Stamp of the Teutonic Knights from the 14th century. ("Visitatorum Magister in Allemaniae"). Material: brass Deutschordens-Zentralarchiv, Singerstraße 7, 1010 Vienna, Austria Foto Frank Bayard 2012 Wikimedia Commons CC SA 3.0

Siege and Fortification in Medieval Europe

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> The first part of fighting is the shooting of arrows, then the pointing of spears, then the thrusting of hem to left and right and then the drawing of swords. That's all there is to it.[1]

Thus a ninth century Arab writer characterised the nature of war, and his emphasis on close quarter fighting with edged weapons, which forces men on foot or horse, to confront one another in an intimate way, explains the vital supremacy of fortifications in the Middle Ages. The man crouched behind a palisade set on a pile of earth has an obvious advantage over the fellow climbing up, while he who stands on the walkway of a stone wall is in a much better position than one climbing a ladder to reach him. It is, therefore, no accident that castles, mostly ruined, occasionally barely discernible, are the strongest reminder of the medieval past in Europe.

Of course, medieval people enjoyed fine models from Rome, primarily city walls, for the Romans were great fortifiers. They inherited an ancient tradition which had developed almost all the techniques of building strong defences long before them.[2] But there were many kinds of fortifications. Britain is marked by a number of earthwork dykes, of which Offa's Dyke, 177 miles (285 km), roughly corresponding to the border between England and Wales, and Wansdyke (Woden's dyke), 35 miles, (56 km), are the best known. However, we know little about them or when and how they were operated. Villages in France and the Netherlands were sometimes protected by *haie*, small hedged earthworks. In some places there are traces of much bigger earthwork and timber enclosures, as

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1   al-Harith b. Abi Rabi'a quoted and translated in Hugh Kennedy, *The Armies of the Caliphs. Military and Society in the Early Islamic State* (London: Routledge, 2001), 23.

2   For a summary see J. France, *Perilous Glory. The Rise of Western Military Power* (London: Yale, 2011), 23-29.

at Le Puiset, built to protect the local population in times of trouble, but we know little of them.[3] Armies in the field commonly built field fortifications of earthwork and timber: in 554 a Frankish army ravaged Southern Italy and, when challenged by a Byzantine force, constructed a mighty earthwork by the river Volturno, only to be defeated.[4] There is no doubt that Charlemagne's great effort to conquer the Saxons hinged upon establishing Frankish fortifications and destroying native ones. Both sides used earthwork and timber to protect these bases.[5]

We have close knowledge of actual systems of fortification, in what we now call France, England and Germany. Charles the Bald (843-77), faced by fast-moving Viking raids which penetrated France via its rivers, tried to draw the invaders into diplomacy, but ultimately improved his army, established fortifications at key point and built fortified bridges across the great rivers.[6] Paris, in the ninth century, was centred on an island in the Seine, the Île de la Cité. Thanks to Charles' efforts, by 885-86, when the city was attacked by a large Viking army, it was connected to the north bank by a stone bridge guarded by an incomplete stone tower, while a wooden bridge and tower linked it to the southern (in modern terms "Left") bank. It was around these structures that an epic siege erupted. This was a savage siege but ultimately it ended in a compromise. The Emperor Charles the Fat (881-87) permitted the Vikings to continue upstream to ravage his enemies in Burgundy even though they had been unable to take Paris, whose citizens cared little for the Burgundians.[7]

Alfred of Wessex (871-99) was faced by the same Viking enemies: they could come by sea or by land from the Midlands and North which they had conquered. In response, he constructed "*burhs*", a network of fortified settlements in which the local population could shelter. These were earthwork and timber enclosures. A system of compulsory service provided garrisons, and although they were not individually especially strong, they could resist initial attacks and pin down the enemy until a parallel system of raising a field army could attack them. In the

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3   J. France, *Medieval France at War. A Military History of the French Monarchy 885-1305* (Leeds ARC, 2022), 79.

4   J. Haldon, *The Byzantine Wars* (Cheltenham: History Press, 2008), 1.

5   B. S. Bachrach, *Charlemagne's Early Campaigns (768-777)* (Leiden: Brill, 2013).

6   J. Nelson, *Charles the Bald* (London: Longman, 1992), 2011-219.

7   *Viking Attacks on Paris. The bella Parisiacae urbis of Abbo of St Germain* ed. N. Dass (Leuven: Peeters, 2007); France, *Medieval France at War*, 50-53.

890s this definitely annulled Viking attack.[8]

The German kings, who were also dukes of Saxony, faced attack by the Magyars of what is now Hungary. These were steppe horsemen, lightly armoured fierce fighters whose speed and hitting power made them deadly enemies. Henry I (919-36) bought them off for a period during which he built up his cavalry and began to construct a network of fortresses, enabling him to crush them at the battle of Riade in 933. His son, Otto I (936-73) defeated them again at the Lechfeld in 955, but on this occasion the local garrisons massacred the survivors as they took flight, ending the Magyar threat.[9]

Such networks of fortifications were a terrible burden on medieval monarchs and their subjects. Charles the Bald's system was dissipated in the succession problems after his death. In England *burhs* survived as local centres, and some like Winchester became cities with walls, but within half a century the defensive network had vanished - to the great profit of later Viking attackers. Equally in Germany some centres became important towns, but the network disappeared as the enemy weakened and political circumstances changed. The real lesson of these cases is that while strength of fortification is important, in the end none could hold out without hope of relief. It was the combination of fortification and a strong Anglo-Saxon army which made Alfred's system successful. In Germany the kings built up heavily armed cavalry and at the Riade Henry I advised his cavalry:

> When you sally out to the field of battle let noone ride faster than another but keep together. The shields of each should guard his neighbour so that they can receive the first volley of arrows from the enemy [Hungarians]. Then charge very fast before the enemy can fire again for the weight of your armour will prevail. [10]

Given their success why did such networks vanish? Armies and fortifications were incredibly expensive and a great pressure on society. All monarchies had to depend on the social and political elites who saw themselves as enjoying a high degree of autonomy in political and military affairs. Fundamentally medi-

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8   R. Lavelle, *Alfred's Wars. Sources and Interpretations of Anglo-Saxon Warfare in the Viking Age* (Woodbridge: Boydell, 2010).

