

GUNS IN SCOTLAND

**The manufacture and use of guns
and their influence on warfare
from the fourteenth century to c.1625**



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ABSTRACT

Guns first came into use in Western Europe in the fourteenth century and the Scots were using them by the 1380s. It was not, however, until the reign of James II (1437-1460) that they emerged as an important weapon for battering fortifications. The first mention of a master of the artillery dates to this time and by the sixteenth century there is substantial evidence for a gunnery establishment with a master, a comptroller and various other craftsmen - gunners, founders, wrights and smiths - mostly based in Edinburgh Castle. Bronze guns were being cast by the 1470s.

Guns allowed James IV (1488-1513) to embark on an aggressive policy against England which was disastrously unsuccessful and finally abandoned by the Regent Albany in 1523. Artillery was expensive to make and maintain and considerable expertise was needed to make full use of it. By the 1540s the Scots' ineffectual handling of their artillery was plain, leaving the way open for English and French intervention and the establishment of sophisticated artillery earthworks.

In the late sixteenth and early seventeenth century hand firearms with snaphance locks were manufactured in the Scottish burghs, particularly Edinburgh, Canongate and Dundee. The Scots should be given the credit for first making snaphance pistols on a large scale, if not for significant developments in the lock mechanism itself. The surviving firearms are of high quality and must be seen in the context of a flowering of Scottish craftsmanship at this time.

The Scots adapted their castles for use with guns but gunloops were perhaps sometimes for little more than show and provisions for flanking fire were not often systematic. Despite the presence of French and English trace Italienne forts on Scottish soil in the 1540s and 1550s the Scots eschewed the radical new approach these suggested.

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DECLARATION

This thesis has been composed entirely by myself and the work on which it is based is all my own.

Date 7 Jan 1982

Signed

David H. Caldwell

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ABBREVIATIONS

The following is a list of the 'letters only' abbreviations commonly used. An * indicates that more information is provided in the Bibliography.

* <u>ADC</u>	<u>Acts of the Lords Auditors of Causes and Complaints</u>
* <u>ADCP</u>	<u>Acts of the Lords of Council in Public Affairs</u>
* <u>AMW</u>	<u>Accounts of the Masters of Works</u>
* <u>APS</u>	<u>Acts of the Parliament of Scotland</u>
EBA	Edinburgh Burgh Archives, City Chambers, Edinburgh
* <u>ER</u>	<u>The Exchequer Rolls</u>
NMAS	The National Museum of Antiquities of Scotland
PRO	The Public Record Office, London
RCAHMS	The Royal Commission on the Ancient and Historical Monuments of Scotland, Edinburgh.
* <u>RPC</u>	<u>Register of the Privy Council</u>
* <u>RMS</u>	<u>Register of the Great Seal</u>
* <u>RSS</u>	<u>Register of the Privy Seal</u>
* <u>SHR</u>	<u>Scottish Historical Review</u>
SRO	The Scottish Record Office, Edinburgh

INTRODUCTION

SCOTTISH WARFARE IN THE LATE MIDDLE AGES

The early use and development of guns in Scotland took place against a background of almost constant hostilities, primarily with England, the southern neighbour. It was Scotland's great misfortune to share her only land frontier with a country whose military reputation was not only deservedly high for much of the period we are considering but which also had vastly superior resources in wealth and manpower. What is more, the English believed they had a right to the kingdom of the Scots and were to advance this claim as late as the sixteenth century.

The fourteenth century was dominated by a determined English attempt to effect the conquest of Scotland. Government was, initially at least, to be imposed by means of garrisons installed in castles up and down the country, but the first major English effort in the struggle came to a disastrous end with their resounding defeat at Bannockburn in 1314 and the succeeding years were to see them cowed by great Scottish raids into their own country which achieved the Scots' aim of having their king Robert I and his independence fully recognised. King Robert died in 1329 and as was to happen so often in Scotland was succeeded by a child, David II. Before long the Scots were almost completely subjected to the rule of the English or their puppet king Edward Baliol. They were, however, just as surely expelled again by the early 1340s though the occasion was not marked this time by a great victory in a pitched battle. This was by no means the end of Scotland's misfortunes; she was worsted by the English on numerous occasions and suffered the indignity of having two of her kings captured, David II in 1346 and the young James I, kidnapped at sea in 1406 while the heir to the throne, but the English were not able to make a serious attempt at dominating the country again until the mid-sixteenth century.

The fifteenth century was marked in military terms by internal struggles rather than major confrontations with the English although the Scots never forgot about the two fortresses of Berwick and Roxburgh which their enemies showed every intention of holding on to. There was major opposition between Highland and Lowland in the time of James I but overall his reign probably saw less military activity than any other of the Medieval Period. The reign of his son James II (1437-60) was notable for a series of sieges mostly directly against the houses of the Black Douglasses and their supporters. James III was also troubled by internal dissensions but in this case the king's enemies were the victors and the king was mysteriously murdered in the aftermath of his party's defeat at Sauchieburn in 1488. Some much needed stability was restored under his son James IV, though his reign was by no means free of military expeditions and sieges and was to come to a disastrous conclusion in 1513 with the death of the king and many of his nobles at the hands of the English on the field of Flodden.

The defeat at Flodden saw the struggle renewed in earnest with England and Scotland became a battleground fought over by the French and English. Flodden had been fought in pursuance of a French alliance and this policy was furthered in the succeeding minority of James V by the ex-patriate Franco-Scot the Duke of Albany. The troubled reign finally saw the humiliating defeat of the Scots at the hands of the English at Solway Moss in 1542 and this was undoubtedly a major cause of the death of the king not very long afterwards. The fact that James left as his heir a baby girl, Mary, heightened the English resolve to win their neighbour, firstly by marriage and secondly by brute force. The resounding defeat of the Scots at Pinkie in 1547 and the subsequent establishment of English garrisons precipitated the intervention in force of the French who by 1550 were the definite winners. But, as so often

in warfare, factors off the battlefield were ultimately of much more importance, in this case religion. By 1560 the tide had turned dramatically against the French, helped by the protestant affiliations of a large body of the Scots to their former English foes. The English speedily adopted the role of aider and abettor of the new cause, forcing the French out of their last stronghold of Leith in 1560 and in 1573, at the invitation of the Scottish government, flushing the last supporters of the deposed pro-French catholic Queen Mary out of Edinburgh Castle. The way was paved for the succession of Mary's protestant son James VI to the crown of England in 1603 on the death of the English Queen Elizabeth without any immediate heirs.

The Scots had a very simple and effective strategy to employ in warfare, the credit for devising which goes to Robert Bruce. Firstly, they should never enter into a pitched battle with the English but harry them with light skirmishing. Secondly, they should never fortify their towns with walls but defend them by force of arms.¹ The odds were certainly normally against the Scots when it came to set battles and even if they won it was likely that the English could make a quick recovery and field another army. If defeated, there was little chance of raising another force and they lost not only men but often baggage and artillery as well. A list of the more important battles between English and Scottish armies in the period from the beginning of the Wars of Independence to the sixteenth century and their results emphasises just how vulnerable the Scots were:

Dunbar, 1296,	victory to the English
Stirling Bridge, 1297,	" " " Scots
Falkirk, 1298,	" " " English
Bannockburn, 1314,	" " " Scots
Dupplin, 1332,	" " " English

1. Dalrymple, Historie, ii, 12.

Halidon Hill, 1333,	victory to the English
Neville's Cross, 1346,	" " " English
Otterburn, 1388,	" " " Scots
Homildon Hill, 1402,	" " " English
Flodden, 1513,	" " " English
Solway Moss, 1542,	" " " English
Pinkie, 1547,	" " " English

Bruce himself may never have intended to fight at Bannockburn and arguably may have achieved his aims as successfully without his victory. A classic example of the strategy he advocated is the campaign of 1385. A combined Franco-Scottish force making a raid into England withdrew before an approaching English army (much to the dismay of the French) laying waste their own lands as they went and clearing people, livestock and other valuables out of the way of the enemy. While the English soon had to withdraw through lack of food as a consequence of this activity, the Scots and French invaded the West March of England, inflicting severe damage and gathering much plunder. Although the English destroyed churches and towns the hurt they could do to the Scottish economy was limited, and since their army was almost entirely professional or semi-professional it was very expensive. The Scots army in the fourteenth century travelled light and quickly and those required to do military service did so at no expense to the Crown.

The reasoning behind the second element of this strategy relating to the fortification of towns may be explained as follows. No fortification could hold out for ever - if not battered, mined or taken by assault its garrison would eventually be starved out and therefore lose. On the other hand, a fortification which fell into the hands of an enemy could be a major source of annoyance and unless it could be recaptured quickly a major risk was run of having to face a relieving enemy army. Only castles, too small individually to be of any importance but collectively too many to be dominated readily by an enemy, were of any use.

The effect of guns on fortifications, in terms of how they were pressed into service for defence, must be seen against this background of numerous private fortified houses and a lack of royal commitment to a national policy of building strategically placed fortresses.

Now this particular theory of warfare went against the grain and even this century many military historians have failed to realise the full significance and importance of campaigns without battles and fortresses unmade. Warfare in the Middle Ages just as now was often thought of in terms of battles. It was dishonourable and cowardly to avoid them and they were the best means by which glory and booty could be won. Only on a battlefield could a general's true ability be seen, and Scotland did not lack aspiring generals, although she was, unfortunately, not blessed with many of any ability. An important motive in warfare was to overcome the enemy and impress rivals with displays of wealth and power and this could hardly be done by armies which did not stay to fight.

There were thus two major opposing tendencies influencing the Scots' ideas on warfare in the Later Middle Ages and the development of guns was to have an important bearing on which tendency had the more importance in establishing the strategy which was actually pursued. Guns were undoubtedly items of prestige and their noise and power were meant to impress. Great things were expected of them and indeed achieved. The inevitable result was that guns came to be looked upon as such a desirable asset that no army could be without them, and such an army was not the sort which avoided contact with the enemy. The main developments in guns took place in precisely the period when there was least fighting with the English but they were used by the crown in numerous sieges against the castles of its own rebels and even to regain Roxburgh Castle from the English in 1460. By the beginning of the sixteenth century the Scots

had not fought a major pitched battle with the English for some time but had had considerable experience of the destructive effect of guns. What is more, a prestigious royal gun-foundry was established in the opening years of the new century. All this must be borne in mind when consideration is given to the Scots' strategy in 1513. The predominance of French influence on government and in military matters thereafter helped to ensure that the lesson Robert Bruce might have taken from the defeat at Flodden was ignored.

The sixteenth century saw the development of effective hand-firearms and the Scots showed some determination to make the most of this latest technology. By the early seventeenth century Scottish craftsmanship in firearms was flourishing, but the reasons for this are not just to be sought in the greater demand for them in battle, for such has often, and in this case might readily, have been met by the importation of cheap weapons from abroad. The manufacture of firearms has also to be seen in the context of a flourishing of Scottish craftsmanship in the later sixteenth and early seventeenth century.

PREVIOUS WRITERS AND THE SCOPE OF THEIR WORK

Many of the more likely documentary sources of information on guns and warfare in the sixteenth century and earlier have now been in print for a good number of years. The major source is undoubtedly the Treasurer's Accounts (and to a lesser extent the Exchequer Rolls) which record payments to the gunners in the royal service, the purchase of munitions, the expenses of the gun-foundry, of the campaigns of war and various other such activities, all of which required the cost to be met by the King. The accounts are fairly continuous for the whole of the sixteenth century and include some specifically concerned with the 'gunhouse' or munitions. A quantitative analysis of the work produced

by the gun-foundry cannot reliably be built on them but they do present a considerable body of information which can be supplemented from other sources, for example inventories and English intelligence reports.

These sources of information have not been utilised to the full by students of Scottish history, the more recent of whom, in general, have chosen to avoid detailed interpretation of Scottish military affairs. The battle of Flodden, probably the event of greatest significance in the popular view of Scottish history between now and Bannockburn, has attracted specialist studies, notably by Mackay Mackenzie,² and Mons Meg has been the inspiration for a number of speculative articles on its origins and use³ which only finally came to any conclusions of certainty in a paper by Gaier in 1967.⁴ The editors of the Treasurer's Accounts and the Exchequer Rolls often commented usefully on guns and warfare in their introductory remarks to the printed volumes, none more exhaustively than Dickson in volume one of the former, and a useful introductory study of the Scottish Army in the first half of the sixteenth century was made by Dickinson in 1949, bringing out much information on the guns in particular.⁵

Salient features of the story of Scottish guns, like James II's fatal interest and Mons Meg have been picked up by writers who studied guns on a European level. Studies by writers such as Napoleon and

2. W.M. Mackenzie, The Secret of Flodden (Edinburgh, 1931).

3. Notably A. de Béhault, 'Le canon d'Edimbourg "Mons Meg" forgé, a Mons, au xv^e siècle', Annales du Cercle Archéologique de Mons, xxiv (1894), 1-96; J.B. Paul, 'Ancient Artillery with some notes on Mons Meg', Proc Soc Antiq Scot, 1 (1915-16), 191-201; W.H. Finlayson, 'Mons Meg', Scot Hist Rev, xxvii (1948), 124-6.

4. C. Gaier, 'The Origin of Mons Meg', Journ Arms & Armour Soc, v (1967), 425-31.

5. G. Dickson, 'Some Notes on the Scottish Army in the first half of the Sixteenth Century', Scot Hist Rev, xxviii (1949), 133-45.

in/

Favé, Clephan and Partington⁶ have gathered together much European material which can usefully be compared with our Scottish. The history of guns in England and France is of particular relevance and the works of Tout, Ffoulkes and Hogg for the former⁷ and of Foletier, Perroy and Contamine for the latter.⁸ A recent study of the armaments industry in the Low Countries by Gaier is also of importance.⁹

Largely because of their collectability early Scottish firearms have been much written about, mainly from an art historical viewpoint, though some attempt has been made to trace their origins and discover the identity of the craftsmen who stamped their initials on them. This work has rarely got passed looking at surviving examples which date to the late sixteenth century. The pioneering work in this field was an essay by Charles Whitelaw published in the 1920s. A useful recent survey by Blair presents a complete bibliography of articles to 1975.¹⁰

6. Napoleon III & I. Favé, Etudes sur le passé et l'avenir de l'artillerie, 6 vols (Paris, 1846-71); R.C. Clephan, 'The Ordnance of the Fourteenth and Fifteenth Centuries', Archaeol Journ, lxxiii (1911), 49-138; J.R. Partington, A History of Greek Fire and Gunpowder (Cambridge, 1960).

7. T.F. Tout, 'Firearms in England in the Fourteenth Century', The Collected Papers of Thomas Frederick Tout (Manchester, 1934) ii, 233-75 (also Eng Hist Rev, xxvi (1911), 666-702); C Ffoulkes, The Gun-Founders of England (Cambridge, 1937); O.F.G. Hogg, English Artillery 1326-1716 (London, 1963).

8. F.V. de Foletier, Galiot de Genouillac, maitre de l'artillerie de France, 1465-1546 (Paris, 1925); E Perroy, 'L'Artillerie de Louis XI dans la campagne d'Artois (1477)', Revue du Nord (1943), 171-196, 293-315; P. Contamine, 'L'Artillerie royale française à la veille des guerres d'Italie', Annales de Bretagne, lxxi (1964), 221-61.

9. C. Gaier, L'Industrie et le Commerce des Armes dans les Anciennes Principautés belges du XIII^{me} à la fin du XV^{me} siècle (Paris, 1973).

10. C.E. Whitelaw, 'A Treatise on Scottish Firearms' in H.J. Jackson, European Hand Firearms of the sixteenth, seventeenth and eighteenth centuries (London, 1923); C. Blair, 'Scottish Firearms', Bul American Soc Arms Collectors, xxxi (1975), 61-101.

Scottish castles have likewise been very much written about but very little has as yet appeared in print on the relationship between fortifications in Scotland and guns. Simpson has contributed a specialist study of the castle of Ravenscraig in Fife in these terms and Cruden has given an introduction to the whole subject as a chapter in his survey of the Scottish castle,¹¹ but both these and other work have concentrated on the architectural aspects without bringing the guns clearly into focus. Some work by MacIvor, however, in process of publication is a notable exception.¹²

James IV's activity in building up a royal navy is a subject that has as yet failed to receive any detailed study despite the fact that Scottish historians have always been aware of it.

ARTILLERY BEFORE GUNPOWDER

Artillery did not originate with guns and gunpowder just as the uses of it did not. Machines which fired stones and bolts by means of the powder stored up in twisted cords were developed in the Hellenistic world for the defence of fortifications. These were the precursors of the crossbows of large size utilised in Medieval Europe. Engines which could hurl large stone balls against fortifications by the use of a counterbalance were known by the end of the thirteenth century.¹³ Much ingenuity was also spent on devising 'passive' machines, whether towers

11. W.D. Simpson, Ravenscraig Castle (Aberdeen Univ Studies 115, 1938); S. Cruden, The Scottish Castle (Edinburgh, rev edit, 1963), 198-245.

12. I. MacIvor, 'Artillery and Major Places of Strength in the Lothians and the East Border, 1513-1542' in Scottish Weapons And Fortifications, ed. D.H. Caldwell (Edinburgh, 1981).

13. For a recent summary on early artillery see J.-F. Finó, 'Machines de Jet Médiévales', Gladius, x (1972), 25-43.

to be wheeled up against walls to allow men access over the top or shelters in the safety of which the walls could be breached at the bottom. All these devices and contraptions had their successes in their day. The earliest guns were just another element in this game of military engineering and it took over 200 years for them to establish their supremacy in all fields of warfare - attack and defence of fortifications and on the field of battle. It was even longer before all the other contraptions disappeared.

At the lowest end of the scale of military 'machines' were crossbows, some of large size, others capable of being readily handled and fired by a single man without the use of any mechanical aids to span them. These may all, nevertheless, be included here as war-machines rather than personal weapons since in Scotland there is only evidence for their use in sieges - apart, that is, from in hunting. In other words crossbowmen never seem to have formed a significant element in any Scottish army. There is some evidence, admittedly ambiguous, for the use of crossbows in Scotland as early as the ninth century¹⁴ and Jordan Fantosme's account of William I's campaigns into England in 1173 and 1174 mentions crossbowmen at the siege of Wark Castle in the later year. Jordan, who claimed to be an eye-witness of many of the events he narrates, gives an unusually detailed account of this siege which it is worth quoting here at some length (in translation from the French):

'Then the king of Scotland caused his knights to be sent for,
The earls of his country, 'all the best warriors.
Through good advisers he willed to besiege Wark,

14. J.M. Gilbert, 'Crossbows on Pictish Stones', Proc Soc Antiq Scot, cvii (1975-6), 316-17; A. MacGregor, 'Two antler crossbow nuts and some notes on the early development of the crossbow', *ibid*, 317-21.

He wished to have the castle by means of Flemings and archers,
By good stone-throwing machines (perieres) and his very strong engines,
And by his slingers and his crossbowmen.

....

Those who will assault the castle; Flemings they were called.

Then you might see targes seized and bucklers,
The cheval-de-frise assaulted, as soon you may hear.
By wonderful boldness they reached the ditches;
Those who were within did not forget themselves;

....

This assault lasted long, but effected little:

....

And the king of Scotland grew greatly incensed,
When he saw his sergeants die and frequently meet with mischance,
And saw that he gained no success there, he was grieved at heart,

And said to his knights in his great distress:
"Send for your stone-throwing machine (periere) quickly;
It will soon break the gate, if the engineer lies not,
And we shall take the bailey without any delay."

....

The first stone it ever cast at them!
The stone hardly turned over from the sling
But it struck one of their knights to earth.
Were it not for his armour and the shield he had
He had never returned to any of his family.

....

When the stone-throwing machine failed him (i.e. William) he caused the other to be brought:
He wished to burn the castle, he did not know what better to do;

But Jesus the glorious, the Maker of all things,
Changed the wind very contrarily for the king of Scots,
Then said King William: "let us leave this siege:
I see my men destroyed, and evil which cuts us off".¹⁵

William had already unsuccessfully besieged Wark in 1173 but on the occasion described above he had been reinforced with Flemings who may have provided the engines and crossbows and the expertise to operate them - even if not with great success! The stone-throwing machines were probably larger catapults of some sort.¹⁶

15. Chron. Jordan, 303-11 (translation slightly altered).

16. David I is said by Richard of Hexham to have besieged Wark in 1138 with machines, but it is not clear what these were. Chronicles of the Reign of Stephen, Henry II and Richard I (Rolls Series, 1886), iii, 157-8.

Jordan's chronicle of the events of 1173-1174 is an isolated account of engines and crossbows for war* and there is a gap of ninety years before there is again evidence for their use by the Scots. There was a crossbowman (balistarius) at the castle of Aberdeen and another at that at Ayr mentioned in accounts of 1264-1266. There was a certain W(illiam?) balistarius at Roxburgh Castle at the same time and an account details the expense of seven cowhides got by Imbartus for the machines,¹⁷ apparently not those in the care of W. balistarius. Machines in this context almost certainly means military engines of some sort but what we cannot say. The cowhides could either have been to protect the woodwork of the machines from being set on fire by enemy action, or to form slings for the stone shot fired by them.

Two groups of references to crossbowmen and machines in the 1170s and 1260s is not much on which to build a case for the Scots' interest in military engines prior to the Wars of Independence, but the chance nature of these records makes it probable that they were very much more common.

The documentation for the English occupation of parts of Scotland and her fortresses at the end of the thirteenth and during the fourteenth century is relatively copious and details much of the equipment in use. In 1298, for example, Jedburgh Castle had ten crossbows (balistae) and two crossbows with windlasses¹⁸ (balistae de tour).¹⁹ Presumably the former were simple devices which could be spanned by one man, a foot being put through a stirrup attachment at the end of the

17. ER, i, 5, 12, 30.

18. Stevenson, Documents, ii, 313.

19. This is the meaning preferred for tour, rather than tower, though such crossbows were often mounted on towers. See Finó, 'Machines de Jet Médiévales', 26.

* I am grateful to Prof. Barrow for bringing to my attention a certain Steffanus (= Stephen) 'balista', who witnessed a charter of the Countess Ada mother of Malcolm IV and William I c. 1160-70 (St Andrews Liber, p. 209).

stock and the bowstring being pulled with both hands or with the aid of a hook hung on a belt round the waist. The latter were larger and considerably more powerful, needing a windlass attached to each stock in order to bend them. Other crossbows, like some in Berwick Castle at the same time, are described as being either for one foot or two, indicating two sizes of those without windlasses. They fired different types of bolts (arrows).²⁰

At Berwick and Dumfries Castle the English had springalds (espringals). At Berwick there were three which were mounted on the walls. Dumfries was to have two.²¹ Springalds seem to have been some type of machine which fired large bolts or quarrels, probably just like very large crossbows. An English account of expenses on Scottish castles in 1305/6 lists 'unum springald cum balistis et quarellis' for the castle of Ayr and William Douglas was shot through the thigh by one at the siege of Perth in 1339 seemingly without any lasting damage.²²

Crossbows and the like were essentially anti-personnel devices. The other machines mentioned in documents at this time were probably all intended for knocking down or getting over walls but it is unfortunate that while they are often given their own particular nicknames there is little to suggest what they were actually like. The machine brought from Glasgow in 1300/1 for the siege of Bothwell Castle in the Clyde valley was called le Berefroy and was probably a great wooden tower for wheeling alongside walls. A roadway had to be specially prepared for it.²³ At the siege of Stirling Castle three years later the English had thirteen engines called Lincoln, Segrave, Robinet, le Vikere,

20. Stevenson, Documents, ii, 322-5. See also H.L. Blackmore, Hunting Weapons (New York, 1971), 183.

21. Ibid., 322-5, 333-5.

22. Cal. Docs. Scot., iv, 392; Chron. Wyntoun, vi, 129.

23. Cal. Docs. Scot., iv, 450-2.

Kyngestone, la Persone, le Berefroy, Linlithgow, Bothwell, the Prince's, Gloucester, Toulemonde, apart from the famous 'Warwolf' which King Edward insisted should be tried against the castle even after the garrison had surrendered. At least some of these machines operated by means of a counterweight since Edward I wrote to the Prince of Wales on 12 April 1304 asking him to procure as much lead as possible from churches and other buildings about Perth and Dunblane for the weights of the engines then at the siege.²⁴

Machines with counterweights generally fired large stone balls. At the simplest level the firing power might be provided by a group of men hauling on ropes attached to one end of a pivoting beam, on the other end of which was fixed a sling containing the projectile. Much more efficient was the use of a heavy weight at the end of the beam away from the sling. The engine was then got ready by pulling the sling-end down till it reached the ground; on being let go the downward pull of the weight caused it to rush skywards with tremendous speed, releasing the ball from its sling. In the more sophisticated versions of these machines the weight could be changed or moved along the beam to allow the balls to be aimed, probably with a fair degree of accuracy. There is no evidence for the use of stone throwing machines in Scotland operated by torsion and indeed it is doubtful how effective they could have been in our damp climate.

There are no Scottish accounts of this time for provisioning castles with machines and the outstanding series of escalades and feints employed by the Scots to regain their castles in the years prior to Bannockburn have tended to be given much more prominence than other more conventional siege operations. Nevertheless there is evidence

24. Cal. Docs. Scot., ii, nos 1560, 1599; Stevenson, Documents, ii, 481. Three other engines at the siege are included in an unpublished document in the PRO, E 101/13/25: W Mountagu (ie. named after its owner or officer-in-charge), le lordem (?), le Parker and 'Weland the thief'. I am indebted to Prof. Barrow for this information.

that the Scots used engines of war just like the English. There is a contemporary English poem (in French) of the great siege of Caerlaverock Castle in Dumfriesshire in 1300. The Scottish defenders are said to have furnished the castle well with men, engines and provisions and to have fired bows, cross-bows and springalds against their English assailants.²⁵ At the siege of Stirling Castle in 1304 Edward I had a narrow escape from a bolt (spiculum) fired from a springald in the castle.²⁶

Two fairly detailed descriptions of the siege of Carlisle in 1315 and of Berwick in 1319 are of particular interest. The Chronicle of Lanercost is our main authority for the former occasion in which Robert I failed in his attempt to take the city:

Very shortly afterwards in the same year, on the feast of S. Mary Magdalene (22 July 1315), the king of Scotland, having gathered together all his force, came as far as Carlisle, and surrounding the city, besieged it for ten days, treading down the cornfields and laying waste the suburbs and everything around, and burning the whole country; and collected for his army all the cattle they could steal from Allerdale, Coupland, and Westmorland. On every day they made an attack on some one of the three gates of the city, and sometimes on all three together; but not with impunity, for darts, arrows, and stones, as well then as at other times, were cast down upon them from the walls in so great abundance, that they questioned among themselves, whether the stones did not increase and multiply within the walls.

25. The Siege of Carlavrock, ed. N.H. Nicolas (London, 1828), 61, 79.

26. Flores Historiarum, iii (Rolls Series, 1890), 119.

But on the fifth day of the siege they erected an engine for casting stones near the church of the Holy Trinity (the Cathedral), where their king had placed himself, and continually threw great stones towards the Caldew gate, and at the wall, but did no injury, or but little to those within, except that they killed one man. There were, indeed, within the city, seven or eight similar engines, with other warlike instruments, called springalds, for throwing long darts : and slings in sticks, for casting stones, which greatly terrified and annoyed those who were without the city. In the meanwhile the Scots erected a great berefray, in the manner of a tower, the height of which considerably exceeded that of the walls, which being observed, the carpenters of the city erected a wooden tower, which exceeded the height of the other, upon one of the towers of the wall, towards which the engine must have approached the wall; but it never drew near to the wall, for when it was drawn upon wheels over moist and clayey ground, there it stuck by reason of its weight, nor could it be drawn any further or occasion any inconvenience. But the Scots applied many long ladders which they had brought with them for the purpose of ascending the wall in the same manner in different places, and a sow for undermining the wall of the city, if they found it practicable, but neither the sow nor the ladders availed them anything. They also made bundles of straw and grass in great abundance to fill up the moat without the wall, on the east side, in order to pass over it dry; they also made long wooden bridges running on wheels, that being drawn forcibly and rapidly with cords, they might be carried across the ditch; but neither would the bundles, during the whole stay of the Scots

there, fill up the moat, nor those bridges pass the ditch, but fell by their weight to the bottom. On the ninth day of the siege, when all the engines were ready, they made a general assault on all the gates of the town, and attacked valiantly throughout the whole circuit of the walls, and the citizens defended themselves as valiantly; and in the like manner on the following days. Moreover the Scots employed a stratagem similar to that by which they took the Castle of Edinburgh - they caused the greater part of their army to make an assault on the eastern part of the city, against the place of the Friars Minors (the Grey Friars), that they might draw thither the party within, but the Lord James Douglas a valiant and wary soldier, with certain of the more bold and alert of the army, posted themselves on the western side, over against the place of the Canons and Preaching Friars (the Black Friars), where, on account of the height (of the walls) and difficulty, an attack was not apprehended, and there erected long ladders which they ascended, and they had archers in great numbers, who discharged their arrows thickly lest any one should raise his head above the wall : but, blessed be the Lord, they found such a resistance there, that they were thrown to the ground with their ladders and there and elsewhere about the walls, some were taken, some slain, and others wounded. Yet no Englishman was killed during the whole siege; except one man struck with an arrow, and the one above mentioned, but a few were wounded. Thereupon on the eleventh day, that is to say, on the feast of St Peter ad Vincula, the Scots either because they heard of the approach of the English to raise the siege or because they despaired of making any further progress, early in the morning

returned unto their own lands in confusion, leaving behind them
all their warlike engines above mentioned.²⁷

In the initial letter of a charter of Edward II to Carlisle, 12 May
1316, there is^{the} representation of a siege which can convincingly be
claimed to be that of the town in the previous year. The most
prominent figure on top of a tower is identifiable by the coat-of-
arms on his shield as Sir Andrew de Harcla, the English commander.
On the tower next to him a soldier is preparing a machine - probably
a springald - for firing. It consists of a large crossbow on a
stand with a capstan for drawing it tight. The Scots' attempt to
scale the walls by ladder is also shown and in the left hand margin
the stone-throwing engine built by them, ready to fire a large stone
ball. It is a machine worked by means of a counterweight, the sort
of thing which may have been known as a trebuchet.

In 1319 it was the turn of the Scots to defend a town, this time
the burgh of Berwick where they were ably helped by John Crabb, a
burgess of Flemish origin, who was renowned in his day as a military
engineer. He is known to have been of good service to the Scots until
he was captured by the English in 1332, and not being ransomed worked
for his captors in Edward III's Scottish campaign of 1335 and at the
siege of Dunbar Castle in 1337.²⁸ It is unfortunately not known if
Crabb had been working for the Scots before 1319.

According to Barbour, Crabb
'... gert engynis and trammys ma,
And purvait gret fyre alsua;
Spryngaldis and schotis on seir maneris,
That till defend castell afferis,
He purvait in-till full gret wane.'²⁹

27. Chron. Lanercost, 230-2.

28. E.W.M. Balfour-Melville, 'Two John Crabbs', Scot. Hist. Rev.,
xxxix (1960), 31-34.

29. Barbour, Bruce, ii, bk. XVII, lines 245-9.

When the English attempted to bring a sow - a shed in which miners could work in safety - against the wall, Crabb positioned a great engine of war opposite it and destroyed it with the third stone fired from it. He also had prepared a crane which ran on wheels and which was intended to hold the sow or other enemy contraptions fast by a chain while they were burned with combustibles dropped from the walls.³⁰

The Exchequer Rolls from 1327 onwards provide a little more information on engines and engineers. In 1327 they record the expenses on machines in Berwick and those erected at the siege of Norham Castle. John Crabb was involved with these but in the following year mention is made of another engineer called Peter.³¹

In 1334 the loyal Scots under the guardian Sir Andrew Moray laid siege to Dundarg Castle in Aberdeenshire, being held by Henry de Beaumont, one of Edward Baliol's supporters, and forced the garrison to surrender when the second stone fired by their engine caused the 'mast gest' of Dundarg's tower to break.³² This was the prelude to a whole series of successful sieges which were once more to see the country largely rid of English garrisons. In some cases fortresses were won by guile (Edinburgh in 1341) or by bribery (Cupar in 1339) but on many occasions it is clear that siege machines played a significant role. Sir Andrew Moray bent machines against St Andrews Castle and Leuchars Castle in 1337, forcing their surrender, and from there moved on to batter his own Bothwell Castle in Lanarkshire with an engine tellingly called 'Boustour'. It apparently had the desired effect.³³ Sir William Douglas, 'the Knight of Liddesdale', took

30. Ibid., ii, bk. XVII, lines 597-705.

31. ER, i, 64, 98, 311.

32. Chron. Wyntoun, vi, 72.

33. Chron. Bower, ii, 324.

Dalkeith Castle and then Dunbar in quick succession in 1341 with the aid of engines³⁴ and we can suppose they were used on several occasions by the Scots at this time. Expenses on the making of them are recorded in 1342 at Edinburgh and in 1361 at Stirling.³⁵

In 1382 the payment of fees to an artilarius in Edinburgh Castle and Teodoricus the carpenter for making machines is recorded.

Artilarius in this context probably means a keeper of crossbows and other engines - that is artillery. Teodoricus - or Dedericus - was probably of Flemish or German origin and was active making engines at least until 1388.³⁶ In that year it is recorded with evident satisfaction that he had completed a large machine which could fire (shot) per tres vices (i.e. it was a stone throwing machine with movable counter-balance?).³⁷ Dedericus seems to have been based in Edinburgh Castle and at the same time there was Maurice the 'Gunner' at Stirling Castle, the unnamed artilarius at Edinburgh, and by 1388 Alan the keeper of crossbows et instrumentorum pro gunnys at Stirling.³⁸ As we shall argue below, it is fairly likely that gunner and guns at this time can or do indeed refer to early cannon.

During the fifteenth and sixteenth centuries when the Scottish use of guns is well established, non-gunpowder engines of war continued to be used. The expenses of wood and iron and other materials for a new-made engine (machinam ligniam) at St Andrews are recorded in 1402 and for its repair two years later. This was probably the engine used at the siege of Reres Castle in Fife in that year along with a sow.³⁹

34. Chron. Froissart, iii, 243-4.

35. ER, i, 487, 494, 508; ii, 63-64.

36. Ibid., iii, 87, 117, 118, 659, 660.

37. Ibid., iii, 665.

38. Ibid., iii, 667, 676, 683, 687, 693.

39. Ibid., iii, 552, 559, 602, 610.

A sow was also used by James II at the siege of Hatton Castle, West Lothian, in 1453, another was made to be used against Berwick in 1486, and the Hamiltons apparently had one at their attempt on Glasgow Castle in 1570.⁴⁰ Crossbows are listed in sixteenth-century inventories of Glasgow Castle (1515) and Falkland Palace in Fife (1516) and were probably for use in defence rather than just for hunting.⁴¹ Crossbows were used by the besiegers of Tantallon Castle in 1491.⁴²

ORIGINS OF GUNPOWDER AND CANNON

Opinions amongst scholars on the origins of guns have swung alarmingly to and fro, from East to West. Recent detailed work, however, on the Chinese evidence would seem to give the honour for their invention to the Chinese. In the Creighton Lecture delivered at the University of London in November 1979 Joseph Needham was able to claim that 'true' gunpowder was invented between 800 and 850 and that the 'true' gun or cannon appeared in China in early Yuan times, about 1290, following on from about three and a half centuries of development of fire-lances and flame-throwers. There are Chinese drawings of vase-shaped guns with flared mouths and swelling bellies like the earliest illustrations of European guns, and about twenty bronze and iron guns self-dated by inscriptions to between 1280 and 1380. Needham speculated that the transmission of the knowledge of gunpowder and guns to the West took place in the second half of the thirteenth century through the activities of western envoys and

40. Ibid., v, 606; ix, 434; Bannatyne's Memoriales, 41.

41. Caldwell Papers, i, 54-58; ER, xiv, 164.

42. TA, i. 181.

merchants travelling east and of Nestorian pilgrims travelling west.⁴³

The existence of guns in Europe is first unambiguously referred to in the records of Florence. The Town Council authorised the delegation of one or two persons to the making of iron bullets and cannons of metal for the defence of the castles and territory of the Republic in February 1325/6.⁴⁴ The knowledge of guns is also documented in England about the same time, and by the 1340s they are well attested in Spain, France, the Low Countries and Germany,⁴⁵ suggesting the alarming rapidity in the spread of new weapons which has been all too familiar to us this century.

The early English evidence for the use of guns is of more than passing interest to us since the Scots were amongst the first they were aimed against. There is an illustration of a gun - the earliest outside China - in a manuscript of Walter de Millemete entitled De Nobilitati Sapientiis et Prudenciis Regum, which bears the date 1326.⁴⁶ The gun,

43. J. Needham, 'The Guns of Khaifêng-fu', Times Literary Supplement (11 Jan. 1980), 39-42.

44. The extract from the Registro delle provvisioni (vol. xxii, fo 65) in the Archivio di Stato in Florence is given by Partington, A History of Greek Fire, 101-2. It is illustrated by J.F. Finó, 'L'Artillerie en France à la Fin du Moyen Age', Gladius, xii (1974), 13, fig. 1.

45. The early evidence for the use of guns in Europe has been clouded by misconceptions and faulty information. For a convenient recent summary (but without the benefit of Needham's contribution on the Chinese evidence) see Partington, A History of Greek Fire, especially chap. III (for Spain, in conjunction with J. Lavin, 'An Examination of some early documents regarding the use of Gunpowder in Spain', Journ. Arms & Armour Soc., iv (1962-4), 163-9. See also Clephan 'The Ordnance of the Fourteenth and Fifteenth Centuries' and Tout, 'Firearms in England in the Fourteen Century' (to be read along with A.V.B. Norman's note on 'Ribaudekins', Journ. Arms & Armour Soc., viii (1975), 236-7).

46. It is preserved in Christ Church, Oxford (MS 92). There is another MS by Millemete, also dedicated to Edward III, entitled De Secretis Secretorum Aristotelis (British Library, Add. 47, 680), which has another illustration of a similar gun. A reproduction of it may be found in Finó, 'L'Artillerie en France', fig. 2.

presumably of cast bronze, is bulbous with a flaring muzzle, rather like a round-bottomed vase, and rests on its side on a table. A soldier is shown in the act of applying a hot poker or lighted match to its vent and an arrow flies forth from its mouth. There is no supporting text in the manuscript to explain this painting but it clearly represents a weapon of a very primitive type which is nevertheless recognisably a gun. In fact there is a small case bronze gun with a swollen breech-end from Lochult in Norway which is a slightly more developed form. It is only 0.3m. long with a calibre of 31mm.⁴⁷ and technically would have presented no greater difficulty to manufacture than the excellent bells which we know then to have been quite common throughout Europe.

Some scholars would even suggest that the English used guns against the Scots at the siege of Stirling Castle. The basis of this argument is a draft writ in the Public Record Office in London which shows that Edward I had recently ordered a supply of sulphur and saltpetre to be sent up from York. Gunpowder was certainly known to the English at this date and it is probable that these materials were for making it or some other combustible mixture, but it is important to emphasise that evidence of gunpowder or its constituents is not in itself evidence for guns since they had many other uses. At the same time, that the English might have used guns in 1304 is not inherently unlikely.⁴⁸

Guns were certainly fired by the English at the battle of Crecy in 1346⁴⁹ and according to John Barbour had been used by them against the

47. T. Lenk, 'Medeltidens Skjutvapen', Nordisk Kultur, xiib, Vaaben (1943), 149, fig. 25.

48. The draft is PRO, SCI/12/177 and is cited in The History of the King's Works, vol. i, ed. R.A. Brown, H.M. Colvin & A.J. Taylor (London, 1963). See also Partington, A History of Greek Fire, chap. 1, 'Incendaries in Warfare'.

49. Tout, 'Firearms in England', 239-40; Partington, A History of Greek Fire, 105-8.

Scots several years earlier. This is probably how the Scots first became acquainted with these new weapons and there are two well known passages in Barbour's poem The Bruce, first penned about 1375, which have considerable relevance to us. Firstly in connection with the siege of Berwick by the English in 1319 Barbour writes about the devices John Crabb had to defend the town, finishing up with:

'Bot gynis for crakkis had he nane.

For in Scotland zeit than, but wene,
The oyss of tham had nocht beyn sene',⁵⁰

Secondly, in describing the campaigning in Weardale in 1327, in which a Scottish raiding party under the Earls of Moray and Mar and Sir James Douglas successfully outmanoeuvred the English army under the newly crowned Edward III, Barbour mentions the following English equipment not previously known to the Scots:

'Twa noweltyis that day thai saw,

That forouth in Scotland had bene nane;

Tymmris for helmys war the tane, (tymmris = visors

That thaim thought than off gret bewté,

And als wa wondre for to se.

The tothyr crakys war of wer,

That thai befor herd nevir er',⁵¹

'Gynis for crakkis' and 'crakys of wer' have generally been assumed to be guns and rightly so. Barbour, an experienced traveller and civil servant, was evidently familiar with them and in the context of the evidence for the use of guns by the English in the fourteenth century, it is reasonable to suppose that new engines which gave 'cracks' or

50. Barbour, Bruce, ii, 86-87.

51. Ibid., ii, 153-4.

loud noises would be guns. Barbour's poem can be shown to be remarkably accurate where there are any means of cross-checking his information with contemporary records and we can therefore place a fair amount of reliance on his statements. By the 1370s guns are mentioned quite commonly in English documents and already by 1369 a sub-department for gunnery had been established within the Tower (of London) wardrobe. This was superseded at the beginning of the fifteenth century by the nascent Office of Ordnance which also assumed its functions.⁵²

In the light of this early interest by England in guns and the growing awareness of their uses in warfare it would not be surprising to find that the Scots also explored their possibilities at an early date. If we believe Barbour, they had come across them by 1327 and the late Douglas Simpson was of the opinion that they used a gun themselves at the siege of Dundarg Castle in 1334. He also believed that this was the earliest record of the use of a gun at a siege in Britain.⁵³ Simpson's case was based on the following passage in the Wemyss manuscript of Wyntoun's chronicle:

'The wardane gert the gunnare syne
Dress up stoutly the engyne,
And Warpit at the toure a stane.
The first cast at it kest, bot ane,
It hit the toure a sturdy straik,
That the mast gest of the toure brak.

