitasset. Tum demum a magistris suis Anglicana lingua ad manum seu pugnum vocabantur, ad quem obedientissimi convolabant, et paulatim pisces omnes, unum post alterum nempe, eosq. tantillum saltem rostri pressura laesos evomebant. Finita autem piscatione, loco eminentiore his Corvis collocatis, ligulam ex collo solvebant, via ipsis ad ventriculum libera permissa et pro cibo, praedae partem cui libet piscem unum inquam, projiciebant, quem dexterrime hi per aera descendente hiante rostro excipiebant. Voces autem quibus ad manum vocitabantur hi Corvi, erant con, con (Germani dicerent Kum, Kum) quod lingua Anglicana, nihil aliud sonat, quam Veni, veni.“

“The bird called *cormorant*, in elder times known as *Diver*, of which we have to give a detailed description here, was watched catching fish by Carlo Antonio dal Pozzo, the bird offered this spectacle in France, to the persons present, the very christian King and the most illustrious cardinal Barberini; this is what he wrote to me:

In England they are wont to train sea-ravens for catching fishes, not unlike we educate birds of prey for bird hunting in Italy. Furthermore, the trained sea-ravens are sold for a no small price. This fishing was demonstrated in honour of the legate, Cardinal Barberini, and we saw four simultaneously fishing ravens or cormorants at a place called Fontainebleau, which all have been sent by the King of England to the King of France as a present, along with the trainers and instructors of these birds. These ravens often fished for trout in the canals there. When they were brought to the fishponds from their houses, their eyes and the head were covered, so that they would not be frightened during that transport. And so, when they had reached the river, the coverings were removed and at first the lower part of the throat was slightly laced up by a leather strap, so that they would not swallow the fish they catch, but they were able to plunge into the river. The birds quickly dived into the water and followed the escaping fishes a long time with admirable speed, they came up as soon as they had caught something, and swallowed the fish, slightly compressed by the bill, just as they liked, until everyone had devoured four or six fishes. Finally they were called to the hand or rather fist by their trainers, they most obediently flocked together there and disgorged all the fishes one after the other, not even slightly damaged by the pressure of the bill. At the end of the fishing, the ravens gathered together on a higher place, the trainers removed the straps from the throats and threw, the free passage to the stomach now enabled, a part of the fish prey to them, which they – I emphasize this – caught in mid-air with their

snapping bill. The commands, with which they called the ravens to the hand, were “con, con!” (German would say “Kum, Kum!”), in English language it was nothing other than “Come, come!”

After this report some time goes by until the next account from France. In 1698 the royal amusement was still or again practised at Fontainebleau, because in this year the French state papers have a record of a *garde des cormorans*. Later, in 1713, a report on a grandiose procession along the canal of Fontainebleau was published in the *Mercure* journal. Sun King Louis XIV. – in a golden coach – was accompanied by a huge entourage consisting of over one hundred six- and eight-horse carriages, and together they watched cormorant fishing – doing it themselves was obviously not in vogue anymore. This spectacle took place twice a week, but watching the birds now only was an excuse to show one’s splendid wealth to the other participants. The last of the sparse sources from France is dated back to the year 1736, when the *garde des cormorans* is mentioned once again (DUNOYER DE NOIRMONT 1867).

3.1.4 Austria

In 1716 BESLER *et al.* report the following:

„Hodoeporicorum Scriptorum Indici, quomodo corvi hi aquatici ad piscium praedam assuefacti sint, referunt, sed non opus est, ut in Indiam recurramus, cum Anglis Gallisque, imo Germanis quoque nostris, hoc artificium non lateat, et corvos piscationem edoctos, ab Eminentissimo Celsissimoque quodam Electore Viennam missos, hac in Urbe ante aliquot menses conspexerimus.“

„The authors of the Indian travel reports describe how these ravens are used for fishing, but in England and France it is no way of earning money, like we find it in India; even here in Germany this art is not unknown, and sent to Vienna by the most noble Elector we saw these trained ravens catching fish some months ago in this very city.“

The peculiar geographic detail „India“ is a historical term for the countries in South and South East Asia including China (BRITANNICA ONLINE ENCYCLOPEDIA 2012b).

3.1.5 Germany

In the beginning of the 1770s, tamed cormorants were kept even in Germany to delight the Landgrave of Hesse-Darmstadt (BOIE & RANZAU 1820).