9   C.R.Bowlus, *The Battle of the Lechfeld and its Aftermath, August 955. The end of the Migrations in the Latin West* (Aldershot: Ashgate, 2006).

10 Liudprand, *Antapodosis* ed. J.Becker (Hannover: MGH, 1915) Bk 2 ch. 31, 51-52 and see also Widukind, *Res gestae Saxonicae* ed. P.Hirsch and H.E.Lohmann (Hannover: MGH, 1935), Bk 1 ch. 38, 58.

eval society was based on an agriculture in which, for every seed of grain sown the peasant typically could reap only 5, and in a bad year less. Medieval people had ingenuity and skill, but only limited means so the whole structure of society had to march to the pace of the agricultural year. In consequence armies and military enterprises, with very few exceptions, were short-lived, and because of that relatively incoherent. These characteristics became more evident as political circumstances changed.

The Castle: Origins

Castles had rather different origins from the royal networks already mentioned. In his Edict of Pîtres of 864 Charles the Bald showed he was well aware of the dangers of private fortifications:

> And it is our wish and express command that if anyone has built castles, fortifications or palisades at this time without our permission, such fortifications shall be demolished by the beginning of August, since those who live nearby and round about are suffering many difficulties and robberies as a result.[11]

The Franks were dominated by a bickering and feuding aristocracy who, even under a great ruler like Charlemagne, enjoyed a monopoly of political office - it was they who became Counts, Dukes and Margraves, the key territorial administrators. They were supervised by the *missi dominici,* travelling inquisitors, but even they were drawn from this class. In practice, therefore, they enjoyed considerable political autonomy and the Carolingian kingship strengthened their power over others.[12] This was backed by their substantial military retinues. When the Carolingian hold on power in France was challenged in a conflict which endured for a century by the rival dynasty of the Capetians monarchy ceased to count for much. The great aristocrats, to whom governmental power had been confided, were able to exercise it for their own benefit. Their actual lands were scattered across and even beyond the areas in which they claimed to administer justice and government, but houses built on them were vulnerable to attack by rivals.

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11 *Edict of Pîtres*, trans. Simon Coupland consulted on 08.04.25 at https://www.academia.edu/6680741/The_Edict_of_Pîtres_translation.

12 C.West, *Reframing the Feudal Revolution. Political and Social Transformation between Marne and Moselle, c.800-c.1100* (Cambridge: Cambridge University Press, 2013); S.D.White, *Rethinking kinship and feudalism in Early Medieval Europe* (London: Routledge, 2006).

The castle was a solution to this problem being a fortified home, garrisoned by dependent knights, built where a lord had lands, serving to coerce the agricultural population and protect the family's wealth from rivals. The fate of Egfrid illustrates how important this was:

> 'At a certain villa Egfrid [friend and ally of Charles the Bald] refused to emerge from the strongly fortified house in which he had shut himself up; so they set fire to it and drove Egfrid out, chopped off his head and threw his body into the flames.' [13]

As kingship was disputed kings could no longer manipulate aristocrats by offers of office or grants of land, so dependence on land and governmental rights over it increased making protection the more urgent. This was the more urgent and important because in the tenth century peasants expanded the area of agriculture and made such local rights very valuable. And conflict between the great men, the need to cater for family or create and maintain alliances permitted the rise of middle-ranking aristocrats so that by the 11th century castles were becoming quite common, especially in France south of the Loire where contact with the monarchy was becoming rare. As these multiplied it became very difficult for kings, dukes and counts to maintain control over them. The dukes of Aquitaine, for example, lost control of the Limousin to a group of aggressive vice counts.[14] Although such great men retained their eminence they depended greatly on playing off their nominal subordinates against one another.

Underlying this process, around 1000 a Burgundian cleric noted the impact of the new agricultural wealth on the church:

> Just before the third year after the millennium, throughout the whole world, but most especially in Italy and Gaul, men began to reconstruct churches, although for the most part the existing ones were not in the least unworthy. But it seemed as though each Christian community were aiming to surpass all others in the splendour of construction. It was as if the whole world were shaking itself free, shrugging off the burden of the past, and cladding itself everywhere in a white mantle of churches. Almost all the episcopal churches and those of monasteries dedicated to various saints, and little village chapels, were rebuilt better than before.[15]

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13 *Annals of St Bertin* ed. J.Nelson (Manchester: Manchester University Press, 1991) Year 868,143.

14 J.France, "People against mercenaries. The Capuchins in Southern Gaul," *Journal of Medieval Military History* 8 (2010), 1-22.

