MEDIÆVAL MILITARY ARCHITECTURE IN ENGLAND.

THE art of construction as practised in Europe from the fall of the Roman empire to the dawn of the Reformation, though of late years much and successfully investigated, has been approached almost exclusively from its ecclesiastical side. This was indeed, for many reasons, to be expected. The service of the altar justified, perhaps required, the highest degree of taste in the design of the temple, and the utmost richness in its ornamentation. Moreover, the greater number of our ecclesiastical buildings are still in use, and even the remains of those that are in decay, being chiefly monastic, are interesting from the intimate connection of their foundations and endowments with early piety and learning, and from the evidence supplied by their records, where preserved, of the descent of landed property, and of the ancestry of the older historic families of the country.

The coeval military structures exhibit, necessarily, no such splendour of design or richness of execution, nor do they awake such sympathies in our breasts. The parish church is the common concern of all who worship within its walls, or whose dead are laid within its sacred precinct ; but the castle, always a dangerous and unpopular neighbour, and often associated with local tyranny or the disasters of war, was in most instances ruined or swept away with the general use of artillery ; and, even where preserved, its narrow dimensions and inconvenient arrangements, circumstances adding to its value as a place of defence, render it, except in a few rare instances, unfit for modern residence, and thus tend to sever it from the current sympathies and interests of humanity.

Nevertheless, there is in these structures, obsolete as they are, or because they are obsolete, much to attract those who care to know of the life and customs of former generations. Many of these buildings were the work and residence of

personages who have left their mark upon the history of our country. Some, as Leicester, Wallingford, Norwich, Lincoln, Nottingham, were the seats of Saxon Thanes and Danish Vikings, succeeding to a still earlier Roman, or perhaps British occupation. Others, as The Tower, Windsor, Winchester, Berkeley, Pontefract, Carisbrooke, are associated with the splendours of our greatest and the miseries of our most unfortunate monarchs. Others, as Oxford, Northampton, Lewes, Kenilworth, are connected with great constitutional struggles between prince and subject. Some, as Exeter, Bedford, Rochester, Corfe, Chepstow, remind us of bloody combats and sieges from the times of the Conqueror to those of Charles I. Others again, as Hedingham, Bungay, Alnwick, Arundel, Wigmore, Goderich, Raby, Belvoir, are intimately bound up with the great baronial names of De Vere, Bigod, Percy, Fitzalan, Mortimer, Talbot, Nevill, and de Ros; while a very considerable number, as Ludlow, Shrewsbury, Bridgenorth, Chester, and the Welsh castles; Carlisle, Newcastle, Norham, Ford, Hermitage, Jedburgh, Berwick, and a host of subordinate towers and peels, are celebrated in marchman's warfare and Border minstrelsy, and in the politic but unjust aggressions of our earlier Henries and Edwards.

The remains of these fortresses are full of interest to the antiquary, whether his branch of pursuit be legal, architectural, or military. Most of the greatest and oldest castles, such as Richmond, Gloucester, Hastings, Clare, Totnes, Lancaster, Tutbury, Brember, were the 'capita' or chief seats of Honours and Baronies, having peculiar privileges within their garths and demesnes, and with manorial dependencies scattered through many counties, and held by the military tenure of guarding or repairing some specified part of the castle—tower, wall, gatehouse, or hall; to be paid either in person or by the commutation known as Ward-silver. The castle of Durham, like that of Chester, was the seat of an Earl Palatine, who, more fortunate than his lay brother, preserved his earldom and its almost regal appendages unshorn to the Reformation, and, with a splendid remnant of judicial and spiritual power, to our own day: and indeed, even now, though the mitre no more springs out of a coronet, nor is the crosier any longer combined with the sword, and the baronial hall is surrendered for educational purposes, the

Lord of Durham is not altogether wanting in pride of place, nor reduced, as yet, to even episcopal poverty.

To the student of military architecture, or of the art of defence before the general use of artillery, the details of castellated structures are exceedingly attractive. They are remarkable, sometimes, for the grandeur of their earthworks or the enormous passive strength of their walls; sometimes, for their happy position and skilful disposition; their arrangements for a vertical or a flanking defence, or, as at Arques, Dover, and Windsor, for their subterranean outlets and countermines. Even where the walls are destroyed, there often remain, in the earthworks, traces of a much earlier people than the Normans, who, as at Old Sarum, Marlborough, Berkhampstead, and Cardiff, occupied the ground with bank, mound, and ditch, long before native skill had attained to the construction of wall or tower. Finally, though the stern usages of war did not admit of the banded shafts, lofty vault, or woven window tracery of Fountains or Tintern or many a monastic church, the ornamentation of the richer castles has a chastened fitness peculiar to itself, and the ruins of very many have a savage grandeur of their own which few who have visited Caerphilly, or Harlech, or Scarborough, or Tintadgel, or Tantallon, can fail to appreciate, any more than that union of strength and beauty so conspicuous in Chepstow, Raglan, and Ludlow, and which attains its highest perfection in Warwick.

The history of such castles as have been connected with public events is not difficult to trace. They are mentioned by the ancient chroniclers and in the earliest records. Some, as Bamborough, Tamworth, and Tutbury, in their simpler and earlier forms, are recorded in the Saxon annals, and in Saxon charters even of the eighth century. Many, especially on the Marches, had their jurisdiction within which the king's writ was of no avail, their courts of record and of law, their Chancellor, Chancery, and official seal; consigning offenders to pit and gallows, and passing fines and recoveries and other early forms for the conveyance of land. Other castles, as Pool and Dinas Brân in Mid-Wales, Caerlavrock, Naworth, Home-Castle, and Roxburgh, in the northern Marches, constructed for the protection of an exposed frontier or debateable district, are commemorated in the records of either country. Others again were either permanently royal

fortresses, or from time to time, either by escheat or forfeiture, in the hands of the crown, and were therefore maintained at the public charge, and the cost and details of their repair charged in the public accounts of the realm. Some were purely military, intended only to contain a castellan and a garrison, and possessed little internal accommodation and no ornamental detail; in others the palace had the ascendancy over the fortress, the accommodation was ample, the apartments large, and the ornamentation rich, and thus the date of the several parts admits of easy inference.

What is wanting in the early accounts of all these buildings is a ground plan. The fabric rolls and specifications are now and then, as at Caernarvon, so minute that a skilful antiquary, like Mr. Hartshorne, was able to identify the work in the existing building; but an early ground plan is a very great rarity. In ecclesiastical buildings, from the known uniformity of the arrangements, this want is scarcely felt, but the details of a castle vary with the disposition of the ground or the caprice of the builder, and although a hall, a kitchen, a well, and perhaps a chapel, are indispensable features in most castles, these parts have nothing of the regularity of position of a nave or choir, a cloister, a chapter house, or a refectory.

There are also a numerous class of castles, which, built without licence from the crown during the wars between Stephen and Maud, came under the condemnatory title of "castra adulterina," and were for the most part levelled with the ground as the crown gained power in the reign of Henry II., and beneath the prudent rule of William Mareschal, during the early minority of Henry III. Of these castles there is generally a local tradition, but the actual remains are usually only light and indistinct lines indicating foundations.

What has been done towards a history of castellated architecture, though it has been strengthened not unfrequently by contemporary records, and especially by accounts and fabric rolls, depends mainly upon the internal evidence afforded by the buildings or the earthworks. Where the castle is a ruin, and the disintegrating effect of weather has had full play, it is not difficult to detect the relative age of the several parts by the thickness of the walls, and the character of the materials and workmanship, as well as by

the outline of the earthworks. The absence of ornament, and the general removal of window dressings and doorcases, often, it is true, render the absolute date difficult to discover, but these difficulties are trifling to those which are interposed where, as at Norwich, or Lancaster, or York, or Carmarthen, the building is converted into a gaol, or where, as in some parts of The Tower, the old work is encrusted by modern houses, and concealed with lath and plaster and wainscot. Warwick, so remarkable on many accounts, is especially so for the tasteful manner in which it has been made suitable for modern habitation, without obscuring in any degree its ancient parts, and this merit may also be claimed for Powis or Red-Castle.

Our county historians are usually diffuse upon the descent of a castelry or Honour, and the extent of its rights and tenures, but their descriptions of the buildings themselves are seldom intelligible, and never scientific. Even Surtees, so distinguished for the wealth and lucidity of his style, and whose history of Durham contains, entombed in folio, chapters that in a more accessible form would have met with far more than antiquarian attention, and who stands in many respects on the level of Dugdale as a county historian, rarely attempts scientific description. Hunter, whose histories of Hallamshire and the Deanery of Doncaster are perfect as records of the descent of families and of property, is not at home in architectural detail; and even Whitaker, who was quite aware of the interest which attaches to earthworks, gives plans of but very few of them, and says very little indeed about the particulars of the castles. To come down to the latest period, even Hodgson and Eyton in their histories of Northumberland and Salop, so copious and so accurate in all matters of record, pass by with slight notice the various earthworks, camps, and castles, the accurate details of which would be valuable; and far more so some sound general conclusion as to their origin, style, and points of difference and resemblance, to which it is the duty of a topographer to pay attention.