„In Deutschland, namentlich im Hessen-Darmstädtchen, ward zu Anfang der siebziger Jahre des vorigen Jahrhunderts dieser Fischfang geübt, nach

dem Berichte eines noch lebenden Augenzeugen. Der Förster Bauer im Eutinschen berichtet nämlich: es habe dort die damalige Hofhaltung auf dem Jagdhofe zu Bessungen auch Falkoniere gehalten, und diese hätten mehrere zum Fischfange abgerichtete Seeraben in tragbaren Verschlagen bei sich geführt. Zur Erlustigung des Hofes wurden die Seeraben, nachdem ihnen messingne Ringe um den Hals gelegt worden, vom Rande der grossen steinernen Wasserbehälter auf die Jagd der in denselben vorhandenen Fische losgelassen. Man bewunderte die Ordnung, in welcher sie Linie hielten, die Schnelligkeit, die Geschicklichkeit, mit der sie die Fische erhaschten; die Beute, die sie, durch den Ring gehindert, nicht verschlucken konnten, mussten sie dann, von den Falkonieren genöthigt wieder von sich geben.“

„According to an account of a still living eyewitness, in Germany, more particularly in Hesse-Darmstadt, this fishing was practised in the beginning of the 70s of the last century. Forester Bauer from the area around Eutin reports the following: the court household there also employed falconers, and they kept various sea-ravens, trained for fishing, in portable crates. For the disport of the court, the sea-ravens, after rings made of brass were put around their throat, were released from the edge of the big stone basins to hunt the fishes in there. The order in which they kept their line was admired, the speed, the skill, with which they grabbed the fishes; then, forced by the falconers, they had to regurgitate the prey, which they, hindered by the ring, could not swallow.“

Unfortunately, there is no further information on the origin of the birds and who trained them.

3.2 19th and 20th century

3.2.1 Austria and Hungary

Almost one hundred years after the account from 1716, there is another source from Austria. In a list of presents received by the menageries of the imperial court there is an entry to *Phalacrocorax carbo* (FITZINGER 1853).

„1814. Ein Geschenk des Herrn von Schubanegg in Pesth — 1816. War zum Fischfange abgerichtet.“

„1814. A present by Mr. von Schubanegg from Pesth – 1816. Was trained for fishing.“

It is not clear, whether the bird was already trained, when he arrived from (Buda)Pest or whether this was done in Vienna, as the remark dated 1816 possibly suggests. But a comparison with other entries in the source indicates that this is the year of the cormorant’s death. Therefore, it has to be concluded that the cormorant

was already trained and his skills were supposed to make the present a special one.

3.2.2 Holland

The first reliable description of Dutch cormorant fishing comes from the same period. NAUMANN & NAUMANN (1817) report from a place in Saxony-Anhalt near their hometown Ziebigk:

„Man richtet diesen Vogel auch zum Fischfange ab und traf ihn sonst in vielen Falknerien an, besonders wenn deren Falkoniere Holländer waren, die ihn aus ihrem Vaterlande mitbrachten. So habe ich ihn in der Falknerie zu Ballenstädt gesehen, aber nie dem interessanten Fischfang mit beigewohnt. Man läßt hiebei nämlich den Vogel aufs Wasser, wo er die Fische auf seine gewohnte Weise fängt und seinem Führer überbringt. Damit er jedoch die Fische nicht ganz verschlingen möge, legt man ihm vorher einen Ring, von einem Riemen gemacht, um den Hals, welchen man abnimmt, sobald der Vogel den Spaß überdrüssig wird und sich selbst satt fressen soll.“

“This bird also is trained for fishing and usually could be found in many falconries, especially when the falconers were Dutchmen, who brought them from their fatherland. So I have seen it in the falconry of Ballenstedt, but never was able to watch this interesting fishing myself. Namely, the bird is released into the water, where it catches the fish in its usual manner and delivers it to its leader. However, to prevent it from swallowing the fish, a ring made from a strap is put around its throat, which is took off as soon as the bird is tired of this fun to enable it to eat its fill.”

Most likely the mentioned Dutchmen were members of the *Loo Hawking Club*, which was co-founded in 1771 by English, French and Dutch falconers and disbanded again in 1853 (SCHLÜTER 1943). There is evidence for the export of trained cormorants from here to England a short time later.

3.2.3 England

In England cormorant fishing was resurrected by Captain Francis Henry SALVIN (1817 – 1904) in 1846. As co-author, he published a textbook on falconry in 1859, which also contains a chapter on the cormorant (SALVIN & FREEMAN 1859).

„It would appear that the Dutch, who for ages have been falconers and bird fanciers, have retained some knowledge of it, for I know of two instances of cormorants having been brought to this country from Holland, where they had been trained. In one of these my friend, E. C. Newcome, Esq., of Feltwell Hall, Norfolk, brought over a trained cormorant on his return from the Loo Hawking Club in 1846. Mr. Newcome's country was not suited to the amusement, and little was done; but his introduction of the sport (which for years I had contemplated) determined me on trying it. In the summer of 1847 I received a young untrained cormorant from Rotterdam, which a member of the Loo Club brought over. I knew very little about training the bird, but with perseverance and my knowledge of falconry I eventually succeeded, and as he became such an extraordinary fisher, I named him „Isaac Walton“, in honour of that bewitching author upon the piscatory art (e.g. „*The Compleat Angler*“ from 1653 – MB).“



CORMORANT FISHING.