15 Rodulfus Glaber, *Historiarum Libri Quinque* ed. J.France (Oxford: Clarendon, 1989), 114-

His "white mantle" could soon have been applied to castles which flowered as the century proceeded. In Italy a parallel process known as the *incastellamento* began at the same time in response to the weakness of the monarchy.[16] But castles were not simply defensive. We are told in a charter that the Lord of Saumur "terrified Fulk [Nerra, Count of Anjou 987-1039] as its garrison rode about ravaging his lands." Horsemen based in a castle could patrol, to defend or attack, up to 15 miles in a day from their base. And castles were built to attack. Around the year 1000 Audoin bishop of Limoges (990-1014), supported by the duke of Aquitaine, built a castle at Beaujeu to protect his lands, but Jordan II of Chabannes saw this as a provocation and defeated his forces.[17] Of William the Conqueror his biographer remarked:

> This was his chosen way of attack: to strike fear into the settlement by frequent, lengthy expeditions in that territory, to lay waste the vines, fields and domains, to capture fortified places and put garrisons in them wherever it was desirable; finally to attack the region relentlessly with a great multitude of troubles.[18]

Richard I (1189-99) built Château Gaillard in two years (1196-98) as a base for his projected reconquest of the Norman borderlands seized by the French monarchy during his absence on crusade.[19]

Kings had greater resources than aristocrats but even the strongest monarchs could not prevent great men from constructing them. In France the monarchy struggled with the castellans. Concerning the castle of Monthéry, which stood on the route between the royal cities of Paris and Orleans, Philip I of France (1060-1108) is said to have remarked to his son:

> Beware, my son, keep watch and guard that tower; the distress I have suffered from it has nearly made an old man out of me. Its plots and vile treachery have never allowed me good peace and quiet.[20]

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16 A.A.Settia, *Proteggere e dominare: Fortificazioni e popolamento nell'Italia medievale* (Roma: Viella, 2011).

17 Ademar of Chabannes, *Chronicon* ed. P.Bourgain, R.Landes and G.Pon (Turnhout: Brepols, 1999), CCM 129, Chap. 42, 163.

18 William of Poitiers, *Gesta Guillelmi* ed. and tr. R. H. C. Davies and Marjorie Chibnall (Oxford, 1998), Chap.38, 61.

19 J.Gillingham, *Richard I* (London: Yale, 2002), 304.

20 Suger, *Deeds of Louis the Fat* ed. R.C.Cusimano and John Moorhead (Washington: Catholic University, 1992),40.

The Counts of Champagne dominated the valley of the Marne with no less than six castles, and they had fortified cities like Troyes and many castles elsewhere. Yet Brionne remained a bone in the throat until its acquisition in 1121.[21] In France castles spread like a rash, so that in the general area of Capetian dominance, the Île de France, some 148 private castle sites have been identified.[22] However, the monarchy could generally count on the support of senior clergy, who often controlled cities and castles. In the longer run as towns developed their people looked to the monarchy for aid against aristocratic pretentions and violence, providing finance and the shelter of their walls.

In Germany, where the outbreak of civil war under Henry IV (1056-1105) provided a powerful stimulus, it has been calculated that between the eleventh and fifteenth centuries 10000 castles were built.[23] The Hohenstaufen dynasty, kings and emperors in the twelfth and thirteenth centuries, were named for their home castle. In Italy the Plain of the Po was dominated by great trading cities with formidable fortifications who were very frequently at war with one another. Many of the nobles of the countryside moved into the cities where they built towers, such as can still be seen at San Gimignano, while preserving castles on their estates. War between the cities usually consisted of attacking not cities themselves, but outlying fortifications and castles to chip away at the *contado* of the enemy city and force concessions.[24]

After the Norman conquest of England William I (1066-87) gave lands to his Norman followers, establishing, however, quite harsh terms to control them. But even in England the Conqueror and his successors needed aristocratic support and castles multiplied. When King Stephen (1135-54) took the throne many lords favoured his rival, Mathilda, and the ensuing war developed into a series of local struggles in which sieges of castles predominated.[25]

Aristocrats were not necessarily building castles out of hostility to royal power,

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21 M. Bur, *La formation du Comté de Champagne v.950-1150* (Nancy: Université de Nancy II, 1977), 277-79.

22 A.Châtelain, *Châteaux forts et féodalité en Île de France du xième au xiiième siècle* (Paris: Créer,1983), 225-27.

23 W.F.Schueri, *Medieval Castles and Cities* (London: Cassell, 1978), 87.

24 J. France, "Thirty Years of War: the cities of the Lombard Plain," in R.G.Khamisy, R.Y.Lewis, V.R.Shotten-Hallel (eds), *Exploring Outremer I Studies in History in Honour of Adrian J.Boas* (London: Routledge, 2023), 127-41.

25 D.C.Crouch, *The Reign of King Stephen, 1135-54* (London: Routledge, 2016).

but when it was weak they had to guard their interests. And castles were not just block-houses. They were residences, social centres, stores and status symbols, deeply treasured by their owners, not least because from them their bully-boys, the knights, dominated the peasants and assured collection of rents and dues. When Robert Giroie's castle of St Céneri was taken by surprise and burned by his enemies a chronicler recorded of its owner: "So at one blow the noble knight was utterly disinherited and forced to live in exile in the houses of strangers."[26]

But castles were clearly seen as having vital military and strategic importance for Ordericus comments:

> In the lands of the English there were very few of those fortifications which the French call castles: in consequence the English, for all their martial qualities and valour, were at a disadvantage when it came to resisting their enemies. [27]

Ordericus was probably wrong because England had fortified *burhs*, and many aristocratic homes were fortified.[28] But he shows the importance contemporaries attached to castles.

In 1184 the county of Hainaut was invaded by three allied armies led by the count of Flanders. Baldwin V of Hainaut was greatly outnumbered and could not possibly challenge such overwhelming force in the field. He abandoned weak castles and ordered his vassals to concentrate their men in the strongest places they held, and to devastate the countryside. To encourage them he sent round the following message:

> Take comfort and be strong, because our enemies will withdraw at some time, and leave our lands to us, because they cannot take the lands with them.[29]

These allies all had different reasons for joining the attack, and when the prospect of a long war in the face of a determined defender loomed, they withdrew. It was typical of medieval armies that short-term issues were of overwhelming

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26 Ordericus Vitalis, *Historia aecclesiastica* ed. M.Chibnall, 6 vols (Oxford: Clarendon, 1969-79), 3: :294-95. 4: 295-96.