The great work of King, the Munimenta Antiqua, though half a century older than most of the above, and full of absurd theories and fanciful descriptions, is yet tolerably accurate in its plans, and on the whole a valuable work for military remains. The Vetusta Monumenta, a publication

of the same school and period, includes a few castles, and gives their plans and sections clearly, and to a large scale. Unfortunately the descriptions are either altogether wanting, or meagre and unscientific. The voluminous works of the industrious and accurate Britton include but few castles, being chiefly confined to ecclesiastical and domestic architecture. Finally, the well-known drawings of the brothers Buck, and those given by Grose, though, notwithstanding their incorrect perspective, they serve, with some assistance from the sketches of Paul Sandby, to show what the buildings represented were 70 or 80 years ago, are grievously wanting in detail; nor are the descriptions of Grose of any great value.

Since the rise, within the last twenty years, of the numerous local archæological societies, castles have received a larger share of attention. Mr. Hartshorne has entered largely into their histories, and a few good descriptions have appeared; but England has as yet produced no special work upon military architecture, although many of the best castles have been noticed, and their plans and certain of their details are given with minute and valuable accuracy in the excellent volumes of Mr. J. H. Parker upon Domestic Architecture.

England contains, it is true, many very curious, and some very grand examples of military architecture, but that insular position and those industrious habits which have given her the blessings of internal peace, and made her children prosperous, have not been favourable to the erection of fortresses of the larger class. For these we must pass to the Continent, and more especially to France. There, each of the great duchies and scarcely subordinate kingdoms of which that monarchy is now composed, were in the eleventh and twelfth centuries independent states, each with an open frontier needing defence, and with a brave and wealthy baronage very willing and very able to supply it. Hence France contains within its present borders the remains of the castle-palaces and palace-castles of the Dukes and Barons of Normandy and Brittany, of Burgundy and Provence, of Lorraine and Navarre, of Flanders, of Anjou, and of many a minor province; and he is ill-qualified to judge of castles or of fortified towns, who is unacquainted with Arques, or Falaise, or Loches; with Coucy, or Chateau-

Gaillard, or Etampes; with Carcassonne, or Avignon, or Villeneuve, or Beaucaire, or the splendid and accurate restoration of Pierrefonds.

Moreover the possession of these great works has created, though very tardily, a few writers capable of comprehending and describing them. So far as they occur in Normandy, where indeed they are most numerous, they have entered into the well-known lectures of M. de Caumont upon monumental antiquities, delivered at Caen in 1830, and published in 1835. These contain a very interesting section upon military works. The plans and elevations, though somewhat roughly executed, and on too small a scale, are very valuable; his descriptions are clear, and his conclusions for the most part sound. Others before him have described particular structures, but he seems to be the first who has attempted a general classification, based upon a critical examination of the numerous extant examples in his own province.

Of detached writings must be mentioned those of M. Deville on Chateau-Gaillard, Tancarville, and Arques, published in 1829, 1834, and 1839; the first peculiarly strong in the history of the castle and its famous siege, and the last excellent both in its history and its description, and all accompanied by clear ground plans.

The great work of M. Viollet-le-Duc, though not confined to military architecture, and not yet completed, does nevertheless, in the parts already published, contain by much the most comprehensive as well as the most detailed account of French castles yet given to the world; and as, besides the general resemblance between all European castles, those of the eleventh century in Normandy are almost counterparts of those of the same period and often built by the same nobles, or their sons, in England, it has deservedly become our chief authority. Also, the castles of France being generally on a larger scale and in better preservation than those in England, M. le Duc has been enabled to explain more fully than could have been done here, certain details, such for example as those of the gateway, drawbridge, and portcullis, and especially of the timber superstructures for vertical defence, known as *Hourdes* or *Bretasches*, terms represented with us by the "hoard" of London builders, and the "brattice" of mining engineers.

M. le Duc's work has already given rise and matter to a

special volume in English on the subject of French castles, from the press of Mr. Parker, which will doubtless be reprinted and expanded when the completion of the "Dictionary" shall provide additional information.

There is besides a work in German, "Geschichte der Militar-Architektur des frühern Mittelalters," by M. G. H. Krieg von Hochfelden, which contains much that is of great interest concerning the earlier German castles, as well as a general notice of those in France and England.

Although military architecture in England, setting aside the works of the Romans, begins with the age, and probably with the actual period, of the Norman conquest, the country contains numerous examples of military works of an earlier, and in many instances no doubt of a very remote time. These works, executed in earth, or at least of which nothing but banks, mounds, and ditches remain, are sometimes of great size, but usually of extreme simplicity of plan. Of most of them, the Roman again excepted, the relative age is all that we can hope to ascertain, but even from this knowledge we are at present very far; and although it is probable that the simple encampments, of irregular outline, and on high ground, are the work of the earliest inhabitants of Britain, and those of circular or more regular outline, having higher banks, and placed in more accessible positions, are the works of the concurrent and post-Roman periods, yet the outlines are often so mixed, and the arrangement of the mounds and banks so alike, that it cannot always certainly be said what is sepulchral, what merely commemorative or monumental, and what military; what the works of the earlier or later Celts, what of the Saxons, what of their Danish conquerors, and sometimes even, though not often, what is Roman.

The particulars of these various earthworks, so different in plan, and extending over so many centuries, deserve a separate notice, and therefore though originally intended to have been discussed in this paper, it seemed more prudent to lay this branch of the subject aside for the present, in the hope that it may be taken up when the completion of the larger scale Ordnance Maps shall afford more accurate and copious data than now can conveniently be procured. The subject, in fact, should have entered into the instructions given to the officers of the Survey, by which means we

should at least have avoided the obscure and sometimes contradictory system of nomenclature by which these works have been designated at different periods of this great, and in most respects admirable, national undertaking.

But, although it be expedient to pass by in silence those earthworks, irregular, rectangular, or concentric, which have no direct connection with the subsequent castles of masonry, and therefore with military architecture, there remain, nevertheless, certain earthworks which are so connected, and which must therefore here be noticed.

These earthworks occur in most parts of England, and especially in those provinces north and east of Watling Street, so full of Danish names and traditions; and they are found still more commonly in Normandy, where they are the known strongholds of barons of Danish or Norwegian descent. On the other hand, they are by no means unknown in Saxon England, and in the south and west, and upon the Welsh border, where the Saxons are known to have penetrated. Many of these works also, in England, are recorded in the Saxon chronicle as the work of Saxon monarchs, and they were certainly, in the centuries preceding the Conquest, the seats of thanes and earls of both Saxon and Danish blood. Sometimes, further to complicate the question, they are found mixed up with Roman works, so that they have in part been regarded as of Roman origin.

These earthworks may thus be described. First, was cast up a truncated cone of earth, standing at its natural slope, from 50 to 100 ft. diameter at the top, and from 20 to 50 ft. high. This was usually, perhaps always, formed from the contents of a surrounding ditch, now often filled up.

Connected with this mound or *motte* was a base court or enclosure, commonly oval, but now and then circular, and even rectangular, contained within a high bank of earth, outside of which was also a ditch. Usually the mound was near one end of the enclosure, in a focus of the ellipse, but not unfrequently it stood on the line of the bank, at one end or in one side of the enclosure, and thus formed a part of the outer defence.

The entrance was by a notch in the bank, usually at the further end from the mound, and the approach wound round the exterior of the ditch, so as to be commanded from the bank.

Outside this base court or ward, but applied against it,

and often covering the entrance, was generally a second enclosure, also within a bank and ditch; and in many cases, on the other side of the base court, a third enclosure. Sometimes all three were in a straight line, the mound being in the central space, and sometimes they formed a sort of triangle. These works were very rarely indeed concentric.

The earthworks are all of the original fortresses that now remain to us, but there is not wanting evidence of the manner in which they were completed. Upon the mound was the house of the lord, of timber, approached by a steep bridge, also of timber, laid across the ditch and extending some way up the mound.

Around the base court, ranged along the scarp or inner edge of the ditch, and upon the bank, was a strong and close palisade of wrought timber; and within this were the timber houses and sheds for the dependents and the cattle. Probably the outer enclosures were less strongly defended and intended to contain cattle alone. The palisade was reinforced by occasional wooden turrets. The Scandinavians disliked enclosures of masonry, and were not adepts at its construction. With the use of timber their seafaring experience had made them familiar.

These earthworks are often so complete as to tell their own story, but M. de Caumont cites a contemporary account, written about the end of the eleventh century, which places the whole arrangement graphically before us. The author is a certain Colmiu, Archdeacon of Terouane, in his life of St. John, a canonized prelate of that church. "The rich and powerful," he intimates, "first secure a strong place for their personal safety, and the keeping of their prisoners and their wealth. They commonly throw up a mound of earth, surrounded with a deep ditch, upon the inner edge of which they establish a stout palisade of squared timber, strongly bound together, equal for defence to a wall, and strengthened by turrets or towers. Upon the centre of the mound is placed the residence, only to be approached by a steep bridge across the ditch." This description is illustrated by the Bayeux tapestry, upon which is represented the taking of Dinan. Here is seen the conical hill surmounted by a timber building, which two men are attempting to set on fire, whilst others are ascending the mound by the steep bridge, reaching nearly to a gateway at its summit.

Sometimes, as at Tutbury, this regular fashion was departed from, to take advantage of a naturally strong outline, though even here the mound, of large size, stands on one side of a base court, about two-thirds of which is defended by a bank and ditch, the other third having a naturally steep face. At Bamborough and Scarborough, places naturally high and of great strength, the mound is dispensed with. At Wallingford, Hereford, Cardiff, Leicester, Tamworth, and at Stamford, the enclosure is or was open towards the river on one side.