Fig. 2: Joseph Wolf: *Cormorant Fishing*, in SALVIN & FREEMAN (1859).

SALVIN obviously was a man of distinct British humour. Besides the „Compleat Angler“ he had more tamed and trained cormorants, which he – in contrast to his „predecessors“ – bred himself. His birds were named *Hobble-Gobble*, *Detective*, *Hoang Ho* (Chinese name for the Yellow River). Furthermore, he trained the *Sub-inspector* and *Kas-wang* (Chinese title for the Great Khan, however, the bird was a female) and their common daughter *The Water Nymph* (HARTING 1883), which was bred in the Zoo of London in 1882 (SALVIN 1882). Also to be mentioned are *The Pick-pocket* and *The Artful Dodger* (HOUGHTON 1870). HARTING (1883) gives a very interesting and detailed description of SALVIN'S cormorant fishing, which he witnessed with fascination (see Fig. 2). He knew even more lovers of this „sport“, like a certain „Mr. T. Evans“ from Sawston, Cambridgeshire, who owned various tame birds, which were trained by the Scottish falconer John Barr. The cormorant followed Evans like a pack of dogs and on the crack of a whip they plunged into the water.

Protagonist SALVIN practised this sport until approximately 1890, when the „second phase“ of English cormorant fishing ended as well – there are no later accounts. The birds were posthumously exhibited in the Hancock Museum at Newcastle (BLACKBURN 1895). In 1906, two years after SALVIN'S death, a Chinese fisherman presented his birds in the Hippodrome of London. Here SALVIN'S activities were only mentioned in passing (BRITISH ORNITHOLOGISTS' CLUB 1906).

3.2.4 France

During this „second phase“, cormorant fishing once more was brought from England to France. Pierre A. Pichot, whose name is closely connected with French cormorant fishing in the 19th century, owned his first bird in 1861. It was trained by John Barr as well, who also offered his services to the Frenchman in the following time (PICHOT 1884). Likewise, the often mentioned Count LE COUTEULX DE CANTELEU (1870) reports on instructions in training cormorants by the said Scottish falconer.

3.2.5 Russia

A much later source is contained in a travel report from the Russian city of Saratow on the shores of the river Volga from the year 1912 (MEYER 1913):

„Neben der Station befindet sich auch dort ein Wolgamuseum. Hier wurden uns ebenfalls die Entwicklungsstadien des Sterlets in Spiritus gezeigt. Weiter sahen wir Zähne vom Mammut, sowie einen ausgestopften Kormoran (*Phalacrocorax carbo*), auch „Scharbe“ genannt. Der Kormoran wird dort, ähnlich wie in China, zum Fangen der Fische abgerichtet.“

„Next to the station there is a Volga museum, too. Here the development stages of the sterlet are shown in alcohol as well. Furthermore, we saw teeth of the mammoth and a stuffed cormorant (*Phalacrocorax carbo*), [in German] also called „Scharbe“. Like in China, the cormorant is trained here for catching fish.“

The account temporally and geographically contrasts sharply with the rest of the sources. Since a transmission to Russia by Western European royal houses is not documented, the origins of Russian cormorant fishing and a possible connection with England or Holland cannot be clarified.

3.3 Fishing by means of the cormorant on Lake Dorjan/Macedonia

KINZELBACH (2010) mentions indications of an old form of cormorant fishing on Lake Ohrid, which is split up between Albania and Macedonia. For Lake Dojran, which is located about 175 kilometers eastwards and divided by the border of Macedonia and Greece, there is evidence for the use of the cormorant in an economical fishing method. Foreign speaking papers on this topic are rare. However, APOSTOLSKI & MATVEJEV (1955) deliver a very detailed German account of this both simple as well as complicated method, which has a very high degree of efficiency.

Fishing is practised only in winter and in spring, when the fishes migrate to the western and north-western shore to escape the deeper and cooling down water in winter or to spawn in the reeds in spring. Outside the fishing season the fishermen are busy with gathering materials, cutting reed, harvesting oak or beech tree trunks etc. Then, using the trunks and woven reed mats, they begin to fence in so-called mandri, basins of the size of one hectare, which remain open to the lakeward side, so that the fishes can swim into them. In the middle of the fenced in area a hut is erected on poles, in which the fishermen stay. As soon as there are enough fishes in the mandri, the open lakeward side is closed as well, at first with a net and then also with trunks and reed mats. The temporary net is necessary to prevent the fishes, startled by the driving in of the poles, from fleeing back into the open water. After that the birds, which were caught beforehand with special traps and whose wings were clipped, are brought in. They come from huge swarms of birds, which rest on the lake in the migratory periods, i.e. shortly before and during the beginning of the migration of the fish into the reeds. Besides the cormorant, the fishermen especially use species from the genus *Mergus*, amongst these mainly the smew *Mergellus albellus* and the great crested grebe *Podiceps cristatus*. Especially compared with the first one, a relatively small number of cormorants is used.