27 OV 2:219.

28 G.Beresford, *Goltho: the development of an Early Medieval Manor, 850-1150* (London: English Heritage, 1987).

29 Gilbert of Mons, *Chronicle of Hainaut* tr. Laura Napran (Woodbridge: Boydell, 2005), Chap.114, 95.

importance. And after all "they cannot take the lands with them." And such problems persisted. In 1310 Frederick of Austria attacked the castle of Schaerding, but his hastily gathered force soon retreated in the face of poor logistics, bad weather and loss of horses.[30] Baldwin V was fortunate that his vassals remained loyal; in 1216 Prince Louis of France rallied the rebellious English barons against King John. Many lords went over to Louis and their castles strengthened the revolt, but some remained loyal and royal castles were numerous and strong. [31] The resistance of Dover to Louis' attack was crucial to the royalist cause. Under the determined leadership of Hubert de Burgh a well-supplied garrison of 140 knights and many others tied up powerful elements of the rebels for some two years - blunting the threat to the English monarchy.[32]

The Castle and its Fortifications

Much recent writing has stressed the many functions of the castle.[33] Castel del Monte, built by the Emperor Frederick II in Apulia c.1240, was primarily a "pleasure palace."[34] Bodiam castle in East Sussex was constructed in 1385 as a status symbol by a successful soldier who made his fortune in the "Hundred Years War." [35] In fact, this approach is part of a general tendency amongst historians to play down violence and its importance in medieval history. But, of course, given their origins as residences, few castles can be seen as mere bunkers. In the case of the examples above it is worth noting that both were built in peaceful areas, and they were still highly defensible and shared features with the more obvious bunkers of their age.

It is generally observed that most castles built between the mid tenth century

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30 *Annales Osterhovenses* 754-1433, MGH SS 17:556.
31 S.McGlynn, *Blood Cries Afar. The Forgotten Invasion of England 1216* (Stroud: Spell-mount, 2013).
32 J.Goodall, "Dover Castle and the Great Siege of 1216," *Château Gaillard: Études de cas-tellologie* médiévale (2000), 91-102.
33 C.Coulson, *Castles in Medieval Society: Fortresses in England, France, and Ireland in the Central Middle Ages* (Oxford: Oxford University Press, 2004) has been highly influential in this respect.
34 G.Masson, *Frederick II of Hohenstaufen. A Life* (London: Secker and Warburg, 1957), 193-99.
35 C.Coulson, "Some analysis of the Castle of Bodiam, East Sussex", *Medieval Knighthood* 4 (Woodbridge: Boydell,1992), 51–108.

and the later twelfth were of earthwork and timber. There were exceptions. Doué-la-Fontaine was a ninth-century stone-built great hall, fortified by the count of Blois about 950 with the addition of an upper storey. Around 1000 this whole structure was buried in a great earth motte and a donjon (keep) built on top.[36] Fulk Nerra count of Anjou (987-1040) was a great builder of castles, and it seems as if from early in his reign he built in stone with Langeais completed before the end of the tenth century.[37] The Conqueror built the great stone White Tower to overawe London.[38] But these were exceptions. Earthwork and timber was for long the norm. This can be connected to the reasons why lords wanted such structures. They were seeking to protect, or extend, wealth-giving lands or the rights over them. Not all lords had strong elevated sites, but earthworks could be built almost anywhere Moreover they were relatively cheap. No special skill, such as that of the mason, was required, and most aristocrats had, in one way or another, acquired the power to demand manual labour from their peasants. By contrast, in the Holy Land, the crusaders found an absence of timber, but a plethora of ancient ruins whose ready cut stone they therefore used to build castles. Saforie castle, for example, where the crusaders held a fractious conference before the battle of Hattin in 1187, has ancient sepulchres embedded as corner stones.

Earthwork and timber castles were very effective in defence.[39] Two types dominated. The Ringwork was simply a circular ditch with the spoil of the excavation carefully piled inside, thus presenting an attacker with a ditch and a steep ascent to a wooden palisade. This was probably the kind of protection constructed around Goltho manor. It clearly has much in common with the marching camps used by the Franks and others since time immemorial. In the twelfth and thirteenth centuries the rival cities in the plain of the Po frequently constructed camps of just this kind in the course of their attacks upon one another.[40]

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36 M. de Boüard, "De l'aula au donjon:les fouilles de la motte de la Chapelle à Doué-la-Fon-taine (x-xi siècle)," *Archéologie Médiévale* 3-4 (1973), 5-110.

37 B.S.Bachrach,"The cost of Castle building: the case of the tower at Langeais, 992-92," in *The Medieval Castle: Romance and Reality* ed. K.L.Ryerson and F.Powe (Minnesota:Centre for Medieval Studies, 1991), 47-62.

38 R.A.Brown, *English Castles* (London:Chancellor, 1970), 15.

39 The key work is R.Higham and P.Barker, *Timber Castles* (London: Batsford, 1992).

40 On Goltho see above p.oo, n.oo: J.France, "Campements fortifies, sièges et engins de siège dans la vallée du Po au XIII siècle,» in N.Prouteau, E. de Crouy-Chanel and N. Faucherre (eds), *Artillerie et Fortification 1200-1600* (Rennes : Presses Universitaires de Rennes,