Such having been the nature of a Northman's or Saxon's castle, it may readily be understood how they came to be so rapidly constructed, and so readily destroyed. Thus, according to the Saxon chronicle, King Edward, in 913, constructed the northern fortress at Hertford, between the Mimram, the Beane, and the Lea, the southern fortress south of the Lea, and fortified Witham, where the earthworks yet remain, while Ethelfleda constructed the fortresses of Tamworth, Stafford, Eddisbury, Warwick, Chirbury, Warburton, and Runcorn.

Tamworth was a royal Saxon seat in the eighth century, but probably the earliest Saxon work the construction of which is recorded in history is Bamborough Castle, thrown up by Ida in 547, and defended originally by a hedge, and afterwards by a wall. The name is derived from Bebba, Ida's wife.

Ina constructed Taunton Castle, destroyed by Queen Ethelberga in 722. Morcar was the Saxon lord of Brun or Bourn in 870, where part of the mound remains, and the lords Wake had a castle.

Ethelfleda, lady of the Mercians, burnt Bramsbury in 910. Her works in 913 have already been mentioned.

In 920, King Edward repaired and fortified Maldon, and in 921 the Saxons threw up works at Temsford and abandoned those at Huntingdon. In 922, King Edward fortified Stamford town, on the south side of the river, and in 924 threw up a fort near Bakewell in the Peak.

In 1052, when the Confessor and Earl Godwin came to terms, and the attack upon London was set aside, Robert, Archbishop of Canterbury, and his Frenchmen fled, some westwards to Pentecost Castle, and some northwards to Robert's Castle, evidently two native fortresses. In 1055,

Earl Harold, expecting a Welsh attack, dug a ditch round Gloucester, and in 1065 he prepared to erect defensive works at Portskewet, near Chepstow, and collected materials there.

In 1067, Hereford Castle is mentioned, which was of course the pre-Norman work of which the mound remained for centuries, and much of the banks and ditches are still seen. Norwich Castle, occupied by the wife of Ralph de Guader in 1075, could scarcely have been more than the old Saxon stronghold, and although Worcester, Bristol, Rochester, Tonbridge, Durham, and Pevensey are mentioned as castles in 1088, it is probable that they were mere palisaded earthworks, and not the strong towers of masonry which about that time were constructed, and, in the case of Pevensey, added to the Roman building.

Nor are the remains of these peculiar strong places confined to those recorded in the Saxon annals and other historical works. A careful examination of Yorkshire, Lancashire, Cheshire, and Stafford, has discovered many others, some of which correspond in position to the aulæ of the Saxon thanes recorded in Domesday. Thus Dudley was a Saxon seat. Edwin Earl of Mercia, Lord of Strafford Wapentake in Yorkshire, had an aula on the mound at Laughten-en-le-Morthen, and Coningsborough mound was the centre of a royal fee. The Saxon Earl of Richmondshire had an aula at Gilling, the earthworks of which remained within a century. The mound at Halton was crowned by the seat of Earl Tosti. At Berry Banks, near Stone, dwelt Wulfer, King of Mercia ; the chief seat of the Saxon lord of Hallamshire is not known, but in that district the great thanes were Waltheof, Tosti, Sweyn lord of Sheffield, and Harold, whose seats must be sought in the mounds and banks of Castle-Hill and Castle-Bailey near Bradfield, the Castle-Hill at the meeting of the Sheaf and the Don, Tickhil, and Mexborough, to which may be added Melling and Hornby in Lonsdale, the Castle Hill at Black Burton, Robin Hood's Butt at Clapham, and Sedbury or Sedda's Burgh, all well marked Scandinavian earthworks with oval areas, mound, bank, and foss. Such also are, in Yorkshire, Castle-dykes at Sedesal and Langwith, Maiden Castle at Grinton, Coningsborough, and Kirkby Malessant, Stamford in Lincolnshire, besides very many others.

Where the bank is oval or circular and the mound evidently an integral part of it, the work is of course of one date, and probably Scandinavian, that is Saxon or Danish, and of the post-Roman period ; but these mounds are found also within enclosures rectangular in plan, and which, either from internal evidences, or from history, or from the discovery of coins or remains, are supposed to be Roman. Such are Leicester and Wallingford, Tamworth, Wareham, and probably Plessy. Auldchester, the Roman Alauna near Bicester, with a Roman camp of 1000 ft. square, has also an artificial mound called Castle-hill. Leicester, an admitted Roman city, has a mound in its south-west angle, on the river bank, at the upper end of the stream. Wallingford, with banks that must be Roman, has a mound at its north-eastern angle, also on the river bank, at its upper end. Tamworth, rectangular, has its mound near the centre of the river on the southern side. At Wareham, the mound is also on the river bank, up stream, at the south-western angle of its rectangular enclosure. But Leicester was the seat of a succession of Saxon earls, Wallingford of a thane of great wealth, Tamworth of many Mercian kings, and Wareham was a Saxon town of considerable importance. Were these mounds of the date of the containing banks, or were they Saxon additions ? Or were they older than all, pre-Roman, the work of the Britons ? Mere exploratory mounds, what in later days were called Cavaliers, they could scarcely be ; they are too large, and occupy what might in each case be the prætorium of the camp. But the Roman prætorium, or the citadel, which in permanent stations succeeded it, was not placed on an artificial mound.

At Hereford, the banks are rectangular ; but the mound, which was also near the river, had a Saxon history. At Cardiff, where the banks are no doubt Roman, the mound is towards the river, but here is no record of a Saxon occupation.

Still, on the whole, there seems sufficient evidence to regard these large mounds as of Saxon or Danish origin ; generally part of an original work, sometimes an addition, as a citadel, to banks already in existence, and usually, if not always, Roman.

It is thought that many of these mounds, used by the Saxons for security, may have been cast up by the Britons

as sepulchres. Of course this may be the case, and as few of them have been opened, little is known of their interior. But they were regarded, even in Saxon times, as military; and in most cases it is pretty evident that they are of the age of their connected banks, which must be military. Silbury and Brinklow, both mounds of the largest class, have never been regarded as military; and the distinction between a sepulchral and a military earthwork seems always to have been preserved. A "low" is always sepulchral. Probably also a Saxon, one of a race not unaffected by superstitious influences, would have objected to the employment of a sepulchral mound as a foundation for his dwelling-house.

When, therefore, we are told that the Conqueror found no castles in England, and that Domesday enumerates but forty-nine, we are to understand that this limits the term to towers of masonry, such as had come into use in Normandy; for it is very certain that every Honour and almost every Soke and large estate had its fortified aula, and probably the residences even of the ordinary thanes were entrenched.

The Celtic entrenchment was intended to protect the tribe, and the Roman encampment or station for the defence of the empire; but with the Northmen came in a greater prominence of the right of private property, and their strong places, as they became settled in the country, were constructed less for its general security than for the protection of particular estates and families.

It was this individuality, the growth especially of the eighth and ninth centuries, that lay at the root of the feudal system. Each man who acquired land, sought also to possess a stronghold for his own safety and that of his tenants, and from which, like the Scottish borderer of later days, he could sally forth and win a subsistence by the aid of horse and arms, or, as the marchmen phrased it, "with snaffle, spur, and spear." Military tenure arose naturally in such a state of society. It provided mutual support to both lord and vassal, the collective vassals giving power to the lord, who, in turn, secured to each man safety. All were, in a sense, equal. No man was degraded by such tenure. The most powerful barons were almost always, also, vassals, holding fiefs under persons often of rank inferior to themselves.

The military tenant was bound to serve his lord in war, and to defend his residence when attacked. From the history of Norwich Castle it appears that this latter obligation was of early date. It was known in the ninth and common in the tenth century. It was called Castle Guard, and was very precise, each tenant having to defend a specified part of the castle, as the gateway, chapel, hall, wall, or towers, all which are pointed out with the titles of the barons in the Registrum Honoris de Richmond. At Belvoir Castle, Stanton tower was so called because a tenant of that name held his land by the obligation of repairing and defending it.

For the correct appreciation of the military works established in England after the Norman Conquest, it will be necessary to show briefly what was the state of military architecture in Normandy, and from what it arose.

In Normandy are found very numerous earthworks exactly resembling those already described in England, the typical features being the mound, oval bank, circumscribing fosse, and one or two exterior appendages, each with its proper defences.

Within a radius of about sixty miles of Caen, M. de Caumont enumerates about fifty-four of these strong places having mounds, or, as they are there called, "mottes," and some in which this feature is double, as with us at York, Canterbury, and Stamford, besides a few in which the mound is either wanting or is represented by naturally high ground, scarped and dressed by art.

So far, therefore, the works of the Northmen in England and Normandy displayed a marked resemblance. This continued down to the tenth century, when the Normans took a considerable step in advance. Their seigneurs, no longer content with keeps of timber, constructed towers of stone, almost always rectangular, and placed them, not upon the mound, which would afford a very insecure foundation for so great and concentrated a weight, but within the enclosure, the palisade of which they afterwards, often long afterwards, as occasion served, exchanged for a wall.