APOSTOLSKI & MATVEJEV (1955) have found out in an examination of the composition of the groups of „working birds“ in March and May 1954 that the mew occurred with 290 (93 male, 197 female) individuals in all analysed mandri, whereas the cormorant was represented by 13 (4 male, 9 female) animals in only 30% of the basins. This is mainly due to its size, which especially in the later phase of the Dojran fishery allows the use of only a few specimens. Furthermore, the bird is known for his efficiency. His „output“ is many times that of the smew, so that a higher proportion of cormorants is not necessary. 3 up to 5 fishermen bring in between 30 and 80 birds in every mandra.

To catch the fishes, a segment of approximately 30x30m is separated inside the basin. This is also done by means of reed mats, which, however, in opposition to the outer boundaries are porous enough to allow the fishes to swim through. After that, the birds are brought in into this segment and they now begin to hunt the fishes, which for their part flee through the reed mats in that part of the mandra without birds. After the fishes have escaped, the porous mats are replaced by tight ones and the fence on the lakeside is removed. In the mandra the next segment is now separated and the process starts from the beginning.

Thus, the basin gets smaller and smaller. When it finally has reached a size of approximately 30x30m, the fishermen change to separating segments in a size of 10x10m, until the last segment has been reached as well, in which the concentration of fishes finally is high enough that they can be caught with nets without problems. The Macedonian short film „Pticite doagjaat“ from 1956 contains short clips of this fishing method (EUROPA FILM TREASURES 2012).

4. Discussion

4.1 Fishery on the model of China

CARPACCIO's painting *Caccia In Valle* does not provide proof of cormorant fishing in Venice about 1500. The picture mainly has a symbolic character and intends to show the young noblemen's depraved hunting for physical love (DITTRICH & DITTRICH 1994). To enforce his intention – the depiction of lust – the religiously motivated painter added „greedy“ cormorants to the ensemble. For example, the black bird with the reptile-like appearance was characterized in the same way in Old High German Bible glossaries from the ninth century onwards as an interpretation (gloss) for the unclean *mergulus* (*Leviticus* 11,17 in the *Vulgate*) (STEINMEYER & SIEVERS 1879).

However, similar symbolism which was used by CARPACCIO can only be achieved by means of real and well-known motives. In this context the avifaunistic works of Pierre BELON (1555) contain an interesting account:

„Les seigneurs prennent souventes fois plaisir en luy donnant la chasse, principalement entour Venise: car ils choisissent un temps calme, et se mettent sur certains petits bateaux legers, deux ou trois douzaines de compagnie, qu'ils nomment fissoleres vogues à cinq ou six hommes chascun, et estants surmer, vont comme un carreau d'arbaleste: parquoy ayants entourné le cormorant, lequel ne pouvant prendre secousse à se darder en l'aer, demeure suffoqué. Car les seigneurs tenants les arcs à ialets, luy tirent soudain qu'il luy voyent la teste hors de l'eau, et à la fin le redent si lassé, qu'ils le prennent en plaine mer. Cest un beau spectacle de voir un tel deduit, comme aussi de voir un cormorant tenant une anguille moyennement grosse, car l'ayant prinse en l'eau, et luy convenant venir dessus pour l'avalier, faut le plus souvent qu'il la combatte longuement avant que d'en venir à bout.“

„The noblemen often allow themselves to hunt [the cormorant], especially in the region of Venice. They chose calm weather, go on board of small, light boats, two or three in the whole, which they call Fisolera and are rowed by five or six men, and when they are on the sea, they drive as fast as the bolt of a crossbow. When they have surrounded the cormorant in this manner, it cannot build up gain to fly in the air. The noblemen have ball bows and they shoot at it as soon as they see its head come out of the water, and so they tire it out, so that they can pick it up from the water surface. It is a great entertainment to see such an enjoyment and also to see, how a cormorant holds a medium-sized eel. The bird has caught it in the water, but it wants to devour it on the surface, and so it must struggle with it often and a long time, until the bird reaches its goal.“

The described method of hunting closely resembles the depiction in CARPACCIO's painting. However, instead of a great crested grebe a cormorant is the target of the balls. It is plausible that the bird gets surrounded to prevent it from flying away by cutting the space for its well-known long take-off distance. Unfortunately, BELON does not explain why the Venetian noblemen hunted cormorants in this manner and what they wanted to do with the birds afterwards. But his text shows us that there could have been a real motive in form of this kind of hunting, which also could have led to the depiction of cormorants sitting on a boat's wall. Therefore, the association with cormorant fishing possibly arises only in the eye of today's viewer of CARPACCIO's painting.