A more complex type was the motte and bailey. This was built in much the same way. A circular ditch was created, and the earth piled inside in a mound around the lower part of the timber framework of a tower which could then be furnished with the required number of stories. Some considerable care was needed to distribute the earth across the mound to make it stable. In 1066 William of Normandy brought with him a prefabricated castle, and in the Bayeux Tapestry his labourers can be seen painstakingly layering the earth of the motte to take the weight which would be placed on it.[41] The tower on the motte could be connected by a bridge across the ditch which separated it from the bailey, if there was one, which was essentially a ringwork protecting stores, stables and other assets. If this was breached the owners of the castle could seek refuge in the wooden tower. No doubt some of these structures were better or bigger than others, but what we know of ditches suggests they were formidable. In 1091 William II of England and his brother issued decrees in an attempt to end warfare and castle-building in Normandy. Amongst other provisions it was decreed:

> No-one in Normandy may dig a ditch in open country unless from the bottom of this ditch the earth can be thrown out of it without the aid of a ladder, nor may he set up more than a palisade which must have neither redan nor rampart-walk.[42]

This suggests that ditches could be very deep, and by extension, mottes or earthwork redoubts very high. Anyone who has seen the massive earthworks at Berkhamstead castle, built very quickly after 1066, will appreciate the strength conferred by excavation. The earthworks cover 11 acres: the motte is 40 ft high, and the bailey 300x500 ft, the whole surrounded by a double bank and ditch.[43] Not the least of the advantages of a motte was protection against fire. In the Bayeux Tapestry the Normans attack Dinan, but are shown having to mount the motte to use it, exposing them to the defenders. Fire arrows are, contrary to Hollywood movies, relatively poor at the job, while sticky fire was rare in the west.[44]

2011), 33-40.

41 *The Bayeux Tapestry* ed. D.M.Wilson (London: Thames & Hudson, 1985), 49-50. The layers are carefully picked out in different colours.

42 F.Barlow, *William Rufus* (New Haven: Yale, 1983), 286-87.

43 P.M.Remfry, *Berkhamsted Castle and the Families of the Counts of Mortain, the Earls of Cornwall and the Crown* (Worcester: SCS, 2009).

44 BT 23.

The number of such earthworks is immense. In England the new Norman aristocracy created a rash of such fortifications to hold down their new lands, and they continued to be created, though at a much slower rate, right through the Middle Ages. English heritage suggests that there are some 700 such sites in England and Wales. There is no single pattern. Some are simply plain are classic motte and bailey, others just mottes or ringworks, a few utilise the sites of prehistoric earthworks and many are modified natural features. A lot of these structures had very short lives, and are long decayed. The motte at Pentre where the M4 crosses the river Lloughor is commonly dismissed as a heap made during building of the road. But many others were developed and modified over the years, often with stone castles erected upon them. Most of the castles held for the count of Hainaut in 1184 would have been earthworks.

The rising tide of stone castles in the twelfth century owed a great deal to the increased wealth of Europe, much of which was creamed off by the aristocracy. They offered their owners greater comfort, provided an intimidating element in the landscape, and were highly flexible. Roman city walls provided a model for construction. There was no fixed pattern and the primary determinants of layout were the sites available and the wealth of the owner. A common feature of prominent castles in the eleventh and twelfth centuries was a great square or oblong donjon tower. One of the earliest was Loches begun by Fulk Nerra c. 1035 and completed by his son. It stands 23.3 by 15.4 metres (76 by 51 ft) with walls 2.8 m (9 ft 2 in) thick. It is 37 m (121 ft) high, and each storeyof the four storeys is a single room. In England the White Tower is of the same magnitude, while Hedingham is a more modest example. Its keep is 16 m (53 ft)x 18m (58 ft) and rises through five floors to 21 m (70 ft), while turrets rise up to 7.6m at each corner. It stands on a rock spur dominating the nearby countryside of Suffolk and Essex.

Around many of these donjons there were earthworks, soon replaced or augmented by outer walls to form a concentric defence. Plain walls, up to 10m high, were a substantial obstacle, especially if, as was commonly the case, they were built on earthworks. However, the addition of a walkway, protected by a wall with merlons (crenelations) offered defenders cover, making them even more formidable. Towers, which were higher and projected outwards from the wall, enabled the defenders to take attackers in the flank. Dover, reconstructed under Henry II (1154-89), had a mighty square five storey donjon at its heart, surrounded by a high curtain wall with massive square towers, and the whole was

encircled with another curtain with towers. In the thirteenth century this outer wall was extended to cover the whole of the plateau on which the castle sat, and the main gate rebuilt massively: by this time many of the towers projecting from the wall were, in the new fashion, round. These certainly offered a better all-around view than square towers which, however, continued to be built.

Perhaps the greatest castle in twelfth century Europe was Château Gaillard, constructed by Richard I, 1196-98, on a rock spur high above the river Seine. It was connected to the fortified town of Les Andelys by the river and supported by other castles in the region. With cliffs on three sides, it could only be approached from the east where a huge and strongly fortified outer bailey blocked the way of any attacker. This was cut off from the inner baily by deep rock-cut ditch beyond which another strong bailey faced the attacker. This, in turn, was connected by a bridge to the inner bailey with its great tower. In England the greatest castle was Caerphilly, a private structure begun in 1268 by the Claire family: it is surrounded by a huge artificial lake which kept throwing machines at bay and prevented mining.[45] Only the huge royal castles built by Edward I (1272-1307) to control North Wales rivalled but never surpassed it. This network of castles in North Wales served as bases to put down any rebellion and, by that very fact, strengthened them. But they were in themselves massive enough to provide time for relief to gather. They were hugely expensive and the resources of much of the English kingdom were drawn on for construction,[46] but compared to the cost of continual mounting of huge expedition this was an economy. And privileged towns, erected in the shadow of such monsters, generated taxation to offset their costs. Only kings and the very greatest princes could afford such structures. They were massively built and their complex designs with successive lines of defence made penetration difficult. Gates were always weak points. Barbicans, enclosed the immediate approaches, providing outlying defence. The gates themselves increasingly took the form of two linked round towers in a single block through which the entry ran like a tunnel. It was blocked by portcullises and in its roof and walls were "murder holes." But such refinement was not common and, in any case, more modest measures could be very successful. In 1214 King John invaded France from the south while his allies attacked from the north. John enjoyed

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45 D.Renn, *Caerphilly Castle* (Cardiff: CADW, 2002).