These rectangular stone keeps came into fashion in the eleventh century,[1] and in the course of Duke William's

[1] The rectangular Keep of Langeais (Indre et Loire), built by Fulk, Count of Anjou, in 992, is one of the earliest known. It has, says M. Caumont, much of the Roman method of building, especially in its arch heads of brick.

reign grew into general use ; and, in some instances, as at Arques, were of very great strength. So far as has been ascertained, although the Norman style began to be used in England under the Confessor, no Norman castle was constructed there until after the Conquest. This might be from the unwarlike character of the king, or from the general dislike felt by his nobles towards the Normans—a feeling which, a century later, had prevented the construction of any Norman castle in Scotland, although the Norman style is not uncommon in Scottish church architecture.

What invests these castles in Normandy with so strong an interest to the English inquirer, is, that from them came those great families who played so important a part in the subsequent history of England, and which gave to their owners those names so familiar to our English ears, but so seldom derived from or borne by any English ground. Such are D'Evreux, Bailieul, Bolbec, Cantelo, Courcy, Fontenay-le-Marmion, Granville, Montgomery, Mortimer, Umfreville, Venables, and Vernon, of whose lords some cast in their lot at once with England, others retained a divided interest until driven by Philip Augustus to a forced selection, and others again shared their estates between an elder and a younger son, whose descendants sometimes, as with the Harcourts, asserted their common origin, after a separation of more than seven centuries.

In Normandy, moreover, the lords of the castles sprung from those who had actually constructed them and inhabited them from their commencement ; whereas, in England, the corresponding families were extinguished, and their places taken by the Norman intruders. And it is this grafting in of the Normans upon the Saxon seats which has preserved and enhanced the name and fame of the latter.

As the Saxons, like the Normans, upon their permanent settlement in a country, and their acquisition of landed property, erected their estates into a manor or lordship, and attached this to the residence of the lord, it became very much the interest of the Anglo-Norman who got a grant of Saxon lands, to place himself as far as possible in the very place of the Saxon thane, abiding in the "aula," which was the social and judicial as well as the military centre of the fief, and to which the tenants were accustomed to look

for protection and justice. Hence it is that the castles of almost all the earlier Norman barons show evidence of a pre-Norman occupation, and have a Saxon history.

Where this is not the case, as in the later, and often in the inferior castles, the grand characteristic—strong earthworks—is wanting, and their place is supplied by defences of masonry and a ditch of moderate dimensions. The same remark applies to the works of the Normans who supplemented the English Conquest by their invasion of Middle and South Wales. At Hereford they found and built upon the Saxon earthworks, as at Chirbury, Montgomery, and Presteign; and so at Coyty, the seat of a Welsh lordship, they seem also to have found and adopted ancient earthworks; but in the smaller and often somewhat later castles, so numerous on the Marches, and throughout the South Welsh counties, the earthworks are usually very light, and the defences of a less laborious and more scientific character.

The first care of a Norman lord on obtaining seizin of a Saxon estate, was to provide a strong and safe refuge for his followers and himself. With this view he repeated in England what he or his immediate ancestors had already done in Normandy. He constructed a square tower of no great architectural or military merit, but of great passive strength, and which, in case of an attack, could afford protection to his immediate dependents, and the artificers engaged in completing the outer defences. If he dealt with an earlier work, he built, not on the mound, but on undisturbed ground within the enclosure.

Sometimes, as at St. Leonards, Wattlesborough, Goderich, and Ogmore, these keeps were of small dimensions, 20 ft. to 25 ft. square, and 40 ft. to 50 ft. high. Under more favourable circumstances, as at Bamborough, Norwich, and The Tower, they were of very considerable magnitude—80 ft. to 100 ft. square, and 90 ft. high. Sometimes, as at The Tower, St. Leonards, and Goderich, they are very plain; at others, of later date, as at Rochester, Hedingham, Dover, and Newcastle, their details are highly wrought. But, however constructed, large or small, ornate or plain, the rectangular keep is the one typical feature of a Norman castle, the most constant, the most striking in appearance, and the most usually preserved, even to our own day. These keeps, of

great passive strength, having been built with attention both to material and to labour, are usually standing when all else is in ruin, and thus they appear of later date than were the less substantial additions of the fourteenth or fifteenth centuries.

Having premised thus much concerning the manner in which the Normans of the eleventh century availed themselves of, or added to the works of their predecessors, it will be convenient next to describe in some detail an ordinary Norman fortress.

G. T. CLARK.

(To be continued.)

MEDIÆVAL MILITARY ARCHITECTURE IN ENGLAND.[1]

By G. T. CLARK.

In the preceding part of this paper an attempt was made to describe the appearance, and to give an outline of the history of those earthworks in England and Normandy, upon which the Norman and Anglo-Norman barons founded their chief strong holds, and which, therefore, are connected with the military architecture of either country. It is now proposed to describe the buildings themselves, whether placed within the ancient earthworks, or altogether of original foundation, which constituted the fortresses of England in the eleventh and twelfth centuries, through the periods known in ecclesiastical architecture as the Norman and Transition, and which, in military architecture, include the Norman form of castle.

The Norman fortress is, of all mediæval military structures, the earliest in date, the simplest in form, the grandest in outline and dimensions, and the most durable in workmanship. It is characterized most frequently by its rectangular keep, sometimes by its shell keep, mound, and earthworks, and occasionally by its surrounding wall and mural towers.

The Keep.—This is a square or oblong tower, from 30 to 80, and even 100 ft. in the side, and from 50 to 100 ft. to the crest of the battlement. The walls are from 8 to 15 ft. thick at the ground level, and seldom less than 6 ft. at the base of the parapet. Each face, close to each angle, is reinforced by a broad flat pilaster strip of about a foot projection, and these, in the larger keeps, rise above the intermediate walls to form the exterior faces of four square turrets, one crowning each angle of the building, and standing free from 16 to 20 ft. Sometimes, as at the Tower, Rochester, and Colchester, one turret is circular, capping the angle, and three-quarters disengaged. These flanking pilasters sometimes stop 6 or 8 in. from the angle, sometimes completely cap it, the two then uniting to form an

[1] Continued from p. 109.

angle of their own. Sometimes they stop at the end of the wall, and thus convert the salient into a re-entering angle, which, especially in late examples, is often occupied, as at Scarborough, by a slender shaft, or three-quarter bead.

Between these flanks are usually from one to three pilaster strips on each face, of the same character and projection, but narrower, and these sometimes cease at the cills of the highest windows, but more generally die into the wall at the base of the parapet. All these pilasters rise from a common plinth, and are usually of the same projection. Sometimes they have two sets off. Their absence distinguishes the larger Peels, and the Scottish towers of the fourteenth century, such as Lochleven, from the Norman keep, which in outline they much resemble.

These keeps have but few openings. The basement is sometimes dark, but more commonly lighted by narrow loops of 2 to 3 in. opening, 8 to 12 ft. from the ground outside, but within splayed, and reached by stone steps in the recess. It is said that sometimes a part of the vault of the recess is hollowed so as to intercept an arrow or firebrand, which might otherwise strike the ceiling, and fall upon the floor, but is thus thrown down upon the stone step. The openings increase in size to the main, usually the second floor, and in large keeps this floor has two tiers of windows, of which the upper are the larger, and are the fourth tier from the ground. They were guarded with strong wooden shutters.

The staircases are commonly well or turnpike, round a solid central newel. They are contained in the angle turrets, one, a principal one, from 9 to 11 ft. diameter, usually ascends from the basement to the roof, as at the Tower and Canterbury. Others, in the other angles, commence at the first or second floor, and also ascend to the top. Porchester, though a large keep, has but one staircase. The position of these staircases is indicated outside by a winding line of loops. Sometimes the staircases are straight, contained in the thickness of the wall, as at Chepstow and Bamborough, where they commence just within the entrance. Sometimes, as at Goderich and Prudhoe, the straight part leads up to or is continued from a circular stair. Below the commencement of the subordinate staircases, the angles are usually occupied by mural chambers, which are found in other

parts of the wall of the basement and first floor. These are sometimes well-chambers, sometimes mere closets or small bed-rooms, sometimes oratories, but more commonly garderobes with sewers. Higher up the walls are threaded by galleries, of which one usually runs round the building, and opens upon each staircase. The principal of these galleries is at the level of the upper tier of windows of the main floor, where it traverses the recess of each, like a clerestory passage, and was used for defence, and for closing and opening the shutters. Such an arrangement was, of course, utterly destructive of any privacy in the apartments; but defence, and not comfort, was the ruling idea.

There were no absolutely underground chambers. The basement was on or 4 or 5 ft. below the ground level, and from 8 to 12 ft. high, and the first floor rather more. The second, or main floor, was, in large castles, 20 to 25, or even 30 ft. high, and the third, or upper floor, about 12 to 15 ft. These main floors were never vaulted, and where vaults are found, as at Richmond, London, Dover, Newcastle, and Arques, they are not original. These floors rested upon whole baulks of oak, 12 to 14 in. square, for which the apertures remain. At Corfe they are very remarkable for their size. The staircases and mural chambers were vaulted with plain, or rather rude, barrel vaults, in the chambers sometimes hipped, but seldom ribbed, and only in very late examples.

The interior of the larger keeps was divided into two equal, or nearly equal, parts by a cross-wall, pierced as at the Tower by doorways and small arches, or on the main floor by two or three large arches, as at Rochester; or, instead of the wall, were single cross-arches as at Scarborough and Hedingham. This wall carried the gutter which lay between the ridge roofs of the two divisions of the building. Norwich and Canterbury seem to have been crossed by two partition walls.