But even if the throat ring, allegedly perceptible only on the original painting, could be confirmed, it still would not be a doubtless evidence for cormorant fishing in Venice about 1500, since at least one report from China was already accessible. Franciscan monk ODOR-

IC OF PORDENONE, who had undertaken a journey to Asia in the early 14th century (ca 1318-1330), describes cormorant fishing from the boat and also mentions the compression of the throat by a cord (GUDGER 1926). Therefore, a ring-like structure around the neck of one of the birds could as well be attributable to ODORIC'S report, which was rapidly spread throughout Europe after his return home. For example, there is a revision of the Latin original text by a Minorite from Prague from the year 1340 and in 1359 Konrad Steckel translated it into German (LEHMBROCK 2004). Possibly Marco Polo brought the knowledge on cormorant fishing to Europe, but this is not verified yet. During his long stay in the Middle Kingdom he must have learned of or even watched it, but his written records do not contain any reports on cormorant fishing.

SCALIGER (1557), also reporting from Venice, provides first conclusive evidence for European cormorant fishing. However, he does not mention that the bird wore a neck ring or handed over the caught fish to his master in any way. The bird returned satiated, he just writes, but this could be caused by a too vague report by eye-witness Cosentino. It is striking that this account belongs to a time, in which new reports on Chinese cormorant fishing reached Europe for the first time since ODORIC OF PORDENONE. The earliest one that is still known today comes from Galeote PEREIRA, a Portuguese mercenary, who fought in the war between Burma and Siam (1548 – 1549), being subsequently imprisoned until 1552. Probably he wrote the report immediately after his escape. It is not known if PEREIRA ever returned to Europe and when he died. But at least his work found its way home. The earliest handwritten and still known copy dates back to 1561 and was made by Indian pupils from a Jesuit college in Goa (BOXER 1967). Taking the time line into account it is indeed possible that in SCALIGER'S day PEREIRA'S account was already known at Venice, which was one of the most important centres of art and culture in Europe at that time. The practised method from a boat points to influences by the descriptions of Chinese cormorant fishing. Shortly thereafter, the memoirs of the Portuguese mercenary were published in Venice as part of an Italian anthology with accounts from China (PEREIRA 1565). Furthermore, it was translated into English and published by WILLES (1577).

SCALIGER'S account dates from a time too early to reliably connect it with the English and French royal cormorant fishing more than 50 years later. Provided that it is more closely described by the authors, the cormorants, unlike in Venice, were carried to the shores like falcons sitting on the fist and sent from there into the water. The handling of the birds always followed the methods of European falconry. Only once, in 1619, it is reported that James I practised fishing from a boat on the Thames (HINDS 1909).

In 1608 tame cormorants appear in England for the first time. Presented on the church steeple, they welcomed the King when he visited Thetford. By the way, there is no indication that such birds would have been something new or unusual (just as in the diaries of Louis XIII by HÉROARD), which gives rise to the suspicion that training cormorants was already well-known at that time, at least in England and France. Seven months later the English King ordered that henceforth the French king regularly had to be supplied with trained cormorants (HARTING 1871) – a tradition which was continued until at least 1625 (FABER 1649). As a logical consequence, two months after James' order in 1609, the first written report on cormorant fishing in France appears, more particularly in the canals of Fontainebleau. Obviously, the eight-year-old Louis XIII watched this spectacle with great pleasure. Before 1617, when HÉROARD reports that Louis himself, now king, fished with the cormorants, D'ARCUSSIA visited the court, where he met a „Fleming“, who also performed trained cormorants at Fontainebleau. This induced SALVIN & FREEMAN as early as 1859 to suspect that the idea of cormorant fishing was brought to Europe by Dutch Jesuit missionaries.

DUNOYER DE NOIRMONT (1867) continues these speculations:

„Celte manière curieuse de pêcher fut introduite en Europe par les Hollandais, au xvⁿ siècle. Un Flamand vint à la cour de France, sous Louis XIII, avec deux cormorans dressés, et en donna le spectacle au Roi, qui voulut en avoir sur ses pièces d'eau, notamment à Fontainebleau.“

„This strange kind of fishing was introduced by the Dutch in the 17th century. A Fleming visited the French court under Louis XIII. with two trained cormorants and performed them for the king, who wanted to have something like this on his ponds, especially at Fontainebleau.“

DE NOIRMONT refers to D'ARCUSSIA'S Text, but with the alleged origin of European cormorant fishing he reads too much into the old account. He obviously did not know about the elder sources from HÉROARD, which do not contain any information on the origin of the birds. Nevertheless, this theory survived until today at least as a presumption, but after a careful examination of the sources it can no longer be maintained:

In a letter from January 17, 1620 to the doge and the senate of Venice, the Venetian ambassador in England, Girolamo Lando, mentions a „Fleming“, too. The original text is written in Italian. This is the English translation by HINDS (1910):

„I have obtained information upon the point of the letters written by Sig. Trom (=Luca Tron – MB) from Nancy. There is nothing except that a certain Fleming has the fancy for rearing certain birds which take fish in the water and bring it intact to their master. He has frequently approached His Majesty and obtains complimentary letters to various princes for the purpose of making them a present of these birds and so obtain gifts. He wished to do this at Nancy, but being a man of no position and as he was acting simply for the sake of gain, his letter to his Highness was simply of a complimentary character.“

Landos letter obviously is an answer to an enquiry from Venice whose contents can only be reconstructed very roughly. Luca Tron, at that time in diplomatic position at Nancy, had been vaguely informed about contacts between Henry II., Duke of Lorraine, and James I. He reported this to Venice, whereupon he received an order to investigate any important political facts about it. He cleared up the matter and wrote the answer cited above.