46 For a comprehensive view see *The History of the King's Works I and II The Middle Ages,* ed. R.A.Brown, H.M.Colvin, A.J.Taylor (London: Stationery Office, 1963), 293-408.

much success but this was halted by the resistance of the castle of La Roche-au-Moine. It was not a particularly strong place but the garrison was determined and bought time for the French to mobilise and block John's attack.[47] When Toulouse was besieged by the Albigensian Crusade in 1217 its fortifications had been largely demolished, but it was too big to surround and an attempt to storm it failed in the narrow streets with defenders throwing missiles from roof-tops. In the end the siege failed with the death of its leader, Simon de Montfort, in 1218.[48]

Few cities could afford truly elaborate fortifications. In fact, many city walls perhaps were intended to enforce tax collection as much as to resist attack. But in Italy, where the cities often fought one another, the citizen armies were a real defence, no matter how modest the actual fortifications. But the real challenge offered by a city was, in an age of small armies, its size. Crema, a small city with powerful fortifications including a double wall, held out against Frederick Barbarossa for six months 1159-60, while the siege of Milan, much bigger but indifferently fortified, 1161-62 took almost a year.[49] Frederick II had magnificent armies but he failed before Brescia in 1238 and Parma in 1248.[50] Cities could be well-fortified, like Carcassone which in the late 13th century received a double set of walls, but even without such refinements they could resist siege. As long as the citizens acted carefully. In July 1209 a crusading army besieged Béziers. The citizens were confident that this huge of army of 20000 would soon move on unable to feed itself for long. The citizens harassed and taunted the attackers, but failed to shut their gates which the crusader infantry poured into for a great massacre.[51]

Siege Warfare

Besieging a castle or city created enormous organizational and logistical problems for the attacker. Assault, entering the place over, under or through its walls, was bound to be a bloody affair if the defenders were determined. Philip II of France besieged Château Gaillard in September 1203, but only after he had seized nearby fortresses and captured the fortified town of Les Anelys which was

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47 France, *Medieval France at War*, 134.
48 L.W.Marvin, *The Occitan War, A Military and Political History of the Albigensian Crusade, 1209-18* (Cambridge: Cambridge University Press, 2008), 268-96.
49 France, *Western Warfare*, 110, 14.
50 Masson*, Frederick II*, 285-87, 344-47.
51 Marvin, *The Occitan War*, 37-45.

connected to the castle. A relief expedition was then fought off. A strong camp was established by the south wall and a series of assaults began, but success came only in May 1204. Philip had raised a very large army to tackle a fortress with a garrison of 40 knights and 120 lesser men. French losses were heavy but included only four knights, so the burden of loss fell on mercenaries and poor foot.[52] This was a huge effort, justified only by the scale of the Anglo-Norman war. The costs of such an effort were only justified if the rewards were great. Bribery of garrisons was cheaper. The siege of Antioch on the First Crusade ended after eight months when a garrison commander was bribed.[53] Quite commonly siege ended with an agreement but things did not always go smoothly. In 1104 Baldwin I of Jerusalem besieged Acre and was happy to offer generous terms when the citizens offered to surrender. But he had the aid of many Italians ships and troops who wanted plunder, and they attacked the citizens as they left the city.[54]

Surprise, of course, as in the case of St Cénéri, was effective. Castles had to be prepared for siege. Garrisons had to be reinforced and extra food laid in. The gates had to be strengthened, areas cleared of food sources and defences improved. Hoardings had to be built; these were wooden structures cantilevered from the wall or tower enabling archers to cover blindspots and to drop stones on enemies at the base of the wall from which they projected. And catapults had to be erected to counter those of the enemy. But surprise was difficult to achieve as news of preparations inevitably travelled.

Assault was likely to be bloody, so blockade was an alternative. This required the attackers to create shelter and to establish lines of supply, which Philip did by careful preparation at Château Gaillard in 1203. In July 1247 Emperor Frederick II besieged Parma, establishing a strong camp, entitled Vittoria, so that by February the city was starving. Frederick left the siege to hunt and the garrison, by now desperate, made a major sally and destroyed the attacker. The loose structure of medieval armies made blockade very risky.

A third strategy, which often accompanied assault or blockade, was to destroy

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52 France, *Medieval France at War*, 127-29.

53 Anonymous, *Gesta Francorum et aliorum Hierosolimitanorum* ed. R.Hill (Edinburgh: Nelson, 1962), 44-45.

54 J. France, "Surrender and capitulation in the Middle East in the Age of the Crusades," in Holger Afflerbach and Hew Strachan (eds), *How Fighting ends - a History of Surrender* (Oxford: Oxford University Press, 2012), 82 [73-84].

the countryside round about, so that the defenders faced grave difficulties what-ever the outcome of the actual siege. In 1144 Turks had seized Li Vaux Moise near Petra. Baldwin III of Jerusalem (1143-63) realised that the inhabitants de-pended on cultivation of olive trees, and it was decided: " therefore, to root out the trees and burn them." The Turks were then ejected by the local population and the castle returned to the Franks.[55] On 1 May 1179 Richard Lionheart attacked Taillebourg, then thought impregnable because there were cliffs on three sides, and the fourth was protected by a well-fortified town. On 8 May Richard set about destroying everything in the countryside. This provoked the townspeople into a sally, which Richard crushed, following them into and seizing the town. Deprived of the supplies there, the castle soon surrendered.[56]

If assault was contemplated, the attacker had a choice of going over, under or through the walls before him. In practice at a major siege all three would be attempt-ed. In combination, of course, with blockade, for apart from anything else siege was a psychological struggle and a sense of isolation was destructive of morale.