The roofs were sometimes nearly flat and leaded, as now at the Tower, but sometimes they had a high pitch, as may be seen by the water tables at Porchester, though there they spring low and do not rise much above the parapet. The gable ends seem in all cases to have been set back, as in a Scottish Peel, so as to leave the rampart walk unbroken.

The parapet was notched with embrasures of small opening, and at considerable distances, but original military battlements of the Norman period are very rare. The unbroken parapet, common in Norman churches, was of course inadmissible. The Norman parapet was a mere continuation of the wall, not set out upon corbels or over machicolations. There remain frequently holes in the parapet at the rampart level, as at Rochester, evidently to carry a timber 'brétasche,' but these are possibly not original. There were such in the White Tower, either added or repaired by Henry III.

The arrangements for covering the main entrance to these keeps, always on the first floor, are very curious, and in larger and late examples, such as Rochester, Hedingham, Newcastle, Dover, and Norwich, very elaborate. The smaller towers, as Goderich, St. Leonard's, Guildford, and Penllyne, were entered by plain small doors, usually flat-topped, but under a round-headed tympanum. These were approached by exterior steps, narrow, steep, and exposed, usually of wood. In the larger keeps the staircase, also exterior, was broader, more commodious, and covered over. Upon one side or face of the main building, was constructed a fore-building or smaller tower, also rectangular, from 20 to 30 ft. square in plan, in height two-thirds of the keep, and of two stages or one floor. This was placed against one end of one side of the keep, and concealed, as a vestibule, the main entrance. A staircase, built against the wall, and sometimes, as at Rochester, Dover, and Arques, commencing on the adjacent face and turning the angle, led up to the main floor of the forebuilding. The steps were protected by a side wall, and crossed at one or two points by a sort of gatehouse, the embattled roofs of which were reached from a narrow door in the first floor of the keep, usually opening from a mural chamber. At the stair-head was an open landing or bridge pit, covered by a drawbridge, which, when up, shielded the entrance to the forebuilding. This door opened into a vestibule occupying the whole floor of the forebuilding, and from it a second door led direct into the keep. The basement of the forebuilding was usually a dongeon, opening by a small door into the basement of the keep. At Rochester it is vaulted. Good examples of this forebuilding and outer stair may be seen at Dover, Castle-Rising, and Newcastle, and in a less

perfect state at Rochester, Hedingham, and Middleham. At Scarborough and Canterbury the building is removed, but its outline may be traced against the keep wall. As no such arrangement is found, or appears ever to have existed, at the White Tower, it has been inferred that this forebuilding is a later invention. It is found at Arques, but there is reason to doubt the early date usually assigned to that keep. In almost all the Norman keeps, it has been found convenient to break a door direct into the basement, and the first floor door is then converted into a window, as at Goderich and Canterbury. This alteration seems to have been made at an early period, perhaps when the addition of strong exterior walls gave sufficient security to the keep.

Also there is sometimes found a small door in the basement, opening a few feet from the ground into the bridge pit below the outer stair, but this does not appear ever to be original. There is such a door at Rochester and at Corfe; this latter, however, has been enlarged. There is again another small door sometimes found on the first floor, opening by a plank bridge upon the adjacent enceinte wall. This is seen at Rochester and at Desmond's Castle at Adare.

The defences of the main portal were always a strong wooden door, barred with oak, and usually, always in later keeps, a portcullis. This, which is said to be a Roman defence, was here always single, and worked from a small mural chamber in the floor above. From the size of the groove, the grate seems to have been of iron. There is no portcullis at the Tower, Guildford, Castleton, or St. Leonard's. It appears at Hedingham, Scarborough, and Rochester.

The interior arrangement of these keeps was simple. The basement was a cellar and place for garrison stores. The first floor was a guard room. The second floor was occupied by the state apartments, and the upper floor seems to have been the armoury, and sometimes the chapel. Probably stores, and heavy missiles for the defence of the battlements, were deposited along the rampart walk.

The well was a most important appendage, and constructed with much care. The pipe, of hewn stone, was usually carried up to an upper floor, and sometimes to the roof. At Kenilworth, Dover, Porchester, and Newcastle, it is so contained in the outer wall, ending above in a well-

chamber, in the vault of which was a sheave. At Rochester and Norwich the pipe is in the cross-wall, and in the former ascends to the roof, having an opening in a sort of recess or cupboard upon each floor, and below the groove notches in the ashlar lining to allow a workman to go down for repairs. There is a similar arrangement at Canterbury. At Richmond the well is in the basement only. At Arques it is clumsily carried up to the first floor in a sort of detached flue or chimney, probably an addition. At Dover and Colchester the well has been closed up. No well has been discovered in the White Tower, at Guildford, or at Castleton. At Bamborough the well is sunk 145 ft. through whin rock. At Carisbrook, the older, and probably Norman well, known to have been 300 ft. deep, has been covered over, and its place is lost.

The chapel was almost a necessity in the eleventh and twelfth centuries. At Rochester, as became an Episcopal castle, the chapel occupied half the upper floor. But the most complete, as well as the earliest Norman military chapel, is that of the White Tower, indicated by a semicircular bow on the east side, containing the apse. This very perfect apartment has nave, aisles, and a spacious clerestory, all vaulted. It runs through the two upper floors of the building, and rests, in the two lower floors, upon a crypt and sub-crypt, both vaulted, and having semi-domed east ends. At Dover and Newcastle the chapel is in the upper floor of the forebuilding. In other instances it was a mere oratory, either occupying a mural chamber or constructed with wood and plaster partitions in one of the larger rooms. The regular castle or garrison chapel was usually in the inner ward, as at the Tower, and also at Ludlow, where the original circular late Norman nave remains. At Norwich it was a church just outside the bridge, and at Tutbury and Leicester, probably the chapels were the large churches still standing, one just outside, and one just inside the castle walls.

The kitchen at Rochester was in one end of the forebuilding, but most commonly it seems to have been, like the chapel, bratticed off from a larger room, with a plaster chimney. It is remarkable how seldom there are traces of so very necessary an apartment within our Norman keeps. No doubt a large kitchen was only wanted in the rather

rare event of the keep being besieged. For ordinary garrison use the kitchens were in each ward.

Most of the Norman keeps have garderobes in the walls, provided with vertical shafts, dropping either into an exterior shoot at the foot of the wall, or corbelled out upon its face.

Fireplaces are always found in the late keeps, not always in those of earlier date. There is but one in the White Tower. At Rochester the vents terminate in the outer wall, a few feet above the hearth, and, as at Colchester, they are double, opening one on each side of a pilaster, in the angle. Elsewhere they rise vertically to the battlements. Later accounts show that there was much use of flues of wood and plaster of a temporary character, carried up against the wall, and these have been no doubt in use in nearly all the Norman keeps, which never could have been warmed by the few hearths now remaining in the walls.

Besides the sewer vents and chimney flues the walls of some keeps are said to be pierced by shafts for the lifting up of timber and heavy missiles to the battlements, and for the transmission of orders from one story to another. Mr. King describes such shafts and tubes, and says that the former commence in the basement, in recesses large enough to allow of a balk of timber being got into the cavity, and that they branch off so as to supply the different floors. This may or may not be so, but in the example indicated there is nothing of the kind. The cavities taken for speaking tubes, seem to be only the spaces once occupied by the bands or chain courses of timber for holding the work together horizontally.

The earlier keeps are very devoid of ornament. The Tower has not even a moulding, save in the chapel, and an exterior blocking over its main tier of windows. No doubt it has been much mutilated, but though the ornaments might have been removed, the courses of freestone would still be distinguishable from the ordinary rubble masonry. Some of the later keeps exhibit details of excellence but much simplicity about the doors, windows, and fireplaces. Such is the case at Dover, Rochester, Hedingham, and, with more richness, in the chapel at Newcastle. Bamborough has a fine doorway, early in the twelfth century. The exterior of Norwich is panelled in tiers of arches. Goderich, otherwise

plain, has an exterior string of hatched or chevron work. In these keeps the openings are usually round-headed, and where flat, there is a relieving arch above, as at Chepstow. Occasionally false arches are turned, in the thickest part of the walls, as though a doorway had been closed up. Such are observed at Dover, Norwich, and Guildford. They are thought, but scarcely upon good grounds, to have been intended to invite an attack.

It is singular that a Norman keep should seldom, if ever, have any chambers under ground, though the floor of the basement is sometimes sunk 4 to 5 ft. The mural cells may have been used as prisons, and would be sure ones, though the loops usually command an extensive view, but the basement of the keep, with its timber ceiling, would scarcely be secure. The basement of the forebuilding, when vaulted, as it sometimes was, would be safe, and is generally called 'the prison.' A mandate of 17 Hen. III. directs to be ceiled two cellars below the king's wardrobe and his great chamber; and these no doubt were on the ground floor supporting the state apartments. It may be, however, that these accounts relate to buildings in the wards and not in the keep.

One or two keeps have buttresses of bold projection, greatly in contrast to the usual flat pilaster. This is seen at Colchester and at Arques, where the exterior stair passes through one of them. At Arques also the buttresses are turned to account in the upper story, arches being thrown across from buttress to buttress, upon which are built chambers, and on one face a chapel, through the floors of which missiles could be dropped upon the assailants below. Arques, however, is built of chalk and flint, with little or no original ashlar, and it is, in consequence, impracticable to decide with certainty what is original.