52. See Tout, 'Firearms in England' and Hogg, English Artillery, 80-96.

53. W.D. Simpson, Dundarg Castle (Aberdeen Univ. Studies 131, 1954), 20-21; and 'The Tower-Houses of Scotland' in Studies in Building History, ed. E.M. Jope (London, 1961), 230.

The Beaumont tretit thaim inhy,

To sauf him and his company,

And zauld the toure to the wardane,⁵⁴

The Cottonian manuscript substitutes 'wrightis' for 'gunnare' but otherwise the passage is quite close. Bower's account has it that the castle was reduced fulminatione ingenii.⁵⁵

Simpson's claim for the use of a gun at the siege of Dundarg Castle rests, then, principally on the mention of a gunner in a near contemporary description of the event, but it is to be noted that neither is a gun mentioned nor is there evidence that the term gunner at this early date was used in the same way as now. The word 'gun' itself is thought to derive from 'mangonel', a stone-throwing machine worked by means of a counter-balance and it follows that a gunner at this time may have been an appropriate title for a man who operated such an engine. In the lack of more specific evidence it is perhaps more reasonable to assume that the engine at Dundarg was not a cannon but a mangonel or trebuchet. Although guns are known to have been used at sieges in the fourteenth century there is little to suggest that they were of anything but small size, and certainly not of large enough size by 1334 to have an immediate effect on a castle, even allowing for the timbered reconstruction of the upper part of the tower at Dundarg postulated by Simpson.⁵⁶

According to Froissart the Scots used 'kanons' against Stirling Castle sometime in the period 1337-42.⁵⁷ There is little doubt that the term cannon, derived from the Greek or Latin word for a tube, has always been reserved for guns, and so this is the first time that the

54. Chron. Wyntoun, vi, 72.

55. Chron. Bower, ii, 321.

56. Dundarg Castle, 34.

57. Chron. Froissart, iii, 243-4.

use of guns is unambiguously attributed to the Scots. Froissart is known to have visited Scotland in 1365 and could therefore have discussed the siege with people who were present at it but on the other hand he may simply have been guilty of an anachronism in an attempt to vary his vocabulary. By itself, therefore, we cannot place too much trust in this statement that cannon were used at Stirling although that they were is by no means improbable.

We are on rather surer ground when we suggest that the Scots had guns in the 1380s. In 1384 saltpetre and sulphur were bought by the Scottish government for the royal castles and also an instrument called a gun for equipping Edinburgh Castle.⁵⁸ There can be little doubt that this was a gun in the sense of a military engine which projects stone or metal balls by means of the explosive power of gunpowder. By the 1380s the term gun had been so used exclusively in England for forty years.

Q/ The association of saltpetre and sulphur, the ingredients (with charcoal) of gunpowder, add weight to this identification. These military preparations may have been undertaken in anticipation of the troubles likely on the expiry of the fourteen year truce signed with the English in 1369. Also in 1384 a small unofficial French expeditionary force came to the assistance of the Scots, followed by a larger force in the next year, under the leadership of the French admiral, Jean de Vienne, well supplied with money, arms and armour to encourage their allies.⁵⁹ Of special interest is the fact that de Vienne purchased handguns and gun powder at Sluis for this expedition.⁶⁰ The English saw fit about this time

58. ER, iii, 672.

59. For a useful summary see Francisque-Michel, Les Ecosseis en France, Les Francais en Ecosse (London, 1862), i, 80-90.

60. B. & H. Prost, Inventaires mobiliers et extraits des comptes des ducs de Bourgogne de la Maison de Valois (1363-1477), tome II (Paris, 1908-13), 178, cited by Gaier, L'Industrie et le Commerce des Armes, 120.

to strengthen Berwick and Roxburgh Castle, then held by them, with various guns, nineteen guns being mentioned in all.⁶¹

Also in the 1380s there is in Scotland rather more evidence for the existence of specialists paid by the government to use, look after and make engines of war, and these we have already mentioned : Teodoricus the Carpenter and an Artilarius (Keeper of crossbows) in Edinburgh Castle, Maurice the Gunner and Alan the Keeper of crossbows et instrumentorum pro gunnys in Stirling Castle. As guns came into use they were associated with the other engines of war and their keepers. In the course of the fifteenth century a royal gunnery establishment was to be developed but it had its roots in the fourteenth century and these earlier specialists.

61. Tout, 'Firearms in England', 268-71.

THE GUNS

INTRODUCTION

Guns came in several sizes, for different purposes, and changed with time. It is important to arrive at an understanding of all this before proceeding any further and, fortunately, the broad outlines can readily be gathered together from the documentary evidence. Rather more difficult to grasp is the total gun population and distribution in Scotland prior to 1625 although inventories do survive for the royal gun collection and lists of the guns in the possession of certain of the nobles and burghs which go some way to forming the basis of an assessment of the prevalence of guns in Scotland. The royal guns inevitably figure most prominently, not just because they are the best documented but also because they played the most important part in national affairs. It was successive kings and governments rather than private individuals who led the way in adopting and deploying guns. It was the royal guns and gunners who took the field with the army when called out to fight the English or besiege a castle while the guns of the nobles and burghs were left at home.

GUNS, THE DOCUMENTARY EVIDENCE

The most striking thing which is immediately apparent from studying the documentary sources is that the terminology of guns can be stratified into two chronological zones. From about 1380 to 1500 - that is after an initial period of experimentation in the use of names - these instruments of war are referred to as artillery, guns, bombards or serpentines only, whereas in the course of the sixteenth century a great diversity of other names appears. The four primary

terms remained in use but, in the case of bombard and serpentine, mostly to apply to old or obsolete pieces. The words artillery and gun were current as general terms, as they are today, to designate any of this class of weapons, including with the former crossbows and with the latter hand firearms. There is no evidence of serpentes or bombards being manufactured after the fifteenth century. All four words in varying forms are common to many European tongues and their origins may best be explained as follows. 'Artillery' is from the old French word meaning to equip or arm. 'Gun' is a contraction of mangonel and the latin word magonalium is indeed sometimes used for guns in sixteenth-century documents - for instance, Robert Borthwick is described as a magonalium fundatori in a charter of 1510/11¹ - but some of the early Scottish texts, for example Barbour's Bruce - 'gynis for crakkis' - might also suggest a relationship with 'engine'. 'Bombard' is derived from the Latin or Greek word (bombus, bombos) for a humming sound; and 'serpentine' is from serpent, meaning a snake.

At the beginning of the sixteenth century new gun names were introduced into Scotland, particularly cannon, from 1506 and various forms of falcons and culverins from 1496 and 1511 respectively, and these terms remained in regular use into the seventeenth century when pieces of artillery came to be named by the weight of shot fired (ten pounders, fifteen pounders, etc). These words were also commonly used throughout Europe and their derivations very briefly are considered to be: cannon, from the Latin for a tube; falcon, after the bird of that name; and culverin, from the French for a snake. The use of these new terms reflects a standardisation in nomenclature and gun sizes that was first beginning to take shape on the Continent in

1. RMS, ii, no 3546.

the last quarter of the fifteenth century, largely due to the initiative of the French. The names canons, grandes couleuvrines, couleuvrines moyennes and faucons were first particularly applied to the cast bronze guns produced in the reign of Charles VIII (1470-1498), occurring in contemporary accounts of the artillery.²

Various continental and English books and manuscripts survive from the sixteenth century which list the size and weight of these guns, and although there is some variation in the figures and names, the relative ordering of the guns and their types remained constant. Early gunners were the first to admit that any table of guns could only give at best an approximate guide to size and performance. An attempt at greater rationalisation was made by the French in 1552 with their adoption or recognition of only six calibres³ but other continental and English sources tend to recognise a far greater variety.

Unfortunately, no Scottish tables of gun sizes survive but apart from the inherent improbability that the basic terminology would be used in an entirely different order some cross checking can be made with the artillery used elsewhere. For instance, in 1511 a load of gun shot was bought for the royal guns in Veere in Holland. The expense of these is detailed in a bill incorporated in the Treasurer's accounts and there we learn that those for the cannons weighed 36 lbs each and those for the gros culverins 16 lbs.⁴ We find that the corresponding shot weights for canons and grandes couleuvrines as

2. Napoleon III & I. Favé, Etudes sur le passé et l'avenir de l'artillerie, 6 vols (Paris, 1846-71), iii, 206.

3. Ibid, iii, 240.

4. TA, iv, 303. Gun measurements are given from now on only in imperial since metric is not meaningful in this context. Compilations of the metric equivalents are, however, listed in a table below.

listed in French documents of 1552 are 33 lb 4 oz or 34 lbs and 15 lbs 2 oz to 15 lbs 4 oz respectively, which figures compare satisfactorily with the Scottish ones. Inevitably, with the passage of time, gun sizes tended to vary but it is important to emphasise that the ordering of their sizes remained constant. Other names than cannon, culverin and falcon were used but the Scots seem to have struck closer to French nomenclature than to that current in England.

In a study of Armada Guns Professor Lewis has listed three sources of confusion which surround the whole subject of early gun nomenclature and which to him pose great problems of interpretation.⁵ The first of these is 'the careless and erratic nomenclature employed by the contemporary writers, and, probably, by the contemporary gunners, and even the gunfounders'. The second is 'the abyss which seems to yawn between the theoretical writers and the practical gunners'. The third, and according to Lewis the worst difficulty is 'the entirely unscientific mind and outlook of both theorist and practitioner'. Now Lewis is specifically referring in these remarks to the interpretation of gun specifications in England in the second half of the sixteenth century but the problems foreseen by him might obviously also be inherent in our Scottish source material, and we therefore at the outset ought to evaluate the trustworthiness of our documents in this respect.

The prime point to emerge from a study of the Treasurer's accounts, the various contemporary histories and other documents is the particularity with which guns are described from the sixteenth century onwards. The blanket terms gun, artillery and field pieces are rarely used. In inventories the gun name without measurements was deemed sufficient information for ready identification. The Scots of

5. M. Lewis, Armada Guns (London, 1961), 15.

the sixteenth century stood much closer to military matters than we do now and what more natural than that the mass should readily identify guns by their size and appearance as Everyman today knows the different makes of cars? Field-pieces are never described as cannon or siege guns as hagbuts or falcons. There would of course have been pieces which could marginally have been classified as belonging to more than one category but we would suggest that confusion of this sort ought to be considered a relatively minor problem. Lewis rightly urges caution in interpreting early documents but the overall impression to be gained from the Scottish sources is of the precise and consistent use of gun names. There is little evidence of the influence of the writings of theoreticians on artillery in Scotland at this time but certainly no particular reason to attribute too much inaccuracy to an unscientific outlook. The latter may be seen in a tendency to exaggerate for example the numbers engaged in a battle or the power of the guns employed but such inaccuracy is of a different order from misunderstanding the nature of the guns themselves.

Bombards and serpentines were mostly of wrought iron and only capable of firing stone shot. They were not strong enough to withstand the explosion of the greater charges of gunpowder necessary to propel the considerably heavier metal shot. Stone being lighter and prone to shatter did not have nearly the same destructive effect on fortifications as iron, and in order to have any effect at all the guns had to have large bores. The early bombards were thus very cumbersome. The smaller guns and serpentines were normally breech-loading since it was technically easier when working in wrought iron to forge an open ended tube to one end of which could be attached a chamber containing powder and ball. Such a system made for quick loading and ease of operation in confined spaces but the inevitable leakage of the explosive

gases between chamber and chase on firing weakened the power of these guns and indeed made them dangerous to those who fired them.

Cast bronze was used for guns from an early date as the gun from Loshult in Norway bears witness but it was only towards the end of the fifteenth century that cast bronze guns were established on the battlefields of Europe as the most potent weapon then known. They were superior in strength and quality to wrought iron pieces and since they were designed to fire iron or lead shot they were considerably more destructive. A cannon with a calibre of 6½ inches was undoubtedly much to be preferred to a great bombard like Mons Meg which shot 18 inch stone balls since not only was it more powerful but considerably smaller and easier to manoeuvre. Associated with this new bronze artillery were more efficient carriages. Bombards were lumbered to the scene of battle on carts but were then laid on trestles or on the ground for firing while smaller guns would either be fired from carts or trestles. From about 1460 onwards bronze guns were cast with trunnions and mounted on and fired from large wheeled carriages which would be pulled efficiently and with some speed by horses, as demonstrated most impressively by the French in 1494 when they crossed the Alps with a great train of the new artillery and overawed much of Italy. No longer were guns either just large or small but were consciously designed with different functions in mind. Thanks largely to her close relations with France, who then led in the development of artillery, Scotland early became acquainted with the new guns and according to the Spanish ambassador Don Pedro de Ayala (1498) James III had been given some modern bronze guns by the French.⁶

6. P. Hume-Brown, Early Travellers in Scotland (Edinburgh, 1891), 48. There is no reason to doubt the veracity of Ayala's eye-witness account, but his explanation of how the guns reached Scotland - ie as payment to James III of what was due to him as co-heir of his sister, the Queen of Scotland - is nonsensical.

Bronze was more expensive than iron and to cast it into guns required the skill of experienced craftsmen working over a lengthy period of time and well provided with equipment, not least a furnace and a casting pit. The resources and technology were thus only within the reach of a few. In Scotland only the crown could build up a significant train of bronze guns. Wrought iron guns, however, continued to be made throughout the sixteenth century since the manufacture of them did not require sophisticated tools, furnaces and large labour forces but little more than a smith with a good supply of fuel, an anvil, a hammer and a strong right arm. As before they were normally stone-firing breech-loading guns of no great strength.

The differences between wrought iron and cast bronze guns were not just a matter of the materials of gun and shot and a preponderance of breech-loaders amongst the former and a predominance of muzzle-loaders amongst the latter; in certain areas the functions of the two did not coincide. Most obviously the heavier sorts of field guns were always bronze muzzle-loaders since such guns had a longer range relative to their weight and size. Wrought iron guns, on the other hand, are often described as being in use on ships and in castles owing to the advantages of breech-loading in confined spaces.

When the names of cast bronze guns are referred to in sixteenth century documents we can be sure that we are dealing with guns which - within certain limitations - have defined sizes, ranges and weight of shot. Not so with wrought iron guns to which contemporary gunnery manuals pay scant attention. The impression that is inevitably left is that the terms denoting wrought iron guns were often used much more vaguely. Thus heidsteik may have meant little more than a large gun and cutthroat a small one, just as was the case with bombard vis à vis serpentine.

There survives from Scotland, however, a fair number of stone balls which can reasonably be claimed as pieces of shot for these wrought iron guns and obviously an assessment of their sizes will help towards an understanding of the different sizes of wrought iron guns. A most interesting group of thirty-four was recently found in excavations at Threave Castle in Kirkcudbrightshire, in levels dating mostly from the second half of the fifteenth and the sixteenth century.⁷ The following table summarises their sizes, together with a further three in the National Museum found in 1923. The sizes are given in inches to relate them to the other gun measurements:

Shot	Diam.	Shot	Diam.	Shot	Diam
1	1.7	1	2.35	1	3.1
1	1.75	9	2.4	1	3.25
1	1.8	1	2.5	1	4.5
1	2.1	1	2.8	2	5.0
1	2.2	1	2.95	1	5.3
1	2.25	4	3.0	1	5.8
2	2.3	5	3.05		

Some of the measurements are only approximate since only a small fragment of some balls is represented, but two major groupings can be recognised, centring on 2.4 and 3.0 inches (61 and 76 mm). Early gunners often allowed for considerable 'windage' - that is the difference in diameter between the shot and the bore of the gun - owing to the difficulty of working guns and shot to consistently precise sizes, and a windage allowance of at least a quarter of an inch seems to have been quite normal.⁸ It would therefore be quite likely if the shot from Threave was mostly for guns with bores of about 2.5 and 3.1 inches (64 and 79 mm).

7. A more detailed report on these by the writer will appear in the forthcoming excavation report in Medieval Archaeol.

8. E.g. J. Smith, The Generall Historie of Virginia ... And A Sea Grammar, vol. 2 (Glasgow, 1907; first published 1627), 294.

It is essential for the advancement of knowledge on early guns that a careful record is kept of gunstones' provenances and physical properties. To date the writer has had the opportunity of examining over fifty from various localities in Scotland other than Threave, the diameters of which are as follows:-

Diam	Provenance	Diam	Provenance	Diam	Provenance
1.68		2.6	Shanwell, Kinross.	4.5	Lochleven
1.7	Cramalt Castle, Selkirk.	2.8	"	4.5	"
1.75		2.8		4.75	
1.9	Shanwell, Kinross	2.85	Hawick	5.0	Urquhart Castle, Inverness
1.97		3.0	Houston House, Renfrew	5.9	
2.0	Shanwell, Kinross	3.0	Dundarg Castle, Aberdeen	6.7	
2.0		3.0	Tynningham, E. Lothian	7.2	
2.1		3.0		7.45	
2.1		3.25	Fast Castle, Berwick	7.5	Lochleven
2.3	Ravenscraig Castle, Fife	3.42		7.5	
2.32		3.5	Dundarg Castle, Aberdeen	7.5	"
2.4	Shanwell, Kinross	3.5		7.7	"
2.5	Loch Lomond	4.0	Blackness Castle, W. Lothian	7.7	"
2.5	Shanwell, Kinross	4.0	Urquhart Castle, Inverness	8.0	
2.5	Balvaird Castle, Fife	4.2		8.0	
2.5		4.2		8.0	Tantallon Castle, E. Lothian
2.6	Balvaird Castle, Fife	4.3		8.5	"
2.6	Shanwell, Kinross	4.4		8.7	Lochleven
2.6		4.5			

Excluded from the above list are over twenty stone balls of ten inches or more in diameter, several of which are at Stirling and Urquhart Castle. Some of these are likely to be shot for stone throwing machines rather than bombards.

If a lot more information of this type is gathered it ought to be possible to group the balls and suggest gun sizes for them, as has been possible for the group from Threave Castle. This sample of fifty odd from so many different localities is hardly enough for any serious statistical analysis. Data on metal shot can be collected in the same way but here there are added problems since shot of this type was manufactured and used until the nineteenth century and metal balls are by no means always cannon balls. For instance, badly corroded ball bearings can be confused with gunshot, and iron balls, admittedly normally cannon ball, were used in mustard mills and in the game of henching or bullets in which players took it in turn to throw their shot as near as possible to a target (a primitive form of bowls).

Early gunners went to great lengths to draw up tables listing gun sizes and performance, although it is not normally clear what proportion of their figures are theoretical rather than empirical. Robert Norton's The Gunner, published in London in 1628, is one of the most complete statements of this type, and further, Norton expounds most fully different ways of classifying guns which had undoubtedly been perceived for a long time.

Norton distinguished four classes of artillery, partly on the basis of function and partly by weight of shot. Firstly there were the cannons of cast metal which were basically heavy, medium range guns for battering enemy defences. Secondly there were the culverins (by which Norton understood falcons as well) which were lighter, long range guns. The larger ones served 'to pierce and cut out in batteries what the Cannons have shaken and loosed'⁹; the medium sized guns could be used as 'flankers', that is to enfilade lines of fortification; and

9. Norton, The Gunner, 56.

the smaller guns made good field artillery. Thirdly, there were the cannon periors and perieraes, many of which were of wrought iron and many breech-loading. They fired stone or murdering shot (grape shot) and the examples cited by Norton suggest they were often used in fortifications and on ships. All but the very smallest are said to be relatively short barrelled (eight or twelve calibres long). Finally, there was a miscellaneous group including mortars and petards. The former were very short barrelled guns often of large bore, which were intended for lobbing balls or bombs into the midst of the enemy. The latter were metal chambers which were filled with gunpowder and exploded against gates, etc.

The Scots used guns of Norton's first three classes extensively and for the purposes outlined by him but mortars and petards were not commonly employed until after the end of the sixteenth century. The early bombards would logically belong with the cannon in this classification but no account is taken of the long barrelled stone throwers which undoubtedly existed in England, Scotland and elsewhere and which in some ways were comparable to the culverins. Nor is account taken of the very smallest of the culverin type, the hagbuts of crok, which were much used in Scotland. Norton's classification, nevertheless, represents the leading theoretical ideas of the day and is thus of importance in allowing us to understand how guns were used.

Norton also classified cast guns of each calibre by two other means and although there is no inkling of either system from Scottish documents it is worth mentioning what these were since Norton was attempting to rationalise the variations in gun size which undoubtedly existed and since these differences were perceived to exist and to be of importance. Firstly, each type of gun, as cannon, culverin, falcon, etc., could be reinforced, ordinary or lessened. The

following examples for cannon taken from Norton's figures, explain the differences involved:

1. reinforced or double fortified cannon had the thickness of metal round the bore at the touch-hole equal to the bore in diameter.
2. ordinary cannon had $\frac{7}{8}$ thickness at the touch-hole.
3. lessened cannon had $\frac{3}{4}$ thickness at the touch-hole.¹⁰

The thicker the gun metal the more able was the gun to take larger or stronger charges of powder and there was a tendency for guns to get heavier as gunpowder improved. Norton's other classification was also threefold, being based on the proportion of gun length to calibre. A gun's length was often described by gunners in terms of the number of calibres or diameters of its bore which could be placed end to end in its bore. Thus there were extraordinary pieces of more calibres in length than ordinary, ordinary pieces, and bastard pieces¹¹ of less calibres in length than ordinary. Extraordinary guns would have had a greater range than ordinary pieces while the range of bastards was even less.

It now remains to list the different types of guns known to have been used in Scotland giving such details about their size and use as can be deduced from the documents.

Bombards: The 'crakys of wer' of Barbour can readily be dismissed as an early attempt at feeling for a name for a new invention. Otherwise, until the 1470s, bombard was the only word used to describe guns apart from 'gun' itself which could always be applied to a firearm of any sort,

10. Ibid., 44-45.

11. Bastard pieces, eg. bastard cannons, bastard culverin, in this sense, must not be confused with culverin bastards which are a recognised size of gun.

and 'artillery' which could probably still mean crossbows and other engines as well. Although the term bombard seems normally to have been reserved for guns of large size it could at first, at least in its Latin variant, describe guns of smaller size. In fact, there was no Latin equivalent for 'gun' used in the fifteenth century and bumbardus did service instead.

By 'bombard' we should understand a gun of large size, normally with a bore in excess of 8 inches (203mm) but with a relatively short barrel, firing a stone ball. Bombards were primarily intended to knock down walls. Some were of cast bronze but most were probably made of wrought iron.

The first Scottish mention of bombards is in the Exchequer Rolls in 1430 in connection with payments for their shipment and other instruments from Bruges to Scotland. In particular a large bombard is mentioned, the movement of which in the ship caused the breakage of certain vessels of wine (vase garnagii).¹² Bower says that James I had a large bronze bombard cast in Flanders in that year, with the following inscription on it:

'Illustri Jacobo, Scotorum principi digno,

Regi magnifico, dum fulmino castra reduco;

Factus sum sub eo, nuncupor ergo Leo'.¹³

This was presumably the same gun. The Low Countries were already at this time an important metalworking region, especially for armaments, and many large guns were produced. The chronicler of Pluscarden records that in his time (the 1460s) the gun was in England¹⁴ and so it may have been amongst those lost at the 1436 siege of Roxburgh Castle.

12. ER, iv, 677-8, 681.

13. Chron. Bower, ii, 490.

14. Chron. Pluscarden, i, 376.

A great bombard appears in the Exchequer Rolls for 1441-2, 1449-50, a bombard in 1452 and a great bombard at the siege of Hatton Castle in the same year.¹⁵ Possibly one and the same gun is referred to in all cases. A bombard belonging to Mary of Gueldres was taken to Berwick in 1461 but was soon returned to Trinity College, Edinburgh.¹⁶ It may have been destined for the siege of Carlisle undertaken by the English Queen Margaret of Anjou and the Duke of Exeter with Scottish forces¹⁷ and it or another great bombard which spent two nights in Haddington a year or so later was probably used at the siege of Norham Castle.¹⁸ On the other hand, a gun (bombardo) with three chambers - indicating that it was a breechloader - was bought from an Edinburgh burgess, Andrew Crawford, in 1455, the payment of fifty shillings¹⁹ suggesting that it was only of small size, the sort of gun which was shortly afterwards called a serpentine. Likewise the guns (bumbardis) sent from Haddington to Berwick Castle when it was recovered by the Scots in 1461 may have been small. In the 1470s and 1480s the Exchequer Rolls allude to the making of guns or bombards but the Latin of the accounts obscures whether bombards were meant at all. (This gunmaking will be dealt with more fully below).

Certain named guns were almost certainly bombards, like the 'gun callit Duchal' referred to in 1489,²⁰ perhaps because it had distinguished itself at the siege of the castle of that name in that year; and of course, Mons, with two others 'Messengeir and Talbart

15. ER, v, 118, 382, 502, 606.

16. Ibid., vii, 99.

17. J. Gairdner, The Paston Letters (London, 1872), ii, 13.

18. A.I. Dunlop, The Life and Times of James Kennedy Bishop of St Andrews (Edinburgh, 1950), 237n.

19. ER, vi, 4.

20. TA, i, 123.

gunnis' all three of which had a house built for them in 1501 and were lifted off the ground on to pieces of wood.²¹ Bombards, so-called, however, are referred to well into the sixteenth century and were used on ship board as late as 1540,²² and in Stirling Castle in the 1580s.²³

Serpentines: In the late fifteenth century guns which were smaller than bombards - field pieces rather than guns of battery - came to be called serpentines. They would normally have fired shot of stone or lead. The first mention of them comes from the Exchequer Rolls of 1473 when a payment was allowed for of the expense of taking six small guns called serpentines (sex parvorum bumbardorum dictorum serpentynis) with powder in two carts with four horses from the castle of Threave to Edinburgh.²⁴ Serpentine were certainly manufactured in Scotland, of wrought iron in 1483 on behalf of James IV by John Lamb and John Kyle, both of Leith, in the 1490s and early sixteenth century.²⁵ It was possible to buy six serpentines for the royal use in Ayr in 1516²⁶ suggesting that they were manufactured there.

Serpentines were mounted on carts as field pieces as in 1496 for the raid into England, and were used to defend fortifications, like those left for the keeping of the place of Inchgarvy in 1515.²⁷ Where there is any descriptive information about them they are said to be breech-loading; thus three sent to Dunbar (Castle) in 1497 each with 'tua

21. Ibid., ii, 24-25.

22. Ibid., vii, 356. Possibly Mons?

23. Hist. MSS. Comm., 9th Report (1883), Appendix, 193.

24. ER, viii, 163.

25. Ibid., ix, 218n; TA, i, 334; iv, 486.

26. ER, xiv, 188.

27. TA, i, 295; v. 25.

chaumeris, thair mykkis and thair slottis'.²⁸ The chambers were for loading powder and shot, the myks were iron stirrup attachments for mounting the guns and the slots wedges for keeping the chambers in place. Not all, however, were necessarily breech-loading.

The term serpentine dropped out of use after the early sixteenth century, except apparently to describe certain handguns, like 'tua lang serpentine culverinnis of irne stokkit' in Edinburgh Castle in 1566 and possibly twa serpentynis stokkit with tre' in Tantallon Castle in 1556²⁹ though these may have been obsolete guns of an earlier date. 'Serpentine' was used by the English to describe larger guns in the sixteenth century. Hence the six Scottish moyens at Flodden were identified by them as great serpentines.³⁰

Cannons: The first use of 'cannon' to describe guns in Scotland, excepting the mention of them by Froissart about 1340, is in 1506 when one is said to have been put on one of the royal ships³¹ but it is probable that the Scots had some cannon before this. The anglophile

Lord Bothwell wrote to Henry VIII in 1496 that there were two great curtaldis 'that war send out of France' in Edinburgh Castle. Since the English identified the Scottish cannons in 1513 as 'great curtalles' it is likely that these were cannon.³² During the sixteenth century cannon seems normally to have referred to particular guns of a large size and not to have had the same wide meaning as nowadays. Cannon

28. Ibid., i, 334.

29. Wardrobe Inventories, 169; SRO E96/1.

30. Lewis, Armada Cannon, 15; D. Laing, 'A Contemporary Account of the Battle of Flodden', Proc. Soc. Antiq. Scot., vii (1866-8), 146.

31. TA, iii, 203.

32. Original Letters, 1st ser, i, 25.32. Laing, 'A Contemporary Account of Flodden', 146. Continental sources confirm the identification of curtalds with cannon. See Napoleon III and I. Favé, Etudes sur le passé et l'avenir de l'artillerie (Paris, 1846-71), i, 128; iii, 218.

were cast bronze guns of large size which fired cast iron shot. They were essentially used for battery purposes and were more efficient replacements for bombards. Typically their specifications were as follows: weight 3,800 lbs; calibre 6½ inches; weight of shot 33 lbs; number of horses to draw one gun, 21. Scottish evidence for the size of cannons is slim but it may be noted that balls each weighing 33½ lbs were bought in Flanders in 1512 for the royal use and in 1513 it took thirty six oxen to pull one.³³

Cannon were the largest class of the new bronze guns and in the course of the sixteenth century there was a tendency to make them of larger and larger size. In England such terms as 'cannon of eight' - that is with a bore of 8 inches - demy cannon and double cannon were used to describe these guns of different sizes and in Scotland there is evidence in particular for the use of the term 'double cannon', that is a gun which theoretically would have fired an iron shot of twice the weight of an ordinary cannon and therefore have had a calibre of about 8 inches. In the rest of this discourse on guns we shall assume that double, great or grose applied to gun names refer to guns which fired shot of twice the weight otherwise denoted by the names. There are no clear examples of 'double' referring to guns with two barrels but great, grose or double may in some cases have referred to guns with a greater thickness of metal than normal rather than a larger bore. This point at present seems incapable of proof.

The Duke of Albany was said by Queen Margaret Tudor to have had four double cannon amongst the guns he took on his raid into England in

33. TA, iv, 302-3, 516. The specifications given here and for the following guns, unless otherwise indicated are based on those for French guns drawn up in 1544. See for instance, J.-F. Finó, 'L'Artillerie en France A La Fin du Moyen Age', Gladius, xii, (1974), 21.

1523 and one was got in Flanders in 1541-2, possibly the 'double cannon of fonte markit with the armes of the feir in Zeland' which was in Edinburgh Castle in 1578 and which (then broken) was lent to the Earl of Bothwell prior to 1593.³⁴ A great cannon called the Necar was cast in Edinburgh Castle in 1511³⁵ and this is the first evidence that cannon were made in Scotland. Two other great cannon are recorded in 1515 and one was used by the supporters of Queen Mary to shoot at Holyrood Abbey in July 1571.³⁶ John Knox, following the English terminology, mentions cannons royal employed against St Andrews Castle in 1547 and they were used by the English to besiege Edinburgh Castle in 1573.³⁷

By 1513 there were at least five cannons available for James IV to take on the Flodden campaign and Albany was said to have twenty-eight in 1523³⁸ which was probably an exaggeration. They were used fairly commonly in the royal service throughout the century and were apparently mostly of foreign make. An exception may have been the 'cannon of fonte market with the Kingis haill armes of Scotland' in Edinburgh Castle in 1578.³⁹

Culverins: Culverins came in various sizes and the term was also used for a type of hand firearm. This latter use will be described at a later stage but fortunately there is rarely ever any doubt whether a large piece of artillery or a handgun is intended in a document since culverin when applied to artillery was normally qualified by an

34. Henry VIII Letters & Papers, III, ii, no 3368; TA, viii, 123; Wardrobe Inventories, 218; SRO E96/5.

35. TA, iv, 278-9.

36. Ibid., v, 38; Bannatyne's Memorials, 177.

37. Knox, History, i, 96. Diurnal of Occurrents, 330.

38. TA, iv, 515-16; Henry VIII Letters & Papers, III, ii, no 3368.

39. Wardrobe Inventories, 252.

adjective indicative of its type. The larger culverins were used effectively as siege guns and the smaller ones were readily put into service as field pieces, the unifying feature of the class being their great length - and hence their range - in proportion to their weight of shot, which was normally of iron.

Shot for grose culverins bought in Flanders in 1511 each weighed 16lbs⁴⁰ and this compares exactly with what might be expected for a French grande couleuvrine, the vital statistics of which can be read off as : weight 3,800lbs; calibre $4\frac{1}{3}$ inches (perhaps this is a bit too low); weight of shot 16lbs; number of horses to draw one gun, 17. Two were taken to Flodden, one alone of which required thirty-six oxen to draw it, eleven drivers and twenty workmen with picks, shovels and spades.⁴¹ Double culverins were being worked upon in the royal foundry in 1540, 1541 and 1558 and the mould for one in the first of these years is said to be sixteen feet long.⁴² According to de la Brosse and d'Oysel the Scots had 'une grande couleuvrine de fer de fonte' in 1559 taken by the French holding Leith for the queen⁴³ and references to others (of bronze) are not lacking throughout the century.

Smaller in size than grose or double culverins were demy culverins but apparently they were not much used in Scotland. All three listed in Edinburgh Castle in 1573 were English, one of cast iron, and it is specifically mentioned that there was not enough shot to service them.⁴⁴ English sources of the late sixteenth century give them a calibre of

40. TA, iv, 303.

41. Ibid., iv, 516-17.

42. Ibid., vii, 360; viii, 124-7; x, 437-42.

43. De La Brosse & D'Oysel Report, 93, 101, 112.

44. Wardrobe Inventories, 251, 253, 261.

about 4½ inches.⁴⁵

Next in size were culverin bastards first mentioned in an account of 1538. Shot for them had been bought during James V's visit to France in 1536.⁴⁶ They would have weighed in the region of 1,970lbs, had a calibre of 3⁵/₆ inches, fired shot of 8lbs and have required 11 horses to pull one gun. They were used for various purposes, in siege work, in the field and on ships, and in 1558 paper was bought to draw the pattern for making one in the royal foundry.⁴⁷

Culverin moyens were : weight 870lbs; calibre 2½ inches; weight of shot, 3lbs; number of horses to draw one gun, 7. They were in use as early as 1513 when six were taken to Flodden each pulled by eight oxen and a horse.⁴⁸ They were thereafter extensively used by the Scots for various purposes. The French contributed some to the royal collection in the 1540s and they were evidently made in the royal foundry as well.⁴⁹ Cardinal Beaton had his gunner Master Wolf make others in 1543-1544 at St Andrews Castle.⁵⁰ Two double culverin moyens cast in Edinburgh Castle in 1539/40 and two great culverin moyens got in Flanders in 1541/2⁵¹ were probably guns of a larger size corresponding to English sakers with a calibre of about 3½ inches. Four culverin pikmoyens taken by the English at Flodden were identified by them as sakers.⁵²

45. O.F.G. Hogg, English Artillery 1326-1716 (London, 1963), 26-28, and H.L. Blackmore, conveniently give several early English gun tables. Discussions of value on early English guns and their sizes are 'Guns and Gunnery in the Tudor Navy' in The Spanish War, ed. J.S. Corbett, Navy Records Soc., xi (1898), 315-35; L.G.C. Laughton, 'Early Tudor Ship-Guns', Mariner's Mirror (1960), 242-85; M. Lewis, Armada Guns (London, 1961).

46. TA, vi, 413-14.

47. Ibid., x, 438.

48. Ibid, iv, 510.

49. Ibid., viii, 378-9; ix, 188; x, 438; Wardrobe Inventories, 260.

50. Rent. S. Andree, 202.

51. TA, iv, 516-17; viii, 123.

52. Laing, 'A Contemporary Account of Flodden', 146.

Falcons: Falcons were a favourite type of gun amongst the Scots.

They were lighter than culverins and even longer in relation to their calibre. They made good pieces of field artillery but were on the light side to be effective in siege work. They were used extensively in defending fortifications and on shipboard. Lord Bothwell mentions in a letter to Henry VIII of England 'x falconis or litill serpentinis' in Edinburgh Castle in 1496⁵³ and this is the first evidence of them in Scotland. Thereafter they are commonly referred to. They were certainly being cast in Edinburgh Castle by 1526⁵⁴ and probably some of the guns being made by Robert Borthwick in the years immediately preceding the Flodden campaign were also of this class. In theory falcons were as follows: weight, 750lbs; calibre, $2\frac{1}{3}$ inches; weight of shot, 2lbs; number of horses to draw one gun, 4. Two pounds was the weight of iron shot but in practice falcons and guns of smaller size normally fired lead shot.

The Scots distinguished between several different types of falcons: double, single, quarter and small, though in the case of the latter term there is no reason to think that it was used with any exactitude. By and large the class included all bronze long barrelled guns smaller than culverins but larger than hagbuts of crok. In England and on the continent a sub-group of falcons was recognised and known as falconets. Their specifications may be given as: weight, 450lbs; calibre, $1\frac{5}{6}$ inches; weight of shot, 1lb; number of horses to draw one gun, 2. As a term, however, falconet did not find favour in Scotland although the guns undoubtedly did. The English had what they listed as nine Scottish falconets of brass in

53. Original Letters, 1st ser, I, 31.

54. TA, v, 266-7.

the Tower of London in 1547⁵⁵ but these would presumably have been known more familiarly to the Scots as small falcons.

Double falcons, one would expect, would fire shot of about 4lbs. They seem to have been a particularly Scottish type of gun and much favoured by the Scots. Data about their size is practically non-existent but they may have been of great length and were not necessarily always muzzle loading since there is a record of nine breech loading ones having been put on the Unicorn when she was sent in search of pirates in 1539.⁵⁶ They were in use by 1536 since James VI had iron bullets made for them then in France and David Rowan was making three of them in Edinburgh Castle in 1548/9.⁵⁷ There were moulds for some in Edinburgh Castle in 1578 as well as two English ones,⁵⁸ possibly examples of the great falcons which occur in early Tudor lists of ship-guns.⁵⁹

Quarter falcons would theoretically have fired shot of about 1lb and would have been convenient light pieces of field artillery. According to the English ambassador Sadler 'four score light pieces for the field whiche they call here quarter faulcons' were amongst the munitions sent by the French for Cardinal Beaton's party in 1543 and there were moulds for them in the royal munition works.⁶⁰ Half falcons are mentioned only once, in a mythical fight at sea.⁶¹

Small pieces, carted guns, etc., referred to in sixteenth century sources may often be supposed to have been falcons of some

55. H.A. Dillon, 'Arms and Armour at Westminster, the Tower, and Greenwich, 1547', Archaeologia, LI, i (1888), 263.

56. TA, vii, 225.

57. Ibid., vi, 414; ix, 271.

58. Wardrobe Inventories, 251, 260.

59. Laughton, 'Early Tudor Ship-Guns', 280. Laughton suggests great falcons were 6 to 9 pounders.

60. Hamilton Papers, ii, 103; Wardrobe Inventories, 260.

61. Complaynt of Scotlande, 41.

sort. Sometimes our authorities are more precise, as Bannatyne writing about an incident in 1571 when the party holding Edinburgh Castle for Queen Mary set off for Dalkeith with 'two carted brasen peices or falcones'.⁶² Falcons are elsewhere specifically referred to as being 'carted pieces', by Leslie, for instance, describing Albany's raid of 1522.⁶³ Carts were only used for guns of small size, two or three being put in each one.

Hagbuts of Crok: Like 'culverin', 'hagbut' could be used to denote hand guns as well as small pieces of artillery and unfortunately the context does not always make it clear which was being referred to. The term hagbut in various related forms appears in most European languages and means literally a gun with a hook, the hook being attached to the underside of the barrel and serving to mount the piece or lessen the effect of its recoil on firing. 'Of crok' or 'croichert', also referring to the hook, was added to distinguish the small pieces of artillery from hand guns, though not invariably so. 'Of found' was often added to indicate the guns were of bronze for not all were, some being of wrought iron. Some were breech-loading pieces, as forty two iron ones bought on the continent for the royal service in 1542 and others are described as being stocked and fitted with fire works (that is, matchlocks).⁶⁴

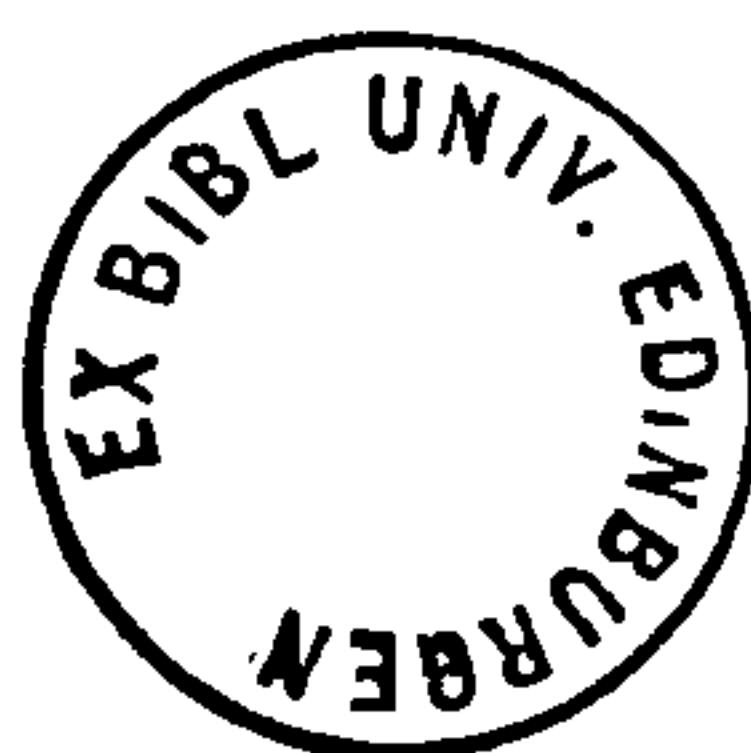
Hagbuts of crok were too small to figure in most artillerists' lists of gun sizes⁶⁵ but happily surviving examples amply demonstrate that they fired shot of half a pound or less and, relative to their

62. Bannatyne's Memoriales, 136.

63. Dalrymple, Historie, ii, 184.

64. TA, viii, 129, 135; Wardrobe Inventories, 252.

65. Norton, The Gunner, 56, describes them as hand guns firing lead shot of about 30z, but these were evidently a different order of thing from the Scottish ones.



size, were very long barrelled pieces. A Scottish gun of brass in the Tower of London in 1547 described as a robinet⁶⁶ may well have been a hagbut of crok or a gun of similar dimensions but lacking a hook. Certainly the term robinet, in English lists referring to long barrelled guns with a calibre of about 1 inch, was not made use of in Scotland.