Even a simple fortification could be formidable. In 1111 Louis VI of France, in alliance with Theobald of Blois, decided to attack Hugh of Le Puiset. This was an earthwork enclosure, a ditch and bank crowned with a palisade, with a motte in one corner. Louis fortified nearby Toury, which belonged to the abbey of St Denis, and stocked it with food. The royal army drove Hugh's forces into the castle, and tried to burn the main gate with blazing carts. Theobald attacked else-where but his forces were harassed by some of Hugh's cavalry. While the king was stalled before the gate, a bald priest, the leader of a peasant militia which they bishops had ordered to support the king, climbed up the earthwork and chopped a hole in the palisade, opening the way to the king's men. Hugh fled into the motte and later surrendered.[57] The farcical elements in this story should not be allowed to detract from understanding how difficult it was to take even a simple fortifica-tion. In this case royal resources were augmented by the church, which had been plundered by Hugh, in what was a major undertaking. Le Puiset was unusually large, so Hugh could not guard its whole circuit, enabling the bald priest to do his work. His success also underlines the need for infantry in sieges.

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55 Kennedy, *Crusader Castles*, 25-27.

56 J.Gillingham*, Richard I* (London: Yale, 2002), 81.

57 Suger of St Denis, *The Deeds of Louis the Fat* ed. R.C.Cusimano and J.Moorhead (Wash-ington: Catholic University, 1992), 84-89.

Archery was vital to both sides in a siege. The attacker needed to keep the defenders' head down, so that the walls could be assaulted. Strong penthouses were often constructed and moved close to the walls to protect miners picking at the foundations. Towers could be built to dominate a section of the walls with arrow fire, and, as at Jerusalem in 1099, they could be moved up to the wall on wheels and a drawbridge dropped.[58] Defenders needed to bring the maximum firepower to bear at the point of danger. Arrow-slits in the walls were of vital importance to defenders, especially as cut into projecting towers they could take any attack on the walls in the flank. Though it has to be said that shooting galleries with multiple slits were never safe places.[59] Such considerations partly explain the growing popularity of crossbows, a weapon with a flat trajectory which assisted accuracy, and used in conjunction with the plunging fire of ordinary bows must have been deadly.

Arrow fire had a very important impact on castle design in the crusader states. At first crusader castles were simple affairs, like the "Red Tower", a two-storey donjon surrounded by a square outer wall.[60] But as the settlers came under enemy pressure, mighty fortresses arose showing careful design. In 1168 the Hospitallers constructed Belvoir on the flat western edge of the Jordan valley, "set amidst the stars like an eagle's nest and abode of the moon." [61] A wide rock cut moat surrounds the massive square outer castle on three sides (the other is the cliff over overlooking the Jordan valley on which sat a great tower) each set with square towers. A precise small copy forms the inner castle. But the special conditions of siege in the Middle East was that wealthy hostile states could use archery on a scale unknown in the west.

Turkish horse archers was the staple of Middle Eastern armies, and the proximity of the steppe meant they could be hired in large numbers, to supplement local mounted and foot archers. Bowmen on this scale could saturate the defences and even arrow slits would become very hazardous: mighty Margat fell to the Mamluks in 1285: around the arrow slits, buried in the interstices of the building

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58 J.France, *Victory in the East. A Military History of the First Crusade* (Cambridge: Cambridge University Press, 1994), 346-55.

59 P. Jones and D. Renn, "The military effectiveness of Arrow Loops: Some Experiments at White Castle," *Château Gaillard* 9-10 (1982), 445-56.

60 D.Pringle, *The Red Tower (al-Burj al-Ahmar)* (London: British School of Archaeology in Jerusalem, 1986).

61 Kennedy, *Crusader Castles*, 58-61.

blocks the archaeologists found numerous arrowheads.[62] This is why at Belvoir and other great crusader castles the outer walls are lined with buildings, like stores and stables, all having numerous loopholes.

Crac des Chevaliers in Syria illustrates the importance of missile weapons and their impact. The castle is built on a spur of the mountain accessible only from the south. Its highest point was sculpted to house the inner castle. On its south side a great talus and towers confronts the enemy, all providing ample cover for defenders. The outer wall on the south is lined by a huge stable with arrow slits. The west wall is immensely thick and set with shooting galleries and box machicolations - effectively small stone hoardings projecting from the walls covering blind spots. To the east is the main entrance, fully enclosed and provided amply with firing positions. On the south, between the outer and inner walls is a great cistern which, when filled, would be a deterrent to mining. In effect, the south outer wall and talus of the inner castle provide layers of firing points. At the very top are much wider opening for large crossbows which could be brought to bear on enemy catapults.

These heavier missile weapons were trebuchets, which by the thirteenth century were of two kinds, both relying on a rotating army with a sling attached. The traction trebuchet operated by human pulling power, could throw only relatively small missiles, but with a high rate of fire. It was clearly an anti-personnel weapon, though larger models could probably damage the crenulated wall protecting the walkway of a castle or city wall. Such weapons seem to have originated in China but were in use in Western Europe by the tenth century. The counterweight trebuchet, which appears simultaneously in Europe and the Middle East in the later twelfth century, threw a much heavier ball. Neither could reach beyond 150-200m, and it is noted that in operation usually had to be screened from their target's arrow fire. Neither could smash heavily built masonry walls, but both were major threats to fighting tops, and in the Middle East therefore increased dependence on concealed and well protected firing points.[63]

A rather more mundane means of attack was mining. In October 1215 King John besieged the great keep of Rochester castle, digging a mine under the tower at its south-east corner. Props were placed and a fire set, fuelled by "forty of the fattest pigs of the sort least good for eating." The subsequent collapse enabled

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62 Kennedy, *Crusader Castles*, 179.
63 I follow here M.S.Fulton, *Artillery in the Era of the Crusades. Siege Warfare and the Development of Trebuchet Technology* (Leiden: Brill, 2018).