Norman keeps differ in workmanship and, of course, in material. The White Tower is of rubble rudely coursed with very open joints, but the plinth, and coigns, and pilasters, seem to have been of coarse Kentish rag ashlar also open jointed. St. Leonard's is an excellent example of early Norman rubble with open joints; and this may be said of the basement of its adjacent Abbey church at Malling, and, perhaps, of the Tower of the parish church. Guildford exhibits some herring-bone workmanship, as do Chepstow, Penllyne in Glamorgan, and the Norman wall at Tamworth. In the

chalk districts, flint was freely used as at Canterbury and Saffron Walden. In the South the ashlar is often Caen stone. Corfe is of excellent local ashlar, as is most of Kenilworth and Porchester. Norman work is always of sound execution, though often rough, and it is very durable. Chain courses of timber were much in use, laid in the heart of the wall, at intervals of 15 or 20 ft. Sometimes breaches have disclosed these timbers, which have rotted away, leaving cavities which have much exercised the imagination of antiquaries.

The Norman keep was usually placed upon the highest part of its enclosure, often very near to the enceinte, as at Rochester, and sometimes forming a part of it as at Ogmore, Porchester, and Richmond. It thus commanded a part of the exterior defences, and placed the citadel in close communication with the ramparts. At Arques, if M. le Duc's exceedingly ingenious description be entirely justified by facts, this communication was marvellously complex.

The rectangular keep may with perfect truth be termed the main and most usual characteristic of a Norman fortress, and it was that feature with which, upon a new or unoccupied site, the Norman baron commonly commenced his work. But it was not the only characteristic, and where the security which it afforded could be gained by other and easier means it was commonly dispensed with. Those means were afforded by the earlier mound or motte, and where this is present the rectangular keep is wanting, and in its stead the mound is occupied by a polygonal shell of masonry, which, being upon steep and high ground, was out of the reach of ordinary attacks, and from its great height commanded the other defences as effectually as would the regular keep.

Oxford and Saffron Walden, are probably the only examples in England of the two works in one fortress. With these exceptions, if such they really be, there is, probably, no instance of a rectangular keep where there is a full-sized mound, that is, not a mere 'cavalier,' but a mound large enough to carry a shell of tolerable area. At Canterbury the mound is small, and belongs to the defences of the town, not of the Castle. At Rochester, where there is a large mound, it is placed outside the Castle ditches, and was no part of the Norman fortress. Of the five

great fortresses which covered the road from Dover to London, Dover itself, Canterbury, Rochester, and the Tower, have rectangular keeps; the fifth, Tonbridge, as early in date as any of them, having a mound, has not the keep, neither has Arundel, also a very early castle. Warwick and Kenilworth, near together, and occupied by the Normans immediately upon the Conquest, exhibit the same difference; Warwick, the old Saxon seat, has a mound and no keep; Kenilworth, a purely Norman fortress, has a keep and no mound. And so of the capital cities, palaces, baronial seats, and chief towns, Bristol, Bamborough, Carlisle, Corfe, Chester, Colchester, Guildford, Gloucester, Lancaster, Newcastle, Nottingham, Porchester, Scarborough, have or had rectangular keeps and no mounds, while mounds without keeps are, or were, found at Bedford, Berkhampstead, Cambridge, Cardiff, Clare, Carisbrook, Devizes, Durham, Hereford, Hertford, Hinkley, Leicester, Lewes, Lincoln, Marlborough, Totnes, Worcester, Wallingford, Windsor, Wareham, and York. The fact seems to have been that the chief seats of the Saxon Thanes were for the most part provided with mounds upon which their timber residences were constructed, while the less distinguished lordships or those of Norman creation, received the rectangular tower alone, as at Brougham, Brough, Bungay, Bowes, Castle-Acre and Castle-Rising, Chepstow, Clitheroe, Castleton, Goderich, Helmsley, Hedingham, St. Leonard's, Prudhoe, and several others.

There is some difference of opinion as to the date of these shell keeps, whether they preceded or followed, or, as seems more probable, were contemporary with the rectangular keeps. Arundel, the only Castle recorded in Domesday as existing at the Conquest, has a shell keep which may possibly be a few years earlier than that event, the work of one of the Norman artizans known to have been fostered by the Confessor. Some of these shells, however, like the square keeps, verge upon the early English period, and on the whole it seems probable that they were introduced by the Normans, and continued to be constructed for about a century and a quarter, or until all the mounds occupied by the Normans were so crowned.

These shell keeps evidently replaced the "gettimbred" houses of the Saxons, and were composed of a shell of masonry,

polygonal or circular in plan, with walls from 8 to 11 ft. thick, and 20 to 30 ft. high. Sometimes the exterior angles were strengthened by flat Norman pilasters, but more commonly the walls were of plain rubble, having a plinth and coign stones of ashlar. Such a building was far more likely than a solid tower to stand without settlement upon made ground.

The space thus enclosed, from 50 to 100 ft. diameter, was open in the centre, but around it were buildings like sheds, abutting against the ring wall. Such was the arrangement in the round tower at Windsor before it was raised and closed in by Wyatville. Sometimes upon the wall was a gatehouse, with a covered stair, ascending the mound, and representing the old wooden bridge. At Cardiff the gatehouse was rebuilt by the Beauchamps, and proved too heavy for the mound, slipping down into the ditch a century or more ago : the more usual entrance, however, seems to have been by a doorway in the curtain, either of large size as at Lincoln, or a mere postern as at Tamworth.

The shells vary somewhat in plan. Tonbridge was oval, 86 ft. by 76 ft., with 15 exterior pilasters, and walls 11 ft. 6 in. thick. It is attributed to Bishop Odo. The mound covers nearly an acre. Pontefract was composed of six roundels, three large and three small, and was 64 ft. across. Clifford's Tower, at York, seems to have somewhat resembled Pontefract. It was an oval, 64 ft. by 45 ft. It stood outside the castle enceinte, and had its own drawbridge and well. Cardiff is polygonal, without pilasters. Tickhill was round, with 16 exterior pilasters, the foundations of which remain. At Lincoln the shell is nearly circular, and is upon the curtain, having a door inside the place, and one outside.

These structures upon mounds are not now very common, the seventeenth and eighteenth century taste for a summer-house or 'gazebo' having proved fatal to them. Cardiff, Arundel, and Lincoln, are original, and tolerably perfect. Tamworth is, in substance, original. At Tonbridge and Berkhampstead the foundations are still seen, and are thought to be traceable at Warwick. At Oxford, Wallingford, Hinkley, and Leicester, all the masonry above ground has been removed. At Windsor, the original shell, of late Norman date, seems to have been raised and strengthened by Edw. III., as was the Edwardian wall by Geo. IV. Arundel ought to be

the earliest of these buildings, though it may be doubted whether the present shell is as early as the Conquest. Pontefract is probably one of the latest, verging on Early English. At Alnwick the shell is built upon a natural knoll, and forms the inner ward of the castle, the main buildings being placed within and around it, leaving the centre as an open court. The plan of this fine keep points to a transition date; one of the gatehouses of the castle is pure and highly enriched Norman. At Leeds Castle, in Kent, is an island covered by one of these shells, probably of late Norman date, though rebuilt or much altered. The open court is preserved.

The position of the mound varies in different castles. At Tutbury, Warwick, Lincoln, Leicester, Tamworth, Tonbridge and Wallingford, it stood on the line of the enceinte, the curtain ascending its slope. At Berkhampstead it is outside the inner ward, but within the main or outer ditch, and something like this is its position at Pontefract. At Cardiff it stands within the main area, but had its special ditch, now filled up, and stood upon the line of defence of the inner ward, now destroyed. At Hereford it seems also to have been central. Both at Tamworth and Berkhampstead there is no trace of a wall but up one side, so that it is probable that in these instances the shell was an exterior projection, a sort of spur-work, connected with the main fortress only by a single strong wall, up the ramparts of which ran the gallery of communication.

The builders, whether of keep or shell, certainly generally intended to enclose these works within an exterior wall, sometimes, as at Arques and Castleton, the only exterior defence; the second and third lines of wall, formed by Hen. III. or Edw. I., being usually additions of later date.

The keep or shell completed, and a place of security in the event of an attack thus provided, the next step was the enceinte wall, but this not being of such pressing necessity, was sometimes postponed for half a century or more, during which time the garrison must have trusted to ditch, bank, and palisade, the keep of masonry being their final security. Norman work is of so enduring a character, that had any considerable number of curtain walls and mural towers been constructed in that style, they would have remained more or less perfect, both in Normandy and England. They

are, however, rare. Even around Norman keeps the walls are seldom wholly Norman. The stoutest wall at Corfe is probably of the age of King John, and though there may be fragments of Saxon work, there is no Norman curtain. The oldest part of the curtain of the Tower of London is little if at all earlier than John, though from its strength and workmanship it well deserves to be Norman. The great wall of Cardiff Castle, 40 ft. high and 11 ft. thick, sound as when built, is probably of the early part of the twelfth century, and has survived much of later work. At Kenilworth (Hen. II.) there remains in the enceinte a round Norman tower. At Carlisle, Chepstow, Rochester, Prudhoe, Richmond, Scarborough, Lincoln, Alnwick, and Tamworth, parts of the enceinte are Norman, as is a part of Southampton town wall, and of the ward wall at Porchester, where it is mixed up with Roman work. A large proportion of the oldest curtains now standing, are of the age of Hen. III., by which time no Norman work could have fallen into decay. The wall of Bamborough may have Norman foundations, but the superstructure is of the time of Edw. II. On the whole it seems probable that while the keep was built or the mound crested, with all convenient speed, as places of absolute security, the Saxon palisades, banks, and ditches, were retained for many years.