Hagbuts were taken to Flodden in 1513 and were employed in the succeeding decade.⁶⁷ Payments for making 'trestis' (trestles or stands) are included in the Treasurer's Accounts for 1515⁶⁸ and these can only be meant for hagbuts of crok. Already by 1522 it was worthwhile issuing proclamations for hagbutters for the governor's service but hagbutters in this sense can only have referred to soldiers armed with handguns.⁶⁹ Hagbuts of crok were greatly used by the Scots in the field, in fortifications and on the sea, and an act of parliament of 1535 enjoined all landed men, spiritual and temporal, and ladies of conjoint fee or liferent, to furnish themselves with 'ane hagbute of found callit hagbute of crochert with ther cawmys (bullet moulds) bullettis and pellokis off leid or Irne with powder convenient therto' for every hundred pounds of land of new extent that they possessed, or two culverins for every hundred merk land and one culvering for every forty pound land, 'with trestis to be at all tymes Reddy for schoting of the saidis hagbutis And that every man of leving forsaid sall have ane man or ma as he may furness for schoting of the saidis hagbutis and culveringis and to lere utheris to schute the samin'.⁷⁰ Yet another act of the same parliament

66. Dillon, 'Arms and Armour at Westminster, the Tower, and Greenwich', 263.

67. TA, iv, 519, 520.

68. Ibid., v, 15.

69. Ibid, v, 203.

70. APS, ii, 345, c. 20.

ordered merchants trading goods abroad to the quantity of a last to bring back at least two hagbuts with their equipment for each such load or else metal to make them and other armour.⁷¹

For 1552 there are several references in the Treasurer's Accounts to the costs of casting great hagbuts of found or double hagbuts of found in the royal foundry⁷² but judging by the evident popularity of these small guns it is probable that they were made on other occasions as well. Great or double hagbuts may have had a calibre of about 1.1 inches as opposed to the 1 inch or less of hagbuts and may have been longer.

Other bronze pieces: Cannons, culverins, falcons and hagbuts were the main types of bronze ordnance made and used in Scotland but other pieces were employed and are worth mentioning briefly.

Sakers are noticed occasionally in Scottish texts and may all have been English like 'Ane Inglis sacre of fonte market with the rois' in Edinburgh Castle in 1578.⁷³ Sakers had a calibre of about 3.5 inches and may have been little different from the Scottish great or double culverin moyens and culverin pikmoyens.

Pasvolents were also in use and a late sixteenth-century source suggests they fired shot of about the same weight as sakers, or perhaps slightly heavier. They may in fact have been very long culverins.⁷⁴ Alexander Routh bought seven pasvolents in France in 1513 for the Michael and two were bought for Falkland Palace three years later. Iron shot were bought for pasvolents in France in

71. Ibid., ii, 346, c. 21.

72. TA, x, 101.

73. Wardrobe Inventories, 219.

74. L. Collado, Platica Manual de Artilleria (Milan, 1592), cited by Lewis, Armada Guns, 133. See also Corbett, 'Guns and Gunnery in the Tudor Navy', 324.

1536 and one was used in the field in 1547. There was one in the royal collection as late as 1566.⁷⁵

In 1541 John de Lyoun was sent to Foulis to bring a mortar gun of found back to Edinburgh Castle.⁷⁶ This, it would seem, is an early reference to a type of gun that only came into its own in the seventeenth century. They were very short guns with relatively large or enormous calibres and were used for lobbing shot down into the enemy at short range. A mortar is carved on an early seventeenth century piece of sculpture from one of the gates in Edinburgh Castle.

Finally, a brief word about guns of cast iron, a few of which, possibly all English, were employed in Scotland in the sixteenth century. The technology for making them was developed in England from the early part of the century and by the end/^{they}were being produced competently in large quantities. 'Ane grit zetling of irne' was sent to Inchkeith in 1566 and the burgh of Edinburgh had 'ane greitt irne yething' of its own in 1584. 'Ane demy culvering of yetline yron marked with the rois' (i.e. of the Tudor dynasty) is listed in the 1578 inventory of artillery in Edinburgh Castle.⁷⁷ The word yetling in these and other instances - not just with guns - was used to refer to cast iron, just as 'of found' was applied to objects cast in bronze. Thus it is likely that the zetling mentioned in an Aberdeen dispute of 1548⁷⁸ was also of cast iron.

Heidsteiks: (cf. German, Hauptstuck). Heidstiks were wrought iron guns used in the sixteenth century, especially in the 1540s and

75. TA, iv, 487; vi, 414; ER, xiv, 163-4; Cal. State Papers Scot., i, 9; Wardrobe Inventories, 169.

76. TA, viii, 119-20.

77. Ibid., xi, 518; Edinburgh Burgh Recs., iv, 400; Wardrobe Inventories, 253.

78. Aberdeen Council Register, 259.

and 1550s. They are described as having stocks and chambers, (for breech loading) and as firing stone balls, and were included amongst the guns for arming the royal fleet for James V's voyage round Scotland in 1540.⁷⁹ They were probably amongst the largest wrought iron ordinance in use at this time, with the exception of the earlier bombards, but we lack any precise data about them. Chambers of forged iron for heidsteiks in Edinburgh Castle in 1578 are described as being 'great' in size and the burgh of Ayr purchased one in the 1540s described ^{as} /'ane greit pece of artallirie'.⁸⁰

Slangs: With slangs we are on slightly surer ground since the term slang is the Scottish equivalent of the English sling. According to English sources of the late sixteenth century slings had a calibre of 2½ inches but in his study of early Tudor ship guns Laughton came to the conclusion they were of much greater size in the earlier part of the century. He identified guns raised from the wreck of Henry VIII's Mary Rose as slings, one having a calibre of about 8 inches and length (minus the chamber) of 9 feet 8 inches, and cited documents of 1514 which referred to slings of over 20 feet in length.⁸¹ Such long guns were still in use in the mid-century and it might be expected that the Scottish lang slang mentioned in 1539 was also of great length.⁸² Other variations in their form are admitted to and thus we read of double slangs, great double slangs, ringed slangs, half slangis and quarter slangis,⁸³ the ringed (ringit) presumably referring to iron rings attached to the barrel as an aid to moving it.

79. TA, vii, 355.

80. Ayr Burgh Accts., 102.

81. Laughton, 'Early Tudor Ship-Guns', 275-8.

82. TA, vii, 222.

83. Wardrobe Inventories, 250, 253; Complaynt of Scotlande, 41.

The burgh of Edinburgh's Treasurer's Accounts for 1557-8 give the prices of various guns bought by the town and slangs varied from £50 for two to £11 for one.⁸⁴ Like heidsteiks they were favoured for sea service.

Berses: Bers was the Scottish equivalent of the English base and guns with this name are first recorded in the 1530s. James V purchased eighty-six of them during his visit to France in 1536 and shipped them back to Leith. Each was provided with three chambers and there were 150 slots (wedges) to hold the chambers in position. The total weight of the shipment is given as 13,857 lbs which means a weight in the region of 161 lbs (73 kgs) for each bers with its slots and chambers.⁸⁵ They were used in great quantities on the royal ships being well covered with red lead as a protection against the elements.⁸⁶ According to late sixteenth century English sources bases were small breech loading guns of culverin type with a calibre of 1½ inches and length of about 4 feet.⁸⁷ Although the term bers is by no means unknown in other early Scottish documents it is possible that it was particularly associated with this group of eighty-six French made guns and that comparable Scottish made guns passed by another name - cutthroat. There was a double bers in Dumbarton Castle in 1571.⁸⁸

Cutthroats: Cutthroat is a Scottish gun name for which there is apparently no direct equivalent in other languages. First mentioned in 1543/4⁸⁹ they seem to have been breech loading guns of

84. Edinburgh Burgh Accts., i, 250, 255.

85. TA, vi, 413-14; vii, 213, 217, etc.

86. Ibid., vii, 355.

87. Corbett, 'Guns and Gunnery in the Tudor Navy', 318.

88. Bannatyne's Memorials, 108.

89. TA, viii, 253.

small size of use primarily as field artillery. They were carried with the army two or more to a cart to which they seem to have been fixed for firing. The carts were fitted with pavises (shields) for protection and were each pulled by three horses.⁹⁰ The guns themselves were provided with myks for mounting and, of course, with spare chambers, and at least sometimes fired metal shot.⁹¹ They were particularly made use of in the campaigns of the 1540s but guns called cutthroats with stocks and chambers were still in use in the middle of the following century.⁹² An English spy report of 1542 says the Scottish army had carts with two small guns in each which 'shotte aboute the greatnes of a mannes thombe' which gives some indication of their size. The same guns, apparently, captured at Solway Moss, were equated by the English with their own bases.⁹³ There were also double cutthroats.⁹⁴

References to other wrought iron guns are rather scarce. Edinburgh had three dogs on the battlements of the butt at the Nether Bow Gate in 1558 which are said to have weighed 1 stone 4 lbs - ridiculously light, and about the same time two men were paid for carrying two double dogs.⁹⁵ On the other hand, John Bickerton in Leith was paid for making two chambers to two dogs which weighed 3½ stone together.⁹⁶ Mention is made of a ring dog in Glasgow's burgh records in March 1578/8.⁹⁷ A 'hollis pece' is included amongst some guns belonging to Aberdeen in 1544 but there is no further information as to what type of gun it might have been.⁹⁸

90. Ibid., viii, 329, 348; ix, 150-1; Wardrobe Inventories, 169.

91. Wardrobe Inventories, 169.

92. Thanes of Cawdor, 300.

93. Hamilton Papers, i, pp lxxii, lxxxiii.

94. SRO E96/1. One in Tantallon Castle in 1556.

95. Edinburgh Burgh Accts., i, 248, 250, 252.

96. Ibid., i, 252.

97. Glasgow Burgh Recs, 67.

98. Aberdeen Council Register, 195..

Murdresaris and great basselis are described on shipboard, the former in the graphic sea fight in the Complaynt of Scotlande, written in 1549, the latter, according to Pitscottie on James IV's Michael.⁹⁹ The basselis may have been like the English basilisks with a calibre of 8½ inches.¹⁰⁰

Petards: Although not guns, strictly speaking, their shape and use of gunpowder has meant that petards are often included with them. They only came into use in Scotland at the very end of the sixteenth century. The Earl of Bothwell is said to have been provided with them for breaking up the gates and doors of Falkland Palace in 1592 when he made an unsuccessful attempt to seize James VI.¹⁰¹ By the end of 1602 they were considered to be a sufficient threat to law and order for the Privy Council to issue a proclamation banning their use and manufacture, probably prompted by the night attack made by the Master of Ogilvie on Lord Spynie's house of Kinblethmount in Angus in the previous month. The Ogilvies successfully took the house after blowing up the yett with a petard.¹⁰² In 1614, however, the Privy Council found it expedient to have a petard tested and sent for use against Dunyvaig Castle in Argyll, then being withheld by Angus Og and Coll Ciotach.¹⁰³

99. Complaynt of Scotlande, 41; Pitscottie, Historie, i, 251-2.

100. According to W. Harrison's An Historical description of the Iland of Britaine (pp 188-9) introducing the 1587 edition of Holinshed's Chronicles (given by H L Blackmore, The Armouries of the Tower of London. I Ordnance (London, 1976), 393.

101. Melville Memoirs (Donaldson), 164.

102. RPC, vi, 490-1, 519.

103. Ibid., x, 677, 726-7.

The following table attempts to summarise the information outlined above on gun sizes, also giving a tentative indication of the range of some of the guns, the information being derived from English gun lists. It is assumed that all the guns are 'ordinary'. There is no worthwhile information on gun ranges from Scottish sources with the one exception of Mons Meg. In 1558 she was fired to celebrate the marriage of Queen Mary with the Dauphin and there is a payment recorded in the Treasurer's accounts for the finding of her bullet and bringing it back from Wardie Muir to Edinburgh Castle. Wardie Muir was near Newhaven, almost two miles from the castle, and suggests that Mons was no weakling. The table as a whole can in no way be regarded as definitive; it is merely intended as a rough guide to typical examples of each sort of gun.

GUN	Method of Construction	Method of Loading	Weight lbs kgs	Calibre inches mm	Type of Shot	Weight of Shot lbs kgs	No of horses/horses/oxen	Maximum Range yards metres
bombard	wrought/cast	M/B			stone			
serpentine	wrought	M/B			stone			
double cannon	cast	M	5400 2454.55	8 203	iron	66 30	21 36	1500 1371.60
cannon	cast	M	3800 1727.27	6½ 159	iron	33 15	17 36	1700 1554.48
grose culverin	cast	M		4 ² / ₃ 118	iron	16 7.28		2000 1828.80
demy culverin	cast	M		4½ 114	iron	12½ 5.68		1800 1645.92
culverin bastard	cast	M	1970 895.45	3 ⁵ / ₆ 97	iron	8 3.64	11	1600 1463.04
double culverin moyen)	cast	M						
culverin pikmoyen)?	cast	M						
saker)	cast	M						
pasvolent	cast							
culverin moyen	cast	M	870 395.45	2½ 70	iron	3 1.36	7, or 1 + 8	1300 1188.72
double falcon	cast	M		3 ¹ / ₁₀ 79	iron	4 1.82		
falcon	cast	M	750 340.91	2 ¹ / ₃ 59	lead	2 0.91	4	1100 1005.84
small falcon)	cast	M						
falconet)?	cast	M	450 204.55	1 ⁵ / ₆ 46	lead	1 0.45	2	
quarter falcon	cast	M			lead	½ 0.23		
double hagbut of crok	cast	M	56* 25.5	1 ¹ / ₁₀ 28	lead			
hagbut of crok	cast/wrought	M/B	38½* 17.04	1 25	lead/iron			
heidsteik	wrought	B			stone			
double slang	wrought	B			stone			
slang	wrought	B		2½ 64	stone			
bers	wrought	B	161 73.18	1½ 44	stone			
cutthroat	wrought	B		1½ 44	stone			
mortar	cast	M			stone/lead stone/iron			

* based on weight of surviving gun
M muzzle loading
B breech loading

It is only possible to guess how many guns there were in the royal arsenal at any one time. Until the arrival of Mons Meg in 1457 James II may only have had one bombard at his disposal although there may have been numerous smaller guns as well. It is only with the year 1513 that the documentation is complete enough to give an impression of what was available. It is likely that all the royal guns of a large size were utilised in the campaign of that year. There were certainly no guns left to defend Edinburgh Castle immediately afterwards.¹⁰⁴ The artillery train taken with the army consisted of five cannon, two gros culverins, four culverin pikmoyens and six culverin moyens, and besides that James had sent off a cannon and a culverin moyen for O'Donnell to use in Ireland.¹⁰⁵ There is only a vague reference to 'othir dyvers small ordenances'.¹⁰⁶

The royal fleet of 1513 also accounted for a great number of guns, including, we might assume, numerous small guns for defending the tops and decks of the ships. Serpentine, pasvolents and other guns with 'gavelokis' are mentioned in the ship-fitting accounts, as well as two probable bombards : Talbert and the Gun of Threave, but the accounts mostly do not specify which guns were included in the numerous cart-loads taken from Edinburgh Castle to Leith and from there on board the ships.¹⁰⁷ The three large royal ships, the Michael, the Margaret and the James, were probably all well provided, the Margaret with a bombard, four falcons and twenty-one other small

104. ADCP, 11. The use of guns to defend fortifications is dealt with in a later chapter.

105. TA, iv, 515-18, 527.

106. Laing, 'A Contemporary Account of Flodden', 146.

107. TA, iv, 451-507.

guns, and James IV boasted to the English ambassador Dr West that the Michael shot sixteen big guns on either side.¹⁰⁸ Many of these guns were, of course, lost as a result of the war in 1513, and the Scots artillery was probably at a very low ebb during the reign of James V. Dougal Campbell, a Scottish master mariner interrogated by the English in 1522, claimed that there were not thirty great pieces of brass in Scotland either land or sea, of which thirteen were double cannons and the rest falcons and such like,¹⁰⁹ and these probably included the Duke of Albany's ordnance in Dunbar Castle.

The inventories of Edinburgh Castle made in 1566/7 and 1578 provide the next opportunity to form an impression of the size of the royal artillery train.¹¹⁰

EDINBURGH CASTLE	1566/7	1578
double cannons	1	1
cannons	8	11
grose culverins	3	2
culverins	1	-
serpentine culverins	2	-
demy culverins	-	3
culverin bastards	2	1
sakers	2	2
pasvolents	2	-
culverin moyens	6	11
double falcons	1	4
falcons	1	-
quarter falcons	-	2
hagbuts of found	16	-
hagbuts of crok	8	13
bombards (Mons Meg)	-	1
great double slangs	-	2
slangs	-	3
cutthroats	6	7
TOTAL	59	63

108. Ibid., iii, 90, 142; James IV Letters, 321.

109. G.R. Elton, 'Anglo-French relations in 1522: A Scottish Prisoner of War and his interrogation', Eng. Hist. Rev. (1963), 316.

110. Wardrobe Inventories, 165-77; 248-61.

Both these inventories are notably lacking in the smaller pieces - falcons, hagbuts of crok, cutthroats, etc - which we know were much made and used, and it is not clear what the explanation for this is. Apart from these the guns in other royal fortresses, principally Stirling, Dumbarton, Dunbar, and Blackness, must also be taken into account. Unfortunately we only have complete inventories for two of these and they are not exactly contemporary with the Edinburgh ones. Allowance must therefore be made for the possibility that the same guns might appear in the inventories of the different castles at different times.¹¹¹

	DUMBARTON 1571	DUMBARTON 1580	STIRLING 1581	STIRLING c.1583(?)	STIRLING 1585
groseculverins	1	-	1	3	1
demy culverins	-	-	1	1	1
culverin bastards	2	2	1	1	1
sakers	-	-	2	2	2
culverin moyens	2	2	3	5	5
double falcons	-	-	5	7	6
falcons	2	2	1	-	3
quarter falcons	1	-	-	2	-
hagbuts of found	3(+1broken)	2	6	4	6
bombards	-	-	2	-	2
double berses	1	-	-	-	1
berses	1	-	-	-	-
other pieces	-	-	-	3	-
TOTAL	14	8	22	28	28

It is also known that guns were lent or given out to various individuals, like the two lieutenants, Huntly and Argyle, who each got a cannon and two falcons in 1543.¹¹² An inventory by John Chisholm, the comptroller of the artillery, lists all the guns from the castles of

111. Bannatyne's Memoriales, 107-8; RPC, iii, 319-20; Hist. MSS Comm. Mar & Kellie (1904), 34-36; SRO E96/3; Hist. MSS Comm. 9th Report (1883), 192 (= SRO E96/4).

112. ADCP, 535.

Edinburgh and Stirling given out in the three years preceding May 1593:

'The number of peices of artailyherie of found disponuit and gevin furth of the Castellis of Edr. and Strivilling thre lait yheiris bygane pairtlie be the kyngis majesties preceptis and adviss but the samin to be socht in agane as sall please his majestie and counsale.

In the first.

To the sumtyme Erle bothwell Ane brokin double cannoun-markit with the arms of the toun of campfeir Edr. castell.

To him sen syne quhilkis James Murray maistre wryt knawis vass deliverit be the laird of Cocbuy knowit Four or thre grit and small paris Edr. Castell.

To him mair at the kyngis majesties going to be marit Ane fair battard of fonte Strivelling castell.

To the laird of Eist Wymss tane be him to the Kyng of france twa of the best franche cannonis quhilkis Johnne Cheisholme brocht hame.

To the laird of Kinfans Lyndsay Twa double faulcons of fonte be precept to Johnne Cheisholme. Strivelling castell.

To hary home Constable Ane brokin cannoun scottis fonte.

To Johnne Cheisholm for helping of the rest of the artailyhyre within the castell of Edr. Ane franche cannoun of auld mak.

To my lord Secretar quilk Mr George Tod ressavit Ainuther brokin cannoun in november bygane ayheir Edr. castell.

To Sir Robert Melvill be precept to Johnne Cheisholme. Lent be his majestie and put in the houss of brunt Illand Ane franche moyane of found Strivilling castell.

To Sir James Sandilandis be precept to Johne Cheisholm
Twa moyanis of found put in blackness Strevilling castell'.¹¹³

These inventories of the royal guns suggest that the Scots had at their disposal in the later part of the century somewhere in the region of eighty large cast bronze or iron guns, some sizeable wrought iron pieces and other smaller pieces, possibly considerably more than indicated by these inventories. It is unlikely that the Scots were better supplied at any other time. Although at first this might seem to be a goodly amount of fire-power closer study suggests otherwise. Only about twenty heavy siege guns are listed, cannons and the larger culverins, and these guns had not only to defend the major fortresses but might also be required for sieges elsewhere or naval expeditions. The failure of some of the sieges undertaken by the Scots in the sixteenth century, for instance Tantallon Castle in 1528 and St Andrews Castle in 1546, can largely be explained by their lack of fire-power. The sieges of Haddington in 1548 and Leith in 1560 would both have been unthinkable without considerable foreign aid in troops and artillery, and when it came to the siege of Edinburgh Castle in 1573 the government found itself hamstrung without English help since all its artillery was turned against its men from the castle walls. By contrast, England by 1513 is said to have had cannon enough to conquer Hell¹¹⁴ and continued to add guns as the century went on.

GUNS FROM ABROAD

Many of the royal guns were acquired from abroad. Their arrival in this country is often mentioned in chronicles and the Treasurer's

113. SRO. E96/5.

114. Cal. State Paper Venetian, ii, 105.

accounts, and they can further be identified by the coats-of-arms described upon them in the various inventories mentioned above. James I's 'Lion', Mons Meg and her lesser sister are early examples of guns of foreign origin, and according to Don Pedro de Ayala, the Spanish ambassador at the court of James IV, the Scots not only had old and heavy artillery of iron but also modern French guns of metal which were very good and had been given to James IV's father by King Louis in payment of what was due to him as co-heir of his sister, the Queen of Scotland.¹¹⁵ This story does not make sense as it stands, but we need not doubt Ayala's assertion that James III had modern French guns, and they may have included the 'ij. great curtaldis that wae send out of France' seen by the pretended Lord Bothwell in Edinburgh Castle in September 1496.¹¹⁶

In 1509 James IV was buying artillery on the Continent, much to the curiosity of the English. Negotiators for purchasing the guns were said to be in the service of the Archbishop of Glasgow¹¹⁷ and they evidently made a deal with the famous Hans Popenroyter of Mechelen to supply them with guns as Henry VIII's agent Thomas Spinely wrote in February 1509/10 to his master that he had made a deal with Hans that would give him guns as cheap as those supplied to the Prince of Castile and so cheaper than those supplied to the King of Scots by 16 patars in 100.¹¹⁸ Henry was well satisfied with his agent's work and sneakily suggested that he might try to procure the guns meant for the Scots as well - apparently without success as these were shipped home by George Paterson of Leith in October 1511.¹¹⁹

115. Hume-Brown, Early Travellers, 48.

116. Original Letters, 1st series, i, 31.

117. Henry VIII Letters & Papers, i, no. 216.

118. *Ibid.*, I, no. 922.

119. *Ibid.*, I, no. 923; TA, iv, 286.

No doubt these guns were very expensive, and if James had any inkling of the underhand trick attempted by his brother-in-law he would have had a further very good reason for seriously turning his attention to his own foundry in Edinburgh.

Many of the guns got from abroad were sent as gifts by the French, by way of encouragement to wage war against the English, and the Scots were not slow to ask for guns for this purpose as well. James IV's Secretary, Andrew Forman, wrote to Louis XII in July 1512 that if Louis wished to carry out his intention of starting a good big war in Scotland he would have to send as much money as he thought necessary, also artillery and powder, for the Scots had none, but he need only send a small number of men to show the Scots how to form in battle order and how to besiege fortified places, and the sooner the better.¹²⁰ Louis sent his ambassador de la Motte later that year along with Martin Peguineau, varlet of the King's Chamber, and Jehan Piefort, one of the King's gunners, and with them sent a present of wine to James, eight hundred iron cannon balls and fifteen thousand pounds of gunpowder.¹²¹ De la Motte's ship reached Leith roads on St Andrew's day and then continued up the Firth to Blackness where the King was presently staying. According to the intelligence report of Dacre written to Henry VIII soon afterwards De la Motte brought eight lasts of gunpowder, eight serpentines¹²² of brass for the field, three yards long and more which shot stones as large as a swan's egg, and two hundred iron gunstones. Further information got from the Bishop of Caithness, the Abbot of Kelso, the Earl of Atholl and Sir William Scott

120. James IV Letters, 254.

121. Ibid., 270-1, 275-6.

122. The English used the term serpentine at this time to refer to guns of large size.

led Dacre to believe that there were another two brass guns as well.¹²³ The discrepancy between what is recorded to have been loaded on to De la Motte's ship by order of the French King and what Dacre was informed was unloaded is most striking. It would be wrong to completely dismiss Dacre's account as bad reporting as we do not necessarily have a full picture of what happened in France.

The artillery spoken of as being supply by Louis XII's General of the Finances as a protection for the ship hired for De la Motte's journey¹²⁴ may be the artillery referred to by Dacre, and may indeed have been unloaded in Scotland for the use of the Scottish King. Certainly there is no question that the Scots' infant gun foundry could have supplied all the large guns at Flodden or the numerous guns required for the fleet, and guns bought in Flanders and sent by the French king may have formed an important element in the artillery train at this time.

The English suspiciously kept an eye on Scotland's military affairs long after Flodden, and agents on the Continent were always ready to report the slightest hint of preparations for aid to the Scots. On 4 February 1515/16 it was said that large pieces of artillery were being made at Mechelen under the charge of Lord Ravenstein and it was thought that these might be destined for the Governor Albany.¹²⁵ About a year later it was rumoured that the French king was sending 22 pieces of artillery, 20,000 pikes, 1,500 haggebushes and crowches, 6,000 handguns, 10,000 Almayn rivets with saletts and vambraces and 8,000 halberds to Albany, along with

123. Henry VIII Letters & Papers, i, no. 3577. Cf. Cal. State Papers. Venetian, ii, no. 316.

124. James IV Letters, 270.

125. Henry VIII Letters & Papers II, ii, no. 1478.

50 men at arms and a body of Swiss.¹²⁶ The Scots themselves eagerly looked for help from the French. In September 1514 the Lords of Council concluded that a herald be sent to France to encourage Albany to come over and to ask the French king for 'all munitions promittit ... money, artalzerie, and all othir munitiouns and in speciale our schippis and all the artalzerie being in thaim'.¹²⁷ It was rumoured that Albany would come to Scotland in the 'capital' ship of the fleet, the Michael but in the event she was sold to the French king along with all her guns and Albany arrived in Scotland with the Margaret and James only in the early summer of 1515.¹²⁸ He certainly had guns with him - according to Pitscottie six cannon, six great field pieces and other small guns,¹²⁹ and the Treasurer's accounts at this time record much activity of carting guns from Dumbarton and Glasgow back to Edinburgh,¹³⁰ but these may only have been the Scots' own guns belonging to their fleet.

Later French backed initiatives were heavily supported by guns, including those of Albany and the later expeditions in the 1540s. Albany's guns remained in Dunbar Castle until eventually acquired by James V on his marriage in 1536; most of the others went back with the French to France. Similarly with the English guns used at the Siege of Leith and later against Edinburgh Castle. Thwarted at Tantallon by lack of guns and ammunition James V was prepared to beg for it from Frederick I of Denmark immediately afterwards - without success - and perhaps more realistically to buy it in France, in 1531 and 1541, and in 1536 especially when he went there in person.¹³¹ Flanders was

126. Ibid., II, ii, no. 3048.

127. ADCP, 20.

128. Henry VIII Letters & Papers, II, i, no. 287; II, ii, no. 3330.

129. Pitscottie, Historie, i, 288.

130. TA, v, 16, 17, etc.

131. James V Letters, 150, 157; TA, v, 458; vi, 413-14; Hamilton Papers, i, no. 74.

another source at this time and in 1543 the governor Arran sought facilities in Denmark for purchasing munitions and supplies. In 1571 the source of a load of artillery and other munitions seems to have been Hamburg.¹³² The Regent Morton could write to Elizabeth I of England in 1573 that the greatest part of all the ordnance in Scotland had been made abroad 'sa as gif questioun occurrit qwhethir thay belangit to the crown or not, in respect of markes we suld shortlie faill in oure pruiff'.¹³³ Certainly there was money to be made by some Scottish merchants importing munitions and some went a step further, re-exporting weapons to the 'rebels' in Ireland. This trade from Glasgow and other ports in the south-west may well explain the discovery from Corr in Northern Ireland of a hagbut of crok with the arms of Paris upon it.¹³⁴

THE GUNS OF THE NOBILITY

Small pieces of artillery for defence of the home seem to have been quite widespread amongst the nobility and more prosperous lairds from an early date. Threave Castle, the impressive stronghold of the Earls of Douglasses, even had an artillery house (domus artilerie) first recorded in 1458 but presumably a work of the Douglasses.¹³⁵ A complete list of artillery and munitions is preserved for another Douglas Castle, Tantallon near North Berwick. After the death

132. TA, viii, 123; James V. Letters, 302; Cal. Scot. Papers, iv, 4.

133. Cal. Scot. Papers, iv, no. 732.

134. RPC, vi, 324; D.H. Caldwell, 'A Hagbut of Crok from Corr, County Armagh, Ulster Journ. Archaeol., xxxix (1976), 53-55.

135. ER, vi, 459. See also C.J. Tabraham & G.L. Good, 'The Artillery Fortification at Threave Castle, Galloway' in Scottish Weapons And Fortifications, ed. D.H. Caldwell (Edinburgh, 1981, forthcoming).

of the sixth Earl of Angus in January 1556/7 the title fell first to one and then to another minor so that the important stronghold of Tantallon passed into crown hands for a number of years. An inventory of the munition and artillery in it was drawn up on 3 February 1556/7 at the time it was handed over to the keeping of the Laird of Craigmillar on behalf of the crown, consisting of the following:

'Within the said castell laich in the cloiss

Ane culvering bastard of font

Two singill slangis of Irne with two chalmeris to ather of thame

Ane uther culvering bastard of font

Ane heidsteik of Irne with tua chalmeris

On the eist tourheid.

Ane culvering myoun with hir furnist stock and quhelis

On the foir tour heid.

Ane culvering myoun with hir stockkis and quhelis

Ane singill falcoun of font.

On Douglass tourheid

Twa singill falconis of font

Twa slangis of Irne without stokkis and with twa chalmeris to ather of thame.

Abone the brig.

Twa singill cutthrottis and ane doubill cutthrott with two chalmeris to ilk ane of thame.

In the werkhaus.

Twa dowbill slangis with two chalmeris to ather of thame.

Twa singill slangis with twa chalmeris to ather of thame.

Ane singill cutthrott with two chalmeris

In the entries of the yhet.

Ane singill cutthrott with twa chelmeris.

At the yhet.

Twenty twa pikkis

Twelf halbertis

In the mid tower.

Twelf pikkis

In the munition houss.

Twenty four half haggis with thair stokkis.

Ten culverings with their stokkis and ane culvering without
ane stok.

Four pairs of cawmis of brass

Aucht kynkynnys of powder with half ane barrall and ane quarter
barrell of gros powder.

Ane half barrell brokin up of culvering powder half full or
therby.

Fourtene powder hornis for culveringis and half haggis.

XXII Luntis of the samin.

In ane chalmer besyd the munition houss.

Sewin singill hagbuttis of font.

In the hall loft.

Twa barrellis of powder.

In ane volt under the hall.

Twa griet barrellis of powder.

Twa half barrellis of powder.

Ane hagbut of font without ane stok.

In ane cellar under the hall.

Twa serpentynis stokkit with tre.

Within the said castell and place in sindrie partis thereof.

Certane bullettis of Irne to the estimatioun of twa hundredth
or thereby'.¹³⁶

The Earls of Angus were no doubt not unique amongst the nobility in
having their castle so well defended. With the artillery at Tantallon
we can compare that of the Earl Marischal at the great Kincardine
fortress of Dunnottar, inventoried in 1612:

'in the first at the yhet lyand within ye wall twa heid
stickis of irne with thair chalmeris
mair at the northe pairt of the place beyhond the gabriones
ane great
kalice irne peice
ane long braisson pice kairtit and stokit
ane half falkone of brass
ane wther little peice of brass kairtit
ane irne peice
ane wther peice of irne
in the long wolt of litle braissen peices four
at the volt chalmer ane greit irne peice kairtit
ane haill falkone and ane half falkone of brass
on the mount heid abowe the pend twa irne peices
ane number of yrne bullois'.¹³⁷

Of less power and social standing than the Earls of Angus and the Earl
Marischal, the Laird of Glenorchy nevertheless had a substantial armoury
of firearms and weapons at Balloch Castle in 1600 including the
following pieces of artillery:

'off brasin peces, ii, quhairof ane hes quheillis and graith;

136. SRO E96/1.

137. J.C. Watt, 'Dunnottar and its Barons', Scot. Hist. Rev., ii
(1904-5), 404.

off cutthrottis gunis, i; item ane small irne pece callit ane
hagbute of Crok, i; item foure chalmeris of greit gunnis, iiii
chalmeris; item ane schoirt gwn of brass quhilk is in the wyne
seller... off tua gwn wagis of irne, ii; item other twa wages
for the greit gwnnis of brass (the Erll Orknay gat tham with the
gwn) ... off stane calmis, ii pair; of irne clames, ii pair;
off calmes that come with the brasin pece out of Ravinsheuch, i
pair ... item tua spoutis of quhyte irne to charge the greit
peces; off bullettis of irne, ix; off bullettis of leid, viii
... the graith of my Lorde Sinclair's gwn, viz.:- twa bandis with
four lang irne naillis, xii bullettis, and the calmis of the same
gwn'.¹³⁸

Even lower down the social scale was Robert Boyd of Badenheath who had
a small tower-house on Little Cumbrae in the Firth of Clyde. It was
defended by two cutthroat guns, presumably one for each of the two
wide-mouthed gunloops in the cellars at ground floor level though they
do not seem to have been positioned there when the tower was captured
in 1599.¹³⁹ It was by no means the case, in any event that everyone
who lived in a towerhouse was ready to defend it with guns. Two miles
or so across the water from Cumbrae Castle stands Fairlie Castle,
practically identical to it, but the inventory of Lady Fairnelie's goods
and possessions contained in her last will and testament drawn up in
1601 makes no mention of weapons at all.¹⁴⁰

Although if brought together all at once the pieces of artillery
belonging to the nobility would have amounted to several hundred, most
were probably of small size, like the cutthroat guns in Little Cumbrae

138. Black Book of Taymouth, 335-7.

139. RPC, vi, 279-81.

140. SRO RS11 (Ayr) vol. i, fol. 145.

Castle. It should in fact be stressed that they were never all brought together despite enactments by James II and James III ordering the great barons to provide themselves with 'carts of war' for the protection of the realm.¹⁴¹ The nobles apparently greeted these royal demands with a distinct lack of enthusiasm. Turning up to the royal hosts armed to the back teeth was one thing, dragging a cart of guns along was another that the barons were not going to have imposed on them lightly, and there is little evidence that they fielded it on behalf of the king. Powerful families like the Hamiltons put their own artillery in the field - against the forces of the Regent at Langside in 1568 - and were up to conducting a siege - of Glasgow Castle in 1570. In 1560 they used their own guns, along with a large gun sent by the Earl of Argyll, to batter Castle Semple on Renfrewshire into submission. Argyll's gun was probably the cannon given to him from the royal collection in 1543 to help perform his duties as Lieutenant in putting a stop to the unrest in the Highlands and Western Isles. He also provided its services for the siege of Edinburgh Castle in 1573.¹⁴² Such occasions were exceptional and in the case of Argyll's gun, and no doubt many of those in the hands of the Hamiltons, it might have been difficult to establish what claim the possessors of them really had to their ownership rather than the crown. By far the majority of the guns in the hands of the nobles and lairds stayed put to dignify, if not to defend, the houses of their owners. It is thus evident that most nobles and lairds had no reason to fear a serious siege of their houses by their neighbours or peers with artillery. Only the king

141. APS, ii, 45, 99-100, 105, 107.

142. ADCP, 535; Cal. Scot. Papers, i, no. 905; Diurnal of Occurrents, 331.

or government, or the English, were likely to pose a major threat in this way. Most of the nobles, most of the time, did not go out of their way to upset the government and many might reasonably have imagined that they were out of range for an English raiding army. Artillery was thus not necessarily likely to have had a great influence on them, and more particularly on how they planned their houses. This is a point to which we shall return when we discuss the development of fortifications in relation to guns.

THE GUNS OF THE BURGHS

Apart from the king and the nobles, there were several pieces of artillery in the hands of the burgesses. The town councils of the more important burghs saw to it that there were guns to defend their towns against attack. In particular, evidence for this survives for Edinburgh, Dundee and Aberdeen, and to a lesser extent for other places.

Edinburgh: The earliest evidence of an interest taken in artillery by the Edinburgh Town Council has been traced to the 1550s. In 1557 some artillery belonging to David Lytstar of Leith was inspected and shot, though apparently not bought, and a couple of months later, in May 1558 it was resolved that two gunners, Robert Calder and William Kelly, should be hired for three months, to be under the command of Gilbert Balfour, appointed master of the town's artillery, to look after the town's artillery and fire it 'in case of invasioun'. At the same time six cutthroats with their chambers and calmes were bought from David Bell of Leith.¹⁴³

John Bickerton, one of the royal gunners, made chambers for dogs, and John Kyle, smith, supplied a slang and several other gun chambers.

143. Edinburgh Burgh Recs., iii, 20, 21.

John Hammilton sold the town two cutthroats, and Archibald Penicuik a cutthroat chamber along with some tackle 'till woup the stoks of the artailzeie'. All of these men, like David Bell, were based in Leith. A load of flint stones was got to be bullets for the guns and payments were made to men who went to look for iron cannon balls at Haddington - presumably relics of the siege of 1548.¹⁴⁴ Three dogs were placed on the 'overbateseine' of the butt at the Nether Bow and the following year four cutthroats were positioned on a platform above the revestry of St Giles Church. At the same time, the end of September 1559, plans were made to fee six experienced gunners for a month.¹⁴⁵ Two weeks later all the town's guns were packed off to the castle under the safe-keeping of David Rowan the master melter.¹⁴⁶

All this activity was, of course, occasioned by the coming of the Reformation struggles, and perhaps more specifically by the expected arrival of the Congregation. By placing the artillery in the castle, then commanded by the neutral Lord Erskine, the town avoided the risk of it falling into the hands of either the French or the Congregation.

In March 1566/7 David Rowan reported to the Town Council that Lord Erskine was to be replaced as Keeper of Edinburgh Castle and that he would no longer be responsible for accounting for the town's artillery still in his keeping. As a result of this it was moved into the end of St Giles Church for safe-keeping and seems to have remained there except when taken out for use. Possibly this is also the place referred to as a munition house.¹⁴⁷ An extent of £500 was ordered to be raised in May 1568 for mounting the guns and the following January, James Hector, one of the royal gunners, was employed to give advice on

144. Edinburgh Burgh Accts, i, 248, 250-3, 255.

145. Idib., i, 250; Edinburgh Burgh Recs., iii, 57-58.

146. Edinburgh Burgh Recs., iii, 58, 59.

147. Ibid., iii, 229, 236-7, 263; iv, 463.

the remounting and mending of the artillery placed on the town walls.¹⁴⁸
In the ensuing civil war and siege of Edinburgh Castle, soldiers from the castle took the town's artillery from the church for defence of the castle in April 1571 and some of it - chambers for slangs - was still being sought there as late as 1599.¹⁴⁹

Dundee: Dundee's artillery was taken by the English Admiral Wyndham from the church where it was kept before burning it in January 1547/8.¹⁵⁰
The town evidently soon acquired some more and it was taken out in support of the army of the Congregation when it laid siege to Perth in June 1559. It was then left behind in Edinburgh Castle when the Congregation withdrew from Edinburgh to Stirling later that year.¹⁵¹
In 1588 at the time of the Armada scare the burgh again had guns mounted in the steeple of the church under the care of Thomas Davidson the town's master gunner and his assistant Patrick Ramsay (smith/gunmaker), but a year later it was decided to sell 'the auld pieces callit heidsticks being in the steeple' and buy cast pieces of ordnance instead.¹⁵²

Aberdeen: In 1497 when there was a scare in Aberdeen in case the English might invade by sea the town council was able to summon nineteen 'carts-of-war' (carts mounted with small pieces of artillery) from the people of the burgh and the craft guilds.¹⁵³ Fifteen years later in 1512 when the threat of an English invasion again loomed David Stewart and John of Meldrum were chosen to look after the artillery, the first of several recorded masters of the artillery employed by the burgh. In 1514

148. Ibid., iii, 248, 269.

149. Bannatyne Memorials, 112; Edinburgh Burgh Recs (1589-1603), 250.

150. CSP, i, no 132.

151. Knox, History, i, 189, 260, 264.

152. A. Maxwell, The History of Old Dundee (Edinburgh 1884), 266, 212-13.

153. Aberdeen Counc. Reg., 61.

David Stewart was joined by John Mar and William Wormet, and in 1521 a Fleming called Henry Deyne was taken on with a monthly salary of five crowns to look after the artillery.¹⁵⁴ Henry Deyne is described as a gunner and was presumably a craftsman skilled in all the arts to do with guns. He was apparently to work under the command of the masters of the artillery of the town and in the council records of 1523 it is made clear that the two burgesses elected annually as 'Lords of Bonaccord' were likewise to act as masters of the artillery.¹⁵⁵ In 1542 the masters were Andrew Menzies and Alexander Nicholson while the gunner was Andrew Luke. Two years later there was a new gunner Andrew Mowat, paid £4 a month, shortly joined by Alexander Rattray, but it seems only to have been the town council's intention to employ such specialists when danger threatened, and not permanently. Alexander Rattray, however, was still in service in 1565.¹⁵⁶

Aberdeen's guns were probably all kept in the blockhouse which guarded the harbour. In 1523 arrangements were made to buy a gun in Dieppe in France. It was of cast bronze, twenty-four feet long, and was provided with fifty iron cannon balls and a barrel of gunpowder. In 1544 the town also had a falcon, a 'kilis pece', a 'hollis pece' and three serpentines.¹⁵⁷

Other towns: The evidence for the artillery belonging to other towns is as yet less complete. Ayr bought a slang, two cutthroats and a heidsteik in the 1540s and they were kept in the burgh church.¹⁵⁸

Jedburgh was obliged to borrow two cutthroats from Edinburgh in 1570

154. Ibid., 83, 92, 98.

155. Ibid., 445-6.

156. Ibid., 185, 147, 199.

157. Ibid., 106, 195.

158. Ayr Burgh Accts, 93, 100, 102.

for protection against 'the theifis'* Peebles bought a cutthroat in 1558. In 1572 there were guns in the East Port looked after by Adam Hog and in 1625 two guns in the steeple.¹⁵⁹ In Perth the artillery was looked after by John Smith blacksmith, made burgess in 1572 on condition that he did so.¹⁶⁰

Nevertheless the impression is given that most towns of any size or importance had guns which could form a significant element in any war. Like the nobles the burgesses were mostly reluctant to venture their guns furth of their towns in national enterprises, but were prepared on occasion to lend their guns out, like Edinburgh, to Kirkcaldy of Grange in 1567 or Aberdeen to the Earl of Bothwell in 1539.¹⁶¹

GUNS ON SHIPS

Another large body of guns in Scotland must have belonged to the merchants who traded abroad and been distributed amongst their ships. The early history of Scottish ships has still, unfortunately, to be written, and here it will only be possible to give a rather sketchy introduction to the use of guns on them, starting with the royal ships. James III showed some interest in ships as did his son, James IV, although his ambitions of forming a fleet for a new crusade against the Turks are now better remembered. Although his ships were used in warfare they were essentially merchantmen conforming in design to those plying between the major ports of North-west Europe, and were hired out to merchants.¹⁶²

In the right hands, however, they could be a formidable weapon as demonstrated in 1489 and 1490 by Sir Andrew Wood of Largo. In the

159. Edinburgh Burgh Recs, iii, 275; Peebles Burgh Recs, 251, 337, 367.

160. C.A. Hunt, The Perth Hammermen Book 1518-68 (Perth, 1889), p.cxxn.

161. Edinburgh Burgh Recs, iii, 240; Aberdeen Counc. Reg., 166.

162. TA, i, 217.

* Jedburgh lost seven guns to the English when the town was sacked in 1544. ('The Late Expedition In Scotlande', in Dalyell, Fragments, 13-14).

summer of 1489 Sir Andrew with the royal ships the Yellow Carvel and the Flower defeated an English flotilla of five heavily-armed ships which had been preying on Scottish shipping in the Firth of Forth. In the following year he defeated another force of three English ships lying in wait for him off the Isle of May. Pitscottie is our main source for both incidents but, as noted by Mackie,¹⁶³ there is a certain amount of contemporary documentation that confirms Scottish success in naval encounters in these years. Guns played an important part in these battles and the Scottish ships are said to have been well armed with artillery, along with crossbows, pots of lime and fire-balls.¹⁶⁴

In 1493 and the following year James used his ships to good effect in expeditions in the West to overawe the Islesmen, and in 1502 a small fleet of three or four ships was sent to the Baltic to aid the Danes against the Swedes. His ships, however, were probably of no great size, not even the Yellow Carvel or Flower which may have been no more than sixty to seventy tons each with lengths of seventy to eighty feet overall.