John to take the place.[64]Mining was highly developed in the Middle East.[65] In 1271 Baybars, Sultan of Egypt attacked Crac. His Mamluk regime in Egypt had developed a formidable standing army, far greater than anything that the weak kingdom of Jerusalem could field. Baybars quickly destroyed the lesser crusader castles which supported Crac and arrived before it on 3 March. He quickly over-ran the incomplete barbican in front of the south wall and placed his trebuchets there. A mine was dug under the south-west tower under cover of fire from these engines and bowmen. Once the tower collapsed, the garrison accepted terms and left the castle on 8 April.[66] It seems strange that so mighty a fortress fell so quickly, especially as it was held by the fighting monks of the Order of St John of whose bravery there can be no doubt. But Baybars' army was well equipped, and ready to pay the blood-price of the attack. And above all there was no chance of relief, and that really governed the fate of any fortification faced by a determined enemy.

Castles and city defences changed relatively little in the later Middle Ages, but states and armies did. The competence of governments was extended and deliberate strategic choices made about where to strengthen fortifications. In fact, lesser castles, while still useful in local warfare, were eclipsed. Armies became better organized and coherent. By the mid-thirteenth century gunpowder was known, and the first illustration of a gun is dated 1326. Guns were heavy and clumsy, of limited use in the field, but very valuable to both sides in a siege.[67] Henry V's conquest of Normandy, 1417-19, proceeded by a series of sieges in which cannon were vital. However, it should be noted that this happened at a time when French government was in disarray and incapable of mounting a challenge in the field.[68] Moreover, gunpowder artillery was a real challenge for contemporary ironworkers: Mons Meg now in Edinburgh castle weighs 15,366 pounds (6,970 kg) and is 13 feet (4.0 m) in length. Such weight made for great difficulties of movement. And gunpowder was very expensive. And just as castles used trebu-

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64 R.A. Brown, *Rochester Castle* (London: Her Majesty's Stationery Office, 1969), 14.

65 N. Prouteau, "Beneath the Battle? Miners and Engineers as 'Mercenaries in the Holy Land (xii-xiii siècles)," in J.France (ed.), *Mercenaries and Paid Men.The Mercenary Identity in the Middle Ages* (Leiden: Brill,2008),105-18.

66 Kennedy, *Crusader Castles*, 149-50.

67 C.J.Rogers, "The Military Revolutions of the Hundred Years War," *Journal of Military History* 57 (1993), 241-78 reproduced in C.J.Rogers (ed.), *The Military Revolution Debate* (Boulder: Westview,1995), 55-94.

68 J.Sumption, *Cursed Kings: The Hundred Years War 4* (London: Faber, 2015), 530-80.

chets against attackers, so cities and castles had their own cannons, and defensive devices. When the English threatened to besiege Orléans in October 1428 the French protected the bridge across the Loire with a *boulevart*, a strong point to keep the enemy away from the city. The English mined this but the French countermined; however this bulwark fell and the French retreated. The city was bombarded by English cannon, but the French had their own cannon, one of which fatally wounded the English commander, the earl of Salisbury. Thereafter the city was partially surrounded with a series of earthwork and timber forts. Ultimately the French, inspired by Joan of Arc were able to resupply the city and to force the abandonment of the siege.[69]

The fall of Constantinople in 1453 was the culmination of a superbly organized assault by the Ottoman Turks. On his accession the Ottoman Sultan, Mehmed II (1451-81) built fortresses and improved roads so that the city was isolated. An army of over 50,000 encamped before the city in April and it confronted about 8000 defenders who manned the immensely strong walls of the city. The Ottomans certainly used large guns, some of which survive to this day, but their eventual success on 29 May owed much more to the disciplined and well organized siege and the Sultan's acceptance of heavy casualties.[70]

Consequences

Many sieges failed, though rarely without loss to attackers and defenders. Many also ended in compromises of one kind or another. For what attacker did not prefer an intact city, the ransoms of its leaders and the domination of industrious citizens, to burning ruins and piles of profitless dead? On the First Crusade the crusaders in 1097 prepared a great assault on Nicaea, but under cover of preparations their Byzantine allies secretly negotiated a peaceful surrender.[71] But the crusaders stormed Jerusalem in July 1099 after a savage siege, and as a result: "The city was filled with corpses and blood."[72] There were no formal laws of war in the Middle Ages. Nobles might ransom other nobles if fighting was not too

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69 K. DeVries, *Joan of Arc: a Military Leader* (Stroud: Sutton, 1999).

70 S. Runciman, *The Fall of Constantinople, 1453* (Cambridge: Cambridge University Press,1965).

71 *Gesta Francorum*, 16-17.

72 Raymond of Aguilers, *Historia Francorum qui ceperunt Iherusalem* tr. A.C.Krey, The First Crusade (Gloucester Mass.: Smith, 1958), 261.

bitter, but such consideration was rarely extended down the social scale. If a fortress was stormed all within were at the mercy of a wildly out of control soldiery. Commanders, therefore, had to make careful calculations. Too early a surrender and they would be dishonoured, too late and they risked being dead!

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(David orders the destruction of Sheba. Joab pursue Sheba in the city of Abel)

Pietro l'Eremita predica la prima crociata, dal codice occitano Abreujamen de las estorias
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