Most likely the events investigated by the Venetians are identical to the gift of cormorants to the Duke of Lorraine from 1619 (DEVON 1836), which is documented in the English state papers three months before Landos letter:

„14th of October. - By order, dated 14th of October, 1619. To Robert Wood, whom his Majesty intendeth to send with divers cormorants to his good cousin the Duke of Lorraine, the sum of 60*l.*, by way of imprest towards the defraying of his charges in that journey. By writ, dated 7th of October, 1619.“

The reader of Landos letter would expect the „Fleming“ to be the payee mentioned in this entry. Instead the then *Master of the Royal Cormorants* Robert Wood received the money. Five years later, in 1624, when the present to the Polish king is documented, he even uses the method including the request for a letter that the Venetian ambassador had attributed to the „Fleming“ (EVERETT GREEN 1859, HINDS 1910).

„Feb. 9 Petition of Robt. Wood to the King, for letters and safe conduct to Poland for conveying a present of cormorants to the king there and the Prince his son [...].“

Feb. 9 Warrant for payment of 60*l.*, to Robt. Wood, appointed to carry six cormorants as a present to the King of Poland and his son.“

Shortly thereafter, in 1625, the gift of trained cormorants to the French king included a presentation by the English falconers, who evidently had accompanied the birds on their journey. The method used by the

Englishmen is identical with that of the „Fleming“ of before 1617 (D'ARCUSSIA 1617). This allows the conclusion that the said „Fleming“ was a subordinate member („man of no position“) of the Woods' staff and one and the same with the employee mentioned by Lando in 1620 in his letter to Venice. Due to his low position, he never had any direct contact to the English king and the clearing houses, which explains that he is never named in the state papers.

However, assistants are occasionally mentioned, like for example on occasion of the funeral of James I, which was attended by „Robert Wood, John Wood and two others, Keepers of his Majesty's cormorants“ (BRUCE 1858).

Further mention is contained in the report on the procurement of cormorants from the cliffs of the Isle of Man by „John Wood and his myrmidons“ (ANONYMUS 1864). Due to these accounts it has to be concluded that from 1612 onwards specimens of the subspecies *P. c. carbo* were caught by Wood in „some of the furthest parts of this realm for young cormorants, which afterwards are to be made fit for his Majesty's sport and recreation“ and reached continental Europe as royal gifts and profitable trading goods. The raid on the cormorant transport to Venice and the robbing of the birds by the Duke of Savoy in 1624 emphasizes the birds' high value. There are also details on the use of tree breeding *P. c. sinensis* from the reign of James I. They were procured from a colony at Reedham (BROWNE 1836) and the huge breeding population near the Dutch village of Zevenhuizen. Unfortunately, the import of birds from here to England cannot be dated back more precisely (HEGENITIUS & ORTELIUS 1630). The mention of the Flemish falconer, however, could be a dating aid. Possibly his knowledge of the avifauna of his home country helped to tap this source for the king's favourite sport after he took up his job at the English court. Or else, he came from the environment of the trading of cormorants from the Zevenhuizen colony. In both cases the introduction of Dutch birds had at least begun before 1617. But more likely the imports took place before 1612, when for the first time young birds were procured in the „furthest parts of this realm“. But why did the English instead (or even simultaneously) change to catching rock breeding *Ph. c. carbo* in extremely dangerous actions? BROWNE's original manuscript, concerning the colony at Reedham, is dated back to 8th May 1669 (BRITISH LIBRARY 2012) and on the basis of his choice of words it has to be assumed that the colony existed at that time as well. Because he mentions James I as purchaser of the cormorants from there, but not his successors to the throne, Charles I and Charles II, the reason for the daring procurement could be an early, but only temporary extinction of the Reedham colony. And in view of the proven high price (HEGENITIUS & ORTELIUS 1630), the abandonment of the colony Zevenhuisen as source of supply

could have been caused by financial factors. Furthermore, the stronger physique and with it the probably higher hunting success of the subspecies *Ph. c. carbo* are a conceivable reason for procuring birds from the Isle of Man.