In 1502 work was commenced at Leith on a great ship, almost certainly that afterwards known as the Margaret in honour of James's wife. She was built under the direction of two French ship-wrights, John Lorans and Jennen Diew.¹⁶⁵ The ship was undoubtedly a carrack, a broad, sturdy type of ship with high castles at stern and bow. She had three masts with merses (fighting tops) and was armed with a bombard, four falcons, twenty-one small guns, nine crossbows, sixty

163. R.L. Mackie, King James IV of Scotland (Edinburgh, 1958), 63-65.

164. Pitscottie, Historie, i, 229.

165. TA, ii, 281, 282.

spears and armour for her sailors.¹⁶⁶ When she sailed with the rest of the fleet in 1513 she had a crew of 100 men plus another five gunners.¹⁶⁷

An even greater ship, the Michael, was begun soon after the completion of the Margaret, perhaps in 1507, under the supervision of another French shipwright, Jacques Terrell, at James's new naval base at Newhaven near Leith on the Firth of Forth. She was not actually launched until October 1511.¹⁶⁸ Pitscottie, who claimed to have as his authorities Sir Andrew Wood the Michael's quarter master and Robert Barton her master skipper, gives the most complete account of the ship. He says she

'was the greattest scheip and maist of strenth that ewer saillit in Ingland or France. For this scheip was of so greit statur and tuik so mekill timber that scho waistit all the wodis in Fyfe except Falkland wode, by all the tymmer that was gottin out of Noraway. Scho was so strang and wyde of length and breid that all the wryghtis of Scottland yhe and money wther strangeris was at hir devyse be the Kingis commandement quho wrought werie bessielie on hir, bot it was yheir and day or scho was compleit.

To wit scho was xij scoir of futtis of length and XXXV futte withtin the wallis; scho was ten fute thick in the waill, cuttit jeastis of aik witht hir wallis and burdis on ewerie syde sa stark and thik that na canon could gang throw hir. This great schipe cummerit Scottland to get hir to the sie; ffrome tyme scho was aflott and all hir mastis and

166. Ibid., iii, 90, 142.

167. Ibid., iv, 505-7.

168. Ibid., iv, 313.

sailli's compleit, witht towis and ankeris effeirand thairto
scho was comptit to the king to be XXX thowsand pund of expenssis
by hir artaillye qwhilk was werie great and costlie to the king
by all the laiff of hir order. To wit, scho buire mony cannons
sex on everie syde witht thrie great basselis, tua behind in hir
dock and ane befoir, witht iij^c schott of small artaillyhie,
that is to say mayan and batterit facouns and quarter fallcouns,
slingis, pestelend serpitantis and doubill doggis witht hagbut
and culvering, corsebowis and handbowis. Scho had iij^c
marienaris to saill hir, sex scoir of gounnaris to wse hir
artaillye ffor this scho had ane thowsand men of weir by hir
captans skipiris and quarter maisteris.¹⁶⁹

It is difficult to distinguish fact from fiction in Pitscottie's
account but there may be more of the former than might at first be
thought. That the Michael was big cannot be doubted and she was
certainly amongst the largest ships afloat in her day. Contemporary
references to her outfitting in 1513 indicate that she had a crew
of 293 men plus seven (other) gunners and officers and nine years
later a Scottish sea captain interrogated by the English described her
as a ship of 1000 tons.¹⁷⁰ Pitscottie's length for her of 240 feet
is therefore perhaps not unreasonable. Nothing else is reliably
known about her size or manning which is of much significance, other
than that James boasted to the English ambassador Dr West that she
#/ fired sixteen large guns aside.¹⁷¹ There is no good authority for

169. Pitscottie, Historie, i, 251-2.

170. TA, iv, 502-5, 507; G.R. Elton, 'Anglo-French relations in 1522:
A Scottish Prisoner of War and his interrogation', Eng. Hist. Rev.,
(1963), 314. A letter sent to Venice in 1513 also seems to indicate
she was 1,000 tons. Henry VIII. Letters & Papers, I, ii, no. 2204.

171. James IV Letters, 321.

the detailed reconstruction of her with four masts in the Royal Scottish Museum and in fact, a three masted model might be preferred since such is shown on the pattern angel of the end of James's reign. This coin has the figure of St Michael on its obverse and the suggestion that the ship on the reverse is the Michael is too difficult to resist.¹⁷²

The Michael and the Margaret were the two largest and best armed of the royal fleet gathered together in 1513 but it is clear that the more successful merchants of the realm also aspired to large and heavily gunned ships, some of which made up the fleet which sailed to France under royal colours. Indeed in an age when piracy and privateering were endemic heavily armed ships were a necessity for the successful merchant, and Leith could boast of being the home port of some of the most redoubtable sea-captains of the time, not only Sir Andrew Wood but the Bartons, particularly Robert and Andrew, and David Falconer.¹⁷³ In a famous encounter between the Bartons and two English ships under the command of Sir Edmund Howard off the South Downs in 1511 the Bartons' own ship, the Lion, under the command of Andrew Barton is said to have been armed with thirty-six guns, while the Jenny Pirwin (the Bark of Scotland), belonging to the king, which sailed in company, is said to have had thirty guns.¹⁷⁴

172. The coin is in the British Museum. It is illustrated by I.H. Stewart, The Scottish Coinage (London, 1955), pl. 8, 136. See also J.D.A. Thomson, 'Two Ships from Sixteenth Century Coins', Mariner's Mirror, XXXIX, i (Feb., 1953), 57-58 and pl. 4.

173. For an account of Robert Barton of Over Barnton in particular with information on other Scottish seamen and events at sea, see W.S. Reid, Skipper From Leith (Philadelphia, 1962).

174. So says the 'The Ballad of Sir Andrew Barton', printed in T. Percy, Reliques of Ancient English Poetry (London, 1765), ii, 177-93. In its present form it seems to date to the 17th century. Accounts of this incident are to be found principally in Buchanan, History, ii, 247-8 and Hall's Chronicle (London, 1809), 525.

Robert Barton and David Falconer were powerful enough for their aid to be sought in 1525 by Christian II of Denmark - and it was duly given.¹⁷⁵ On the other hand there must have been many merchants or owners of ships with few guns or none at all. In 1540 the town council of Aberdeen concerned itself with the arming of a ship belonging to Robert Colt and Thomas Brechin as a ship of war, presumably because the owners could not supply munitions of their own, and in an undated list, apparently belonging to the end of the century, the names of ten Scottish captains are given, four with ships of twenty-one, fourteen, twelve and ten guns, the rest with none.¹⁷⁶

175. Die Hanserecesse, ed. D. Schafer et al. (Leipzig, 1913), ser. 3, ix, no 82, quoted by Reid, Skipper From Leith, 196-7.
176. Aberdeen Counc. Reg., 169; SRO E90/20.

INTRODUCTION

In Scotland as elsewhere artillery became the concern of the government alone at national level. There were historical and financial reasons for this state of affairs which was perhaps not always intended by those in power. After all James II and III thought their nobles should supply 'cartis of weir' for royal campaigns and parliament ordered 'certane of the gret baronys' to supply them in 1455 and twice in the early 1470s.¹ The barons certainly had an obligation to fight for the king but while laws might be promulgated as to what weapons and armour they should bear the provision of artillery was regarded as a totally different matter - an unwarranted and unacceptable extension to the theory of personal service in defence of the realm. It is important to appreciate just how Scotland's army was made up and how the gunnery establishment, fully developed in the sixteenth century, related to and differed from it. In the gunnery establishment we can see not just an early use of professionals in warfare but the fore-runner of the permanent standing armies of more recent times. It is therefore all the more vital to give a fairly full outline of the extent and organisation of the military might of the country on to which the establishment was grafted.

By the sixteenth century Scottish military capability included the host, officers of the crown with appointments which included military responsibilities, mercenaries, the royal fortresses and ships,

1. APS, ii, 45, 99-100, 105.

as well as artillery and munition works. Administrative procedures to organise and co-ordinate the activities of these were not lacking, and despite the failure of certain attempts at innovation, seem to have worked successfully within the limits in which they were conceived.

The military system, in that it depended first and foremost on the premise that it was the duty of the population to prepare and equip itself for personal service in defence of the realm, had its origins in the dawn of Scotland's emergence as a state, and while other institutions and elements of defence were added through time nothing altered the basic importance of this assumption, which, far from being challenged by the people, was treated as a right not to be given up lightly. Leslie expressed this sentiment beautifully in his explanation of why the nobility would not suffer a tax to be raised in 1556 for the hiring of an army of mercenaries to defend the borders. Not only was it the custom but also the law that they should defend the king's right. The kings were styled 'of Scots', not 'of Scotland' because of their trust in their people. Hired soldiers were not so zealous in fighting for liberty or able with such courage to defend their wives and children, goods and dwellings. Moreover, the realm was not rich enough to maintain 'ydle men', as many as were thought necessary to defend the borders and make raids against the English.²

The system by the sixteenth century was thus protected by tradition from sudden or drastic changes in government policy. Equally important as a constraint and conditioner was the natural poverty of the country and the system was appropriately one that involved as little outlay of money as possible for everyone concerned. But because the people served personally and the government did not pay

2. Dalrymple, Historie, ii, 362-3.

for this service, the army could impose its will on its leaders in no uncertain manner. It could refuse to cross into England as under Albany in 1523 or it could refuse to give support to an unpopular leader like Oliver Sinclair in 1542. The sixteenth century was a period of invasion and reformation and strong central government was often lacking. There is however, little evidence that the methods for supplying an army ever broke down completely or that large sections or groups defied their summons to the host,³ except during the English occupation of some of the southern regions of the country in the mid-sixteenth century. Merriman has reckoned that more than 1,300 Scots were found guilty of remaining away from the armies raised to fight both the internal revolts and the English during the 'Rough Wooing',⁴ but of these many may have had little choice if they wished to preserve their lives and lands from the enemy. Letters of exemption from military service could be obtained, normally on the grounds of infirmity, but relatively few of these are recorded - for instance, only about forty in the years from 1548 to 1556 and about fifty in the period from 1556 to 1565. Besides, the condition was often attached to such exemptions that the exempted individual provide a sufficient substitute.⁵

THE HOST

The host was the backbone of the Scottish army. Traditionally

3. There was an understandable reluctance to attend the second muster of 1523. See ADCP, 187.

4. M.H. Merriman, 'The Assured Scots', SHR, xlvii (1968), 17.

5. G. Donaldson, 'Letters of Exemption from Military Service', SHR, xxxi (1952), 97-98; Review of RSS, iv, *ibid.*, xxxiii (1954), 42; and see also introduction to RSS, iii, p. xiii, and vol. v, p. xviii.

it consisted of the entire male population of the country between the ages of sixty and sixteen and could be called out to serve for a maximum of forty days in any one year. It is apparent for various reasons that in fact in the fifteenth and sixteenth centuries the host never approached this theoretical maximum nor was it desired. Estimates of the size of the Scottish population in the sixteenth century are little more than guesses and have varied enormously, from about 500,000 by the second half of the century to as high as 1,000,000. A figure of not more than 700,000 is perhaps most likely.⁶ Of this population we might further suppose that considerably less than half would be adult males, given the higher mortality rates general in males as against females. All the same, the size of the host was still far less than the potential suggested even by minimising the population figures.

The size of any army of the period is of course always very difficult to gauge. Human observers are notoriously bad at estimating crowd sizes at the best of times, but historians must always also suspect their chroniclers of deliberately exaggerating or minimising the sizes of armies for partisan reasons. We might note however that the figures we have most reason to think of as exaggerations still fall well short of our own supposed male population - thus Don Pedro de Ayala's figure of 120,000 for the host at the turn of the century and the 100,000 given by an English sources as the size of the army at Flodden.⁷ The

6. The lowest figure is from P. Hume-Brown, Scotland in the time of Queen Mary (London, 1904), 52. The highest figure is taken from table 7 of Lord Cooper, 'The Numbers and the Rise of the Population of Medieval Scotland', SHR, xxvi (1947). The figure accepted by the writer as most likely is Prof. G. Donaldson's in his review of The Age of Plunder, *ibid.*, lvi (1977), 199.

7. P. Hume-Brown, Early Travellers in Scotland (Edinburgh, 1891), 47-48. Trewe Encountre (Proc Soc Antiq Scot., vii, 1866-8, 143).

actual size of the army at Flodden has been variously guessed at by modern historians, but as mustered before the battle was surely no more than the 30,000 men suggested by Mackie⁸ - which represents one of the fullest call-outs achieved for a national campaign.

After Flodden the fullest muster of the sixteenth century is likely to have been that achieved for Pinkie in 1547 and a relatively sober contemporary English account gives it as about 30,400 - 30,000 footmen and 400 horse while a French source makes it from 35,000 to 36,000.⁹ Further figures of relevance here are those given by Leslie for the muster at Soutra in 1542 - 30,000 - and the 25,000 men armed with jacks estimated by the Frenchman de la Brosse as the country's fighting strength in 1543.¹⁰ Another French source of 1558 gives the figures of 4000 or 5000 horse and 20,000 or 25,000 foot.¹¹ Alongside these figures we might also consider those for the army of the Solemn League and Covenant in the middle of the seventeenth century. The Scots agreed with the English Parliament to supply a force of 18,000 foot, 2,000 horse and 1,000 dragoons, with a train of artillery.¹² It might not be unreasonable to assume from this admittedly tenuous evidence that the maximum strength of the Scottish host in the first half of the sixteenth century, in theory at least, was as much as 30,000 but no doubt in practice it was rather less. Even if the host seldom ever much exceeded 20,000 it would have been a good sized army by any European standards of the day, and the Scots were never

8. J.D. Mackie, The English Army at Flodden (Misc. of Scot. Hist. Soc., viii), 47-9.

9. Dalryell, Fragments, 60 (Patten's Expedition).

10. Dalrymple, Historie ii, 255, though twice this number is given in Pitscottie, Historie, i, 400; J. de la Brosse, Account of the Affairs of Scotland (Scot Hist Soc., 1942), 43.

11. Cal. State Papers Scot., i, 205-7.

12. APS, VI, i, 153.

beaten in a major battle because of inferior numbers.

What then was the host composed of if not the greater part of the male population? The answer to this can be got from the instructions issued by the government to the royal officials in the provinces, the various sheriffs, stewards, bailies and provosts, ordering them to convene the men of their own particular jurisdictions 'weill bodin in feir of weir'¹³ for 'wapinschawingis' or to notify them of the times and places of the royal musters. Some typical examples of those to be summoned are:

19 October 1456: 'all maner of men betuix sexti and sextene be redy on thair best wyss to cum to the bordouris for the defence of the lande..... And at na pur man na unbodyn be chargyt to cum to ony radis in Inglande And at ilk man that his gudis extendis to xx^{ti} merkis be bodyn at the best with....(etc)'.¹⁴

28 April 1491: 'ilk gentilman hafand ten pundis worth of land or mare be sufficiently harnest and Anarmit with bassanat Sellat quhyte hat gorgeat or peissane* hale leg harnes Swerd spere and Dager And gentilmen haffand less extent of landis unlandit sall be Armit at thare gudely power... And honest yhemmen hafand sufficient power that likis to be men of Armes sall be harnest sufficiently eftre the discrecioun of the said shereffis or commissaris and all uther yhemmen of the Realme betuix sixteen and sixty sall haf sufficient bowis and schaiffis Swerd buklare† Knyff spere or gud ax in sted of the bow'.¹⁵

13. For the meaning of this term see D. Legge, "'In fere of werre'", SHR, xxxv (1956), 21-25.

14. APS, ii, 45.

15. APS, ii, 226.

*Basinets were helmets, 'white hats' and sallets simpler head pieces more like the helmets worn this century by British soldiers, and gorgets and pisanes were defences for the neck and shoulders.

†Bucklers were circular, wood and leather shields like the targes carried by Highlanders in the 17th and 18th centuries.

31 May 1514: 'al and sindry our liegis betuix sexti and sextene and utheris fensabil men'.¹⁶

10 December 1540: 'every nobill man sic as erle lord knyt and baron and every grett landit man haifand ane hundreth pund of yherlie rent be anarmit in quhite*harnes lyt or hevy as thai pleiss and wapnit efferand to his honour And that all utheris of lower rent and degree in the lowland haif Jak of plait halkrik or brigitanis gorgett or pisane with splintis⁺panss of malze with gluvis of plait or malze And that all utheris our souirane lordis lieges gentillmen unlandit and yhemmen haif Jakkis of plait halkrekis splintis sellat or stele bonet with pysane or gorgett and every man with swerd...'¹⁷

7 September 1571: 'all and sindry erllis lordis baronis landit men and freholdars...alsweill to burgh as to land within regalitie as ryaltie...in thair maist weirlyke and substantial maner with forty days victuales and provisioun efter thair cuming and with palyheonis and cariage to ly on the feildis.'¹⁸

The summons are in some respects vague- 'all and sindry' - but where there is a categorisation of those to attend those of less than yeoman¹⁹ standing are never specifically of necessity included. (By yeomen are meant the tenants holding their farms directly from the landowning classes, or the more prosperous farming folk in general). From a study of the hosts called for in the sixteenth century for

16. Irvine Muns, i, 34-5.

17. APS, ii, 362. For an explanation of these arms and armour see D.H. Caldwell Scottish Arms and Armour (Edinburgh, 1979).

18. Ibid., iii, 70.

19. The term 'yeoman' has not been much used by recent Scottish historians but the writer has adopted it since it is used in official documents and since it is difficult to find a precise, suitable alternative. See W.G. Hoskins, The Age of Plunder (London, 1976), 56-57, for an explanation of what yeomen were in early 16th cent. England.

*i.e. plate armour.

+ Jacks and brigantines were jackets padded with metal plates, splints were plate defences for the arms or legs and halkrigs were sets of back and breast plates together.

helping the government to impose law and order on the borders Rae has suggested that the most detailed and comprehensive formulae used to define those who were to turn out were used when the central power was at its greatest strength, and most able to enforce its proclamations; and vague phraseology was generally used only during periods of unstable government.²⁰ While this can be argued for individual cases a consideration of the overall picture for all hostings, principally those concerned with national defence or raids against the English, suggests that such a correlation is none too close.

It would be too facile to imagine that all the nobles, lairds and yeomen went to the host and the bulk of the population stayed at home. Medieval armies were always accompanied by large non-combatant elements and any wise noble would have left his lands and property in order. Besides, since the summonses are framed in terms of land-holding the commitment to turn out theoretically obliged only the head or representative of each household.

In the burghs the commitment did not just fall on the burgesses but the indwellers as well, as clearly stated in an Act of Parliament of 1491.²¹ The townsmen were linked by the value of their goods to the categories of freeholders. Thus in 1540 parliament enacted that those with £100 worth of gear should be provided with plate armour like the nobles and the landed gentry with £100 of yearly rent while others with less goods but who could expend £10 (yearly) should be armed like the lesser gentry and yeomen with jacks, steel-bonnets, swords, etc.²² Edinburgh by far the largest town in the country had over 1,200 house-

20. T. Rae, The Administration of the Scottish Frontier (Edinburgh, 1966), 136.

21. APS, ii, 226.

22. Ibid., ii, 362.

holders by the 1590s who paid tax²³ and the theoretical number of fencible men in the burgh must have been more rather than less than this, but by this time the burghs preferred to commute their service in person to money payments. An actual muster roll survives for Edinburgh, dated 1558, and lists 736 merchants ^{and their servants} ~~from~~ three of the four quarters and 717 masters and servants of the crafts,²⁴ a total of 1,453 out of a total population which may then have still been less than 10,000 but twice as large as the next most important town Dundee.²⁵ Even smaller were burghs like Stirling where only about 340 adult male householders were listed in 1550, Peebles with a muster roll of 160 in 1572 and Lanark with a muster roll of 154 in 1581.²⁶

A military report on Scotland's West March, drawn up c. 1563-6 by an English officer, distinguishes between the complete reserves which could be gathered for a hosting and the effective number of able bodied men. It should however be remembered that the Marches do not necessarily conform in this respect to the more settled parts of the country. According to the report the region fielded 1,519 (actually 1,539) horsemen but contained upwards of 7,000 men of whom 6,000 and odds had submitted to Lord Wharton during his wardency of the English West March (i.e. 'Assured Scots'). The writer of the report reckoned that even though the region were invaded by the English no more men would oppose them than those listed.²⁷

23. This is based on a study of the surviving stent tolls of the burgh, particularly that of 7 July 1592. EBA Register of Extents, i (mostly unpaginated).

24. Edinburgh Burgh Recs., iii, 22-25.

25. For burgh population in general see S.G.E. Lythe & J. Butt, An Economic History of Scotland 1100-1939 (Glasgow & London, 1975), 5-7.

26. Stirling Recs., i, 59; Peebles Recs., 339-40; Lythe & Butt, An Economic History, 5.

27. R.B. Armstrong, The History of Liddesdale (Edinburgh, 1883), cvi-cxvi.

The number of light horsemen given in this document as the strength of the district of Annandale is 331 which is only about a quarter of the 1,312 men listed in seventeen contingents in the return for the wapinschawing of 1541.²⁸ Now it seems unlikely that there was any drastic change in the population of the district between 1541 and the 1560s and so we must assume that this discrepancy in the figures must be in the differing nature of what is being described on the two separate occasions. In the earlier case the complete military turn out of Annandale is ostensibly listed, in the second only the elite, the light horsemen. The relationship between these two figures is similar to that between the 1,539 horsemen of the whole West March and the upwards of 7,000 men said to be in the district and these figures, of course, are considerably less than what the adult male population would have been. It was undoubtedly intended as the March's military strength as displayed at wapinschawings. The English were primarily concerned with the strength of force which could be quickly brought against an invading army or which could form an effective raiding party. The full strength as displayed at wapinschawings was only of real relevance when it came to a government ordained muster.

Another military report on a region of Scotland, this time the Western Isles, including Arran and Bute, survives from the period 1577-1595 and may have been drawn up for the benefit of James VI. Again the area can hardly be considered as typical of the greater part of Scotland but it is of interest in not only giving the total fighting force of the Isles, island by island, but also in assessing the effect of this on the community. It sums up:

28. Hist. MSS. Comm., 15th report (1897), 66, no 135 (Duke of Buccleuch MSS, Drumlanrig Castle).

'The common accustomat of raising of thair men is 6000 men, quhairof the 3d pairt extending to 2000 men aucht and sould be cled with actoumes and haberchounis, and knapshal bannetts, as thair lawis beir. And in raising or furthbringing of thair men ony time of yeir to quhatsumevir cuntrie or weiris, na labouris of the ground are permittit to steir furth of the cuntrie quhatevir thair maister have ado, except only gentlemen quhilk labouris not, that the labour belonging to the teiling of the ground and wyning of thair corns may not be left undone, albeit thai byde furth ane haill zeir, as offtimes it happins quhen ony of their particular Ilands hes to do with Irland or neighbours, that the haill cuntriemen bides furth watching thair enemies ane zeir, half an zeir, or thairby, as thai please. Not the les the ground is not the war labourit, nor the occupiers thairof are nather molestit, requirit, troublit, nor permittit to gang furth of thair awin cuntrie and Ile quhair the dwell'.²⁹

The Islands regularly supplied mercenary forces for service in Ireland at this time and society was obviously powerfully geared towards producing and maintaining an elite force of warriors, but a similar concern for leaving the land properly worked must have operated in the rest of the country.

At the very end of the sixteenth century the Privy Council gives fuller guidance on the theoretical commitment of land-holders to turn out for the host. An act was drawn up in February 1597/8 with the intention of righting the slackness anent arming for and attending wapinschawings and musters, by expounding in clear terms what was expected of each rank in the country. Each earl was to have a corslet

29. W.F. Skene, Celtic Scotland (Edinburgh, 1880), iii, 428-40.

of proof, head piece, vambrases and a Spanish pike with similar stands of armour for twenty of his household; each Lord likewise with armour for ten; each baron likewise with a stand of armour for every fifteen chalders of victual he may spend, and each baron or gentleman whose living does not depend on victual to have a stand for every 1,000 merks of his yearly rent. Every gentleman with a yearly rent of 300 merks, in victual or money was to be furnished with a light corslet and head piece and a pike or a musket, and burgesses with £500 of free gear had to have a light corslet and head piece, and a pike and halbert or a two handed sword or a musket.³⁰ A muster on these lines would bring forth about 800 men from the contingents of the earls and barons alone,³¹ but it is difficult to gauge how many for the whole country.

Unfortunately, very few of the returns the sheriffs and other
of
officers were to make/their wapinschawings seem to have survived. One for the bailiary of Cuninghame held by the Earl of Eglinton in 1532 produces the startling result that of seventy one contingents, seven were adjudged sufficiently armed, sixteen were insufficiently armed and the remaining forty eight were absent.³² The deadly feud then raging between the two main families of the district, the Montgomeries and the Cunninghams, may go a long way to explaining the poor turn out. Neither the total strength of the bailiary or of each contingent is given, the entries being given as the laird of X and his folk and/or his tenants. Indeed, this document may owe its survival in the Earl of Eglinton's papers to its unsatisfactory nature.

30. RPC, v, 446-7.

31. See C. Rogers, Estimate of the Scottish Nobility (Grampian Club, 1873), 77-80.

32. W. Fraser, Memorials of the Montgomeries (Edinburgh, 1859), ii, 118-20.

The king was the commander-in-chief of all the armed forces and was expected to lead the host in person in battle. The death of James IV in the front line of battle at Flodden no doubt brought home the foolishness of practising this policy too literally. James V, Mary and James VI all took the field but there was a greater tendency to delegate authority to lieutenants and in actual fact many of the more important military expeditions of the sixteenth century were conducted either during minorities or when the monarch was an absentee, and in these cases the responsibility of organising and leading the host fell on the regents who, with the exception of Mary of Guise, were men of whom this was expected.

The only other royal officials of importance in this sphere, apart from the lieutenants, the keepers of royal castles and the sheriffs, were the wardens of the Marches of which there were normally three and a Keeper of Liddesdale who was of a similar status. The wardens acted as a frontline of defence and could call out all the men of the Marches who were liable for military service. They could base defence and counter-attack on border strongholds held by themselves or other border nobles, sometimes at royal expense.³³ In periods of war lieutenants of the Marches could be appointed to whom the wardens were subordinate and who could better control the military resources of the whole borders and other lieutenants could be appointed for other areas when occasion demanded. Thus the Earl of Lennox was made lieutenant in the West in 1565 and Atholl lieutenant in the North.³⁴ Argyll and

33. The military activities of the wardens are more fully described by Rae, Scottish Frontier, 43-7.

34. RPC, i, 357, 366.

Huntly both held lieutenancies in their parts of the country in 1552³⁵ and these probably equated with the quarters into which the country could be divided for raising men of war.

Grant has recently shown that the earls' responsibility for calling out and leading armies of men from their own earldoms was obsolescent by the end of the fourteenth century.³⁶ It was the duty of the sheriffs and other royal officials (bailies, stewards) to inspect the fencible men and their equipment at wapinschawings³⁷ and to publicise the times and places of musters, but they did not lead the local contingents in their capacity as royal officials. Leadership at this level was provided spontaneously by the nobility whether earls or not, and it is likely that degree of kinship and bonds of manrent were more significant in deciding who went with who rather than strictly geographical considerations. The earls and other great lay lords still expected, of course, to play an important role in the conduct of military affairs and the leaders of the battles in the army were mostly earls and great lords: at Sauchieburn, the Earls of Huntly, Atholl, Monteith and Crawford, and the Lords Erskine, Graham, Lindsay and Ruthven;³⁸ at Flodden, the Earls of Argyll, Lennox, Huntly, Crawford, Montrose and Lord Home;³⁹ at Pinkie, the Earls of Angus, Arran and Huntly.⁴⁰ Some, like Angus, evidently considered they should hold certain military appointments by right - in his case the leading of the vanguard in battle.⁴¹

35. Ibid., i, 136; Scots Corresp. of Mary of Lorraine (Scot. Hist. Soc. 3rd series, X, 1927), 363.

36. A. Grant, 'The Development of the Scottish peerage', SHR, lvii (1978), 5.

37. At first 4 times a year: APS, ii, 48 (1456/7); ibid., ii, 226 (1491); later twice a year, ibid., ii, 345 (1535), etc.

38. Pitscottie, Historie, i, 206.

39. Dalrymple, Historie, ii, 145.

40. Dalrymple, Fragments, 60 (Patten's Expedition).

41. APS, iii, 588.

The host was split up into smaller units to make it more manageable in battle. On the march it might take the form of a vanguard, main battle and rearguard but when arrayed for battle, the different battles would lie in line abreast. At Sauchieburn in 1488 Pitscottie describes how James III approached, his main battle shielded on all sides with vanguard and rearguard and wings placed laterally while his opponents approached with their three battles one behind the other.⁴² At Flodden the Scots formed in five main battles side by side, a bow shot apart⁴³ and at Pinkie three with two smaller wings of cavalry and Highland archers.⁴⁴ The details for the division of the host mustered on the Castlehill of Edinburgh on 10 October 1565 into a vanguard, rearguard and battle with the commanders and chiefmen in each one are preserved in the records of the Privy Council.⁴⁵

This division was determined on the geographical regions from which the chief men and their followings came and we can little doubt that this type of grouping was a phenomenon of all military campaigns of the period. We turn again to Pitscottie's description of James III's army at Sauchieburn⁴⁶ for a good example of this. The vanguard consisted of men from the Highland region under the Earls of Huntly and Atholl; the rearguard of men from the west and Stirlingshire under the Earl of Monteith and Lords Erskine and Graham; the right wing of men from Fife and Angus under the Earl of Crawford and Lord Lindsay, and the left wing

42. Pitscottie, Historie, i, 206.

43. There are various accounts of the Scottish disposition at Flodden, to some extent contradictory. This is the interpretation considered best by the writer and that given in the official English report in Henry VIII Letters & Papers, i, 667, No 4441. There is no evidence that each battle was divided into two brigades as stated by C. Oman A History of the Art of War in the XVI Century (London 1937), 311.

44. Dalyell, Fragments, 60.

45. RPC, i, 379.

46. See also A. Graham, 'The Battle of "Sauchieburn"', SHR, xxxix (1960), 89-97.

of men from Strathearn and Stormont under Lord Ruthven. The main battle consisted of the contingents from the burghs under the king himself⁴⁷ - presumably the burgesses identified better with each other than with the men from the hinterlands surrounding their burghs.

It would also have been desirable - indeed necessary - to divide the host into more manageable units within the battles but it is doubtful whether the Scottish host was effectively organised into several small divisions for much of the period under consideration. An unpublished statute on the Marches drawn up for the parliament of 6 March, 1429/30 ordains that:

'ilk paroching within the wardainry sall hafe foure ventenoris of the mast worthy men duelland within the paroching the quhilk the lafe of the parochin sall obey and that ilk ventenouris sall soumond thaim to the wapinschawin and alsua to the ost quhen the lufetenand sall ride in England.'⁴⁸

'Ventenouris' were leaders of twenty men (Latin, vintenarius) and the term obviously equates with the word captain which was invariably used at a later date. The presence of the word in a Scottish document is an isolated occurrence, as indeed is the military system outlined. If it was functioning on the Marches throughout the fifteenth century, or was even prevalent elsewhere, one might have expected that more references to ventenouris would have survived.

In July 1512 Andrew Forman, James IV's secretary, wrote to Louis XII of France telling him that if he wanted to carry out his intention of starting a good big war in Scotland he would have to send money, artillery and gunpowder and also a small number of men to show the Scots how to form

47. Pitscottie, Historie, i, 206.

48. Lambeth MS. 167. I am most grateful to Miss I. O'Brien of Glasgow University for not only informing me of this document but also for supplying me with a transcript of it.

in battle order and how to besiege fortified places.⁴⁹ French advisers do seem to have been sent to help organise the Flodden army⁵⁰ and the need for them suggests that the Scots were lacking in any significant command structure in their host at this time.

The detailed procedures for the call-out of the host in the summer of 1523 to deal with the English invasion under Norfolk allow us another glimpse of attempts to form more manageable units much smaller than the battles.⁵¹ Perhaps they are outlined so fully and clearly because they mark a new departure in the field of army organisation at this time.

In the first place the sheriffdom of Edinburgh principal and the constabulary of Haddington were to be divided into four parts under four captains: the Earl of Morton, Lord Borthwick, Lord Hay of Yester and the Master of Hailes. These captains were to appoint at least one captain underneath them from each parish under their control so that they would be responsible for leading out all the fencible men of their parish, both foot and horse. The burgh of Edinburgh was to be divided into four amongst its four bailies and each quarter was to be further subdivided among four 'persons' who were to lead the men therein. Leith was to have four captains and the barony of Broughton (belonging to Holyrood Abbey) two.

In the sheriffdoms of Peebles, Linlithgow and the Overward of Lanark a captain was to be chosen from each parish, in the case of Peebles by the sheriff, Lord Hay of Yester, in the latter two cases by the Earl of Arran who was one of the regents. In the rest of the country 'every man of gud' that had in company with him more than twenty

49. James IV Letters, 254.

50. W.M. Mackenzie, The Secret of Flodden (Edinburgh 1931) 71, 104.

51. ADCP, 169ff.

men was to choose a captain for each company of that number that he might be responsible for the good behaviour of his fellows.

It is notable that it is only in those parts of the country in immediate danger from English invasion and/or controlled closely by the central government that captains were to be chosen on a parish by parish basis, the formation of companies otherwise being left to those nobles and lairds with followings of more than twenty. This may have been a compromise designed not to upset the landed gentry and their privileges but in 1540 legislation went the full way and demanded the choosing of captains at the next wapinschawings by the officers responsible for these and commissaries deputed to them by the king and at least one man from each parish was to be appointed to act as captain to its company of men.⁵²

It may be that this attempt to organise the host from the bottom up was intended by the government to lessen its reliance on the great men to come to the host with their followings. Since the sheriffs did not lead the local contingents in their capacity as royal officials, the government had to depend on the leadership and organisation provided by the nobility, which it had little chance of modifying and adapting to its own particular needs. If this attempt to produce captains of companies on a parochial basis was indeed an attempt to gain greater control of the host we have no evidence that it was a marked success. Concern was still being expressed in November 1546 about the lack of organisation in the host when the Privy Council decided that they should not only seek supplies of pikes, artillery, shot and powder from the French king as aid against the English but also twenty-four experienced men, experts in war, to instruct them in the drawing up of battles and

52. APS, ii, 362.

in siege work.⁵³ Later royal documents speak in terms of the calling out of the nobility with their followings.

Lack of order in the host would have been all the more evident in comparison with the well drilled bands of mercenaries then in use. James VI showed some interest in the ordering of his host when setting off on his expedition against the catholic lords of the North East in 1584, perhaps not altogether unconnected with a concern for his own personal safety and the convenience of his company of 'special noblemen'. Those coming to the host were ordered to keep to their companies of horse and foot, marching in the field in the order appointed to them under the pain of present death.⁵⁴ But as late as 1599 the difficulties of ordering undisciplined part-time soldiers had understandably still not been solved. An act of parliament of that year is worth quoting extensively as a demonstration of the contemporary understanding of the problem:

'The Kingis Majestie his nobilitie counsall and estaittis presentlie convenit understanding perfytelie that the grit skayth and overthrow quhilk this realme hes sustenit in tyme bygone be the loss of samony battillis Hes proceidit from the laik of discipline militarie and upon the trust of ane unskilful and unarmed multitude quhais disordour and naikednes maid thame a pray to thair enemeis And seing the povertie of the crowne and countrey is not able to sustene wageit men under commandment and that na interpryse nor worthie mulitarie actioun can be undertane and effectuall be a confusit and disorderit multitude And the saidis estaittis finding it alvyis maist

53. *RPC*, i, 355.

54. *Ibid.*, iii, 658.

necessar and expedient for the honour of the countrey and
suirtie of his majestie quhen he salhappin to haif ado in the
challenge of his birthrycht That his majestie salbe assurit
of sum speciall number in ordour and underdiscipline and
commandement quha salbe reddy to be imployit in service as
the occasion and necessitie sall requyre'.⁵⁵

Government administration was, however, capable of organising
various local contingents to muster on different days at different places
in the pursuance of an overall objective. A particularly elaborate
example of this is the arrangements by Mary and Darnley to gather a
force to pursue Moray and his associates in August 1565. The various
elements of the royal army were allotted times and places to join the
host on its proposed route as follows:-

Edinburgh, Saturday evening 26 August: sherifffdom of Edinburgh
principal and constabulary of Haddington.

Almondwater, 12 am Sunday 27 August: Linlithgow

Falkirk, 6 am Monday 28 August: Stirlingshire

Stirling, Monday evening, 28 August: Fife, Kinross, Clackmannanshire

Kirkintilloch, 9 am Tuesday 29 August: Lanarkshire

Glasgow, Tuesday evening 29 August: Dunbarton and Renfrewshire

Irvine, Wednesday 30 August: Ayr, Wigton, Dumfries, Kirkcudbright.⁵⁶

It would be interesting to know how successful this staggered muster was!

Royal administration was also capable of controlling the size of
hosts and the frequency of service. One of the biggest drawbacks to a
reliance on the host was that the maximum service due from it in any
one year was traditionally only forty days but many royal expeditions did

55. APS, iv, 188.

56. RPC, i, 355.

not require the full weight of numbers consequent on a general muster while longer periods of time were often desirable. For the siege of Dumbarton Castle in 1489 James IV contrived to have his levies of men from different regions of the country attend severally, turn about,⁵⁷ and this sort of system was regularised by dividing the country into quarters which could be called out in turn - a step apparently first devised by Albany in 1515,⁵⁸ and this was certainly an administrative procedure that was used and worked on future occasions. It was obviously a procedure of use when initiating the siege of a castle, as St Andrews in 1546 and Hamilton and Cragneithan in 1579.⁵⁹ It was not used by James V at the siege of Tantallon Castle in 1528 and this in some measure accounts for the failure of that operation.

The host or parts thereof could be summoned for national defence and for restoring order and suppressing uprisings internally. It is not so clear whether the crown claimed it had an automatic right to demand foreign service or whether the lieges perceived that it had. James IV was able to lead large expeditions into England on three occasions but Albany and James V had notable failures to do so in 1522, 1523 and 1542, and Mary of Guise's attempt to raise a force to go to France completely collapsed. This intransigence on the part of the lieges can be explained by fear of a repetition of Flodden or by the lack of foreseeable gain likely to accrue to the Scots, but a feeling that such invasions were beyond the normal requirements of national defence may also have been prevalent.

57. TA, i, 109-11, 115.

58. ADCP, 59-60. Cf the evidence for provincial armies in the 12th and 13th centuries adduced by Prof. A.A.M. Duncan, Scotland, The Making of the Kingdom (Edinburgh, 1975), 378-9.