Sometimes, indeed, the great extent of the older earthworks, or their incapacity for carrying the weight of walls and towers, or the facility with which works so placed could be mined, seems to have altogether prevented their employment at all. Thus, at Cardiff, where the large rectangular enclosure is contained on three sides within high banks,—wanting, as was not unusual, towards the river,—a walled court was formed between the river and the earthworks, which are actually thus cut off, and formed into an outer ward. The inner ward, contained within four stout walls built upon firm ground, was secure against the miner, the rain, or generally against an escalade; but the outer ward, with its earthworks and wet ditch, was left to those defences alone. Along the crest was probably a palisade, but the wall was an addition in the reign of Elizabeth, and when pulled down and rebuilt in 1863, its foundations were found to be only about 2 ft. deep, nor were there any traces of deeper masonry. At Hereford, where two sides of the

main ward of the castle are still enclosed by banks of no ordinary size, and evidently of early date, they bear no trace of deep strong walls or of massive towers. Also at Berkhampstead, a Saxon fortress, occupied by the Normans, though the inner ward, having no bank, is walled in, the middle and outer wards are defended by ditches and banks alone, the latter far too light to carry masonry, and which could only have been crested by a palisade.

Where the castle crowned a steep hill, and sometimes where there was an earlier bank, the face towards the field was scarped, the wall built as a revetment, and the terre-plein behind converted into a terrace. Thus, at Arques the chalk rock has been scarped for 30 ft. down, and a Norman revetment gives an exterior wall of that height, with a parapet above it. In parts of York and Chester the wall is a revetment against earlier banks, as at Tutbury and Exeter. At Warwick the buildings of the castle are above a vast revetment, constructed against a red sandstone cliff, so that the entrance from the court is on the third story, counting from the river front. A terrace behind a wall gave great additional strength, and much increased the facilities for active defence.

The Cornish castles are usually round, and some of them are of the character of these shell keeps. Such are Restormel, which occupies a sort of promontory, and Trematon, which crowns a natural hill. Both are large courts, open in the centre, with buildings against the walls. Restormel is rather Early English than Norman; Trematon may be earlier; but all access to it is refused.

Norman gatehouses are rare. Frequently the entrance was a mere archway in the curtain, of moderate size, round-headed, and strongly gated and barred with wood. Such an entrance in the late Norman style remains at Bridgend, in Glamorgan. At Cardiff, though the gateway has been altered, and in its present form is probably Tudor, it evidently, as at Ogmore, represents the original Norman opening. At Porchester one gateway at least is Norman, and is composed of a low rectangular tower, with a passage through it and a floor above; and such is the arrangement of the Norman entrance to the inner ward at Arques, where, besides the outer and inner doorways, is a central one in a cross wall, dividing the tower into two parts. Such gate-

houses are very plain, of slight exterior projection, and without flanking towers. The passage was not vaulted, and had two or three gates. Sometimes the portcullis was used, but there were no machicolations. There seems commonly to have been a drawbridge. Prudhoe has a Norman gateway of plain character, and unflanked, but the superstructure and contained chapel are of the age of Edw. II. The gate of Bamborough is unflanked and of slight projection. It has lateral columns and recessed Norman arches.

The hall was an essential part of a Norman castle. In the keep it occupied the second floor, as at Rochester, where it divides the story with the private apartment. There was also an exterior hall, in more general use, attached to the buildings of the inner ward. Such halls are now rare, but there is a fine and perfect one at Oakham, one much mutilated at Leicester, and another much altered at Winchester. There are also Norman houses, chiefly occupied by the hall and its cellars at Christchurch, and at Desmond's Castle, near Limerick. No doubt timber was much used for domestic buildings, which accounts for their disappearance.

Subterranean passages connected with posterns are often talked of, and sometimes found, of the Norman period. They are, of course, most common where the castle, as at Dover, Arques, Old Sarum, and Windsor, stands upon a chalk rock. At Windsor there are two, or perhaps three, passages, at least as early as the Norman period, which passed from the inner ward, beneath the curtain, and opened into the ditch. One of these galleries is now open. It is driven through the chalk, and unlined, but the inner Norman doorway remains, and the outer end has also been discovered. The passage at Old Sarum was very similar. It is now closed up. At Dover, as at Arques, the galleries are extensive, and were intended for countermining, running along the scarp of the ditch, and occasionally opening into it. Windsor also possesses another and much larger postern gallery, which is carried from the lower chamber of a tower near the horseshoe cloister, and opens into the ditch near the river bridge. This is lined, and a work of considerable beauty. In its present form it is of the age of Hen. III., but the passage itself is probably Norman, or earlier. Such passages were no doubt intended for the dispatch of bodies of troops, to surprise the besiegers and burn their engines.

The character of the earlier Norman defences is passive

strength, with much ingenuity of detail, but with little military or architectural science in the disposition of the material, and little attempt at a flanking defence. At Cardiff one angle of the great wall is perfectly plain. Whether in the original design it was in contemplation to supply this want by a vertical defence is uncertain. No Norman architect seems to have employed machicolated parapets of stone, from behind which missiles could be dropped securely upon the foot of the wall; and it is uncertain whether the system of hoarding, in use in the thirteenth century, was an original or applied defence to the Norman keep. It has been supposed that heavy engines of war were placed upon the roof, but the roofs were certainly not always flat, and with the limited garrison that could be lodged and fed within such a structure, the labour of lifting up heavy missiles would be severe, nor could any considerable store of such ammunition be heaped up upon a timber roof of the usual span. Further, with light missiles, such as arrows or darts, the course from a height of 70 or 90 ft. would be less direct, and their velocity less considerable, than from a loop at a lower level.

Where Norman keeps have not been purposely destroyed, they are usually the most perfect and the most striking feature of a castle, whether in occupation, like Dover and the Tower, or in ruin like Hedingham or Kenilworth. This latter condition has also the advantage of being most favourable to the antiquary. Much may be wanting, but nothing is concealed. What has fallen is often later and less interesting work.

The Norman keeps suffered heavily in the great civil war. They were, from their great strength, capable of holding a moderate garrison in safety when artillery was imperfect or not at hand, and there was not time for a blockade. Hence, as fast as these keeps fell into the hands of the Parliament, they were ordered to be 'slighted' or dismantled, and blown up with gunpowder. Corfe is an example of unnecessary severity in this respect, and Kenilworth of equally effective but much less vicious injury.

Also, in very modern times, much injury has been done. The work is too sound, and the mortar too firm, to allow the ordinary material to be cheaply quarried, but the ashlar of the window and door cases has been removed, and the tenant has usually found it convenient to break one or

more gaps into the basement floors. The White Tower has been cruelly pierced in several places for the convenience of moving stores. Sometimes, as at Goderich, these basement entrances are of early date, but it is believed they are never original.

In considering the limited and very inconvenient accommodation within a Norman keep, it should be remembered that they were only intended for residence in case of an actual siege, and then very often received only the mantenants of the lord, and not his mercenaries. Indeed, the builders of some of these keeps seem to have feared these troops almost as much as they did the enemy. The staircases and passages are often contrived quite as much to check free communication between the several parts of the building as between its inner and outer sides. Further, the excessive jealousy in guarding the entrance, the multiplied drawbridges, grates, and doors, the steep winding and narrow staircases, and the sharp turns in the passages, although they kept out the enemy, or if he got in placed him at a disadvantage, also rendered impracticable the rapid re-entry of the garrison, so that when the base court was taken by surprise or assault, the defender had not time to retire into the keep, which was thus liable to be taken by a *coup de main*, or reduced because defended by insufficient numbers. Otherwise, with a sufficient and faithful garrison, and ample provision and military stores, the Norman keep was nearly impregnable. The walls were too high to allow the roof to be reached by fire-balls, and too thick to be mined or breached, especially if properly defended from the summit.

Though reducible to one type, the varieties in detail of the rectangular keeps are infinite.

There exists no list, nor attempt at a list, of the rectangular keeps, or of the mounds occupied by the Normans in England. The following is an attempt, though an imperfect one, to supply the want :—

Norman Rectangular Keeps.

Bamborough. In progress, 1131. The well discovered, 1770.

Bowes, Durham. 75 ft. by 60 ft., by 53 ft. high.

Bridgend, Glamorgan. Late. Now destroyed ; basement remains.

Bridgenorth, by Hen. II. (?) Destroyed.