Considering the analysed data, European cormorant fishing originated under James I in England. From the training of the birds to their use in the later built ponds at Westminster everything was carried out by the English *Masters of the Royal Cormorants*, which at first came from a single family, the Woods. An autodidactic learning of training cormorants was possible using ordinary knowledge of falconry, like SALVIN & FREEMAN (1859) prove in their textbook. The Wood family consisted of John, his son Robert (SCOTT 1809) as well as Luke and Richard, whose further relations cannot be determined any better. The latter claimed to have served King James as cormorant keeper since his „first coming to England“. Had James practised his favourite pastime already in Scotland? Until now there are no sources that would confirm this. But corresponding to the state papers, the facts that wild birds were caught „in the North“ and „the furthest parts of this realm“ and that James, in context with the colony at Zevenhuizen, was called the „VI“, the name he bore before ascending to the English throne, could be indications.

The reported ways of procuring and training cormorants were continued without any changes until the English Civil War (1642 – 1649). After the years of Commonwealth (until 1660), cormorant fishing at court no longer had the status of earlier years, which was intensified by the Great Fire of London in 1666 and the cost-cutting measures thereafter.

The „second phase“ of English cormorant fishing was started in 1846 by SALVIN's successful efforts to re-establish this „sport“, which once more reached France from here – not for the Royal courts, but still for the aristocracy. The cited sources speak for themselves (SALVIN & FREEMAN 1859; DUNOYER DE NOIRMONT 1867; SALVIN 1882; HARTING 1883; BLACKBURN 1895; BRITISH ORNITHOLOGISTS' CLUB 1906).

SALVIN initially came in contact with this via a trained cormorant, which was imported from Holland (SALVIN & FREEMAN 1859). The bird was sent by the *Loo Hawking Club*, co-founded in 1771 by English, French and Dutch falconers. On the basis of this, SALVIN & FREEMAN (1859) speculate without any further evidence that the Dutch not only introduced this „sport“ to Europe, but also preserved it from the 17th to the 19th century. However, NAUMANN & NAUMANN (1817) are the first ones to report on a cormorant which was trained on Dutch territory. Until this point of time there is absolutely no information on cormorant fishing in Holland – on the contrary, it even seems to have been unknown there. In the travel report of a Dutch embassy to China, the author describes the cormorant fishing he observed there in detail, but as a curiosity (NIEUHOF

1666). The text of compiler Olfert DAPPER (1670) does not contain indications of Dutch cormorant fishing, either, which the reader could expect, if it would have been practised there in the 17th century. Instead, he quotes a poor comparison by NIEUHOF (1670) that confirms the missing knowledge of cormorant fishing in Holland at that time:

„De Sinesen visschen door middel van deze vogels, en leren dezelve het visschen, even als men hier te lande de hunden hazen leert vangen.“

„The Chinese fish by means of these birds, and teach it fishing, just like here in this country dogs are taught to catch rabbits.“

As late as about 1675 the Dutchman SWAMMERDAM – for the first time – associates the colony Zevenhuizen with English cormorant fishing. Nevertheless, his account proves once more that this „sport“ was unknown in his home country. As a precaution and to underline his, as he obviously fears, hardly believable account, he finishes his description with the assurance that his source was a „credible and respected“ man. Because of the details on the further developed fishing method after the English Civil War the text is worth being cited here (SWAMMERDAM 1737).

„...de Schoffers..., die een sort van Duikers syn, die in 't vermaarde bosch Sevenhuysen, niet verre van de stad Leyden, in groote quantiteit, eenmal des jaars van de Eyke Boomen geschut worden, ende soo se in het water vallen, dan datelyk de kunst van swemen, ende vaardig weg te duynen, kunnen; ende dat selfs op die tyt als se nog nooit gevloogen ofte ook geswommen hebben...“

Eer ik verder voortgaa... so lust het my voor te stellen, op wat wyse men visch met de Schoffers in Engelant vangt: want voor eenige jaeren wierden deese Vogelen daar in kwantiteyt nae toe gevoert en verkogt. Eerstelyk soo maken sy die tam, soo dat se als de Valken op de hant blyven sitten; wanneer sy nu met deselve visch willen vangen, soo binden sy haar een dun, maar en sterk koordeken aan het eene been, dat sy op een klos winden, die se met een houte steel in de hant, daar se op een yser penneken draait, vast houden: haast op de manier, als onse vrouwen haar klos doen, daar se den gesponnen draat van het vlasch van afhaspelen. Dit alles soo gereet gemaakt synde, soo doen sy een ring om den hals van de Scholfer, en hem gebrogt hebbende by een Vyver met Visch, soo laeten sy hem in 't water vliegen, waar op dan de koorst met een vaardig gesnor van de klos komt af te drayen, en men siet met vermaak, hoe deese Scholfer verscheyde Visschen kommt in te slikken, dewelke

tegens de ring om syn hals geschooven synde, dan blyven sitten, waar op als men dan den Scholfer by den draat weer tot sig haalt, soo doet men hem de Visch weer overgeeven, dat ligt te doen is, indien men den Krop van onderen komt opwaarts toe te drukken. Gelyk my dit van een geloofwaardig en aansienelyk Heer, die het verscheyde maal gesien heeft, verhaalt is.“

„...the Scholfers... are some kind of divers, who are numerously shook from the trees once a year in the famous forest at Zevenhuizen, not far from the city of Leyden, and when they fall into the water, they immediately know to use the art of diving, although they never have flown or swum before...