59. RPC, i, 38; iii, 153.

An English intelligence report describes the army of the Regent Moray, raised from the Mearns, Angus, Fife, the Merse, Lothian, Kyle and Carrick for a space of fifteen days, from 10 to 25 June 1568. It is said to have consisted of 4,000 horsemen in armour, 1,000 harquebusiers and halbertmen, 4,000 carriage horses with victual and 3,000 boys and young men to look after the horses. When it was on the march a cornet of 200 men scoured the fields a mile in advance, then followed the vanguard of 1,000 men or more, then the carriage and the regent with the main part of the army followed by another cornet and a company. On each side of the army there was also a cornet.⁶⁰

This account is especially of interest in giving the proportion of combatants to non-combatants, viz. 5,000 to 3,000, and we have no particular reason to think that this ratio might be atypical. Each man had to supply his own equipment and food as well as fodder for his horse, and obviously could not carry it all on his own back when on the march. Besides it must be assumed that the men marched ready with their armour and weapons. There would thus have been a separate baggage train though how organised we do not know as references to it at the best tend to be incidental. Probably most of the supplies and equipment not carried by the combatants personally were taken on pack horses led by youths and other servants. An act of 1540 ordered that the army was to be 'unhorsit' except for great barons and for the carriage.⁶¹ While mounted men could carry their entire equipment and food, the man on foot definitely could not. It may be that the nobles

60. Bannatyne Misc., i, 19-30.

61. APS, ii, 362.

assumed responsibility for organising the carriage of their retainers' and followers' provisions.

The summons to hosts sometimes indicate that the fencibles were to attend the musters with victuals for so many days, and in most cases it seems that the number of days specified was the length of service required. This must certainly have been the case in 1549 when forty days victuals were requested.⁶² Jehan Le Bel gives a neat picture of the fast moving Scots army in 1327, relying on living off the land for the most part, each man carrying with him only a small bag of oatmeal and a metal plate for making bannocks on. The meat from cattle was cooked in the skins of the beasts themselves.⁶³ This was still the practice of the Highland contingents in the host in the sixteenth century as noted by an Englishman in 1542: 'The maner of the saide Yrishe men is when they com to theire logenges theye kill theire oxen and kyne and take the paunche and set it upon stakes and therin boile the fleshe'.⁶⁴

There seems to have been no question of the Scottish army of the end of the Middle Ages living off the country, either in Scotland or in England. Statutes were passed at various times forbidding those going to and from the army in Scotland from stealing or taking goods without paying.⁶⁵ The government also made provisions for food to be sold for ready money. For instance, in July 1545 the inhabitants of burghs in Fife and the North East were charged to supply food for the use of the host convened on Roslin Moor, and in June 1572 the inhabitants of Glasgow were commanded to follow the army with supplies of bread and ale and

62. Ibid., ii, 600.

63. Les Vrayes Chroniques de Messire Jehan Le Bel, ed. M.L. Polain (Brussels, 1863), i, 48.

64. Hamilton Papers, i, p. lxxiii.

65. E.g. ADCP, 185.

fodder for sale.⁶⁶ Our most complete evidence for such arrangements, however, is for the campaigning in 1523 when they were recorded in meticulous detail in the Acts of the Lords of Council in Public Affairs. A committee of six was delegated at the beginning of August to organise the furnishing of victuals, bullets (i.e. cannon balls) and other necessities to the army. When summons were finally issued on 19 September for a muster at Threipwodrig between Lauder and Stow from 22 September, it was agreed that letters should also be written to the chamberlains of the royal lands in Fife, Strathearn and elsewhere charging them to furnish and make ready certain horses to carry victuals to the army - 'ilkane for the part eftir the auld rait and consuetude and as thai sall be chargeit be the comptrollaris wryting thereapoun'.⁶⁷

With the return of the Governor Albany from France on 20 September with money, men and munitions the host was called out again, this time to four different muster points on 19 October. All the burghs were excused service in the army on condition that they provided on their own expence 12,000 ^{ve}loaves of bread, plus ale, meat, fish, butter, cheese, etc., 1,500 carriage horse with barrels for wine and ale, creels and long saddles, and 400 pioneers. All the provisions were to be sold to the army 'on ane competent price'. At the same time various of the royal chamberlains, bailies and stewards were to be written to to provide carriage horses along with carriage men armed with halberts or a/ Leith axes, and the royal tenants on the estates were to be called out to await on the carriage and the rest of the army. Certain of the more important burghs were to supply tents for the carriage men and army.

The four bailies of Edinburgh and twelve other commissars undertook to supply the army daily with 12,000 loaves of bread and other provisions

66. TA, viii, 395; RPC, ii, 151.

67. ADCP, 176 ff.

and they were given powers to command and charge all the lieges to bring foodstuffs to Edinburgh to be bought for that purpose and to buy all the victuals landed at Leith. The malt makers of Leith were charged to supply ten chalders of malt daily for brewing and four (i.e. burghs) other commissars were to pass to all 'burrowistonis'/on all borders and other places to make open proclamation that all those with corn, hay and fodder for the horses should furnish it forthwith for ready money. In all these directions great emphasis is laid on the fact that all goods would be paid for with ready money, that all prices would be 'competent' and that those who did not willingly provide ran the risk of being punished and having their goods confiscated.⁶⁸ Perhaps many of these provisions were occasioned in 1523 by the presence on the raid of a band of French mercenaries who could not be expected to find their own food but it is probable that by the sixteenth century the army relied to some measure on the supplies that were brought to it by resourceful merchants and traders on all its outings.

INTELLIGENCE

The government's steps to acquire advance warning of enemy invasions are another instance of the desire to organise the country's military resources efficiently. There were two main methods - bale fires and spies. In 1455 the sites for bale fires and procedures for their use were outlined in an act of parliament⁶⁹ and in the aftermath of Flodden it was ordered that bale fires were to be made in the Borders and

68. Ibid., 180 ff.

69. APS, ii, 44, c.1.

Lothians as a warning of the English 'as the auld us and consuetud has been in tymes bygone for the warnying of Scottismen in the resisting of thar inimyis.⁷⁰ It cannot be doubted that from time immemorial effective advanced warning of invasions was provided voluntarily on the spur of the moment, but in 1523 and 1547 - as in 1455 - there is clear evidence of a system directly related to the calling out of the host. The sites of the beacons are given and for 1547 a complete list of those responsible for their upkeep:⁷¹

St Abbs Head: Sir George Douglas of Pittendreich

the Dowhill above Fast Castle: the Laird of Restalrig

The Downlaw above Spott: Robert Hamilton Captain of Dunbar

North Berwick Law: the Prioress of North Berwick

Traprain Law: the Earl of Bothwell

Arthur's Seat or Edinburgh Castle: the town of Edinburgh

Binnings Craig above Linlithgow: William Hamilton of

Pardovan and Matthew Hamilton, the Governor's master of the household.

Obviously greater attention to advanced warning systems was deemed a necessity at this time only a few years after the English fleet had landed troops at Leith and sacked Edinburgh almost unopposed. The alternative method of using spies was not officially organised to any great extent in Scotland and the Scots certainly never developed such a network as contemporary England. It was envisaged in 1523 that border nobles would have 'certane secret exploratouris and spyis' in England and he who first brought sure tidings of an invasion would be

70. ADCP, 5.

71. Ibid., 171; RPC, i, 73-5. A list of bale fires in the West March is contained in 'The Use of Marches' of 1448 in APS, i, 716.

rewarded with ten angel nobles and much use was made of a certain Allan Turner in the period 1545-8 to gather information in England.⁷²

WAGEOURS

During the sixteenth century more and more reliance was placed on professionals in the waging of war. Specialists such as gunners and sailors were paid out of the royal purse and also mercenaries whom it was often more practical to use as bodyguards for garrison duty or to make up small forces for special purposes. Mercenaries were more reliable as soldiers and probably better equipped than the average fencible man.

It might have been thought that the inception of a royal guard would be a basis on which a permanent military establishment would be developed, but this does not seem to have been the case. In fact the evidence for a royal guard before the personal reign of Mary is rather scanty though one certainly existed.* Sir David Guthrie is named as captain of the royal guard in a document of 1473/4 but of what it then consisted is not known.⁷³ In 1517, in the troublesome period after the death of his father, the young James V was given a bodyguard consisting of twelve footmen with halberts under the command of a captain. It was to guard his chamber every night. Furthermore Robert Borthwick the master gunner and six cannoneers were to remain in the castle (of Edinburgh) at all times for its defence.⁷⁴ The Englishman Randolph remarked in January 1561/2 how Queen Mary had a guard of twelve halberdiers under the leadership of Captain Stewart and that she intended

72. ADCP, 169-70; TA, viii, 399, 480, 483; ix, 34, 35, 43, 61, 127, 137, 139, 142, 166, 176, 187, 196, 215, 216, 226, 252.

73. RMS, ii, 1136.

74. ADCP, 83.

*A MS of c. 1292 in Corpus Christi College, Cambridge, describing the household of the Scottish kings says that there were 24 doorwards, 12 of whom were always on duty, day and night. M. Bateson, 'The Scottish King's Household', Scot. Hist. Soc. Misc., ii (1904), 15.

to double its strength.⁷⁵ Later that year she formed a guard of seventy five archers including the captain and other officers⁷⁶ possibly using the famous Scots Guard of the French kings as a model. Arran as governor was given a bodyguard of sixty two hagbutters during the parliament of 1544 and another eighteen were stationed in the steeple of St Giles,⁷⁷ and Moray, as lieutenant, was to get a bodyguard of sixty well horsed men to ride with him on his expedition to the borders in 1532/3.⁷⁸ None of these guards, however, ever figured as a significant military force.

Mercenaries, or 'wageours' as they were called, were employed throughout the sixteenth century but only on an irregular basis to meet contingencies as they arose. A small band of about sixteen men was employed in 1496/7 to hold Coldingham Priory⁷⁹ and the defence of castles or other places was one of the more important functions of wageours. At times of crisis the government took it upon itself to pay for garrisons to be installed in border castles belonging to the nobles. For instance, twenty four footmen were to be feed to hold Ayton for forty days early in 1514, two gunners with hagbuts were paid in 1532 for holding Bille and twelve hagbutters were hired to hold Home in 1547 against the approaching English;⁸⁰ but none of these forces of men were ever of great size.

Considerable mercenary forces were used at certain periods in the sixteenth century, particularly in the minority of Mary and that of her son James VI. In the Treasurer's accounts for 1543-4 there are various

75. Cal. State Papers Scot., i, 585.

76. Maitland Misc., i, 27-36.

77. TA, viii, 307.

78. ADCP, 392.

79. TA, i, 326, 338, 346.

80. ADCP, 13; TA, vi, 158; Ibid., ix, 100.

payments in connection with bands of men-of-war⁸¹ and it is apparent that forces of several hundred men were kept employed at a time. The accounts further suggest that there was a high degree of professionalism in their organisation. Each band, which might be anything from 100 to 500 or more men in strength, had captains, ensigns, lieutenants, quartermasters and officers and servants. Swish-players* provided a beat for the men to march to. A band which was recruited in Perth and Dundee is described as twenty two rod of men of war - that is 220 men - indicating its well drilled nature. It is also known that wageours were often equipped with firearms, either culverins or the heavier hagbuts which probably needed a rest to fire them from, whereas it is doubtful if the host included many such weapons, far less men skilled in their use. Light horsemen were also made use of and were particularly of service in border warfare, for instance in 1545 when parliament passed an act for the lifting of a tax of £16,000 to fee 1,000 horsemen to defend the borders for three months.⁸²

Large forces of mercenaries were again employed in the early 1570s in connection with the siege of Edinburgh and its castle, as many as seven companies being feed at a time, though none of them being much larger than 100 men in size judging by the payments made to them.⁸³ There were certainly a great many wageours available for service by the last quarter of the century and many were recruited for wars on the continent.⁸⁴

The impetus to use wageours came largely from the difficulty of manipulating the host in small and trustworthy units. The burghs'

81. TA, viii, 228, 248-53, 293, 307.

82. APS, ii, 460.

83. TA, xii, 250-2, etc.

84. E.g. RPC, ii, 237.

*A swish was a drum.

unwillingness to supply burgesses for the host was another contributory factor since the money they paid in lieu was often used to pay for soldiers. This was the case in March 1517/8, when the burghs to the south of the Mounth provided the money for fifty culveriners for fifteen days to go to the borders with the Earl of Arran,⁸⁵ and on numerous other occasions throughout the century.

Yet another impetus of greater significance was the strong French influence on Scottish government. In France the raising of taxation to buy the services of professional soldiers had long been practised as an alternative to the use of the discredited feudal levies. The successes of the Scottish army were not so notable in the early sixteenth century that we should be surprised that ways of improving its composition should be considered, and such policies were urged in Scotland particularly in the 1550s. Throughout the sixteenth century the French relied largely on mercenaries of foreign origin, principally Swiss and Germans, but this was certainly not the intention of the Scots. It is quite clear that the forces to be used were to be recruited in Scotland and paid just as the English enemy had been paid for their services for a long time before the period under consideration.

Taxation as a means of raising money was not regularly resorted to by the Scottish crown as the Scots generally subscribed to the theory that the king should 'live of his own'; but the waging of war against the English, which was the concern of everyone in the country, placed great financial strains on the royal purse and taxation inevitably had to be resorted to to help pay for it. This was the case for the raid of Norham in 1497. James IV collected over £1,000 in 'spear silver' along with other large sums in the form of compositions from the burghs in Perth

85. ADCP, 116-7.

and Dundee in order to be exempt from the host, and 'gifts' from some of the nobility.⁸⁶ In the months before Flodden James raised over £4,000 in a 'spiritual tax' on church property⁸⁷ and the church contributed a tax of £5,000 just before Pinkie.⁸⁸ The Pope, Clement VII, imposed a tithe upon the Scottish Church for three years (the 'three-tenths') for the benefit of James V, owing to the lack of royal finances and Scotland's threatened position by land and sea, and the 10,000 ducat (£10,000 Scots) a year subsidy which he granted to James from the Scottish Church to support a college of justice seems to have been given in the realisation that much of it would be spent on the protection and defence of the realm.⁸⁹

Such general taxes as there were from time to time were normally based on the 'old extent' of the lands in the kingdom. Hence in 1549 a tax was demanded which would enable an armed man to be raised and supplied for two months from every seven merk land of old extent.⁹⁰ In 1552 the realm was stented to raise a footman from every forty merk land of old extent⁹¹ and in 1556 according to Leslie's history the queen dowager with the advice of D'Oysel, M.de Toubay and some of the nobility required a tax to be raised from the three estates 'to hold and susteine the men of weir upon the borderis, with this conditione that not ane cum out of awne boundis to keip the bordouris, except quhan the Inglishmen cum with a gret armie, walet men of weir, and make a forray'.⁹² The barons however, would not suffer this to be. After all they held their lands on the condition of their personal service in arms and further reasoned

86. TA, i, 321-3, 324.

87. Ibid., iv, 351, 360-5, 391-6.

88. RPC, i, 79.

89. R.K. Hannay, The College of Justice (Edinburgh 1933), 52ff.

90. APS, ii, 600.

91. RPC, i, 129.

92. Dalrymple, Historie, ii, 361.

that hired soldiers would not be so zealous in fighting for liberty or in defence of their families, goods and homes. Moreover, 'it was not anuich to the riches of the realme to susteine ydle men, so monie as war thocht necessar to defend the borderis against Ingland and to rin the forray upon thame'.⁹³ The host survived as the backbone of the army because of this unwillingness of the nobles to be replaced by mercenaries - or rather, perhaps, more to the point, their unwillingness to pay for mercenaries with hard cash.

The abortive attempt to raise a force to fight in France in 1552 is particularly instructive of how it was envisaged a large mercenary force could be made up. A pikeman was to be raised from every forty merk land of old extent and they were to be led by captains under the command of a cornet of the footmen. The burghs were to provide an ensign of footmen 300 strong who as far as possible were to be hagbutters and a force of horsemen 400 strong was to be got from the borders and the lowlands. The whole army was to be under the command of a lieutenant general.⁹⁴ It is possible to estimate the size of army envisaged if we assume that each ensign of footmen was meant to be 300 strong. There was to be one from the burghs, two from the Highland parts of Huntly's lieutenandry and 600 men from Argyll's. If two ensigns were intended from each quarter of the realm with the burgh's contingent and the horse over and above, there would have been a force of 2,700 foot and 400 horse.

Other mercenary forces were raised by taxes on the lieges but never on quite such an ambitious scale as that projected in 1552. For example, for James VI's expedition to the Isles in 1596 each shire was to provide twenty horsemen and thirty footmen sufficiently furnished with armour and

93. Ibid., ii, 362-3.

94. RPC, i, 129-136. See also TA, x, 154 and Scots. Corresp. of Mary of Lorraine (Scot. Hist. Soc. 3rd series, x, 1927), No CCXLV.

money for forty days, or enough money to fee such men, and the burghs were to provide 500 men, a third with muskets, a third with pikes and corslets and a third with hagbuts and head pieces, together with three ships. Significantly the option was left open for personal service to be provided instead according to old custom.⁹⁵

ARMS AND ARMOUR

It will only be possible here to consider very briefly how the Scots fighting man was equipped in the period under review. In the fifteenth century the government asked for two categories of men: firstly, men at arms, well mounted, with plate armour or jacks and brigantines, spear, sword and dagger; and secondly, footmen, either archers or men with axes and targets.⁹⁶ The Highlanders, however, supplied men armed differently, mainly with habergeons and/or aketons, spears, bows and 'halflang' swords as they were to continue to do in the sixteenth century.⁹⁷ In what proportions these differently armed contingents stood to each other in the host cannot be reliably known but the army was predominantly foot.

From the 1470s onwards more attention was given in official enactments to spears or pikes and other staff weapons suitable for fighting with on foot and the army James IV led to disaster at Flodden seems to have fought entirely on foot in the manner of the landsknechts - that is in great phalanxes armed with pikes. For such a method to be successful it was essential that the troops should be well disciplined and well trained and it is doubtful if the Scots had had time to acquire such skills despite the

95. RPC, v, 306-7.

96. APS, ii, 18, etc. For arms and armour in general see Caldwell, Scottish Arms and Armour.

97. This difference in Highland arms and armour was officially recognised by central government in 1574: APS, iii, 91.

help of French advisers. What is more, according to a contemporary English account the Scots were well armoured⁹⁸ a factor which may have played against them. Swiss and German pikemen wore very little protective clothing so as not to be encumbered by its weight and it is notable that the one Scottish battle that was successful at Flodden was that composed of borderers under Home and Highlanders under Huntly, the very sorts who might be supposed to have been more lightly clad than others in the army.

Pikemen remained the basic fighting force after Flodden but a significant development perhaps as the result of a lesson learnt at this battle was the almost complete abandonment of cap à pied plate armour in favour of the lighter and readier jacks and brigantines. The English commentator Patten was of the opinion that there would not have been such a slaughter of lords and lairds at Pinkie if the English had been able to tell them apart from the people of lesser quality, but they were all alike clad in 'jackes coovrd with whyte leather doublettes of ye same or of fustian, and most commonly al white hosen'.⁹⁹ The Highlanders continued to have fighting traditions of their own and supplied archers long after bows and arrows ceased to be used for warfare in the lowlands. At Pinkie there is said to have been a contingent of 4,000 Highland archers under Argyll. Otherwise, apart from the 400 light horse the 30,000 or so strong army is said to have been mostly composed of pikemen who carried targes and swords as well.¹⁰⁰ Pikes remained the mainstay of the foot soldiers for the rest of the century but several other well tried weapons were also in use as they probably had been at Flodden : halberts, Leith and Lochaber axes, Jedwart staffs and two handed swords, and as the century

98. Trewe Encountre, (Proc. Soc. Antiq. Scot., vii, 1866-8, 150).

99. Dalyell, Fragments, 69.

100. Ibid., 58.

progressed more and more hand guns. It is possible that the front few rows of the battles were packed with pikes with the other arms behind, those with guns being able to fire at the enemy through the front ranks.

A muster roll for the burgh of Peebles dated 19 May 1572¹⁰¹ gives a rare glimpse of the actual weaponry of a body of 160 fencible men, tending, it may be assumed, to the poorer end of the social spectrum:

Peebles Muster Roll, 19 May 1572		no of weapons of different types:	
men with:			
no arms mentioned	32	swords	43
sword	2	spears	60
spear	14	staffs	46
staff	10	bows	3
bow	2	axes	2
axe	1	forks	4
gun	1	lances	3
fork	1	gun/hagbut	3
sword and spear	7		
sword and staff	5		
sword and bonnet	1		
spear and staff	6		
spear and bow	1		
spear and lance	1		
spear and bonnet	4		
staff and lance	1		
staff and bonnet	2		
staff and fork	1		
sword, spear and bonnet	9		
sword, staff and bonnet	4		
sword, spear and staff	2		
sword, spear and bow	1		
sword, staff and gun	1		
sword, staff and bukler	1		
spear, staff and bonnet	4		
spear, lance and fork	1		
bow, axe and fork	1		
sword, spear, staff and bonnet	8		
sword, spear, staff and bow	1		
sword, spear, bonnet and hagbut	1		
(completely)armed	34		
	160		

Note: in some cases a man is listed with more than one weapon of the same type. For the purposes of this table, however, each has been credited with only one of each type.

101. Peebles Recs., 339-40.

Less than a quarter of the men were completely armed, this is presumably with a jack or other defensive garment, or breast and back-plate, a steel bonnet or other defensive hat, and appropriate weapons. A fifth seem to have possessed no arms at all. Of the rest sixty had spears (pikes), by far the commonest weapon, and there were forty three swords and forty six staffs. These last might have ranged from simple long poles, to formidable weapons mounted with long pointed blades (Jedwart staffs) or spiked metal heads (brogit staffs). The four forks sound like agricultural implements pressed into temporary military service.

The impression given by this document is that the townspeople of Peebles were not armed as well as they should have been. It might also be suggested on the basis of the numerous enactments specifying the equipment fencible men were to have that in the country in general throughout the fifteenth and sixteenth centuries there may have been a lack of arms and armour. Townspeople may, however, have generally been less well armed than the country folk since they preferred not to serve in warfare in person and may have felt more secure in their burghs. In many cases a noble or laird would have supplied his own tenants with the weapons and armour they were lacking. All in all it must be assumed that all who turned up for the major campaigns of the period were provided with weapons of sorts and many with protective clothing or armour. In battle the best equipped would undoubtedly have been crowded into the first ranks and present a well-armed appearance to the enemy. When the Scots are described as being well armed at Flodden and Pinkie it may just have been the front men, those who did most of the fighting who are meant. Unfortunately, the real situation will probably never be known, but the writer feels that the opinion may tentatively be advanced that the Scots were normally appropriately armed by their own standards and methods of warfare. The English never derided them for their lack of arms and

armour, only their appearance, and the Scots never blamed any defeat specifically
on a shortage of weapons.

Much of the host seems to have gone on campaign on horseback only dismounting to fight,¹⁰² but as the sixteenth century progressed light horsemen came more and more to the fore. This would have been largely due to the nature of much of the warfare in the second half of the century with small mobile raiding forces often in the field but no large armies as in 1547. The border regions produced almost exclusively mounted men, ideal for coping with the raids and counter-raids endemic on the borders throughout the century. There are said to have been only 400 light horse at Pinkie but in a French memorial on the state of Scotland dated 1558 the country is credited with a potential 4,000 to 5,000 horse as against 20,000 to 25,000 foot.¹⁰³ For a border expedition in 1568 the Regent Moray is credited with a fighting force of 4,000 horse and only 1,000 hagbuters and halbertmen,¹⁰⁴ though many of these horsemen may have intended to fight on foot. For the expedition against the Islemen in 1596 James VI declared himself content to accept in lieu of the personal service of those in each shire twenty horsemen and thirty footmen¹⁰⁵ again illustrating a greater demand for horsemen than is evident earlier in the century. The order for the holding of wapinschawings in 1574 indicates that those with at least 300 merks of yearly rent were to be horsed with light or heavy armour as suited them best while all others were to be provided with weapons for fighting on foot.¹⁰⁶

102. APS, ii, 362. cf Ibid., 715 and the account of the raid of Weardale in Les Vrayes Chroniques de Messire Jehan Le Bel, i, 47-48 (equals Froissart, chap. xxxiv).

103. Cal. State Papers Scot., i, 205-7.

104. Bannatyne Misc., i, 19-30.

105. RPC, v, 306-7.

106. APS, iii, 91.

The order for wapinschawings of February 1597/8, on the other hand, would have everyone with the minimum qualification of 300 merks rent furnished as foot soldiers with pikes and handguns and it would be tempting to think that a swing in fashion back in favour of foot soldiers is represented here. If such it was it seems, as represented through contemporary and royal documents, to have been very sudden, unless we imagine that we are dealing with a belated recognition by the government of an existing state of affairs - a greater predominance of foot soldiers or a decline in horsemanship; but an other explanation of this change of emphasis in favour of foot soldiers more favoured by the writer is James VI's determination to be prepared to defend his rights to succession to the English throne by force if necessary. It was all very well to have large quantities of light horsemen for raiding and skirmishing but what mattered on the field of battle was firstly foot soldiers armed with pikes who could ward off cavalry, and secondly soldiers with guns.

Other elements of Scotland's military might that ought to be considered apart of course, from the artillery and the gunnery establishment - are the navy and fortifications. The former has been dealt with cursorily in the previous chapter, the latter will be treated more fully below.

THE EFFECTIVENESS OF THE SCOTTISH MILITARY SYSTEM

Despite its lack of resources in money and manpower Scotland could put a large army in the field in the sixteenth century, such a force as could match in size, and probably equipment, any of the English armies sent against it. Men and weapons alone do not make an efficient army and it is obvious that the Scottish military system had several serious faults.

Perhaps the main criticism which can be levelled against it is that it did not give adequate allowance for the training of the troops. The orders for the wapinschawings seem to place all their emphasis on having appropriate equipment, not on being skilled in using it, and James II's prohibition in 1456 of football and golf in favour of regular archery practice¹⁰⁷ is only an isolated case of an intent to train the masses; but individual skill was only half the battle. The rest lay in an ability to work under discipline and it would have taken a great many wapinschawings to have instilled discipline and to have drilled such an army.

In the fifteenth and sixteenth centuries Scotland was not notably blessed with great military commanders and reasons for this are not hard to find. Command depended not on ability but on landed strength, hereditary right rather than powers of leadership and even when a noble possessed good qualities as a commander he was too often constrained by the jealousy of his peers. The king or governor in charge often either found his power to control the army circumscribed by having to placate one or more noble or baronial faction over some imagined slight, or infinitely worse, discovered that by calling out the host he had inadvertently provided the occasion for all the disaffected elements in the kingdom to meet and unite in opposition to royal policy. James V's attempt to have one of his courtiers, Oliver Sinclair, installed as leader of the army to invade the West Marches in 1542 looks like a desperate attempt to find a commander who could rise above the factions and resentments endemic in the host but it was an ill-advised move and a miserable failure. Even in the face of the enemy the nobles refused to fight for Oliver, a man most of them considered to be of inferior rank to themselves.*

107. APS, ii, 48.

*G.A. Sinclair, 'The Scots at Solway Moss', Scot. Hist. Rev., ii (1904-5), 372-7 gives an apology for Oliver Sinclair.

The Scottish system of raising an army was, however, cheap. It was possible for a king or government to raise an army of up to 30,000 men, all armed and provided with food to serve for forty days, and that within a matter of days. The cheapness was beneficial not only to the government but also to the men who served. The tragedy for Scotland was that there was a mutual inability or unwillingness to pay for an army. Successive governments did however, show a willingness to make use of mercenaries, an interest not necessarily shared by most of the fencibles who may have valued the enhanced prestige imparted to them by their requirement to fight for their country. Attendance at the musters, the opportunity to identify with thousands of other countrymen and voice common opinions, was the nearest many got to playing an active part in influencing national policies.

THE GUNNERY ESTABLISHMENT, c. 1430-1523, AND THE DEVELOPMENT OF AN
AGGRESSIVE STRATEGY OF WARFARE

The term 'gunnery establishment' has been adopted here as a collective description of the men, munitions and premises connected with the royal guns in the lack of a satisfactory description of this organisation from contemporary documents. The nearest they come to it is in references to the royal artillery or to the gunhouse in Edinburgh Castle. In the accounts for the fees of the gunners the payments are normally described as the ordinary fees of gunners and other handlers of munition without any other heading, and in the letters of appointments to the various craftsmen passed under the privy seal in the sixteenth century the phraseology used generally runs on the lines: a letter to X making him one of our sovereign lord's gunners (etc) for all the days of his life. There can be no doubt that the gunners collectively were perceived to be a group with particular responsibilities, paid by the crown to carry them out - a permanent military establishment in all but name.

THE GUNNERY ESTABLISHMENT IN THE REIGNS OF JAMES I, JAMES II AND
JAMES III.

In the introduction the early evidence for guns in the fourteenth century and those specialists in war machines who looked after them has been described. The records for guns in the first half of the succeeding century are very thin. James I is not known to have mounted a major military expedition until the last year of his reign but very few of the royal accounts, which might have given details of payments to gunners and the purchase of munitions, survive.

The siege of Roxburgh Castle in 1436 may well have been the first occasion on which the Scots seriously used guns against a major stronghold unsuccessfully in this case. The fifteenth-century chronicler of Pluscarden tells how the expedition soon had to be disbanded with great ignominy, nothing having been achieved, owing to internal strife. The siege train, consisting of excellent great machines such as cannon and artillery with slings (nobilibus magnis machinis, tam cannalibus quam fundalibus, artilliariis), and gunpowder, carts and carriages and various other things were all lost.¹ A certain John Paule or Paulis, master of the king's machines (i.e. military engines) was paid his fee of £6.13.4 for the year.² There is nothing more heard of him in the surviving records, either before or after, and it is possible he was only appointed in this year to supervise the guns and engines for the siege.

There is, however, slightly more evidence for another royal employee, Nicholas Plumber, who seems to have been connected with the guns over a number of years. He is described only as a servant of the King and was working for him on various matters from at least 1428 onwards. In 1430 he was given money while in Bruges to pay certain craftsmen for bombards, engines and other warlike instruments and equipment, and in accounts for 1434-5 expenses on iron and carriages 'for making lead in the castle of Edinburgh' are listed.³ In the following reign he is to be found being recompensed for seventy-five pounds of saltpetre bought for Stirling Castle in 1444, and also being given an annual fee of twenty merks from that year at least until 1450. He was dead by 1455 when his widow sold his anvil to the king for the use of his smith, David Wright.⁴ He

1. Chron. Pluscarden, ii, 287.

2. ER, v, 31, 33.

3. Ibid., iv, 605, 627, 677.

4. Ibid., v, 149, 381; vi, 19, 133.

might also be identified as the Master Nicholas the Carpenter sent in 1441 or 1442 to lift the king's great bombard at Galoway Scheelis (Galashiels).⁵ Plumbar certainly seems to have had some interest in guns in both the reign of James I and James II and also worked with metals. James I definitely had guns for the siege of Roxburgh Castle. Possibly the acquisition of guns from the Low Countries, including 'the Lion', in 1430 was the start of James' preparations for such a military enterprise and he surely would not have neglected the personnel to service them.

We must assume that the fiasco at Roxburgh in 1436 was a reflection of dissatisfaction at James' leadership rather than proven shortcomings in the guns and other engines of war. At any rate it did not deter the government in the ensuing reign, in the period before James II took the government into his own hands, from undertaking at least three major sieges: of Methven Castle in 1444 or 1445, Edinburgh Castle in 1445, and Dunbar Castle two or three years later. All three castles were taken but the records are silent as to what part guns might have taken. On the other hand, James II's personal reign is marked by a series of sieges in which guns are known to have played a prominent part. James' efforts were primarily directed against the great house of Douglas which rivalled the crown in wealth, power and prestige. The first blows were struck by James in a campaign in 1450 while the Earl of Douglas was on pilgrimage to Rome. He is said to have besieged the earl's strongholds and put many of his freeholders to death, while in the following year, just after the earl's return, James took and demolished the castle of Douglas Crag in Ettrick Forest.⁶

5. Ibid., v, 118.

6. The only major source for these royal campaigns of 1450 and 1451 is a brief statement in a continuation of a manuscript abridgement of Scotichronicon in Edinburgh University Library. The relevant excerpt is given in ER, v, p. lxxxv, n. 2.

There was then at least a semblance of a reconciliation between James and the Douglasses, only to be shattered by the murder of the earl by the king in 1452 while he was visiting Stirling Castle under a guarantee of safe conduct. Although Douglas's supporters came and burned Stirling in revenge James quickly took action and the field and reduced the castle of Hatton, Midlothian, held by supporters of the Douglasses, and then later in the same year wasted many of their lands. Even so an 'appointment' was made between the two warring factions soon afterwards which should have settled all their differences. It did not, and in 1455 James again struck suddenly at his foes, destroying their castles of Inveravon and Abercorn in West Lothian. The Douglas counter-offensive collapsed ingloriously and the castles of Douglas, Strathaven and Threave were taken, the earl of Douglas becoming an exile in England. Prior to this campaign James besieged and took Blackness Castle from James Crichton in 1454.

There is practically nothing known about the siege of Douglas Crag but James' success against Hatton in the following year may partly be imputed to his use of a large siege gun. An account for the expenses of the siege engrossed in the Exchequer Rolls details four carts for carrying the great bombard and for the gunstones made for it, missiles (telis), arrows, a 'construction' (unius fabrine), bows, and an instrument called le sow, and also the fees of the workmen employed under the command of Alexander Napier, the master of works in charge of the operations (magistri fabrice dicti operis).⁷ Napier, the ancestor of the Napiers of Merchiston, was a prominent Edinburgh burgess who held the office of comptroller at various periods in James II's reign both before and after this siege.

7. ER, v, 606.

There are two contemporary sources for the use of guns at the siege of Abercorn Castle. According to the Auchinleck Chronicle James

'gart strek mony of the towris Doun with the gret gwn the quilk a franche man schot right wele And falyheit na schot within a faldome quhar It was chargit him to hit'.⁸

Secondly, in a letter dated 8 July 1455 James wrote to Charles VII of France how he besieged Abercorn Castle for a month and having knocked down the towers on its curtain walls with non-stop fire from his guns (?) (machinarum) stormed and took it. It was then levelled to the ground⁹ and indeed there is no trace of it now.

With the successful conclusion of the siege of Abercorn the guns (bombardos) used there were transported to Galloway by Andrew Lesouris, carpenter (a lay brother of the Dominican Friary of Cupar, Fife) and John Were, a burgess of Linlithgow. An account survives for the transport of various items from Linlithgow to Threave, particular mention being made of the great bombard. Spades and trowels purchased at this time may have been to help clear a path for the gun. The chancellor, William, Earl of Orkney, accompanied the gun, receiving payment for corn bought by him, probably to feed the large work force which was necessary.¹⁰ Threave eventually surrendered but it is significant to note that the king made payments to several of the garrison, especially a certain John of Dunbar who is soon found in royal service, and it therefore seems likely that the defenders, not only deserted by their master but their stronghold sold by him to the English king did not have the heart to hold out indefinitely. James may also have lacked the

8. Chron. Auchinleck, 12-13.

9. Pinkerton, History, i, 486-8, no XVII.

10. ER, vi, 200-2, 209.

power to bring the siege to a speedy conclusion and may have inflicted little damage on the castle since, rather than destroy it, he installed his own garrison under Sir Alexander Boyd of Drumcoll.¹¹

The capture of Threave was the culmination of James's campaigns against the Douglasses - campaigns which involved the capture of enemy castles. A large siege gun was involved and in the siege of Abercorn Castle at least its effect in battering the castle to such an extent that it could be stormed successfully is indicated by contemporary documents. There can be little doubt that James's use of guns contributed greatly to his success and it is not surprising that in the few remaining years of his reign he continued to promote their development and use and acquired more of them.

Despite James II's evident interest in guns very little can be gleaned from the records about their organisation or about the staff whom he must have had to look after them. This is probably due to the loss of all of the Treasurer's Accounts for the reign, because in the sixteenth century, ^{it is} at any rate, there that most of the expenses of the gunnery establishment are to be found. A certain John Gunner received a fee of £13 6s 8d for the year 1441¹² but this is the only mention of a gunner until the siege of Abercorn Castle. The identity of the French gunner mentioned by the Auchinleck chronicler cannot be guessed at. Friar Lesouris was paid as the royal carpenter as early as 1453 and continued to have dealings with the artillery for a good number of years, not only being involved with the transport of guns but, as one would expect, with the maintenance and repair of their carts, and carriages. In 1464 he seems to have been working in Edinburgh Castle. Another carpenter in

11. Ibid., vi, 199, 203-4; Cal. Docs Scot., iv, no 1272.

12. ER, v. 101.

the royal service called John Lesouris was probably a relative.¹³

In 1455 Henry the Gunner was taken into service at £13 6s 8d a year, possibly to replace a certain John de Moray, deceased, gunner (bombatoris), mentioned in an account of 1455-6.¹⁴

With the taking of Threave Castle a significant addition was made to the gunnery establishment in the person of John of Dunbar who was not only paid a handsome yearly fee of £14 13s 4d (from 1459 £13 6s 8d; from 1460 £20) but was also given the ward of Duchray in Galloway (formerly granted to him by the Earl of Douglas) and half the lands of (Crimond) the barony of Creichmount/in Buchan.¹⁵ He was set to work making and repairing military engines (certorum instrumentorum bellicorum = guns?) including the great bombard taken to Threave which probably received some damage when it crashed into one of the gates of Linlithgow on its return from the siege.¹⁶ The sending of ambassadors to France in 1457 was an opportunity for supplies to be bought in Flanders for Dunbar's work, including 8,000 pounds of iron, 1,988 pounds of saltpetre, 1,600 Flemish pounds of sulphur, 633 pounds of proved gunpowder, a barrel containing 100 pounds of cord for crossbows, two pipes of charcoal, various ropes and cables, 300 ell of Flemish canvas bought for the king's tents and pavilions, and a pipe containing 1,500 arrows with their heads.¹⁷ He was involved in making gunpowder in Edinburgh Castle soon afterwards.¹⁸ Dunbar is never referred to in the Exchequer Rolls as a gunner although he was paid for working on them. He was evidently a military man of some experience when in the employ of the Douglasses and

13. Ibid., v, 529; vi, 161, 200, 204, 357, 581; vii, 294, etc.

14. Ibid., vi, 4, 116.

15. Ibid., vi, 199, 202, 265, 347, 348, 454, 570, 644.

16. Ibid., vi, 293, 385.

17. Ibid., vi, 308-10.

18. Ibid., vi, 495, 497.

one whose services were most welcome to the king when he changed allegiance.

The name of one other gunner is known from the accounts of James II's reign after the siege of Threave Castle : Dedrik Grutare. Dedrik was Dutch or German and is first mentioned in connection with John of Dunbar in 1457-8. He worked for a good year or so before he was awarded a regular yearly salary of £13 6s 8d.¹⁹

A royal appointment of much more significance at this time than those of John de Dunbar and Dedrik Grutare was that of William Bonar of Rossie in Fife as the first recorded master of the artillery. Bonar was a high ranking civil servant who up until 1455 had held the important post of comptroller. In an account of 1456-7 he was paid £20 for the making of certain weapons and may thus have assumed his responsibilities for the artillery a year earlier than when his new official title is first recorded (in an account of 1457-8).²⁰ The

defectiveness of the records do not allow us any clues as to whether or not there were any other 'masters' between his appointment and that of John Paule in 1436 as master of the king's machines but we might guess that Bonar's appointment marked a change in status in the post. The change in name from master of the king's machines to master of the artillery in itself is not of any significance although artillery by the middle of the fifteenth century undoubtedly normally meant guns. Masters of the artillery, however, from Bonar onwards, were all men of rank, at the very least lairds and sometimes lords. The social background of John Paule is unknown but the salary awarded him was not of such a size as would suggest eminence or responsibility and he was most likely of craftsman stock, like all the earlier specialists of the

19. ER, vi, 385, 496, 498, 499.

20. Ibid., vi, 302, 383.

fourteenth and fifteenth centuries. Bonar's responsibilities are nowhere outlined in detail but in the light of later developments it can be assumed that he was in overall command of both the guns and other related equipment and also the men who serviced them.

Matters arising out of his campaigns against the Douglasses may have precipitated James II into appointing a master of the artillery, but in this he was following a pattern already established by his neighbours. In England the first recorded Master of Ordnance was Nicholas Merbury, a court official. He was master at least by 1414 and this date marks the effective separation of the English artillery establishment and its functions from the more general Household administration.²¹ In France in the period from the late 1430s to the 1460s the organisation and administration of the royal artillery was reformed by the brothers Jean and Gaspard Bureau, the latter of whom became master of the artillery in 1444.²²

To get some idea of the functions of the master of the artillery in Scotland we have to look forward to the surviving letters of appointment of the sixteenth century. It is probable that as time went on the nature of the job became more complex but there is little reason to think that the area of responsibilities of the post were significantly altered. The earliest surviving letter of appointment, of Lord Sinclair, dated 13 March 1510/11, gives him all the privileges and liberties in peace and war pertaining to the office that all his predecessors had enjoyed. It makes him master of all the royal engines

21. O.F.G. Hogg, English Artillery 1326-1716 (London 1963), 94-97.

22. H. Dubled, 'Les Freres Bureau et l'Artillerie Royale Francaise (1437-1469)', Ecole Nationale des Chartes Positions des Theses (1946), 33-37; cf E. Perroy, 'L'Artillerie de Louis XI dans la Campagne d'Artois (1477)', Revue du Nord (1943), 174-9.

(of war) and artillery and those who look after them for the rest of his life, with power to appoint deputies and other officers under him. He was to get a yearly salary of £100 paid in two instalments at Pentecost and Martinmas along with his, and eight others', expenses in board and drink in the royal hall.²³ Lord Sinclair's conditions were used as a yardstick for later masters and of other sixteenth century letters only that to Robert Hamilton of the Briggs on 10 February 1555/6 amplifies this. We shall quote it here:

'... to ROBERT HAMMILTOUN of the Briggis ... ane lettir ...
ordinand the said Robert Hammiltoun maister of all and sindrie
hir hienes artailyerie and munitioun, and to have the cure,
reule, and charge thair of at all tymes in tyme cuming, als wele
in tyme of weir as uthirys; and als makand, constituand and
ordinaind the said Robert generall visitoure and ouresear of
all and sindrie hir heines castellis, strenthis and fortis
within her realme, and to caus ordoure reformatioun, batment
and help to be maid of sic thingis as ar necessar for beilding,
defence and keiping of the saidis strenthis and of artailyerie,
munitioun, bullettis, powder and uthir necessar thingis
concerning the samin, as salbe thocht expedient be the said
Robert, and as he sall give commandment thairto; and to tak
threw and just inventouris of all and sindrie hir grace
artailyerie, bullettis, powder, munitioun, being alswele within
the saidis strenthis and fortis as outwith the samin, to be
inbrocht and deliverit to hir hienes and hir derrest moder and
regent of hir realme; and to do all and sindrie uthiris thingis
concerning the premissis that ony maister of artailyerie and

23. ER, xiii, 417n; RSS, i, no 2221.

munitioun to hir hienes and hir predecessouris usit or exercit
of befoir, or as salbe thocht expedient to be done and exercit
be the said Robert for the honour of hir hienes, defence of hir
relame and liegis.²⁴

Probably the responsibility outlined in this for overseeing the royal castles and fortifications and certainly the duty of making inventories are not new elements added to the post, their inclusion here being merely the result of a desire to define the master's responsibilities more clearly on paper.