Bristol, 1147. Destroyed.
Brough.
Brougham Castle.
Bungay. 54 ft. by 54 ft.
Canterbury. 88 ft. by 80 ft., by 50 ft. high. Late. Norman ornaments. Well in the wall, Walls 11 ft. thick.
Carlisle.
Carnbrea (?), Cornwall. Peculiar; perched upon a point of rock.
Castle-Acre, before 1089 (?).
Castle-Rising.
Castleton-in-the-Peak. 38 ft. by 38 ft.; walls 8 ft. thick. No portcullis; no well.
Chepstow. Peculiar; Roman materials; herring-bone work.
Chester. Much altered.
Clitheroe.
Clun, Salop.
Colchester. 168 ft. by 127 ft. Well probably in cross wall.
Corfe.
Dover. Hen. II. Late. Norman ornaments; well covered up.
Fonmon, Glamorgan. Late. Probably Early English.
Gloucester. Destroyed.
Goderich.
Guildford. 42 ft. 6 in. by 47 ft., by 70 ft. high; no portcullis; herring-bone work. Reputed early.
Hedingham.
Helmsley.
Hopton, Salop.
Kenilworth. Hen. II.
Knaresborough.
Lancaster. A prison; much altered.
Leonard's, St., Kent. Very early.
London. Early. No well; no portcullis.
Ludlow. Connected with later buildings.
Middleham.
Newcastle. Late. 60 ft. by 60 ft., by 80 ft. high. Ornate; deep well in wall.
Norwich. 93 ft. by 98 ft. Well in cross wall.
Nottingham. Destroyed.
Ogmore, Glamorgan. Late.
Oxford. Probably 1142.
Penhow, Monmouth. 32 ft. by 22 ft. Walls 12 ft. thick. Probably Early English.
Penllyne, Glamorgan. Herring-bone work.
Porchester. Twelfth century. Well in wall.
Prudhoe.
Richmond. About 1146.
Roche (?). Pembroke. Perched upon a small rock.
Rochester. 75 ft. by 72 ft., by 104 ft. high. Wall 12 ft. thick. Well in cross wall. Late.
Saffron-Walden. 36 ft. by 36 ft. Wall 12 ft. thick of flint rubble.
Scarborough. Probably 7 Hen. II. One side gone.
Wattlesborough, Salop.
Winchester. Bishop's Castle. 1138.

Among the rectangular keeps built in the eleventh and twelfth centuries, and of which remains are to be seen in Normandy, M. de Caumont enumerates the following :—

Beaugency-sur-Loire. 72 ft. by 62 ft. Walls 20 and 24 ft. thick, 123 ft. high.
Brone. Built upon an artificial mound. 4 stages; 5 pilasters on a side. Fireplaces and mural galleries.
Chamboy (Orne). A.D. 1150—1200. Exterior resembles Dover and Newcastle.
Chavigny-by-Poitiers.
Domfront. Broad flanking pilasters.
Du-Pin in Calvados. 52 ft. by 34 ft. at base.
Islot. 44 ft. by 44 ft., and 90 ft.

high, with three pilasters on each face.

St. Laurent-sur-Mer. Oblong; herring-bone work; two concentric but rectangular earthworks, with rounded angles.

Loches. 76 ft. by 42 ft.; with a forebuilding, 38 ft. by 21 ft. Of four stages with half round pilasters. Basement now vaulted. Staircases circular; walls 8 ft. thick; vertical flues; a large window in each upper floor for taking in stores; holes above to support a Bretasche; charcoal mixed with the mortar.

Montbazon.

Mont-Richard. Three pilasters on each face.

Nogent-le-rotrou, Eleventh century. 4 stages; 4 pilasters on each face. A considerable batter.

Plessis-Grimault. A. D. 1000—1050. Herring-bone work; the enceinte walls backed with banks.

Pomeraye.

Pons (Charente Inférieure). Oblong, with 5 and 3 pilasters.

Tonnai-Boutonne. 3 pilasters on each face.

The keeps in Normandy are more usually oblong than square in plan. They extend into Anjou, Poictou, and Maine.

Mounds Incorporated into Castles of Masonry.

Abergavenny.

Aldford.

Arundel. Shell remains.

Bedford.

Berkhampstead. Foundations of shell.

Bourne. Earl Morcar, 870. Lord Wake's Castle destroyed.

Bramber.

Caldecot, Mon.

Cambridge.

Cardiff.

Carisbrook.

Carnhoe.

Castle Hill, Sheffield.

Chichester.

Chirbury.

Christchurch.

Clare.

Devizes.

Dodleston, Cheshire.

Dunham.

Durham.

Eaton-Socon.

Fotheringay.

Gleaston.

Groby.

Hatfield. An Honour.

Hawarden.

Hereford. Destroyed.

Hertford. An Honour.

Hinkley. An Honour.

Kinderton, Cheshire.

Leicester. An Honour.

Lewes. An Honour.

Lincoln. Shell perfect.

Malpas.

Marlborough.

Mold.

Montgomery.

Morpeth.

Oldcastle, Cheshire.

Oxford.

Pevensey.

Plashy, Essex.

Pontefract. Shell described by Leland, as of 6 rowels, 3 large and 3 small, 64 ft. diameter. The mound occupies a salient of the area.

Pulsford.

Restormel. Shell, but no mound.

Risinghoe.

Saffron-Walden, called Buryhill.

Sandal.

Stafford.

Shocklcach, Cheshire,
Skipsea in Holderness.
Stamford. Two mounds, one beyond the Welland. Destroyed.
Tamworth. Shell remains, and curtain, with herring-bone work.
Tickhill. An Honour. Oval bank, with mound at one end, and entrance at the other. Shell circular; 16 external pilaster foundations remain. A well inside.
Toddington?
Tonbridge. Mound 70 ft. high, remains of shell; oval, 86 ft. by 76 ft.; walls 11 ft. 6 in. thick; 15 external pilasters.
Totnes. An Honour. Shell remains.
Trematon. Shell. Mound probably natural.
Ullersford, Cheshire.
Wallingford.
Wareham. At angle of rectangular enclosure. Castle buildings gone. A Saxon seat.
Warwick. Saxon seat.
Windsor. An Honour.
Worcester. 28 ft. diameter at top. Destroyed. Was a Saxon seat with a Norman Castle, by D'Abitot.
Yielden.
York. Two mounds, one on each bank of Ouse.

Mounds supposed to be Military but not known to have been connected with Works in Masonry.

Auldchester, near Bicester. Stands in a rectangular camp 1000 ft. square.
Bailey-Hill, near Bradfield, Yorkshire. An oval area with bank and ditch. At one end, on the enceinte, a mound 174 ft. diameter at base, and 36 ft. at top; about 43 ft. high.
Canterbury. Connected with the defences of the town.
Castle-Hill, near Bradfield.
Castle-Pulverbach, Salop.
Eddisbury, Stafford.
Gelligaer, Glamorgan.
Halton, Yorkshire. Residence of Earl Tosti.
Hertford. Probably Saxon. One of two; now removed.
Hornby in Lonsdale.
Laughton-en-le-Morthen. Residence of Earl Edwin.
Melling, Yorkshire.
Mexborough.
Oldbury by Bridgenorth.
Oswestry.
Pentyrch, Glamorgan.
Penwortham on the Ribble.
Robin-Hood's Butt, Clapham, Yorkshire.
Sedburgh, Yorkshire.
Stamford, one of two; now removed.
Talybont, near Towyn.
Woolstaston, Salop.
York, on right bank of Ouse.

The rectangular keep, and circular or polygonal shell, with other Norman features, seem to have retained their hold upon English castle builders through the reign of Stephen, 1135—1154, into that of Hen. II., 1154—1189, or for rather above a century from the Conquest; or even rather later, for the shell at York had decided early English features; and this is also the case with such rectangular keeps as Penhow, the cradle of the Seymours, in Monmouthshire,

well described by Mr. Morgan, and with Fonmon and Sully, in Glamorgan, of which latter the foundations were opened about twenty-five years ago.

The reign of Stephen was prolific in *castra adulterina*, fortresses built in haste and without licence, many of which were destroyed by his successor, though the Mowbray rebellion is said to have been the occasion of building a considerable number. Henry, no doubt, found the castles of the realm too numerous for the power of the crown, or the peace of the community; for during his reign, and those of his sons, Richard and John, more was done in building enceinte walls, and in strengthening old castles, than in building new ones. It would seem that the old castles were usually planned upon a sufficiently extended scale, and that the new walls followed the line of the old earthworks. Where this was not the case, the old walls were left unhurt, or somewhat strengthened, and another ward was added, either concentrically, as at the Tower, or on one side, as at Corfe. Hence while we sometimes find the old Norman walls amended and strengthened by an occasional mural tower or a gatehouse, as at Richmond, Rochester, Bamborough, and Scarborough, we find in other cases our finest examples of castellated architecture, as at Dover, combining the Norman keeps and interior enceinte with exterior additions, of the reigns of Hen. III. or Edw. I.

The transition from Norman to Early English, which in ecclesiastical architecture constitutes a period of great interest, is by no means, in England at least, so strongly marked in military structures. The new keeps for a time were rectangular, and their arches round, or nearly so, till late in the twelfth century. At Dover the dog-tooth ornament, and a bead moulding, combined with Norman features, mark a transition period, but this is not common. The later keeps are known sometimes by the greater boldness of the pilasters, which became buttresses, as at Newcastle and Dover, sometimes by their improved ashlar and closer jointed masonry, or by the presence of ribs upon the angles of the hip vaulting of their mural chambers, and most certainly by their greater ornamentation about the doors and windows and fireplaces. There is little change in their internal arrangement, and no tendency towards flanking defences.