Before I continue... I would like to describe how in England fishes are caught by means of the cormorant: because some years ago, these birds were transferred and sold there from here. At first they make them tame so that they stay put on the hand like falcons; and when they want to catch fishes with them, they tie it a thin but stable cord round its leg, which they coil on a spool, that is fixed on a wooden handle spinning on an iron feather: just like our women use their spindles, from which they reel off the spun yarn. As soon as all is correctly prepared, they put a ring around the neck of the Scholfer, and after having brought it to a fish pond, they let it fly into the water, and so the cord is unwound from the spool with a loud whirring, and the viewer sees with pleasure, how this Scholfer swallows little fish, which are pressed against the ring around their necks and then gets stuck, on what the man fetches back the Scholfer with help of the cord and the Scholfer returns the fish to the man, and that is easily done by squeezing the crop bottom-up. This was reported to me by a credible and respected man, who has watched this several times.“

Whether SWAMMERDAM refers to HEGENITIUS & ORTELIUS (1630) or whether trading re-started after the time of Commonwealth, must be left open.

The last available source on European cormorant fishing highly contrasts temporally and geographically to the rest of the data. The source does not answer the question whether the fishery there was done for economic purposes on the very broad and branched out Volga or if it was a pastime for the noblemen. Nor do we learn whether the birds were caught wild or whether they were bred. After a desirable settling of these questions it would be to be discussed, whether cormorant fishing came here from the Western European royal houses and if it resembled the English methods in any way.

4.2 Fishing by means of the Cormorant in Macedonia

The Macedonian fishery must be judged completely for itself, because in all respects it was developed independently from the leisure time activities at the European royal houses. It shows that the highly efficient hunting skills of the cormorant were discovered separately in various places on the planet and used to the advantage of human being. However, until now the age of this fishing method is unclear.

APOSTOLSKI & MATVEJEV (1955) interpret a text of HERODOT (490/480 BC – about 424 BC) as evidence for this fishing already in the ancient Greek chronicler's days (HERODOT 5th century BC).

„But those Paeonians who dwell near mount Pangaeus and near the Doberes, Agrianae, and Odomanti; and those next adjoining to the lake, were not at all conquered by Megabyzus. Yet he attempted to subdue those, who live upon the lake in dwellings contrived after this manner: long piles are fixed in the middle of the lake, upon which planks are placed, which being joined by a narrow bridge to the land, is the only way that leads to their habitations. These piles were formerly erected at the common charge; but afterwards they made a law, to oblige all men, for every wife they should marry, to fix three of them in the lake, and to cut the timber upon mount Orbelus. On these planks every man has a hut, with a trap-door opening through the planks, down to the water. They tie a string about the foot of their young children, lest they should fall into the lake; and feed their horses and other labouring cattle with fish, which abound so much there, that when a man has turned back his trap-door, he lets down an empty basket by a cord into the lake, and, after waiting a short time, draws it up full of fish. Of these they have two kinds, called the Papraeces and Tilonas.“

In contrast to what the reader of APOSTOLSKIS and MATVEJEVS interpretations might expect, fishing with birds is not mentioned here at all. Solely the construction of the houses as well as the obviously high concentration of fish directly underneath the trap-doors faintly resemble the fishing in the mandri. Nevertheless, there are other indications of a high age. Similar terrestrial hunting methods, in which animals were driven and crammed into a pen, are known already from the Stone Age. The fishery on Lake Dojran transfers this hunting method into the water. Of course wild birds try to make use of the rich deposits inside the fences, too. To keep them away, the fishermen in their pile dwellings – in a most archaic manner – shoot stones at them with a sling, which is identical to the weapons used by Macedonien and Thracian slinger squads in the army of Alexander the Great. Furthermore, an Etruscan mural

depicts a slinger, who drives away birds from a fishing net. Like this, today's fishermen on Lake Dojran do not aim at the birds but in an area between them and the mandri. This is done because the freely living birds contribute to the fishery as well. Their fish-hunting in the open lake pushes ahead the fishes' migration into the purportedly saving reeds, i.e. into the fenced in basins.

There seem to be efforts in Macedonia to establish this kind of fishing as a tourist attraction on the model of China. Correspondingly, it is advertised as a „traditional fishing method“ in several travel guides and internet tourism portals. APOSTOLSKI & MATVEJEV (1955) found out in their surveys that approximately 30% of the used birds die during their „employment“ and approximately 20% escape from the mandri. These birds as well as those being released after the fishing season are unable to begin the spring migration early enough because of their clipped wings. Their whereabouts have been clarified insufficiently so that a considerably higher number of unreported cases with regard to the mortality rate of the „working birds“ is to be feared.

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