It is probable that much of the work load was always delegated to others, the supervisory role to a deputy or comptroller, the administrative or paper work to lesser clerks. In fact the post may often have been granted as a sinecure or to augment the salary of the Treasurer or another officer of state. It cannot be demonstrated from the surviving documents that there was a continuous sequence of masters and it is more than likely that there were sometimes long gaps between the death of one and the reappointment of another, especially during minorities or when there was little military activity. At such times the keeper of Edinburgh Castle may have assumed much of the responsibility for the artillery and the gunners.

After the siege of Threave Castle the great bombard was returned to Linlithgow and it is probable that this had been its permanent home since the two other royal houses regularly frequented at this time, Edinburgh and Stirling Castle, are both built on precipitous outcrops of rock and would both have been difficult of access for large guns. Soon afterwards, however, much of the activity connected with the guns is to be found taking place in Edinburgh Castle and it seems that it then became the home of the gunnery establishment. The way into the castle, once through the outer defences, is now by means of a broad rock

24. RSS, iv, no 3158.

cut roadway that winds gently round the rocky summit where the main residential buildings of the castle are grouped round Crown Square. Until this road was cut access to the square seems only to have been by means of a steep flight of steps now represented by the 'lang stairs' from the back of Morton's Gate to the Forewall Battery. It has never been clear when the road was cut but it may fairly be deduced that evidence for the keeping of large guns in the castle presupposes its existence and indeed it is very likely that the main reason for its construction was to facilitate the taking in of guns. In fact, in the years 1458 to 1460 the movement of several large guns to Edinburgh Castle is recorded. Two bombards were taken from Linlithgow, others from Threave and artillery by sea from Perth to Leith and then up to the castle.²⁵ Of more significance, perhaps, is the statement that a great bombard - and in this context Mons Meg is probably meant - was taken before the castle sometime prior to July 1459.²⁶ Was this because the new approach road was not yet finished? It is only fair to add that while expenses on repairs and rebuilding in the castle are recorded in the Exchequer Rolls at this time there are no hints to anything so major as this new road being made - either then or at any other time for that matter.

By 1460 James II had a gunnery establishment administered by a master of the artillery, William Bonar, under whom was John of Dunbar, a military expert, and at least two permanent feed gunners, Henry and Dedrik. He had several large guns most or all of which were stationed in Edinburgh Castle where Dunbar and probably the other gunners worked, along with other munitions workers, makers of arrows and lances.²⁷ In

25. ER, vi, 563, 581; vii, 7.

26. Ibid., vi, 497.

27. ER, vi, 499, 582.

his parliament of October 1455 he had requested certain of the great barons to have carts of war each containing two guns with two chambers each, other appropriate equipment and 'ane cunwande man to schut thame';²⁸ and as we shall show below he may have conceived the idea of building Ravenscraig Castle in Fife, actually started by his widow as one of the earliest strongholds designed both to fire and withstand guns. His interest in guns cannot be doubted. All this preparation was to be put to the test in the summer of 1460 when James struck at the ancient Scottish fortress of Roxburgh, considerably stronger than any of the Douglas castles and held by the old enemy of England. On Sunday 3 August when the guns were being fired James, 'mair curieous nor becam him or the maiestie of ane king did stand neir hand by the gunneris quhen the artaillyherie was dischargand, his thie baine was doun in tua witht ane peace of ane misframit gune that brak in the schuting be the quilk he was strikin to the ground and died haistelie thairof'.²⁹ He thus achieved the unenviable fate of being the first sovereign to die by means of a gun. Such was the resolve, however, of the Scots that they pressed on to win and demolish the castle and even undertook the siege of Wark Castle as well.³⁰ John of Dunbar was later rewarded with the lands of Pitgaveny, Dunkympty, Bereflathills and St Andrews - Kirkton in Moray for his faithful service, especially in the taking of the castle, and Dedrik Grutare got a pay rise to £20 a year.³¹

William Bonar lived on but he is nowhere in the still sparse documentation for the reign of James III described as master of the artillery. John of Dunbar seems to have retired to his estates and of all James II's other gun experts only Dedrik, who worked until at least

28. APS, ii, 45.

29. Pitcottie, Historie, i, 143; see also Chron. Auchinleck, 20.

30. ER, vii, 33.

31. RMS, ii, nos 1105, 1437; ER, vii, 32.

1471, and friar Andrew Lesouris the carpenter who was working on guns in Edinburgh Castle in 1463-64 are known to have continued in royal service.³² They were joined by John Bonar, probably a relation of William Bonar, from 1461 until his death in 1492.³³ There is also mention, amongst others, of little Hans the gunner who died in 1473, David Wright who was working on the guns in Dunbar in 1466-67 and who arranged the transport of certain pieces of artillery from Threave Castle to Edinburgh in 1473-74, and of Master Mathew the Gunmaker (vocato factori bumbardorum) who appears in a document of 1484.³⁴

Alan, Lord Cathcart, about whose activities very little is known, was master of the artillery by 1482,³⁵ and may have held this post until the end of James III's reign.

The destruction of the records of James III's reign is particularly unfortunate since there were evidently significant developments in the field of artillery at this time. The one surviving Treasurer's Account for 1473-74 - of which more below - contains details about the casting of guns and it is of interest to note that none of the gunners or other workers mentioned above appear to have had much to do with it. Only Wright brought copper from Wigton to Edinburgh for the work³⁶ which is associated in particular with two French gunners, Ranald and David. Of the use of guns in the military events of James III's troubled reign there is little known. The great bombard which spent two nights in Haddington may well have been destined for the siege of Norham Castle undertaken by the Scots in collaboration with the deposed English king Henry VI and his wife Margaret of Anjou sometime before July 1463.³⁷

32. ER, viii, 120, etc; vii, 294.

33. Ibid., vii, 215; x, 316, etc.

34. Ibid., vii, 494; viii, 189, 216, 253; ix, 286; TA, i, 71.

35. ADC, ii, p.cxv-cxvi.

36. ER, viii, 216.

37. J.O. Halliwell, Letters of the Kings of England (London, 1846), 124; ER, vii, 214.

Leslie's History mentions a shot by one of the king's guns at the siege of the duke of Albany's supporters in Dunbar Castle in 1479. It slew at one go three knights, the lairds of Luss, Sauchie and Craigiewallace.³⁸

THE REIGN OF JAMES IV

In 1488 James III faced an army of rebels including his own son near Stirling³⁹ and in the aftermath of the defeat of the royal forces the king was murdered. Much of his reign and the preceding one had been troubled by internal disorders or the threat of them and there was little involvement in military affairs at an international level. James IV's reign, on the other hand, is notable for new aggressive, military and foreign policies which not only involved the destruction of the Lord of the Isles and the sending of expeditionary forces to Scandinavia but three major invasions of England which, together with further attempts by the Regent Albany against the English in 1522 and 1523, exemplify a belief in the efficacy of large armies backed by heavy artillery. The objectives were fairly limited, the reduction of the main fortifications on the English side of the border to isolate Berwick and make its recovery possible. It may be that James II should be credited with first embarking on this strategy but if the bombardment of Berwick was the inevitable next step to the taking of Roxburgh in 1460 it was doubly confounded by the untimely death of James himself and the surprise give-away of Berwick shortly afterwards by the desperate Lancastrians.

38. Dalrymple, Historie, ii, 94.

39. Generally now known as the Battle of Sauchieburn, though fought by Bannockburn.

One of the leaders of the rebel army which defeated James III was Patrick Hepburn, Lord Hailes, created earl of Bothwell soon after the battle. He remained much in favour with the new king James IV until his death in 1508. Amongst his many official appointments was that of keeper of Edinburgh Castle and in the parliament held on 14 October 1488 he was also given the keeping of the artillery and other equipment in the castle.⁴⁰ This seems to imply that he assumed the functions - although never given the title - of master of the artillery. Certainly, nine years later, he had some responsibility for organising the return of the artillery from the raid of Norham.⁴¹ Possibly John Sandilands, laird of Hillhouse, acted as his deputy, performing a similar role to that of John Chisholm, the comptroller of the artillery in the reigns of Mary and James VI (see below).⁴²

The second year of James IV saw the sieges of the castles of Dumbarton, Crookston and Duchall, followed by the siege of Tantallon in 1491, and in the next few years, expeditions against the Western Isles. These all allowed the new king considerable experience in siege work and the use of artillery. The raids of 1496 and 1497 against the English were undoubtedly the biggest military enterprises of the king to date and the appointment of Sir Robert Ker as master of the artillery after the first of these raids is an indication of this, if not of lessons learned. Sir Robert was son and heir apparent of Walter Ker of Cessford whom he predeceased before the end of 1500. According to George Buchanan, Ker was so highly esteemed by James IV for his splendid virtues that he was made his chief cupbearer and

40. APS, ii, 211.

41. TA, i, 355.

42. Ibid, i, 116, 294, 349.

warden of the Middle Marches, as well as master of the artillery. He was so diligent in pursuing law-breakers in his role as warden that he came to be feared and hated by the borderers of both Scotland and England alike, and was murdered by three Englishmen, principally John Heron, lord of Ford, during a quarrel at a meeting between representatives of both countries for adjusting compensation.⁴³ The next appointment of a master of the artillery, Henry Lord Sinclair, on 13 March 1510/11,⁴⁴ may have had as much to do with James IV's crusading ambitions as a foreseeable renewal of war with England. Lord Sinclair's chief house was the castle of Ravenscraig in Fife, notable as one of the earliest examples in the country of a fortification designed to mount and withstand guns. He died at Flodden in 1513, no doubt fulfilling his role as master of the artillery. Indeed he may be that 'Master gonner of Scotlande' who according to the English chronicler Hall⁴⁵ was slain by the English guns in the opening artillery duel as certainly it was not Robert Borthwick who did hold that post.

A list of gunners for the raid of Norham in 1497 survives. It includes Robert Herwort, Hans, John Kervour younger and John Kervour elder, John Smith, John Mawar younger, Thomas Barker, John Lamb, Dande Achinsone, John Quarrier and three others unnamed. Of these we know that Mawar was a wright and Barker and Lamb smiths.⁴⁶ We do not know, however, whether they were all in regular royal service or just hired for the occasion. Herwort and Hans were certainly being paid full time at least from 1506 or 1507 in the company of another

43. Ibid., i, 229; RMS, ii, nos 2012, 2552; Buchanan, History, ii, 246.

44. ER, xiii, 417n; RSS, i, no 2221.

45. Hall's Chronicle, 561.

46. TA, i, 289, 292, 300, 347.

gunner who first appears then, Thomas Pierson. Herwort, Hans and Pierson figure in the documents principally in the role of cannoneers, helping to move guns from one place to another and going on expeditions to operate them.⁴⁷ Herwort was the son of an Edinburgh burghess who also had some expertise with crossbows as he serviced the king's. Hans was Danish and was apparently also known by the name of John Fassan.⁴⁸

Of the other gunners on the raid of 1497 Thomas Barker and John Lamb are known to have worked for the king on other occasions. Barker was involved in iron working for the artillery in 1496 and again in 1513. There is a record in the Treasurer's Accounts of the payment for six horses carrying iron and coal and his tools to Flodden where he may have met his death.⁴⁹ John Lamb had a business in Leith where in 1496 and 1497 he was busy making gun chambers, myks and other iron parts for guns. He received a gift from the king of the twenty merk lands of Newton of Markinch in 1496 for all the days of his life, no doubt as a reward for his services as a smith or gunner.⁵⁰

Entries in the Treasurer's Accounts for the first few years of the sixteenth century suggest that James IV was taking an increasing interest in guns not only as a matter of policy but also at a personal level. Whereas he had formerly had much joy in shooting with a cross-bow there are now indications of his interest in shooting with handguns (of which more later) and there are likewise instances where he demonstrated a personal interest in artillery. In 1506 an iron gun was carried to Leith sands so that it could be fired before him and the following year

47. Ibid., i, 320; iii, 200, 351, 388; iv, 131, 480.

48. Edinburgh Burgesses, 239; TA, ii, 115, 145; RMS, ii, no. 3263.

49. TA, iv, 519.

50. RSS, i, no. 81; TA, i, 281, 292, 334.

he actually shot some 'great guns' in the Abbey close at Holyrood with his three gunners, Hans, Robert Herwort and Thomas Pierson in attendance.⁵¹

An added impetus may have been given to James' awakening interest in guns by the arrival in Scotland in May 1508 of the Marshal of France, Berault Stuart, Seigneur d'Aubigny. Stuart, who was of Scottish ancestry, was one of the most respected soldiers and military thinkers of his day and came as the ambassador of Louis XII along with a train of distinguished

Frenchmen including that other noted soldier Messire Antoine d'Arces de la Bastie.⁵² James welcomed them in great style, and the tournament held in Edinburgh at the end of May was no doubt occasioned entirely by their presence. D'Aubigny, however, then in his mid-fifties, sickened and died shortly afterwards at Corstorphine, but not before he had dictated a treatise on the art of war to his French secretary. It is tempting to think that this work, composed on his return to Scotland, was intended for James IV. It is a short common sense work based largely on the author's practical experiences fighting in Italy and also on earlier military writers. It does not neglect to stress the importance of artillery and its proper management although it does not go into details on how artillery was to be obtained in the first place.

James had found a solution to this problem by buying more guns from abroad⁵³ and a new attempt was made at gun founding in 1508, the work being done in Stirling. The entries in the Treasurer's Accounts relating to this make it quite clear that it was already underway a few weeks before d'Aubigny's arrival, but the French gunner and/or 'The Franch man that

51. TA, iii, 203; iv, 100.

52. E. de Comminges, Traité sur l'Art de la Guerre de Bérault Stuart Seigneur d'Aubigny (La Haye, 1976), (also gives outline of d'Aubigny's career). For arrival of de la Bastie see TA, iv, 117.

53. TA, ii, 287; iii, 329; iv, 98.

suld mak the gunnis'⁵⁴ who were involved in it may have come with d'Aubigny. As in 1474 other specialists, mostly Scottish, were brought in for the work.

Three years later the gunfounding was moved to Edinburgh Castle and a new figure emerges who was of some importance in the history of guns in Scotland. Robert Borthwick's background is not known but he was evidently a Scot who was taken into royal service owing to his abilities as a founder. He throve in royal service and was the progenitor of a line of East Lothian Lairds. When he was given the Half-Mains of Ballencrieffin feu-ferme in March 1510/11 he was already described as a gunfounder (magnolium fundatori) and the gift was said to be in recognition of his work in making and repairing the royal guns.⁵⁵ Although this was only a life rent it was later argued that James IV had promised to give Borthwick the lands heritably for a yearly payment of one penny in name of blench ferme but had been unable to do so before his death. Borthwick's descendants continued to hold the lands and in recognition of James IV's promise the lands were dissolved from the patrimony of the crown in 1592.⁵⁶ Borthwick was probably already recognised as master melter or 'yhettare' of the king's guns in 1510 although this title is not recorded until February 1511/12 when he was granted a respite for a trip to France on royal business,⁵⁷ possibly to recruit more gunners or buy more materials for the artillery. Borthwick went to Dieppe and it was from that port that a group of French gunners had set out for Scotland late in 1510 or early in 1511 to work on the gunfounding in Edinburgh Castle. From the time of his appointment onwards it seems that Borthwick was the senior gunner in terms of pay and

54. Ibid., iv, 117, 127.

55. RMS, ii, no. 3546.

56. APS, iii, 619.

57. RSS, i, no. 2374.

status but he is not in fact specifically described as master gunner until 1515. Later tradition at least makes him the Scottish master gunner at Flodden and it is of interest to note that he was provided with his own pailyhoun (tent) on that occasion.⁵⁸

By 1513 there were several other craftsmen working alongside Borthwick in Edinburgh Castle. The Master of Works accounts of that date summarised in the Treasurer's Accounts throw a good deal of light on James' preparations for war and the hive of activity round the guns.⁵⁹ John Drummond, who had been taken into royal service in 1507⁶⁰ figures prominently as a wright working on carts and gun carriages with seven workmen under him, and there were other wrights as well, including Robert Johnson and Patrick Notman. Robert Barker the smith has already been mentioned and amongst the other smiths making iron-work for the artillery were Robert Scott with his two men. Scott had been in royal service at least since 1511.⁶¹ Wolf Urnebrig (i.e. of Nürnberg) who was feed from September 1510⁶² worked at making gunpowder and there were several other craftsmen and labourers kept busy, most no doubt taken on for a short time to prepare the military equipment for the Flodden campaign.

It is difficult to know how many actual gunners were in royal employment by 1513. Hans had died in 1508⁶³ but Robert Herwort and Thomas Pierson remained in service. There were the six French gunners Borthwick had working on the gunfounding and in 1511 the Dean of Glasgow (Robert Forman) brought two gunners, experienced it is assumed, from abroad, Master Hans and Jacob.⁶⁴ There were two German culveringmakers,

58. Pitscottie, Historie, i, 270; TA, iv, 521.

59. TA, iv, 508-22.

60. RSS, i, no. 1574.

61. TA, iv, 310.

62. Ibid., iv, 272.

63. RMS, ii, no. 3263.

64. TA, iv, 277-8.

of whom more later. Master John was possibly the Frenchman John Veilnaif who was first recorded in 1505,⁶⁵ and there were other gunners with Scottish names like Wardlaw, Lawson, Seton and Anderson, and another Hans described as Scottish. Unfortunately there is no single list of all the gunners at this time but it seems that a great number were employed to operate the guns on the fleet as well as those on land, evidently in excess of fifty. How many of these were experienced cannoneers is another matter altogether.

For the reign of James IV, for the first time, there survive documents which shed considerable light on the movement and use of artillery in warfare. In particular accounts of the expenditure on guns survive for the campaigns of 1496, 1497 and 1513 and they are worthy of some consideration here.

In September 1496 James invaded England along with Perkin Warbeck, the pretended duke of York, in support of the latter's claim to the English throne. For several weeks beforehand the Treasurer's accounts record payments made in connection with buying, making or readying equipment for the expedition, not least the guns. John Lamb of Leith was especially busy making gunchambers and other iron work, Dande Achinsone the wright was working at Melrose in Roxburghshire cutting timber to make parts for gun carriages - axles, wheels, limbers, 'hamys' (collars for draught horses); etc. - Robert Herwort was casting lead 'plumbis' (gunstones), some containing dice or cubes of iron, in Edinburgh Castle while John the Quarrier was 'correkking of gunstanis' - to name just some of those involved in the preparations.⁶⁶ The artillery was finally gathered together at Restalrig just outside Edinburgh on

65. Ibid., iii, 139.

66. Ibid., i, 292ff.

13 September and very probably consisted more or less of the guns described by Sir John Ramsay, the forfeited Lord Bothwell, in a letter written to Henry VII from Berwick on 8 September. Ramsay says

'I past in the Castell of Edinburcht, and saw the provision of Ordinance, the quhilk is bot litill, that is to say ii great curtaldis that war send out of France, x falconis or litill serpentinis, xxx cart gunnis of irne with chawmeris, and xvi clos carts for spers, powder, stanis, and oder stuf to thir gunnis longin'.⁶⁷

James may well have hoped that large numbers of Englishmen would rise in favour of Perkin Warbeck but in this expedition there is no evidence that he intended to pursue any course of action that would have taken him deep into enemy territory. He meant only to destroy and loot as much as possible in a limited area on the border. His guns, as listed by Ramsay, were mostly field pieces - only the two great curtalds or cannons would have been effective in siege work.

When guns were transported to besiege the castles of Lennox and his supporters at the beginning of James's reign they were drawn by oxen the responsibility of supplying which rested on the sheriffs of the sheriffdoms through which the guns passed.⁶⁸ The utilisation of the plough oxen for pulling the guns, at no cost to the king, was resorted to on several future occasions, indeed well into the seventeenth century,⁶⁹ and by James's reign was probably long established custom. In September 1496, however, James seems to have relied wholly on horses which were considerably faster and more efficient, but which had to be hired at great cost (£237 6s). In fact 143 carters (with their carts) and 196 horses

67. Original Letters, 1st series, vol. i, 31.

68. TA, i, 116.

69. E.g. APS, VI, i, 437 (1645, for moving cannon from Dumbarton).

were paid to carry the guns, their equipment, the tents and other gear. Some at least of the carts came from Haddington and most of the rest, no doubt, from the burgesses of Edinburgh, Leith and Canongate, but the actual carts in which the smaller guns (serpentes) were mounted were royal property, as also the 'close carts' which carried the powder, ammunition and other equipment.⁷⁰ There is no list of gunners who went on the expedition but probably at least John Lamb with his man Colin Smith, Hans, Robert Herwort, Adam Brounle, Henric and Guyane, along with seven wrights and two smiths and a great number of labourers. A bellman was sent thrice through Edinburgh a few days before the guns set off to hire workmen and 76 men with spades, shovels and 'pik mattoks' were feed 'to draw the gunnis in peththis and myris'. There were also twenty gentlemen who rode with the guns as a protection against surprise attack.⁷¹

The horses and carters for the guns were paid on 13 September and were in Haddington, about twenty miles away, by the fourteenth. From there a difficult road was taken over the Lammermuirs to Johnscleuch where the guns rested on the night of the sixteenth. Johnscleuch is only about ten miles from Haddington but presumably owing to the difficulty of the road it took at least a whole day to get there, if not two. From there it was another eight or so miles to Ellem where the host was supposed to muster but the guns pressed on, perhaps by a road a bit further to the south and reached Langton, about eighteen miles away near Duns, on the seventeenth.⁷² They were taken across the Tweed on 21 September with the help of the local boatmen, probably at or near

70. *TA*, i, 280, 291, 295.

71. *Ibid.*, i, 297, 300.

72. For this road taken by the guns see A. Graham, 'More Old Roads in the Lammermuirs', *Proc. Soc. Antiq. Scot.*, xciii (1959-60), 217-35.

Coldstream. Meantime James himself with at least some of his gunners was only at Ellem on the nineteenth though the main part of the army may have been as many as four days ahead. Certainly Perkin Warbeck, for whom ostensibly the expedition had been mounted, was already returning to Scotland on 21 September, disheartened by the lack of support for his cause from the English.⁷³

It is known from an English survey of 1541 of the castles, towers, barmkins and fortresses of the East and Middle Marches that in this expedition the Scots destroyed the towers of Duddo, Thornton, Tillmouth, Howtel, Branxton, Shoreswood, Twizel and Lanton, and the rather more substantial castle of the Grays of Heaton, shown in an Elizabethan sketch as a quadrangle with towers at the four corners.⁷⁴ A map showing these strongholds suggests the extent of the land plundered and ravaged by the Scots in this raid, an area about ten miles long extending as much as seven miles deep into England. It is probable that most of this destruction was achieved by fast-moving loosely organised raiding bands who may also have been responsible for storming and wrecking the towers. James's main effort, however, seems to have been directed against Heaton where he certainly had his gunners and masons who were paid for digging a mine on the nights of the twenty-fourth and twenty-fifth. Perhaps the two curtalds were not as effective as wished. According to an English report the Scots stole away on the night of the twenty-fifth as a relieving army advanced on them from Newcastle⁷⁵ but it is likely that the twenty-fifth or twenty-sixth was planned all along for the disbandment of the expedition as the carters, craftsmen and other specialists are only known to have been paid for a fortnight. Heaton Castle was left as

73. Ibid., i, 296ff.

74. C.J. Bates, 'The Border Holds of Northumberland', Archaeologia Aeliana, xiv (1890), 29-49, 329-30.

75. Cal. Doc. Scot., iv, 419.

a ruin which was never repaired.

In the following year James, now disembarrassed of Perkin Warbeck, decided to make an even bigger effort in England and attempt the siege of the major border fortress of Norham which belonged to the Bishop of Durham. Precise details as to the guns taken are lacking but the presence of Mons and the greater number of men and amount of equipment would indicate that this time James fielded more substantial guns than in the preceding year. Despite making the raid last for a week longer he was still unable to pursue the siege for more than a few days.

With the guns went at least thirteen gunners, 221 men with shovels, spades and picks, twelve wrights, a cooper 'for the powdir' and four smiths. There were also sixty-one quarriers and masons who may have combined their abilities in mining and demolition work with making gunstones and clearing a passage for the guns. Over and above these were the three wrights, two smiths and 100 men who were detailed to accompany Mons. As in 1496 James laid out prodigious sums on hiring horses with their keepers - 188 horses, eight oxen and 113 men which cost over £100 per week, and all were paid for three.⁷⁶

The men and horses for the artillery were feed on 19 July and at least some of the guns were then put on the road, reaching 'Corriwale Hewch' on the twenty-seventh. On the twentieth the king set off for Melrose, probably where the army was due to muster. On the twenty-first Mons was drawn from the castle and brought down through the town with minstrels playing before her but she only got as far as St Leonard's on the outskirts of town, on the Dalkeith Road, before her cradle broke and a new one had to be made.⁷⁷ She and other guns then lay in the abbey of Holyrood for several days from the twenty-fourth to the twenty-ninth.

76. Ibid., i, 346ff.

77. Ibid., i, 348.

James himself, with the main army, was at Norham by the fourth of August⁷⁸ and probably a few days earlier than that, but even so the siege could not have lasted long since the Scots abandoned it on either the seventh or eighth and Mons, since she only left Holyrood on 30 July, could hardly have been brought to play against the castle for more than four days at the very most. Nevertheless the damage inflicted was not inconsiderable as is attested by the rebuilding of a length of the curtain wall of the outer ward soon afterwards.⁷⁹ Again the Scots are assumed to have scaled before an oncoming relief army under the earl of Surrey but there is no indication from the Treasurer's accounts that it was intended to pay the wages of the professionals after the first week in August. In fact, James seems only to have heard of the coming of Surrey on the thirteenth, after he had disbanded his army, and had immediately to raise a new force.⁸⁰

James IV's last and most ambitious military exploit was in 1513 when he invaded England with a full host, perhaps 30,000 strong, and a large train of artillery, in support of the French who had just been invaded by Henry VIII of England. This was no mere raiding party. James was hoping to make such a diversion in the North of England that men and resources would have to be withdrawn from Henry's continental venture or that it would have to be aborted altogether. His first aim was to besiege the Castle of Norham which he had failed to take in 1497 but this invasion of England by land was only part of a scheme which envisaged a diversionary naval enterprise against Ireland, perhaps in conjunction with the 'Wild Irish'.

78. Ibid., i, 349, 350.

79. C.H. Hunter Blair & H.L. Honeyman, Norham Castle (Department of the Environment, 1966), 12. This repair work suggests, incidentally, that the Scots chose to bombard the castle from across the River Tweed. There are still 9 18-inch stone balls at Norham, presumably fired by Mons.

80. TA, i, 352.

The Scottish preparations for the campaign were long and thorough as were James's diplomatic efforts to avoid the approaching conflict. Letters were dispatched on 24 July commanding the host to muster at Ellem, although much of it may have assembled on the Burgh Muir of Edinburgh, and James seems to have crossed over into England on 22 August.⁸¹ ^{was} A start/made on taking the guns out of Edinburgh Castle on 17 August and Norham had been captured by the twenty-eighth.⁸²

On 25 July, the day after the summons to battle were sent out, the Scottish fleet set sail from Newhaven on the Forth. What exactly this fleet consisted of is open to some doubt but it definitely included the three 'capital' ships, the Michael, Margaret and the James, well armed and provided with gunners, and less than thirty, perhaps considerably less, vessels of smaller size. Two contemporary letters sent to Venice give the fleet as consisting of twenty-two ships in all, a third letter mentions only eleven ships including one of 1,000 tons and two of 500 tons each.⁸³ Given this uncertainty over the size and composition of the fleet and in the lack of other detailed information it is difficult to assess the number and types of guns mounted on it. Certainly there must have been several and there were at least nineteen gunners, some with their assistants, whereas there were only eleven gunners went with Robert Borthwick and John Drummond and the artillery into England. Of these gunners some, like Hans, Robert Herwort and Thomas Pierson, had been in royal service for a number of years.⁸⁴

The fleet was put under the command of the earl of Arran who had already commanded naval expeditions to Scandinavia in 1502 and to the

81. P.F. Tytler, History of Scotland, (Edinburgh, 1845), iv, 72.

82. Hall's Chronicle, 556.

83. Henry VIII Letters & Papers, I, ii, nos 2107, 2116, 2204.

84. TA, iv, 507.

Western Isles in 1504. An abortive attack was made on Carrickfergus in Northern Ireland, probably as part of a great plan to cause a further diversion for Henry VIII, and then the fleet sailed for France where it was meant to combine with French ships from Brittany and Normandy in further war against the English, but this all came to naught and instead the ships lay idle at Brest.⁸⁵

That part of James's plan was another diversion in Ireland is given further credence by the visit paid to Scotland in the summer of 1513 by O'Donnell, one of the most powerful leaders of the native Irish in Ulster. The upshot of James's and O'Donnell's deliberations was that a cannon, drawn by thirty-six horses, and a culverin moyen, drawn by eight, were given to the Irishmen to help him in some exploit in Ireland. They took six days to make the journey from Edinburgh to Glasgow. With them were sent two carts with eight barrels of powder, two carts with gunstones, one with pikes, shovels and mattocks and a crane along with (trestles) the 'traistis'/on which the cannon was to be mounted. This suggests that it was really an old wrought iron gun or bombard which was not capable of being fired from the carriage it was transported on. Twenty workmen were also sent and eight quarriers 'for undirmynding of wallis', all given a month's wages in advance. O'Donnell, however, seems to have left the guns behind when he sailed home as carts were sent to Glasgow on 14 August to bring them back to Edinburgh again. They took ten days on the road and were thus too late to take part in the Flodden campaign.⁸⁶

The artillery train which James took into England consisted of five cannons, two gros culverins, four culverin pikmoyens, six culverin moyens

85. Pitscottie, Historie, i, 256-7. See also 'The Historie of Sqwyer William Meldrum', lines 88-244 in The Works of Sir David Lindsay, ed. D. Hamer (Scot. Text Soc., 1931), i, 148-52.

86. TA, iv, 527.

and probably other small guns besides. Its composition is indicative of the fact that first and foremost it was intended for battering down castles. This time the guns were drawn by oxen, many of which were supplied by the clergy and nobles. Each gun was equipped with ropes in front and behind to help pull it up-hill or stop it rolling away downhill. A single horse was harnessed with most of the teams of oxen to speed or direct their progress and there seems to have been a pool of eighty oxen looked after by four men which may have been intended as replacements or extras for the guns.⁸⁷

The five cannon were drawn down from Edinburgh Castle on 17 August by a force of men to Saint Mary's Wynd, just outside the Nether Bow Port at the bottom of the High Street. Possibly the castle and town were too cluttered for the guns to be conveniently harnessed with their oxen. The next day they were put on the road for England, provided for as follows:

first cannon: with oxen belonging to the Captain of Edinburgh Castle, eight drivers and twenty workmen with pikes, shovels and spades.

second cannon: with thirty-six oxen belonging to the king and the laird of Duns, nine drivers and twenty workmen

third cannon: with thirty six oxen belonging to the prior of Whithorn and two West Country lairds, nine drivers and twenty workmen

fourth cannon: with thirty-six oxen belonging to the king, nine drivers and twenty workmen

fifth cannon: with thirty-six oxen belonging to the king and the provost of Coldstream, nine drivers and twenty workmen.

On 19 August the two gros culverins and four culverin pikmoyens were manhandled from the castle to Saint Mary's Wynd and the following day set off:

87. Ibid., iv, 518.

first gros culverin: with thirty-six oxen belonging to the king, nine drivers and twenty workmen.

second gros culverin: with oxen belonging to the laird of Dalhousie, eight drivers and twenty workmen.

first culverin pikmoyen: with sixteen oxen belonging to the king and a horse, four drivers and ten workmen.

second culverin pikmoyen: with fifteen oxen belonging to the king and the laird of Lochleven and a horse, four drivers and ten workmen.

third culverin pikmoyen: with sixteen oxen belonging to the king and a horse, four drivers and ten workmen.

fourth culverin pikmoyen: with sixteen oxen belonging to the prioress of Haddington and a horse, four drivers and ten workmen.

The other guns followed the culverin pikmoyens as follows:

first culverin moyen: with eight oxen belonging to the laird of Restalrig and a horse, two drivers with a man for the horse and six workmen.

second culverin moyen: with eight oxen belonging to Andrew Aitoun and Robert Arnot and a horse, two drivers with a man for the horse and six workmen.

third culverin moyen: with eight oxen belonging to the laird of Kelly and a horse, two drivers with a man for the horse and six workmen.

fourth culverin moyen: with eight oxen belonging to the laird of Balgonie and a horse, two drivers with a man for the horse and six workmen.

fifth culverin moyen: with eight oxen belonging to the prior of New Abbey and a horse, two drivers with a man for the horse and six workmen.

sixth culverin moyen: with eight oxen belonging to the king and a horse, two drivers with a man for the horse and six workmen.

A crane for mounting and dismounting the guns followed on, drawn by eight oxen and a horse with three drivers. There were also twenty-eight horses with creels loaded with gunstones, fifteen hired carts with powder shot and other equipment, and two close carts. Robert Borthwick had twenty-six men under him 'to bere his chargeouris' (i.e. ramrods), Tom Barker the smith went with two servants and his equipment carried by six carriage horses, John Drummond the wright with his servants and there were at least eleven other gunners many with their own servants:

Tom Duncan and servants

Andrew Carver and two servants

John Henderson and two servants

William Young and one servant

Robert Landellis and two servants

William Mayne and five servants

Walter Haliburton

James Gourlaw

Robert Scougall

Robert Scot, smith, and two servants

Robert Scot's brother.

There may also have been a considerable body of 'gentlemen volunteers', including the king's secretary, Patrick Paniter,⁸⁸ and other workers were detailed to remain at home ready to prepare and send on further supplies to the army.⁸⁹

It is not known what route the artillery took, but given that the first aim was the capture of Norham Castle and that the muster had been

88. James V Letters, 8-9.

89. TA, iv, 515ff.

set for Ellem it is probable that the same route over the Lammermuirs was taken as in 1496. According to the English chronicler Hall⁹⁰ the Scots crossed the Tweed on 22 August but presumably not with all their guns as most of these had only left Edinburgh two days previously. The castle is said to have surrendered in six days after the Scots had made three assaults, the walls having been raised by the Scottish artillery. Hall has it that the Captain of the castle was compelled to yield since he had used up all his supplies of ammunition and arrows but according to the castle's owner, the bishop of Durham, James had besieged, assaulted and in a night of great storm scaled and won it⁹¹ (thus following the advice of Berault Stuart in his Treatise on the Art of War.⁹² The lodgings inside were destroyed, the curtain walls knocked down and the gates and ordnance taken away, but the Scots made little impression on the great twelfth-century keep.⁹³

At the same time evidently as Norham was being assaulted that other important English fortress on the Tweed at Wark was also taken.⁹⁴ The Scots then moved on a few miles further to the south to take Etal and Ford, two other castles of some strength.⁹⁵ Whereas in the raid of 1496 all the tower houses in the northerly portion of the English East Marches had been destroyed now it was the turn of the larger castles. Only the town and castle of Berwick remained untouched.

This far James's expedition was a success. His artillery had performed admirably and speedily at Norham if not elsewhere. But now an English army under the earl of Surrey was on its way north to seek revenge. James could have retreated before it in time-honoured fashion

90. Hall's Chronicle, 557.

91. Ibid., p 557; Henry VIII Letters & Papers, I, ii, no. 2279.

92. Comminges, Traité sur l'Art de la Guerre, 12.

93. Henry VIII Letters & Papers, I, ii, no. 2284.

94. Pitscottie, Historie, i, 262.

95. Dalrymple, Historie, ii, 144.

and left it to waste its energies on a retaliatory raid into Southern Scotland. The weather was wet and windy, producing conditions which were not ideal for campaigning and it is probable that Surrey would have had great difficulties in keeping his army together, especially since it had run out of its staple drink, beer. Surrey's greatest worry, however, was probably that despite his carefully laid plans he would miss the Scots altogether and have to face accounting to his royal master for all the money spent on the expedition. He may^{not}/have expected that Norham would fall so quickly and he must certainly have been hampered by the appalling weather but the fact that he only called for the muster of his troops at Newcastle on 1 September and then only took the field at Bolton near Alnwick on 5 September seems to compare unfavourably with the speed of the English response in 1496, 1497 and 1523. What is more, Bolton was little more than a good day's march away from the Scottish position at Ford and it might therefore seem remarkable that it took a further four days for the two sides to close.⁹⁶

On 4 September, Surrey in his determination that James should not escape him without a fight, shrewdly sent him a challenge to battle from Alnwick, a challenge which James could not refuse if he wished to retain his prestige and self respect. James, however, had no intention of playing into Surrey's hands and shifted himself to a commanding position within easy striking distance of the Border. Here on Flodden Edge he dug earthwork defences for at least some of his army and awaited Surrey's arrival. Historians⁹⁷ with the benefit of hind-sight have made the king, acting on the ill-advice of his French advisers, go against the wishes of his nobles in striving for a pitched battle. It is possible, however,

96. Pace Mackie "The English Army at Flodden" who argues that Surrey's response was quick.

97. See especially Buchanan, History, ii, 252-5.

that even now he hoped to avoid a fight and retreat in time-honoured fashion. If this indeed was his intention it looked as if his strategy would meet with success as Surrey, only about six miles away from the Scots on 6 September, evidently had no desire to attack the Scottish position. Instead he wrote again to James the following day to invite him to come down and fight in the plain to which James evidently replied that it was not for a mere earl to dictate to a king and that he would fight where and when he chose.⁹⁸

This is not the place to give a detailed account of the ensuing battle. The most important point to grasp about it was that it was a fight between an amateur Scottish and a well-led professional English army, both sides being at the time of the conflict of approximately the same size. It is only our concern to consider the part the guns had in the battle, especially since the bad handling of the Scottish guns has been claimed as one of the major causes of the Scottish defeat. The basic facts are that James took up a position with his army in a 'fortified camp' on a rising piece of ground, Flodden Hill, facing east and overlooking the valley of the River Till, to await the coming of the English to give battle by noon on 9 September. Surrey considered the Scottish position impregnable, and unable to tempt James down to the plain he engaged in a daring flanking movement round the Scottish position hoping to secure the neighbouring high ground to the north of the position, known as Branxton Hill. Hall says the Scottish artillery fired harmlessly at the English on 7 September as they were encamped three miles away at Wooler Haugh.⁹⁹ Pitscottie has a picturesque tale of how on the day of the battle

'the maister gounar come in presentis of the king and fell on his

98. D. Laing, 'A Contemporary Account of the Battle of Flodden', Proc Soc Antiq Scot., vii (1866-8), 146.

99. Hall's Chronicle, 560.

kneyis desyrand at the king that he might schott his artaillyhe
at the Inglische ost, quhair they war command ower the brige of
Till; ffor he promissit and tuik in hand that he sould cut the
brig at thair owercomming, that the king sould have no displesour
at the on half quhill the other sould be devourit ffor he staillit
his artaillze for the brige and thai come thairon. The king
ansuerit to Robert Borthuik his gounar lyk ane man that was be
reft of his wit sayand to him "I sall hang the, quarter the, and
draw the gif thow schott ane schot this day, for I ame determinat
I will have them all befoir me on ane plaine ffeild and say thame
quhat they can do all befor me".¹⁰⁰

In any case Twizel Bridge was a good five miles away, well out of artillery
range.

The Scots may at first have been in some doubt as to whether the
English would attack at all or whether they would go on into Scotland to
ravage the Merse. When it became clear that they were aiming to occupy
Branxton Hill James ordered his army to shift from its position on Flodden
Hill to take up a new position on Branxton, thus denying it to the English.
While James seems to have been able to make a reasonable job of reposition-
ing his army, a difficult task for ill-trained troops, he probably did
not have the same success with his artillery. It would have taken a
considerable amount of time to hitch the guns to their oxen and thereafter
have them hauled a distance of about a mile and a half to two miles across
ground made boggy by the rainy weather. If James decided to move soon
after eleven o'clock this allowed a good five hours for the
manoeuvre. It must be emphasised once again that the Scottish guns were
essentially a train of siege artillery and were not suitable for the

100. Pitscottie, Historie, i, 270.

rapid fire and quick manoeuvring necessary on a battlefield.

Be that as it may Lord Sinclair did succeed in getting his guns into action at the beginning of the engagement but apparently without making much of a hit on the advancing English. Possibly there was no time to position the guns properly. It would in any case be unfair to blame the gunners alone and there is no evidence, as has been suggested by Donaldson, that the gunners at Flodden were not the best available, all the best ones having gone with the fleet. It was probably the case that there were fewer skilled men per gun than in the English army and it is worthy of note that James had written to Louis XII asking among other things, for gunners who knew their job.¹⁰¹

If the Scottish guns played little part in the battle it was a different matter with the English ones. As far back as December 1511 Henry VIII had been getting ready artillery against the eventuality of a Scottish war. In that month he recalled some guns which he had lent to Margaret of Savoy à cause de son expedition contre les Ecossais.¹⁰² The real commencement of Surrey's expedition was 21 July at Lambeth near London when various captains, the master of the ordnance, Sir Nicholas Appleyard, and other staff were feed for two months and set out for the north. The guns were moved speedily to Durham and then to Newcastle where the army gathered on 1 September.¹⁰³ The only clue as to what the English artillery consisted of is that after the battle Surrey delivered to Berwick, in addition to the captured Scottish guns, eighteen falcons and five serpentines of brass.¹⁰⁴ Falcons were ideal field guns for battle, light enough to be moved fairly readily but, with a range of over 1,000 yards, capable of inflicting deadly damage on massed ranks of

101. G. Donaldson, Scottish Kings (London, 1967), 137; Flodden Papers, 72-79.

102. Henry VIII Letters & Papers, I, i, no. 992.

103. Hall's Chronicle, 556-7.

104. Henry VIII Letters & Papers, I, ii, no. 2651.

men. By serpentines in this context should be understood guns larger than falcons but whether as large as the Scottish culverin pikmoyens, identified by the English as serpentines, may be open to doubt. Mackie has guessed that these guns were served by a total of about 400 men.¹⁰⁵

Hall describes how the battle started with an artillery duel between the two sides in which the English master gunner slew the Scottish master gunner (but as we have shown Borthwick was certainly not killed in this engagement). The English guns then started to sweep holes through the massed ranks of the battle led by James IV, precipitating the king's decision to advance on the English lines. As is well known, in the hand to hand fighting that ensued the Scots came off worse than the English, a matter made very much worse by the fact that all the Scottish leaders from the king down, fighting in the fore front of the battle, were slain. The Scottish guns were abandoned on the field of battle. A body of about 800 Scots made a vain attempt the following day to carry them off but were repulsed after a struggle.¹⁰⁶ In any case they would probably have lacked the means to haul them away.

It is clear that both Scots and English expected guns to play an important part in battle and whether or not the former had really foreseen a major pitched battle in 1513 this was the first occasion that guns were given any prominence on the field. James IV's efforts to provide enough guns for his fleet, his army and even his allies, and the gunnery establishment to back them up with its own permanent quarters and gun foundry in Edinburgh Castle, was an impressive achievement, almost too expensive for his poor, small country to bear.

105. J.D. Mackie, 'The English Army at Flodden', Scot. Hist. Soc., 3rd ser, xliii (1951), 63.

106. Henry VIII Letters & Papers, I, ii, no. 2246 (3); cf. Hall's Chronicle, 564.

Despite this depressing set-back it was clear to the Scots that artillery had come to stay and could not be neglected. The stimulus to further development, however, was provided by the arrival of John duke of Albany from France to become governor of the kingdom for the infant James V. Albany was the son of that duke of Albany who had been such a thorn in the flesh of his elder brother James III. He had been raised in France and was virtually a Frenchman except in name. He was also a noted soldier whose reputation, gained in the wars in Italy, was already high before he set foot in Scotland, and it is possible to see his influence and military interests in many of the enactments of his governorship.

Albany was unable to come to Scotland until 1515 but the Sieur de la Bastie was sent ahead to represent him and protect his interests. Before 1513/14 was out he had with Robert Borthwick inspected Edinburgh Castle, then 'desolat of artalyhery and othir thingis necessar for defens and keping tharof' and 'devisit bulwerkis and trinchis to be made before the place and siclike within the castle to be stuffit with men and artalyhery'.¹⁰⁷ Although the work was to be done speedily it was not until the end of 1517/18 that the lords ordered Robert Borthwick and six cannoneers with him to remain continuously in the castle for its defence.¹⁰⁸

The problem of the lack of artillery in the castle was to some extent lessened with Albany's arrival early in the summer of 1515, bringing with him James IV's ships the Margaret and the James. The Michael with its artillery remained in France and was sold to the French king.¹⁰⁹

107. ADCP, 11.

108. Ibid., 83.

109. TA, v, 16; Henry VIII Letters & Papers, II, ii, no. 3330.

Arrangements were made speedily to off-load the artillery from the Scottish ships at Dumbarton, at least fourteen pieces of artillery, great and small, including two great cannon, and send it through to Edinburgh. These were probably the Scots' own guns.¹¹⁰ Albany himself brought several guns and there was much activity at Holyrood Palace that summer with craftsmen working on close carts, gun stocks and palyeons.¹¹¹ Pitscottie's statement that six cannon, six great field pieces and other small artillery, culverins, hagbuts and crossbows were brought with Albany at this time may not be very far off the mark.¹¹²

Gun founding was recommenced in 1515 and there was the prospect of other guns from abroad. It was rumoured in England at the end of the year that certain large pieces of artillery being cast at Mechlin (now in Belgium) were for Albany and an English intelligence report of about the same time suggested quantities of arms and men, including twenty-two pieces of artillery, would be sent to Albany by Francis I.¹¹³

Of James IV's gunners only Robert Borthwick, Robert Herwort and Hans are known to have remained in service, along with other craftsmen like John Drummond the wright and Robert Scott the smith. Upwards of fifteen new gunners were employed by Albany immediately after his coming, including Adrian Frened, Thomas Waiche, John Grener, Robin Cumbald, John Rowan, Bastian Nicholas, Evon Spencyr, Nicholas Pirlie, Robin Talyhefeir, Gilbert Forbes, Thomas Spark, Anthony Pareyne, Peyr Powis and William Spang,¹¹⁴ many of whom do not seem to have been of Scottish extraction. Albany made one of his Frenchmen, Jehannot de Lavall, master of the artillery in the place of Lord Sinclair, his letter of appointment being

110. TA, v, 17, 38.

111. Ibid., v, 14-15.

112. Pitscottie, Historie, i, 288.

113. Henry VIII Letters & Papers, II, i, no. 1478; II, ii, no. 3048.

114. TA, v, 28-38.

dated 25 April 1516,¹¹⁵ and another Frenchman, Captain John Bouskat, acted as commissioner of the artillery from his arrival in 1515.¹¹⁶

The office of commissioner was presumably based on the French commissaires de l'artillerie, officers who were responsible for the financial affairs and other administrative matters of the bands of artillery.¹¹⁷ In France there was one for each band of artillery but in Scotland the whole of the very much smaller gunnery establishment was treated as one band and there was only ever one commissioner at a time. Bouskat is recorded as being responsible for Robert Borthwick's account of expenses for gunfounding, for the payment of the wages of gunners and expenses on the artillery, and even for mending the stairs in Edinburgh Castle,¹¹⁸ all in the first year or so of his office, but he and Lavall seem to have returned with Albany to France in the summer of 1517, never to return.

Albany's visit to France was only intended to be a short one but for political reasons beyond his control he was not able to return again for several years. Francis I had no wish that he should lead Scotland on a pro-French path that would antagonise Henry VIII of England. Robert Borthwick went with him but returned shortly afterwards. La Bastie stayed behind and Albany's castle of Dunbar was left strongly fortified and provisioned, defended by gunners, six in all, including their leader Master Wolf. The castle on Inchgarvie in the Firth of Forth had two gunners, Dumbarton Castle three, and there were six gunners under Robert Borthwick in Edinburgh Castle.¹¹⁹

115. RSS, i, no. 2756.

116. TA, v, 19.

117. See P. Contamine, 'L'Artillerie royale française à la veille des guerres d'Italie', Annales de Bretagne, lxxi (1964), 225.

118. Ibid., v, 19, 30, 32, 36, 37, 52, 71.

119. Ibid., v, 161-2; ADCP, 83.

Thomas Cameron, referred to as keeper of the artillery or munitions, probably assumed the financial and administrative functions of Captain Bouskat in his absence. He had been one of Lord Sinclair's servants being connected with the guns in 1511 when he was awarded expenses for transporting guns and in 1513 he was working in the powder mill in Edinburgh Castle.¹²⁰ There was also a master of the artillery, or more than one, paid in the years from 1517 to 1523 but the only clue that survives is a letter under the privy seal sometime in 1521 to a Frenchman, Francois Broses (de la Brosse ?) appointing him master of the artillery.¹²¹ Possibly the Treasurer, John Campbell of Lundy, assumed this function before this date. He was held responsible by Arran before the raid against the Homes in 1517/18 for not being quick enough in preparing the artillery.¹²²

Albany returned again briefly in 1521 to pursue his pro-French policy and after a further visit to France to whip up support, he landed for the last time in September 1523, in time to lead the second expedition of the year against the English. The Treasurer, Master John Campbell of Lundy, was given the office of master of the artillery for life before the army set off,¹²³ but despite the munitions, men and money gained from France the expedition ignominiously failed before Wark Castle and Albany returned to France, no doubt glad to see the back of his father's country for good.

Albany did not lack vigour in undertaking military enterprises whilst in Scotland but the first campaign of his governorship about which much documentation survives was led in his absence by the earl of Arran against David Home, Laird of Wedderburn, William Cockburn of Langton and their

120. TA, iv, 310, 520, v, 162, 206, 232.

121. Ibid., v, 155, 206, 232; RSS, i, no. 3229.

122. ADCP, 117.

123. Ibid., 173.

accomplices who had murdered Albany's French lieutenant de la Bastie on 17 September 1517.¹²⁴ Letters were written to all the sheriffs south of the Mounth. (Huntly and Argyle were then preparing an expedition against Donald of the Isles)¹²⁵ fixing a muster for 21 March. Those from north of the Forth were actually to convene in Edinburgh on the nineteenth, those from the south (including the sheriffdoms of Dunbarton and Stirling) at Lauder on the twentieth, all with ten days' supplies.¹²⁶ The sheriffdoms of Lauder and Haddington were excluded but were, instead, to provide oxen for the artillery. The oxen of Haddington (East Lothian) were to pull the guns to Soutra Edge and there the oxen of Lauder were to take over. Horses and carts were also hired to carry powder, gunstones and other provisions.

As before, the guns were manhandled from the castle and were accompanied by Robert Borthwick, the master gunner, with six servants, James Hog, gunner, in charge of twenty-four pioneers with picks and shovels, John the Smith with one servant, John Drummond the wright with three servants, and Master Wolf, gunner in Dunbar. The master of the artillery (the Treasurer, John Campbell of Lundy ?), was in charge of the whole train and two bands of wageours, one of 309 footmen under Sir John Hamilton, the other of 102 footmen under Captain Glen, protected the artillery from sudden attack. This was rather less than the 500 footmen which the Lords had ordered the treasurer to furnish upon the king's expense.¹²⁷ The burghs south of the Mounth were to provide a further fifty culveriners.

Arran intended to go against the rebel castles of Home, Langton and Wedderburn, but news reached Edinburgh, by 6 March that the rebels had

124. The source for the description of this raid is TA, v, 149-64, unless otherwise stated.

125. ADCP, 115.

126. Ibid., 111.

127. Ibid., 111.

taken the house of East Nesbit and were besieging Blackadder Castle which probably then had a garrison in it paid for by the government.¹²⁸ This meant that Arran had to leave sooner than intended with the fencibles of the South-East to relieve the siege. This first raid lasted nine days and was followed by that originally planned, lasting seven days. The rebel strongholds were taken, probably without a fight, Wedderburn and his accomplices having fled into England.¹²⁹

Mounting an expedition against rebels who did not command much support was rather different from going against the English. Albany pursued this latter course in 1522 and again in 1523, the first time, perhaps, without any serious intention of taking the offensive, more to arrange a truce. The English, however, launched major raids into Scotland in the summer of 1523 and Albany, who had returned to France to seek more support, arrived back on 20 September, too late to save Jedburgh.¹³⁰ From France he brought with him a force of mercenaries, horses, artillery and other equipment, variously reported. On 27 September Surrey, the English commander on the East Marches, wrote to Wolsey that he had been informed that he had brought 8,000 men and 600 horses of which 200 were barded (armoured). About a week later a more definite report was got from the prioress of Coldstream, who had been to see for herself, that there were 4,000 foot and 4,000 horse, among the former being 1,000 culveriners, hagbutters and crossbowmen, the rest being armed with long pikes, and Surrey believed the substance of this report to be accurate. Another informant mentions sixteen great guns called cannons, 900 serpentines and falcons (an obvious exaggeration), and gunpowder to the value of 10,000 crowns weight. In a letter to Surrey

128. Dalrymple, Historie, ii, 171; ADCP, 106.

129. Henry VIII Letters & Papers, II, ii, nos. 4048-51.

130. TA, v, 223.

dated 29 September Queen Margaret gives the French as 4,000 foot, 100 men of arms and 80 barded horses. She lists the guns as twenty-eight cannons and four double cannons 'gretar than ony that vass browht to Noram at the feld', along with much smaller artillery, and adds the interesting information that Albany also had 'gret pavays gangan' upon vhylyz vyth the artylery to schwt and to brek the hostys syndre; and of thys he hath mony and every een of them hath tway scharpe swordys befoor them that nen may tawsche them'. Another spy described these contraptions soon afterwards as carts with swords upon either side, and barded horses to draw them, and Sir William Bulmer, after initially being sceptical of their existence, was able to report to Surrey on 20 October that there were six carts, covered with steel and brass, with eight men in each, and certain guns, 'and is carried with barbed horses, and goeth backward'.¹³¹

These carts of Albany's were evidently something rather more than the carts of war used by the Scots from the 1450s onwards - in fact, they seem to have been veritable fore-runners of the tanks of twentieth-century warfare. The ultimate inspiration for such devices probably went back to the waggons armed with guns used so successfully by the great Hussite leader John Zizka in Bohemia in the 1420s. The idea was enthusiastically taken up by the writers of military treatises and Albany may have seen such carts while serving in the wars in Italy. Certainly the Spaniards experimented with small multiple gun carts protected by spears and swords at Ravenna in 1513. The exact nature of Albany's carts is difficult to gauge from the contemporary descriptions but if they took eight men each they must have been quite large. The mention of pavises (shields) and

131. Henry VIII Letters & Papers, III, ii, nos. 3365, 3368, 3403, 3446, 3451.

the steel and brass suggests that they were closed in while Queen Margaret's description of the swords before, taken in conjunction with Bulmer's report gives the impression that the carts were pushed from behind by their horses, rather than pulled. Such a waggon is shown in a late fifteenth century German firework book.¹³²

As it was, he managed to keep his adversaries guessing till quite late on what he intended to do. As late as 23 October Surrey was still in considerable doubt as to whether to expect an attack on the east or the west. On 1 November Albany battered Wark Castle all day from the Scottish side of the Tweed.¹³³

Albany had had no easy task in getting so far. It was later in the year than was normal for prosecuting large scale campaigns, and over and above that the weather was especially bad with snow and heavy rain causing the rivers to flood.¹³⁴ He also experienced some difficulty or reluctance in getting his force together, especially the contingents of Lennox, Huntly and others from the North, but he was no doubt anxious to press on as all the time his French troops were costing money to feed.

Four places were chosen for musters of the fencibles from the four quarters on 20 October. Huntly and the men of the north were to gather at Stirling, Argyle and the Highlanders at Glasgow, Lennox and the West Country folk at Lanark and Arran with the people of the south-east regions at Lauder.¹³⁵ Albany meanwhile, with his French troops was at Edinburgh. He also intended that a feint should be made on the West Marches by Lord Maxwell and he kept the English alarmed by much talk of a descent upon their coasts by Richard de la Pole, the exiled duke of Suffolk.¹³⁶

132. Cod. Germ. 356, reproduced in A. Halle, Tanks, An Illustrated History of Fighting Vehicles (London, 1971), 18.

133. Henry VIII Letters & Papers, III, ii, nos. 3458, 3499.

134. Ibid., no. 3421.

135. ADCP, 185.

136. Henry VIII Letters & Papers, III, ii, nos. 3365, 3368, 3409, 3434, 3438, 3445, 3451, 3456.

The artillery which Albany had brought from France had to be got across country from Glasgow under the care of Campbell the Treasurer in his capacity as master of the artillery, but a messenger had to be sent to Kirkintilloch on the fifteenth to speed him on his way.

The kirkmen had been ordered to provide oxen, or money in lieu, for pulling the guns, to be in Edinburgh on 12 October with the Laird of Spott.¹³⁷

The burghs were to provide pioneers to serve with the artillery along with horses for the carriage of food and other supplies.¹³⁸

On the eighteenth and nineteenth the guns and the French wageours set off from the Burgh Muir, stopping at Newbattle on the twenty-fourth and then going south to Melrose via Soutra and Lauder. Albany meanwhile took the road to Haddington on 22 October, probably to confer with Captain Gonzolles in his castle at Dunbar about the shipping of other guns from there to Eyemouth. It was only, however, on 27 October at Melrose, a good eighteen miles from his objective, Wark Castle, that Albany mustered all his forces, and another three days passed before Wark was fired upon. Surrey thought it possible that he was waiting for the English army to disband before invading England but the bad weather, problems of gathering and keeping together his forces and transporting his artillery may have had as much as anything to do with his apparent slowness. On 30 October he had good cause to be 'in a marvellous great fume all day' because the axletrees of five or six of his great guns broke.¹³⁹

For the siege of Wark Castle Albany is said in a contemporary English account to have had a great gun (Mons ?), eight cannons, two double cannons and twenty-four falcons and serpentines and there may have been other guns

137. TA, v, 225, 228; ADCP, 181.

138. TA, v, 226.

139. Henry VIII Letters & Papers, III, ii, nos 3435, 3460, 3467, 3468, 3477, 3478, 3489.

besides from Dunbar Castle.¹⁴⁰ There was good reason in going against Wark as it had just recently been rebuilt and refurbished after its destruction by the Scots in 1513. Basically it consisted of a massive artillery tower with two courtyards alongside on the edge of the river (see fuller account below), and with the new bulwarks added hurriedly by Richard Cavendish, the master of the ordnance at Berwick not long before the arrival of the Scots, Surrey reckoned it could stand a ten days' siege.¹⁴¹ This was probably the most that any castle of strength could be hoped to last provided the enemy was capable of mounting sufficient batteries against it. A major problem with Wark, however, was that the donjon or artillery tower, had shallow foundations and could be easily mined.¹⁴² In the event the Scots did not have an opportunity to do so.

The historian George Buchanan as a young man was actually present at the siege of Wark Castle and describes it thus in his History:

'After refreshing his soldiers a few days, and being joined by the Scottish forces, the regent, on the 22nd October, marched towards the borders, but when he was about to enter England, and had already led the greater part of his troops across the wooden bridge near Melrose, the Scots, pretending the same excuses as in the former expedition to Solway, refused to advance into England, and those who had crossed, repassing the river, returned by the same way. On which, he encamped a little farther down on the left bank of the Tweed, and prepared to besiege Wark castle, situate on the opposite side. In the meantime, a party of horse, sent across the river, shut up all the passages, lest any relief should be introduced, and wasted all the adjacent country. Wark castle

140. Ibid., no. 3489.

141. Ibid., no. 3365.

142. Ibid., no. 3472.

consists of a strongly fortified, and very high tower, in the inner court, which is surrounded by a double wall. The outer wall encloses a large space of ground, whither the country people, in time of war, are accustomed to seek refuge, together with their cattle, and the produce of their farms. The inner encloses a much narrower space, but is surrounded by a ditch, and better fortified with towers raised upon it. The French took possession of the exterior court by assault, but the English setting fire to the barns and straw, they were forced by the flames and the smoke, to evacuate it. Then, the next two days they battered the inner wall with their cannon, and when they had effected what they thought a practicable breach, the French mounted with the greatest ardour, but being exposed to every missile weapon from the tower, which still remained entire, after losing a few men, they were beat back, and retired to the army, on the other side of the river.

The regent, when he perceived the Scots averse to the war, and at the same time receiving certain information that the English were advancing with an army much more numerous than his own, according to their own writers, fifty thousand men, besides six thousand in garrison at Berwick in the vicinity, he decamped on the 11th November, and marched to Eccles, a monastery about six miles distant, and thence, at the third watch, by a nocturnal march, he retreated to Lauder, during which, both men and horse were greatly annoyed by a severe fall of snow'.¹⁴³

Buchanan's account can be balanced by the official English report by Surrey in a letter to Henry VIII of 3 November. According to this

143. Buchanan, History, ii, 287-8.

Albany came with a great puissance to Wark on Saturday night (31 October) and shot all Sunday and Monday. Word being brought to Surrey at Holy Island, at 7.00 pm. on Sunday, he sent letters immediately to his captains to meet him at Bar Moor Wood on Monday; which they did. At 3.00 pm. on Monday, the Tweed being too high to ford, Albany sent 2,000 Frenchmen in boats to assault the place. They entered the basecourt, and were kept back for an hour and a half by Sir William Lisle, captain of the castle and 100 men. At length they gained the inner ward, but were immediately attacked by Lisle, and driven out of both the inner and outer wards, and ten persons slain. Surrey received notice at 3.00 am. on Tuesday morning from Lisle that he could not keep the castle without help and advanced to his rescue at break of day; but Albany, hearing of it, retreated with his whole force.¹⁴⁴

This report differs from Buchanan's mainly in not mentioning an initial assault on the outer ward, presumably on the Saturday before the artillery bombardment began. Buchanan's date of 11 November for Albany's departure is surely wrong. The Scottish expedition lasted fifteen days from the musters on 20 October to the departure from Wark on Tuesday the third, but it must be remembered that it followed hard on the heels of the hosting called for 22 September to deal with Surrey's invasion of the Borders and it is probable that Albany could not have kept his force together much longer, either legally or through any sense of duty on the part of the nobles and their followings. Buchanan's comments on the unwillingness of the Scots to advance into England are very convincing.

The English mobilisation was well organised, and there is every reason to think that as in 1513 the English army would have been more than a match for the Scots if they had clashed in battle. Surrey, who was

144. Henry VIII Letters & Papers, III, ii, no. 3506.

Lieutenant of the Northern Parts as well as warden of the East and Middle Marches, started his preparation on his return from raiding Scotland in September, inspecting and strengthening the border fortifications, organising lines of communications and warning beacons. Arrangements were also made for threshing and removing all supplies of corn from within five or six miles of the Scottish Border on the East Marches and there was considerable discussion about 'casting the fords', a policy probably unnecessary since the rivers were in spate. Surrey mustered his forces on 20 October, the same day as Albany, gathering them at Newcastle and Morpeth, and from there advanced up the east to Alnwick and Belford by the thirtieth. Meanwhile Dacre, who was warden of the English West Marches and Captain of Carlisle, moved eastwards and was at Whittingham by the thirty-first, keeping his distance from Surrey's force so that they did not have to compete for the same scarce provisions. The surviving English official papers of the period make it clear that Surrey did not lack speedy and effective intelligence of Albany's movements and he was thus well placed by the time Wark Castle was attacked. Buchanan claims that the English numbered 50,000 men by their own accounts, and, indeed, this is the very figure which the English ambassador to the Low Countries gave out to Margaret of Austria. Even if it is an exaggeration it is likely that Surrey commanded more troops than Albany, professional soldiers drawn from the whole of England from Shropshire, Stafford, Derby and Nottinghamshire northwards¹⁴⁵ - that is from a larger area than in 1513 when these four last mentioned counties seem to have been excluded.¹⁴⁶

145. This account of the English mobilisation is drawn from Henry VIII Letters & Papers, III, ii, principally nos. 3365, 3381, 3385, 3387, 3407, 3413, 3414, 3447, 3458, 3477, 3481, 3487, 3499, 3506, 3537.

146. Mackie, 'The English Army at Flodden', 53, 55.

Albany's expedition of 1523 marks the end of an era in Scottish warfare. It was the last major attempt by the Scots to win an advantage over the English by open assault and battery of their frontier fortifications. It was a strategy that looked as if it might promise good results in 1496, was disappointed in 1497 by the failure to take Norham Castle, and proved disastrous in 1513, 1522 and 1523. Why did the Scots pursue it in the first place and why was it such a failure?

Innumerable answers could no doubt be suggested for why the Scots adopted this strategy but only one of these is of interest to us here. This was quite simply the predictability of the effect of guns by the reign of James IV. If sufficient guns could be brought to bear against a fortification for a sufficient length of time that fortification would inevitably be battered into a state of indefensibility. The Scots, anxious not to be left behind by their neighbours, eagerly acquired the guns, and facing them across their southern border was no fortification which, when effectively attacked, could be expected to hold out longer than a few days. With sufficient manpower to blockade the chosen strongpoint and prevent relief from the neighbouring castles the Scots could hope to capture and demolish their objective and withdraw before a relief army arrived on the scene. If this all took place in late summer or autumn the lateness of the year might deter the English from doing too much damage in Scotland in revenge. While Berwick was not actually attacked at this time the successful reduction of English strongholds in the East Marches would have the effect of isolating it and it can hardly be doubted that its ultimate recovery was a major foreign policy objective of James IV and Albany. The recovery of Berwick, and other political gains apart, the strategy had the very obvious advantage that it avoided pitched battles which the English

were more likely to win through greater numbers and better training. Even if they lost their resources were such that the effect was not likely to be so disastrous as a Scottish defeat in which the entire national fighting force and all the available money was invested.

So much for the theory; now for the practice. This strategy only achieved any significant measure of success in 1496 when Heaton Castle was destroyed and the host had time to withdraw before the arrival of the English army of relief. We have estimated above that the Scottish guns could only have been brought to play against Heaton Castle for four days at most and in the following year Norham Castle was probably not bombarded for any longer. In 1513 Norham fell within six days and James, with greater resources than on either of the previous two occasions stayed on to do more damage. In 1523 Albany only shot at Wark Castle for two days.

Even if the English were slow to send a relief force it is evident that the Scots could not keep the field on the English side of the border for longer than a very few days. Even in 1513, when arguably the biggest national military effort ever was made, the army stayed only from 22 August to 9 September. In fact, English intelligence of the Scottish intended hostilities was normally good and a relief army could be ready to face the intruders within a few days. Only in 1513 were the English surprisingly late in the field. Thus the very few days the Scots were likely to have for bombarding an enemy fortress after the time taken to get their men and guns to the Border and before money ran out and before the time came for the host to be disbanded were likely to be made even fewer by the appearance of an English army as in 1523. The Scots may well have been following the advice of D'Aubigny, incorporated in his treatise, not to wait for the arrival of an army of relief as to be caught at a siege was already to be half beaten.¹⁴⁷

147. Comminges, Traité sur l'Art de la Guerre de Seigneur d'Aubigny, 12-13.

This strategy which was so expensive to the Scots and which failed to produce any lasting advantages could only be pursued in 1523 thanks to substantial French aid in the form of mercenary troops and money payments to the nobles. Its failure in that year, hard upon the debacle of the preceding year, did not so much discredit Albany as a military leader (he went on to serve the king of France well in the Italian Wars) as kill any remaining enthusiasm for such warfare against England.

INTRODUCTION

The power vacuum left on the final departure of Albany was soon filled by Angus and the Douglasses who managed to keep the young James V firmly under their control until 1528. Angus was disposed to follow a pro-English policy and major hostilities did not break out with the old enemy until the end of James' reign. King Henry of England saw the accession of an infant Queen Mary as an ideal opportunity to unite Scotland with England by marrying his son Edward to her. When his plans fell through, largely owing to well-founded Scottish suspicion of his full intentions, war was inevitable and the Governor Arran attempted to steer a difficult wavering course, largely the result of trying to maintain his family's own interests, until forced to step down in favour of the Queen dowager, Mary of Guise, in 1554. The years from 1543 onwards were ones of almost constant warfare with the English, with much raiding being done by both sides, but the Scots were able to hold their own until 1547. This indeed, despite the misguided efforts of James V in 1542 and of Lorges de Montgomery three years later, was the extent of Scottish military ambition at this time.

THE REIGN OF JAMES V

Alexander Jardine of Applegarth, who had been Albany's comptroller of the household, was appointed master of the artillery in July 1526 (ducem, gubernatorem et custodem magonaliu sive machina bellicarum regis pro toto tempore vite sue).¹ Three months later the ruling faction of the Douglasses

1. Henry VIII. Letters & Papers, II, i, no. 1672; RSS, i, no. 3417.

led by the Earl of Angus secured the appointment of one of their protégés, John Melville of Raith, to this post² which he did not enjoy for long. The young James V managed to escape from the clutches of the Douglasses in June 1528 and immediately set out to destroy the power of Angus and his following. Sir Alexander Jardine was reinstated as master of the artillery for the siege of Angus' chief stronghold, Tantallon Castle in East Lothian, later that year and protested before the Lords of Council that he should not be held responsible for the present poor state of the artillery no doubt because he had been prevented from performing his responsibilities in connection with it due to the intrusion of Melville.³

Henry Stewart, a younger brother of Lord Ochiltree, who had recently married the dowager Queen Margaret was received into favour by James V and according to Bishop Leslie was not only confirmed Lord Methven in parliament in 1528 but was made 'gret Lieuetennant of the gret artilyhie quhilk with us is an office verie honorable'.⁴ Jardine was certainly dead by 1530 but on the other hand the writer of the Diurnal of Remarkable Occurrents records that late in 1528 Robert Barton of Over Barnton was made treasurer in place of the Abbot of Holyrood and also comptroller, great customar, master of the artillery and conservator of the mines. Certainly in August 1529 his consent was required for sending some guns and gunners with the Earl of Argyll on a royal expedition to the Western Isles.⁵

Now, the post of master of the artillery combined administrative duties with a definite role as leader of the artillery train on the field of battle. Masters like Lord Sinclair and the Frenchmen appointed by

2. RSS, i, no. 3521.

3. ADCP, 284.

4. Dalrymple, Historie, ii, 217.

5. Diurnal, 13; ADCP, 313.

Albany may have been picked for their abilities in these fields but there is also some evidence from the reign of James V that the post may sometimes have been granted as a sinecure to augment the salary of another officer of state. When John Campbell of Lundy was appointed master in 1523 he already held the post of Treasurer and it is not difficult to guess at why Robert Barton should have been given the post. Barton, a member of that noted Scottish family of seafaring merchants, was appointed Treasurer at a time when the royal funds were at a very low ebb. In fact he may have owed his advancement to the post to the fact that he himself was well-moneyed. Royal expenditure tended far to exceed income and the Treasurer could find himself in the situation of being responsible for large debts or even using his own finances to stave off the king's debtors. Hence the other posts including master of the artillery held by Barton may have been intended as some form of recompense. On the other hand, in the case of Lord Methven, there is the suggestion in his appointment to the post if not in 1528 some time prior to or during 1531, of an attempt to find a position of suitable status though not necessarily power for the consort of Queen Margaret.

Robert Borthwick died in 1531 or 1532 and was succeeded as master gunner by John Drummond the carpenter. He is also referred to in official documents as master gunfounder but this post was actually held from April 1532 by Borthwick's servant Peris Rowan.⁶ Drummond did well in royal service, receiving gifts of land as well as his salary, and the rent of a house in Edinburgh belonging to the priest of St Leonards. By 1541 he is referred to as 'principale carpentar, gunnar, meltar and yheman kepar of oure soverane lordis artailliery'.⁷ It is difficult to

6. *RSS*, ii, nos 1304, 1213.

7. *Ibid.*, ii, nos 1304, 4359; iii, no. 1603.

know exactly how many gunners, wrights and smiths were working with him at any one time in James V's reign, but just afterwards, in 1543, there were fifteen in all in Edinburgh Castle.⁸

John Drummond, master wright and gunner	paid £8 6s 8d per month	
Hans Cuninghame (gunner, also called John?)	" £5	"
Christopher, Frenchman, gunner	" £5	"
William Hill, smith and gunner	" £4	"
John Crawford, wright and gunner	" £4	"
Andrew Mansion, Frenchman, wright and gunner	" £3	"
Robert Murray, plumber and gunner	" £3	"
John Clerk, gunner (also principal jackmaker)	" £3	"
Martin Cuninghame (son of John)	" £3	"
William Dalgleish, gunner (Dutchman)	" £3	"
David Lumley, gunner	" £3	"
(John) Bickerton, gunner (smith and culverinmaker)	" £3	"
Gilbert Balnaves, gunner	" £3	"
John Byres, gunner	" £3	"
(Thomas) Kennedy, gunner (in Leith)	" £3	"

There were in fact more gunners than this, not least the master melter Peris Rowan and Master Hans Cochran. The latter was appointed one of the king's principal gunners (unum ex principalibus magistris tormentorum domini regis emissoribus) in January 1538/9 with an annual salary of £100.⁹ This put him at the same level as Drummond and ahead of all the other gunners including Rowan. It is of interest to speculate why he and Rowan were paid twice yearly while all the rest of the gunners and craftsmen were paid monthly. The explanation may be that neither worked for the government full-time but only when gun casting was required. Both probably ran their own private foundries.

Finally there were the 'Frenchemen, gunnaris, cannoneris' in the castle of Dunbar which had continued to be held for Albany until King James acquired it after his marriage in 1536 along with its guns and gunners:

8. TA, viii, 225-6.

9. RSS, ii, no 2840. His servant Nicholas Heliot was given a pension from November 1541 (Ibid., ii, no 4300).

(John Marscho)	paid £4 4s	per month	
Master Wolf, gunner	" £4 4s	"	
Theobald Roquenow, gunner	" £3 15s	"	
Pierre du Boyis	" £3 15s	"	
Pierre Cumbo	" £3 15s	"	
John Roquenow	" £3 15s	"	
Pierre Schouffene	" £3 15s	"	
John Gungo	" £3 15s	"	
John Forbes	" £3	"	
Thomas Liddel, gunner	" £3	"	10

More than half of all these gunners have Scottish names. Of the rest, most, especially those in Dunbar Castle, seem to be of French extraction. There were also Dutch gunners employed under James V : Cornelius of Braidhow (of Breda?), Cornelius of the Feir (of Veere), William Dalglish and William Fandyk. Master Wolf in Dunbar Castle was presumably German as was a certain Hans Denurinbrig (of Nürnberg). We can only guess at the nationality of a gunner in Dunbar who had the picturesque name Lancelot Delake!

James V's first concern on escaping from the Douglasses was to be revenged upon them for his captivity and he lost no time in moving against them. Angus was active in the Lothians and the Merse, riding even up to the gates of Edinburgh, and so James attempted to drive him into England in a raid with the men of Lothian, the Merse, Haddington, Teviotdale, Selkirk and Tweeddale, reputedly to the number of 8,000. These forces were dispersed through the country with orders to muster at Douglasdale and Douglas Castle was then besieged. In the meantime, however, Angus ravished Lothian. At the beginning of October James attempted to take Coldingham Priory with 700 men and instal the Abbot of Jedburgh, Lord Home's brother, but was driven back by Angus and pursued all the way to Dunbar.¹¹

Already on 7 September James had ordered a complete call out of the host at Edinburgh for 20 October in order to go and besiege Tantallon Castle

10. TA, viii, 226.

11. Henry VIII. Letters & Papers, IV, ii, nos 4701, 4709, 4728, 4812, 4830.

near North Berwick, Angus' chief stronghold and undoubtedly one of the strongest fortresses in the land. It had a great fourteenth-century curtain wall over twelve feet (3.66m) thick with a deep rock cut ditch in front of it. The hosting was only to be for twenty days and this was probably the most that James could legally keep his army together at that time owing to the previous musters that year. At the same time as the host was ordered out Sir Alexander Jardine the master of the artillery protested to the Lords of Council that 'sen he had schewin in presens of the kingis grace and lordis forsaide quhat graith and reparacioun the artailyhery misterit, that tharfor na thing suld be laid to his charge in tyme to cum anent the samyn'.¹²

Advice was therefore called for from Robert Borthwick and James Drummond, the chief gunners, what was necessary for the siege, and they reckoned on four cannon and one culverin battard, with thirty pieces of shot, three barrels of powder, twenty-four pioneers and forty oxen to each cannon, and eighteen pioneers and thirty oxen to the battard, with much other graith, carts, equipment, gunners, and eighty joists for 'aparaling' to defend the gunners besides.¹³ These five guns were hardly enough for the task, but Borthwick and Drummond may have been more influenced by what was available than was desirable. Scotland was still struggling to re-arm and replace all the guns she had lost at Flodden, and although Albany had brought several guns over from France all or most of these may have ended up in his castle at Dunbar. James was also to take four falcons to the siege but other artillery had to be borrowed from Albany's garrison in Dunbar Castle, a situation which must have been particularly irksome to the king. Our only source of information

12. ADCP, 284.

13. Ibid., 285.

for the guns James actually had at the siege, apart from those already mentioned, is Pitscottie, and not too much reliance need be put on his statement that James got two great cannons, two great battarts, two moyens, two double falcons and four quarter falcons from Dunbar.¹⁴ Even if he had these guns along with those recommended by his own gunners he would only have had six really powerful pieces - a rather meagre battery for the task in hand.

A worse problem by far may have been powder and shot for the guns. Borthwick and Drummond's recommendation of thirty shot per gun must be set against the fact that a cannon at that time might be expected to shoot forty times in the one day.¹⁵ James must have hoped to get shot in considerable quantities from other sources or the siege would hardly have been worth conducting in the first place. Borthwick and Drummond note that there were only three barrels of powder in Edinburgh Castle, five in Stirling eight with Lord Maxwell and six in Dunbar, with the possibility of more from the Archbishop of St. Andrews.

In the event Robert Barton purloined some gunpowder (1 ton of best gunpowder and 10½ tons of bombard powder) left as a security with him by the exiled Danish king Christian II for the money he had spent supporting him in the previous year.¹⁶

The guns were only ordered to be taken from Edinburgh Castle on the night of 22 October and the next morning were presumably harnessed to the oxen which several of the nobles had been ordered to have at Craigingalt* between six and seven on the morning of the twenty-third. Meanwhile arrangements were made for the king to lodge at North Berwick, Arran at

14. Pitscottie, *Historie*, i, 331.

15. Cf. P. Contamine, *L'Artillerie royale française à la veille des guerres d'Italie*, *Annales de Bretagne*, lxxi (1964), 247, n. 99.

16. See W.S. Reid, *Skipper From Leith* (Philadelphia, 1962), 226.

*I.e. Calton Hill.

Tynninghame and Argyll and Moray in Dunbar. Bothwell and the fencibles of the Lothians were to aid the Homes, instal the Abbot of Jedburgh in Coldingham, while the churchmen were to remain in Edinburgh and help to organise supplies of food for the army.¹⁷

Things, however, did not go well at the siege. The castle was bombarded in vain for several days with no damage being done to the defenders, but several of the besiegers were killed, wounded and burned by the explosion of a magazine¹⁸ which was probably the occasion of the death of Herry Borthwick.¹⁹ James gave up the siege on 4 November with nothing achieved, leaving a band of foot and a company of horse to bring home the artillery. That night Angus issued out with a body of 160 horse, attacked and defeated them, killing their captain David Falconer, a favourite of the king,²⁰ and taking the master of the artillery. Angus wrote to Northumberland that, not to dishonour James, especially for Henry VIII's sake, he conducted the artillery out of danger, and let Jardine go, praying him to tell James that he had been his true servant, but according to James, Angus did take some of his guns and he certainly never forgave him for the slaughter of Falconer.²¹

James V's attempts against the Douglasses were a miserable failure, and what was worse, by his unwillingness to conceive of restoring Angus and his tactless handling of others of the nobility he alienated them against him. Unlike the expeditions of James IV against the English border fortresses lack of time was not such a crucial element in the siege of Tantallon. Lack of equipment probably was, and a certain amount of disorganisation in the artillery establishment reflected by the master of

17. ADCP, 289.

18. Buchanan, History, ii, 301.

19. ADCP, 404. A son of Robert Borthwick?

20. Falconer was also one of Scotland's foremost sea-captains, and an associate of Robert Barnton. See Reid, Skipper of Leith, 196-7.

21. Henry VIII. Letters & Papers, IV, ii, nos. 4923, 4924, 4987.

the artillery's protestation to the Lords of Council and perhaps the explosion of the gunpowder.

This was the last major military venture by James until the raids of 1542 when his antagonism of his nobles in military matters paid dividends in a humiliating defeat. Renewed hostilities with the English seemed inevitable at this stage since Henry VIII was furious with James for not keeping his appointment to meet with him at York. In August an English raiding force led by Angus, his brother George Douglas and Sir Robert Bowes was sent into Teviotdale. According to Angus they numbered 3,000 but were driven off in confusion at Haddonrig by a Scottish force of 1,000 under the Earl of Huntly. Bowes, the Captain of Wark and several other leading Englishmen were captured.²²

At the end of October a major invasion was launched into the Merse under the Duke of Norfolk, leaving Berwick on the twenty-second of the month and returning there on the twenty-eighth through lack of food, with little achieved but the burning of Kelso. Apparently the Scots were well prepared for him and he was watched from afar by a Scottish force of 4,000 horse and 3,000 foot under Huntly. Meanwhile the main Scottish army under James was mustered at Lauder but the nobles had no desire to advance into England despite the wishes of their king and soon dispersed. The claim of John Heron, then held prisoner by the Scots, that they numbered only 12,000 instead of the 20,000 expected is most interesting. He attributed this to fear, but we might suppose that it was fear of James's policies rather than merely fear of the enemy. Heron has it that Huntly was accused of cowardice for not attacking as he retreated across the Tweed and that the Lords in general were charged with being faint hearted,²³ but perhaps Huntly should have been congratulated for

22. Ibid., XVII, nos. 662, 673.

23. Ibid., XVII, no. 1100.

his skilful handling of an enemy of great strength and the nobles' refusal to invade was undoubtedly a wise step so late in the year when there were no crops to be damaged, no food to be got and only the English to provoke to more devastating action the following season.

But although the normal campaigning season was past and there had already been considerable military activity that year James stubbornly called out the host again to muster at Lauder on 20 November. It seems he intended to send half his army to invade the East Marches and the other half to invade the West. The former raid was cancelled since the English were too well-prepared for it and instead the forces were concentrated in the West. They were variously estimated by the English as 14,000, 17,000 or 18,000 men and they had with them four falconets, twelve bases mounted two to a cart and three half-bases or hagbuts on another cart.²⁴ It is obvious from this that siege-work was very far from James's mind and that he only intended to harry the countryside. He also presumably did not expect to meet serious opposition and indeed his army was opposed only by a force of 2,000 to 3,000 English.²⁵

James himself did not stay with the army but retired a few miles away to Lochmaben, having given command to one of his courtiers, Oliver Sinclair, an appointment which greatly offended the magnates who by long tradition and superior status considered they were the natural leaders of Scottish armies. This was no doubt the final straw to an army campaigning against its will and it succumbed so readily to the English in an engagement at Solway Moss on 24 November that there has ever since been the suspicion that the nobles, many of whom were captured, deliberately gave themselves up without a fight.

24. Ibid., XVII, nos. 1110, 1115, 1121, 1142, 1175.

25. Ibid., XVII, nos. 1142, 1143.

James V's death at an early age hard on the heels of the battle of Solway Moss was undoubtedly hastened by this humiliating defeat, the climax of a disenchantment between himself and many of the leading nobles. He left as his sole heir the baby Mary only a few days old and for the next twelve years government was vested in the hands of James Hamilton, Earl of Arran, now the heir to the throne. Arran, more led by conflicting factions and loyalties than leader of events, steered a tortuous political course in circumstances that would have mastered many a more decisive man. His espousal of pro-French policies inevitably signalled war with Henry VIII whose ruthless determination to marry his son, the future Edward VI to Queen Mary only forced the Scots closer and closer to the French. The Protector Somerset's invasion of 1547 in pursuance of the same end precipitated Mary's flight to France and her marriage to the dauphin.

The castles of Edinburgh and Dunbar continued as the two main strongholds with permanent squads of gunners, the main workshops being based in Edinburgh. Arran also maintained two gunners, Lowry and John Mullen, at his castles of Hamilton and Cragneithan, while Cardinal Beaton, one of the most influential and powerful men of the time, associated with Arran and the queen mother in the government, had four in his castle at St. Andrews.²⁶ No doubt other great nobles maintained their own gunners as well. 'Gunnars extraordinary' were employed on occasion to go to other castles, in 1544 Crookston, Glasgow, Linlithgow and Kilmarnock, and in 1548 nine were feed for a spell in Edinburgh Castle.²⁷

26. TA, viii, 419, 422; Rent. S. Andree, 224.

27. Ibid., viii, 310, 314; ix, 227.

Lord Methven, in theory at least, continued as master of the artillery but seems to have been ignored by Arran until reinstated after the arrival of the French expeditionary force under d'Essé in 1548. No payments of fees to him are recorded after the death of James V. Before 1548 Methven's role was usurped by two of the governor's relatives. For the raid to Birgham in 1545 the artillery was commanded by Master John Hamilton of Millburn who was master of work in the Palace of Holyrood and in 1547, for the raid of Langholm, Robert Hamilton of the Briggs, Captain of Dunbar Castle, served as master.²⁸ Methven was not a well man. In June 1548 he wrote in a letter to the queen dowager that he was 'subject to sum infermyte of gravaill, and dolour of stayn, as I trast quhar throw I ma nocht gudly awayt apoun lawbouris and service and I ma nocht gudly be daly resedent in your grace service'.²⁹ It was perhaps, however, his close association with Mary of Guise rather than poor health which led to him being passed over. In another letter to the queen dowager dated a week later than the last he complained that

'it is rycht lamentable and displeasand till ony trew hart that has don gret service and evir remanand still and thinkis, will God, to do trew staid and aw of na creator for my lawte to serff weill and get nother thank nor yet luf nor reward. Madam, I meyn nocht this be your grace bot be my lord governour quhom unto I haif writin his wikednes, for I haif ben and thinkis to be als trew as him self saffand his estait and gree all uther wayis.'³⁰

Methven died about 1551 and was succeeded as master of the artillery by Robert Hamilton of the Briggs, although his appointment only dates from February 1555/6.³¹

28. Ibid., viii, 398, 401, 402, 439; ix, 88-89, 431, 445.

29. Mary of Lorraine Corresp., 242-3.

30. Ibid., no. clxxiv.

31. Scots Peerage, vi, 167; RSS, iv, no. 3158.

One of the royal messengers or pursuivants, Adam MacCulloch had a special responsibility as clerk or servant of the master of the artillery and many of the duties of organising the artillery train for expeditions seem to have been delegated to him.³² In December 1543 Alexander Guthrie was appointed 'sercheour and provisour of all and sindry hors and oxin necessar for careing of oure soverane ladyis and hir governouris artailliery, munitionis and victualis to hir oistis, armyis and campis, to be had and maid in all tymes cuming during the tyme of hir weris'.³³ He also had the task of paying the gunners and workers in Edinburgh Castle for which he received twenty merks a year. In 1550 the job was taken over by his servant, William Stewart, who already figured in the accounts for the raid of Langholm three years earlier as clerk of the pioneers or clerk and payer of the workmen and gadmen (ox-drivers).³⁴ For Guthrie this job may have been a first stepping stone in a career as an administrator which saw him become treasurer clerk and common clerk of the burgh of Edinburgh.³⁵

John Drummond continued as master wright and gunner in charge of the other gunners until November 1550. He was succeeded by John Crawford as master wright and gunner in January 1550/1. A month later William Hill, in royal service since April 1530, was appointed master smith and gunner but his subservience to Crawford is established by his rate of pay, at £6 a month £2 6s 8d less than his.³⁶ Peris Rowan the master melter of the guns was only paid £5 a month. He died in August 1545 and was succeeded by his son David with a similar fee from April 1548. Both father and son, however, were also in receipt of a yearly pension of £40 paid in two instalments at Whitsun and Martinmas, raising their pay to

32. TA, viii, 272, 391, 398, 471.

33. RSS, iii, no. 556.

34. TA, X, 89, 94, 447.

35. Edinburgh Burgesses, 222; TA, ix, 447; Edinburgh Burgh Recs, ii, 289, etc.

36. TA, ix, 475; RSS, iv, nos. 1022, 1093.

the same level as Crawford's; but the Rowans confined their activities almost exclusively to founding. The presence of David at Pinkie is a notable exception.³⁷ Master Wolf, in charge of the gunners in Dunbar Castle, took up service with Cardinal Beaton in December 1543.³⁸

With the breakdown of the marriage negotiations with England in 1543 much of the war effort of Scotland and England was directed into raids. In a study of the years from 1543 to 1550 Marcus Merriman has shown that the average raiding party was 400 to 500 strong though it could be as small as 100 or as large as the 2000 which went with Evers and Sir Cuthbert Ratcliff to burn Coldingham and district on 18 February 1544. Along the East Marches alone during the two years from June 1544 until the Treaty of Camp in June 1546, 159 raids are known to have been made.³⁹ This raiding is not of direct relevance to our study as it did not involve guns, unless the casual use of hand firearms. It is nevertheless important as one of the main manifestations of war, a substratum over which the more prestigious raids and sieges were conducted.

The artillery was taken out for the siege of Dalkeith Castle, a Douglas stronghold, in 1543⁴⁰ and again in March 1544 for the siege of Glasgow Castle, held by supporters of the Earl of Lennox.⁴¹ In both cases the castles were captured but how big a part was played by the guns is not known. At Dalkeith the courtyard of the castle was readily won but the towerhouse held out for a number of days longer. Glasgow

37. ER, xviii, 49, 89; RSS, ii, no. 3482; iii, nos. 2719, 2722; TA, ix, 118.

38. TA, viii, 245; Rent. S. Andree, 177, 180, 182, 199, 202.

39. M.H. Merriman, The Struggle for the Marriage of Mary Queen of Scots: English and French Intervention in Scotland, 1543-1550 (London University Ph.D. Thesis, 1975), 99.

40. TA, viii, 235-6; Henry VIII. Letters & Papers, XVIII, ii, nos. 350, 353, 358, 364.

41. TA, viii, 271, 275-7.

surrendered after ten days though it is claimed that the governor's and cardinal's troops lacked powder and bullet and the castle was none the worse for the bombardment.⁴² It is noteworthy that in neither case was much artillery used and for the latter the accounts quite clearly specify only the following: a cannon, a culverin moyen, a culverin bastard and other small guns with only four close-carts and two horses with creels to carry powder, bullets and other necessities. Apart from the gunners and other craftsmen under the command of John Drummond there were sixty pioneers, a hundred wageours with culverins and sixty with spears. Horses for drawing the artillery were requisitioned from Musselburgh, Preston, Tranent, Dalkeith, Newbattle and Lasswade, and the workhorses of Potterrow, Canongate and West Port were taken as well.

When real trouble came in 1544 and an English army under Hertford landed at Granton Craig on 4 May the Scots were almost totally unprepared and failed to provide any effective opposition in the field. The governor and the cardinal managed hastily to gather together an army to defend Leith and Edinburgh, no doubt greatly hindered by the complete opposition to their government of many of the leading nobles, especially Lennox, Angus and Maxwell. Their force consisted of about 5,000 or 6,000 horse with footmen from the Lothians and they drew them up with their guns along a brook (? the Water of Leith), opposing the English advance on Edinburgh. The Scots, however, withdrew to Edinburgh after some sharp fighting, abandoning their guns which are described as two slings and three serpentines (i.e. two slangs and (?) three culverin moyens). The English nevertheless did not pursue them but made for Leith which they soon entered despite some opposition from another Scottish force and 'great trenches and ditches' cast by the Scots to

42. Pitscottie, Historie, ii, 23-24.

defend it. Meanwhile Edinburgh was further reinforced with 2,000 borderers under the Earl of Bothwell and Lord Home.

When the English marched on the town two days later they had little difficulty in battering down the Netherbowgate with a culverin despite the opposition of the town's guns mounted there and fire from the castle. There was some street fighting in which the Scots are said to have come off worst but the English withdrew in disorder having attempted to fire some of the town. Two days later they again forced their way in through the newly refortified Netherbowgate, this time reinforced by 4,000 of their own border horse, and now met no effective resistance, apparently because the governor and other nobles had abandoned the town to its fate. Edinburgh was burned to the ground and many other places besides, including the towns of Haddington and Dunbar. Hertford failed, however, in his objective of taking Edinburgh Castle which the two engineers with his army, Richard Lee and John Rogers, advised him was impregnable. He left a gun behind, dismounted by the castle's artillery and blown up by his own orders to prevent it falling into Scottish hands.⁴³

The English were by no means quit of Scotland, installing a garrison of over 100 men in Coldingham Priory, Berwickshire, in November 1544.⁴⁴ This Arran immediately decided to be rid of and since (Francis) Arcane, an Italian engineer in the service of the English, and Sir George Bowes had advised that Coldingham could only hold out for forty hours against two cannon⁴⁵ it is surprising that the Scots were not successful. It seems, however, that the governor only had one cannon and departed hastily after the first night on the approach of an English relieving force under the wardens of the East and Middle Marches.⁴⁶

43. Henry VIII. Letters & Papers, XIX, i, nos 472, 483, 518, 533, 534. 'The Late Expedition In Scotlande ... 1544' in Dalyell, Fragments, 1-16.

44. Henry VIII. Letters & Papers, XIX, ii, no. 656.

45. Ibid., no. 692.

46. TA, viii, 329; Henry VIII. Letters & Papers, XIX, ii, no 707. Arran's large gun is described as a 'cannoun myoun' in the Treasurer's accounts, but as a cannon in Diurnal of Occurrents, 36. See also Pitscottie, Historie, ii. 30.

Later that winter the Scots got their revenge on the enemy when a small force under the governor, ably assisted by Angus and Buccleuch thrashed a larger English force at Lilliard's Edge (Ancrum) on 27 February, killing or capturing its leaders. The English had for some time been planning an expedition with the intention of occupying or destroying Melrose and in February a force said to be 5,000 strong under Ralph Evers, warden of the Middle Marches, and Sir Brian Layton, captain of Norham Castle, set out intent on the latter course of action. Arran left Edinburgh with a train of artillery on 23 February having, it seems only summoned men from the Lothians. At any rate Scottish sources all agree that his army was vastly inferior in numbers to the English, though the figure given of less than 600 is perhaps too small. Of these twelve score are said to have been a contingent from Fife under the Master of Rothes, who were then doing their spell of duty for the defence of the Borders. The artillery train consisted of three carts of cutthroats and two carts of single falcons. English sources are silent on what happened and we have to rely solely for once on the Scottish accounts, the fullest of which is that of Pitscottie. The Scots are said to have drawn up on foot and to have waited for the English to advance. They had the advantage of sun and wind and soon put the three English lines, perhaps advancing in too much haste, into confusion. Much of the English force consisted of 'assured Scots' who were no doubt glad to change sides when they saw which way the battle was going. Evers and Layton were both killed and many more of the English besides, from two to five hundred, and as many as 1,000 taken prisoner. Casualties amongst the Scots were very slight.⁴⁷

47. TA, viii, 348, 351; Henry VIII. Letters & Papers, XX, i, nos 129, 285; Pitscottie, Historie, ii, 34-41; Dalrymple, Historie, ii, 285-6; Buchanan, History, ii, 346-8; Diurnal of Occurrents, 38.

This victory at Ancrum not only gave the Scots a much needed boost of moral but saw the desertion by the English of their fort at Coldingham,⁴⁸ and the almost total abandonment of the English cause by those who had had to assure with the enemy for their own safety or for political reasons. The governor might well have been reasonably happy with this achievement and the ejection of the enemy from all the historic lands of Scotland apart, of course, from Berwick, although, as he must have been well aware the English were unlikely to suffer this humiliation lying down. In fact, a continuance of an aggressive stand to the English was forced upon Arran by the arrival in the next summer of a French force under Lorges de Montgomery (actually of Scottish descent). In 1543 the French king had sent a fact-finding mission to Scotland under de la Brosse and Menage and they had recommended that if it were desired that the Scots should carry the war into England in support of the French it would be necessary to send 1,500 to 2,000 hagbutters along with 3,000 or 4,000 Swiss landsknechts or other seasoned soldiers.⁴⁹ Now it was hoped that the Scots would be persuaded to provide a diversion of the type envisaged in 1513 in order to relieve pressure from the war in France where the English were strongly fortifying themselves in the Boulonnais.

Contemporary reports are remarkably consistent in giving the size of Montgomery's force as 3,000, including 500 horsemen. Most of the foot seem to have been armed with hagbuts but 500 of them were pikemen. Montgomery also had artillery, two culverin moyens and two bastards, and money to bribe the nobles.⁵⁰ It was possibly a reluctant meeting of the

48. Diurnal of Occurrents, 38.

49. Brosse Missions, 43.

50. Henry VIII. Letters & Papers, XX, i, nos 457, 513, 909, 911, 912, 924; TA, viii, 378-89; Mary of Lorraine Corresp., 137.

Privy Council a month later which declared that since the king of France had shown such friendship in sending this force that all were ready to do their utmost either to defend the realm or invade England, and a muster of the whole host was called for, to gather on Roslin Moor near Edinburgh by 28 July, victualled for one month.⁵¹

We have to rely almost solely on Scottish sources for what actually happened. The army was obviously intended to pass to besiege Wark Castle and guns were got ready in Edinburgh Castle to this end in the month of July. By 8 August the Scottish camp was at Birgham across the Tweed from Wark where it probably remained until the fifteenth when Scottish spies reported the gathering of an English army at 'Barbour Wod' (? Barmoor, about eleven miles away). The artillery, however, commanded by Master John Hamilton of Millburn in place of the master of artillery, Lord Methven, only seems to have got as far as Newbattle by the eighth at earliest and it is certain that the Scots did not actually besiege the castle, despite a confused statement to that effect by Leslie.⁵² Raids were made into England, the country for six miles about being destroyed, but the army returned every night to camp in Scotland. Montgomery is said to have tried to persuade Arran to besiege Wark but he refused to do so since he lacked great artillery.⁵³ Angus and his brother George, and the Earl Marshall and Cassillis, the leading favourers of England at this time wrote to Hertford on the sixteenth claiming responsibility for sabotaging the expedition but the truth of the matter is probably that most of the Scots from the governor down never intended that an invasion should be made in force into England or that major castles should be besieged. The Scots

51. APS, ii, 594, 595.

52. Dalrymple, Historie, ii, 288. Perhaps the confusion is with Albany's attempt of 1523.

53. Pitscottie, Historie, ii, 46; Buchanan, History, ii, 350; Diurnal of Occurrents, 39.

had abandoned the aggressive policies of James IV once and for all back in 1523 and in 1545 the only Scottish noble who Montgomery could find to support his demand for the siege of Wark was Lord Home who was in receipt of French money in any case.⁵⁴ We are drawn to the conclusion that Arran may deliberately have led the French 'up the garden path' with his show of invading England in strength, thus hoping to avoid creating a rupture with France but at the same time preserving the status quo with England on the Borders.

As it was Hertford invaded on 9 September, deliberately at harvest time when the Scots were at their most vulnerable and he could inflict most damage. Included in the places burned were the abbeys of Kelso, Jedburgh and Dryburgh.⁵⁵ What is more, English garrisons were again established on Scottish soil since Lord Maxwell, a captive in England, was persuaded to hand over the castles of Caerlaverock and Lochmaben in the West March for this purpose. Although it was now November Arran quickly set out against them. The siege of Caerlaverock was over by the eighth and Lochmaben by the twenty-ninth, which was all the more remarkable since the only guns which were taken to beat against them were two culverin moyens from Edinburgh Castle and two cannons and a culverin bastard from Hamilton.⁵⁶ The garrison of Caerlaverock, at least, may have been forced to surrender more from lack of supplies than damage inflicted by the Scottish guns. Two letters of the English warden, Wharton, to Henry VIII dated the end of October explain the difficulties of provisioning Caerlavrock and putting in more men since it was already - and possibly since it fell into English hands - contained by the Laird of Johnstone and his men who were probably responsible for

54. Henry VIII. Letters & Papers, XX, i, no. 1091.

55. Henry VIII. Letters & Papers, XX, ii, nos. 533, 633.

56. TA, viii, 415-25.

burning and wasting some of its 'furnytüre', now urgently in need of replacement.⁵⁷

Not many months were to pass before Arran was again bending the royal guns against Scottish fortresses. In July he besieged the royal castle of Dumbarton, held for England by supporters of Lennox. No record survives of what guns he had with him but the castle surrendered in fifteen days and Arran wrote to the Pope that he had recovered it by a miracle.⁵⁸ Then it was the turn of St. Andrews Castle in Fife, being held by the murderers of Archbishop Beaton. A tax was granted by the clergy for its siege in August 1546 and Arran arranged for the host to muster quarter by quarter for twenty days at a time.⁵⁹

Arran's son was being held a hostage within the castle and it was this, as much perhaps as the fact that it was one of the strongest in Scotland, newly fortified and provisioned by the murdered cardinal, that influenced the governor to try and gain the castle by mining. By late October he is said to have mined almost to the foot of the tower. The defenders, however, were aware of this work and were already countermining and showing no great fear.⁶⁰ Mine and countermine survive to this day, hewn out of the solid rock.⁶¹ They show that the castilians must have been successful in heading off the governor's attempt thus forcing him to try and do a deal with them. The castilians refused his offer of Blackness Castle, restitution and a full pardon in return for his son and the castle and Arran launched an artillery barrage with renewed vigour at the end of November.

57. TA, viii, 415-25.

58. ADCP, 553; Henry VIII. Letters & Papers, XXI, ii, no. 6.

59. RPC, i, 38; Diurnal of Occurrents, 42.

60. Henry VIII. Letters & Papers, XXI, ii, no. 380.

61. Fife Inventory, 255-6; S. Cruden, St. Andrews Castle (HMSO, 1958), pls. 4, 6.

A report from those inside the castle describes how
'the governour causid draw aboute to the west treynchis foure
cannons, ane culvering battarde, two culvering moyens, and
sindrie dowbill falcounis,⁶² and this artalyerie and ordinances
was to battare the see towre, the chalmeris on the see parte at
ye northwest, and the west wall.

And upoun the Weddinsday thereafter, thai begane and schote
at 7 houris in the mornyng continualie whill four houris at evin.
In this manetyme we caused our cannoun and utheris pienes of
munitione be ordoured and schote at thare artalyerye and gunnaris,
and keled that day Jhone Borthwik principall gunnare,⁶³ and with
hym uther tuo, and sundry of the soudearis and men of warre, and
hurte the Erle of Argaillis maister gunnare, wha yite lyis bedfaste.

Thate daye thai schote downe all the battellyne and caiphouse
of the seytoure, and the hoyle ruffe of the chalmeris upone the
partis of the sey; and all this day tha schote upone the easte
parte of the castell witht fedderit⁶⁴ ballattis at the hall and
chapell, and dislogid us of that parte be downputting of the ruffis
and sklatis.

Upone the morue, whiche was Thursday, the Governouris artalyerye
schote continualie frome the begynning of the day whill evin at
nycht, semblabilye as thai did the day of before; and that day we
kelid James Law gunnare, and thre witht hym, but our castell and
place was evill battarrit in the heitht partis and ruffe; neverthe-
less, because of the greet slauchter maid be us upon thare gunnaris,

62. Cf. Pitscottie (*Historie*, ii, 86), who says Arran had 'tuo great
cannonis, thraw mow and hir marrow, tuo battardis, tuo dubill fallcons
witht uther small artaillye as effeirit'.

63. Borthwick was not paid as a gunner, but was captain of the wageours.

64. I.e. feathered, meaning missiles with flights?

thai left all further schotyne witht greit artalyerye and
continewid the seage witht watscheing and continuall schoting
of small artalyerye

You shall understand the continuall schoting at the west
partis of the castell spylte in our cellares and bruhouse ane
monthes provisione'.⁶⁵

Possibly if the bombardment could have been kept up longer Arran need
not have abandoned the siege unsuccessfully on 17 December. Lack of
powder and shot were possibly the main reasons for this. In the previous
month powder had had to be sought from the Prior of Pittenweem and the
town council of Dundee, and now lead was got from the roof of the great
hall at Holyrood Abbey for making shot.⁶⁶ Robert Hamilton of the Briggs
acted as master of the artillery in place of Methven.⁶⁷

Two more sieges undertaken by the governor in the following few
months must be reviewed briefly: firstly the siege of Saltoun Castle,
Midlothian, in February 1546/7, and the siege of Langholm Castle,*
Dumfriesshire, in July. All that is known about the former is that two
culverin moyens were sent with a gunner, John Crawford, ten pioneers and
twelve hagbutters under Gavin Hamilton.⁶⁸ Langholm was a castle of the
Maxwells which had recently had an English garrison installed in it. At
the beginning of July it was reported to the English that the Scottish
artillery, consisting of two cannons, a culverin moyen, a culverin bastard,
a pasvolent 'and tua uder pecis of brase quhais namis ar strange, als gret
as cannonis', with twenty other small brass pieces on little carts and
500 men to look after them were to set out from Edinburgh on 8 July.⁶⁹

65. State Papers, V, no. 598.

66. Henry VIII. Letters & Papers, XXI, ii, no. 576; TA, ix, 25, 28, 44.

67. TA, ix, 138.

68. Ibid., ix, 57-58.

69. Cal. Scot. Papers, i, 9.

* The name Langhope is sometimes given in contemporary documents.

From the Treasurer's accounts we learn only of two double falcons, a culverin moyen and a falcon - that is the smaller guns for which horses were hired. The larger guns, including the bastard, were drawn by oxen. A band of 160 wageours under Gavin Hamilton was given wages and eighty pioneers under Duncan Dundas as captain, with William Stewart as clerk of the pioneers and gadmen. Robert Hamilton was in command of all, as master of the artillery and there were various other specialists and craftsmen including the gunners John Drummond, John Crawford and William Hill, all feed for half a month.⁷⁰ Backing up the artillery was the host and the governor had called out the whole army for this task.

(c.) According to Van Der Delft, the Emperor's ambassador in London, it consisted of 18,000 men plus 7,000 savages (Highlanders).⁷¹

The lighter horse-drawn guns left Edinburgh on 7 July going via Peebles and Selkirk and the larger oxen-drawn ones set out the following day via Lauder and Darnick to Selkirk, and then on to Langholm, which was reached no earlier than 15 July. On 6 July Lord Eure and other English commanders in the North wrote to Somerset and the English Privy Council that if the Scots marched towards Peebles they would reckon they intended to attack Langholm, but if towards Lauder that their goal was the East or Middle Marches.⁷² It is therefore very likely that Arran hoped to keep the English guessing as long as possible by sending his guns by two different routes.

Langholm was a towerhouse about 12.8m by 9.1m with walls about 1.7m thick.⁷³ It did not have any gunloops when captured by the English though it is possible they put them in. Wharton, one of the English wardens,

70. TA, ix, 85-94.

71. Cal State Papers. Spanish, ix, 126.

72. Cal. State Papers Domestic (1601-1603) Add. 1547-1565, 326.

73. Dumfries Inventory, no. 429.

reported on 7 July that it could not be fortified with earth for all the low ground about the tower was water, stone and sand. He concluded that the battling and walls to the highest floor should be taken down to make a platform and that the stair, chimney and windows should be counter-mured (that is filled in).⁷⁴ In 1545 it only had a garrison of fifty horsemen and at the time of the siege possibly even less.⁷⁵

The castle is said to have withstood several cannon shots⁷⁶ but other than that there are no accounts of the course of the siege. The smaller guns must have been back in Edinburgh by the twenty-third when the horses were paid off. No sooner had Langholm fallen than word came of the arrival of a French fleet under the command of Leon Strozzi, the Prior of Capua. Arran hastily redirected his large guns to St. Andrews but they did not arrive in time to participate in the final downfall of that fortress,⁷⁷ so long a thorn in Arran's side.

Whatever accusations may be levelled against Arran as governor it would seem unfair on the strength of the numerous campaigns and sieges described above to include that of lack of vigour, and, in fact, what has been mentioned is only part of the story. Arran may have been motivated primarily by an instinct for the survival of himself and his kin but he was not prepared as governor to settle for anything less than all of Scotland to its old boundaries, excluding Berwick. This, at least partially, explains his indefatigable attempts against Dumbarton, St. Andrews, Caerlawerock, Lochmaben and Langhope; but at the same time there is no reason to think that he any more than the rest of the Scots was eager to be pushed by the French into a more aggressive stance against the English.

74. Cal. State Papers Domestic (1601-1603) Add. 1547-1565, 327.

75. Henry VIII. Letters & Papers, XXI, ii, no. 695; State Papers, V, no. 582.

76. Cal. State Papers Spanish, ix, 126.

77. TA. ix, 102, 103.

At national level Arran's policy can be characterised as being passive - the recovery of lost castles and territory and the attrition of invading forces. With the notable exception of the campaign in conjunction with Lorges de Montgomery in 1545 Scottish raids into England were individually on a small scale though overall of a considerable nuisance value.

It may be said - paradoxically - that Arran vigorously pursued a passive policy in the face of English or English-backed aggression, but it cannot be claimed that he was markedly successful. Firstly, although the Scots rightly regarded their victory at Ancrum, where they used their field guns to some effect, as a major feat-of-arms in no way could it be claimed that it impaired England's ability to continue molesting Scottish territory. Worse than that, it served only to anger King Henry all the more, like any appearance of a Scottish success. Secondly, Arran in his readiness to undertake sieges failed to dishearten his foes but instead displayed his weakness, an inability to batter castles of no great strength into quick submission. He admitted himself that he captured Dumbarton by a miracle and although Glasgow, Lochmaben and Caerlaverock fell to him reservations might well be held as to how big a part his guns played in each case. It is noteworthy that the towerhouse at Dalkeith managed to hold out for several days after its barmkin had been taken and in 1547 there is the rather pathetic spectacle of the entire host and an artillery train being called out to deal with the castle at Langholm, a mere towerhouse no different from several other strongholds up and down the country, not normally considered individually as of any great strategic value. That so much effort should be required for so little return augured badly for the future.

Langholm fell but St. Andrews Castle did not. Here Arran was dealing with a problem of a different type. In the first place St. Andrews was by Scottish standards a strong castle, newly fortified by Cardinal Beaton with

two great circular blockhouses. Secondly when his murderers captured it in 1546 they also acquired the cardinal's guns and considerable quantities of provisions. The cardinal feared an attack by the English since King Henry held him responsible for the breakdown of the treaty for the marriage of his son Edward to Mary Queen of Scots. Thirdly, the protestants were well led by resolute men, not lacking in military skill. Here it was that William Kirkcaldy of Grange gained much experience. A full appraisal of his role in the military ventures of the time is still to be composed but his presence, sometimes shadowy, and his influence show through the contemporary documentation until his enemies vindictively took his life in 1573. Finally, the presence of Arran's son as a prisoner within the castle must surely have had some effect on him.

We have hinted above that Arran may have been hampered by lack of powder and shot at St. Andrews as it is claimed he was at Glasgow Castle two years earlier. If he only had the four cannons and other smaller guns mentioned in contemporary accounts he must also have been sadly lacking in fire-power - and it is to be noted that he only had two cannons at Caerlaverock, Lochmaben and Langholm, and only one at Dalkeith and Coldingham. The culverin bastard taken on most of these expeditions was no mean gun when it came to battery work but the moyens and others were too small and must have been intended as anti-personnel weapons only.

Even if Arran could have found limitless supplies of money, powder and shot, he may not have had access to more battery pieces. He could draw upon four cannon in Edinburgh Castle and another called 'Thrawynmouthe' in Dunbar Castle.⁷⁸ Two other cannons from the royal artillery had been given to the two lieutenants of the West and North, Argyll and Huntly in 1543, and although Argyll seems to have brought his to the siege of

78. Ibid., ix, 103, 104.

Dumbarton in 1546 these may otherwise not have been available to Arran.⁷⁹ There were still other royal guns at Home Castle, left there after the expedition with Lorges de Montgomery⁸⁰ - possibly guns of no great size - and Arran may have been reluctant to denude the castle of them in view of a fear that it might be the target of an English invasion. He may likewise have hesitated to take guns from Dunbar and Edinburgh or his own strongholds at Craignethan and Hamilton. What other royal guns might have been in the hands of the nobility at this time is not clear but in May 1545 Lord Maxwell solicited the governor for artillery and powder for keeping certain houses (? Caerlaverock, Lochmaben) and he may have got them. In July of that year Arran sent letters to the Earl of Angus, Lord Seton, Lord Bothwell and others in the 'est cuntre' with royal guns, ordering them to return them to Edinburgh Castle.⁸¹

As for the tactics employed by Arran in his sieges we are almost totally in the dark. At St. Andrews, however, anticipating a prolonged resistance, he seems to have tried to cut off the castle from outside help by a trench or trenches, a technique employed as early as 1524 against Edinburgh Castle by Angus, Argyll, Lennox and Beaton.⁸² The garrison at St. Andrews nevertheless still managed to keep up contact with their supporters by sea.⁸³ The two days battery described above may have been calculated to destroy the castle's stocks of food, which was done with some success, but it is difficult to understand why all the damage described was to the roof and battlements and why no attempt was made to breach the walls at their base, unless Arran knew this could not be done. Why else did he

79. ADCP, 535; TA, viii, 236, 465. Huntly's cannon was presumably recovered by Queen Mary in 1562. (TA, xi, 213).

80. TA, viii, 432.

81. Ibid., viii, 393; ix, 198.

82. Buchanan, History, ii, 290.

83. State Papers, V, no. 598.

try to undermine them by cutting a tunnel through the rock?

Arran's failure to capture the castle with his 'sobir arttalyerii' demonstrated a fatal weakness to be exploited to the full by the English and the French, and again by Kirkcaldy of Grange in the succeeding decades.⁸⁴ His performance over several months at St Andrews must be set alongside that of the French. A fleet under the command of Leon Strozzi, Prior of Capua, arrived at the end of July 1547 to rid the Scottish government of its problem. The eye-witness account of John Knox relates how Strozzi had ten cannons and four double cannons. The first day they were planted in position it took a bombardment of less than six hours for the castle to be beaten into surrender.⁸⁵ Knox and his companions were taken off to France to serve as galley-slaves. Meanwhile the Scottish guns, dragged in haste from Langholm, had still not arrived.⁸⁶

84. At least some Scots, including Methven, the master of the artillery, linked Arran's failure at St Andrews with the readiness of the English to intervene militarily soon afterwards.

85. Knox, History, i, 96.

86. Pitscottie, (Historie, ii, 89), however, says that Strozzi had the use of 'tuo Scottis cannons quhilk was befoir'.

In June 1546 Scotland had been included in the cessation of hostilities resulting in the Treaty of Camp made between the English and the French⁸⁷ but now their attack and capture of Langholm Castle, in English hands since before the treaty, gave the Protector Somerset (that is the Earl of Hertford responsible for the devastations of 1544 and 1545), governing in the name of the young Edward VI, the excuse he needed for making war on the Scots again. Somerset appreciated the futility of sending expensive expeditions into Scotland year after year which did some damage and then retired again. It seemed that the Scots had a remarkable ability to recover from even the worst raids. Even defeats in battle, although they wounded Scottish pride, did not bring more solid gains in their wake. As early as 1544 Somerset had been thinking in terms of the establishment of a 'pale' in Scotland, an area pinned down with great artillery fortifications, secure against ineffectual siege attempts by the Scots, and now he was in control in England he set about putting his ideas into action.

It is not our intention to give a blow by blow account of the ensuing campaign and the wars that followed* but some considerable attention deserves

87. Henry VIII. Letters & Papers, XXI, i, no. 1014.

*The importance of these wars, not just for Scottish history but, more importantly, for the history of warfare in general has been sadly neglected or underestimated. They can be considered here only in so far as the Scots were directly, militarily, involved.

to be paid to the battle of Pinkie not only because it was the last major pitched battle between the Scots and English but because it has been thought that artillery played an important part in its outcome. The major source for the campaign and battle is a contemporary printed account by William Patten,⁸⁸ who fought in the English army. Patten's is by far the fullest account and while it is very obviously biased heavily in favour of the English it does impress as being generally reliable. Unfortunately Patten seems to have been used by previous authorities, particularly Charles Oman,⁸⁹ almost to the exclusion of other written sources and it will perhaps be best to list the more important of them here at the outset.

Firstly there is a Latin account apparently by an Englishman called Starker⁹⁰ which relies heavily on Patten. Then there is an account in French by Sir John Berteville, a French protestant in the service of the Earl of Warwick.⁹¹ There are other reports by the French ambassador in London, Odet de Selve, including an account of the Earl of Huntly's views on the battle. There are also reports by the imperial ambassador L.C. Van Der Delft.⁹² Finally there are the accounts by the Scottish historians, principally Leslie, Buchan^{an} and Pitscottie. Over and above these written sources are a series of drawings of the battle made by a renegade Scot, John Ramsay, in the service of the English which complement a series of drawings which illustrate Patten's book.⁹³

88. W. Patten, The Expedition Into Scotlande Of the Most Woorthely Fortunate Prince, Edward, Duke of Soomerset (London, 1548) Reprinted in Dalyell Fragments (Henceforth noted as this).

89. C.W.C. Oman, 'The Battle of Pinkie, Sept 10, 1547', Archaeol. Journ., xc (1933), 1-25; A History of the Art of War in the Sixteenth Century (London, 1937), 358-67.

90. De expeditione in Scotiam Commentarius, published in Teulet, Papiers, i, 143-80 and Teulet, Relations, i, 124-58.

91. Berteville, Expedition.

92. These are published respectively in Selve, Correspondance Politique 203ff and Cal State Papers Spanish, ix.

93. Oman, 'The Battle of Pinkie'.

Somerset gathered an army together at Newcastle at the end of August. According to Patten it numbered 16,800 men excluding 1,400 pioneers and had with it fifteen pieces of artillery.⁹⁴ With this can be compared the figures of two other contemporary reports, the first by Berteville giving 12,000 foot 800 men at arms and 2,500 light horse and secondly Van Der Delft 16,000 men including 4,000 horse and a good force of harquebussiers, plus 3,000 fighting men on the ships.⁹⁵ A list made up in August indicates that there were to be eighty ships in all mostly quite small ones for carrying provisions.⁹⁶ They contained 9,222 men but it is not clear if any were actually disembarked before the battle to join the army. It would, seem likely that this was the case.

Oman supposed that Somerset's main aim was to defeat the Scots in battle and that he assumed that he would be given the opportunity to do so. Somerset, however, may well have thought differently since the intelligence reports he received from Scotland during August seemed to indicate that many of the Scots were reluctant to muster yet again that year. Glencairn wrote to the exiled Earl of Lennox and the English warden Wharton in early September to say that few of the Scots had as yet obeyed Arran's summons to muster at Fala Moor the preceeding 31 August and that Arran feared his own people more than the English.⁹⁷ What is more, having already called out the host for the siege of Langholm Castle Arran could only ask for twenty days more service and feared his army might dissolve before the English threat materialised.⁹⁸

94. Dalyell, Fragments, p. XXIV-XXV. The following account of the campaign and battle is based on Patten unless otherwise stated.

95. Berteville, Expedition, 8; Cal State Papers Spanish, ix, 129.

96. Cal Scot Papers, i, no. 29; but Patten (Dalyell, Fragments, p. xxvi) lists only 65 vessels of which only 'the galley' and 24 others were 'war ships'.

97. *Ibid.*, i, nos. 34, 41.

98. *Ibid.*, i, no. 40.

Oman noticed that Somerset's army was about a third mounted which he correctly saw as a new departure, and further deduced that this was the result of experience of continental warfare.⁹⁹ There may well be some truth in this but it should be noted that the horsemen seem to have included the garrison men to occupy the forts that Somerset was intending to build. Many of those on the ships also seem to have been for this purpose.¹⁰⁰

Somerset marched his army up the coast road through Berwickshire and East Lothian, looking for suitable places to fortify and hold, and he found a site to his liking at Eyemouth, a promontory overlooking the only reasonable port between Berwick and Dunbar. He went on by Dunbar and Tantallon but both castles were too strongly held for them to be worthy of immediate consideration. The fleet sailed on up the Firth towards Leith but all the Scottish ships in these waters seem to have retired to the safety of Blackness, not before an encounter in which two Scottish ships are said to have been taken and one English sunk. The Scottish ships at Blackness were later bombarded from the sea¹⁰¹ not without considerable loss to the English in revenge for which they burned Leith. Meanwhile a diversionary raid was made into the South-west under Lennox and Wharton which no doubt had as one of its aims the detention of the fencibles of that part of Scotland, many of whom might be expected to take cause with Lennox against Arran. Castlemilk Castle near Lochmaben was taken and garrisoned and a force under John Lyon holding the steeple of Annan in the name of Arran were rooted out on the day after Pinkie.¹⁰²

99. Oman, Art of War, 359.

100. Cal. Scot. Papers, i, no. 31.

101. Selve, Correspondence Politique, 203, 212; Cal State Papers Spanish, ix, 168-9.

102. Cal. Scot Papers, i, no. 42.

Arran was not slow to respond to the English threat. Earlier in the year the Privy Council had revised the system of bale fires for warning of an English invasion¹⁰³ and he had called out the host in good time to muster at Edinburgh at the end of August. He cannot be blamed for its tardiness. He seems, however, to have had much of the host march on to Fala before he realised the English were taking the coastal route. Once he knew their line of advance he seems to have determined to try and delay them at the Pease Burn defile near Cockburnspath, then unbridged, but his efforts were in vain and too late, and instead he withdrew his army to the line of the River Esk, just four miles east of Edinburgh. Here he took up a position on the edge of a slope,¹⁰⁴ guarded in front by the river, to the north by the sea and to the south by a marsh. Anticipating the intervention of the English fleet he fortified his left flank with a turf rampart mounted with two field-guns and hagbuts of crok. The bridge across the river in front of his position was well defended with artillery as well. Contact was maintained with the English by a body of light horsemen who kept to the high ground inland from the coastal road.

Estimates of the Scots' strength at Pinkie vary considerably as one has come to expect. Patten gives it as above 26,000 fighting footmen, 2,000 horsemen ('prickers') and 4,000 Highland archers. Other sources make the Scots number as much as 40,000, but perhaps the most reliable is the figure of Huntly, one of the Scottish commanders, who claims that they were only 22,000 or 23,000.¹⁰⁵ With them they had a train of artillery, battards,

103. RPC, i, 73-75.

104. Patten (Dalyell, Fragments, 48) considerably exaggerates the strength of this position by comparing the slope to that at the Pease Burn. Despite the fact that the site is now covered by the thriving town of Musselburgh there is no denying how much it is dominated by the hill on which Inveresk Church stands.

105. Cal. State Papers Spanish, ix, 150; Selve, Correspondance Politique, 204, 219.

moyens and falcons being mentioned in the Treasurer's accounts.¹⁰⁶

The English listed them as thirty pieces in all, including a culverin, three sakers, nine smaller pieces of brass and of iron and seventeen other pieces mounted on carriages.

Somerset made slow progress, no doubt since he had to keep his army continually on the alert for fear of the Scottish prickers. On Wednesday 7 September he only made nine miles to Longniddry and the next day five to Prestonpans which was itself only about five miles from the Scottish camp. Here he recalled Admiral Lord Clinton from the fleet for intelligence of the Scottish dispositions and to make plans. The fleet was then stationed off the Scottish camp and Somerset advanced the next day to occupy Fawside Hill, a low ridge of hills running south-west to north-east within site of the Scottish camp. The Scottish light horse were already on this rise towards its south western end, (Carberry Hill) but they were worsted and chased off by the English cavalry. Their commander Lord Home was hurt, his eldest son taken, and several others killed (1,300 according to Patten). On the other hand three leading Englishmen were captured by the Scots: Sir Ralph Bulmer, Thomas Gower the marshall of Berwick and Robert Crouch.

Somerset kept all his army on Fawside Hill on the ninth, no doubt planning what to do next. He fortified his position with earthworks which were substantial enough to be of use to Queen Mary and Bothwell twenty years later.¹⁰⁷ Reconnaissance showed that the Scots were in a very strong position. He could not turn their right flank owing to the marshy ground and if he tried making a wide detour round them they could cross the river and cut his lines of communications. If he had a considerable force of fighting men on board the ships he could have landed them behind the Scots

106. TA, ix, 115-16.

107. Teulet, Papiers, i, 169; Knox, History, ii, 211; or perhaps the earthworks, still traceable, are the remains of an Iron Age fort, reused.

so that he could attack them simultaneously from front and rear, but it is probable that all his fighting force was now on land on Fawside Hill. (Arguably, however, on the day of the battle, the Scots may have feared that Somerset's real intention was to put men on the ships to effect such a move). The alternative which seems to have been chosen by Somerset was to mount a frontal attack on the Scottish camp. On the side of the Esk opposite the Scottish camp there was a considerable eminence of ground, the site of the church of St Michael's of Inveresk. Stretching south from it was a roadway embanked with turf which seems to have been the line of the present main street of the village of Inveresk. Somerset planned to mount his guns by the church and along this roadway to bombard the Scottish camp and hopefully cause the Scots to break up or withdraw. The fleet had already tried firing on them from the sea and were no doubt to provide more pressure from that quarter.

Early on the morning of Saturday 10 September - afterwards known to the Scots as 'Black Saturday',¹⁰⁸ - the English began their march from Fawside Hill down the slope towards Inveresk Church, two miles off, but were greatly surprised to see that the Scots were also abandoning their camp to march across the river to meet them. The reasons for this move must remain a source of mystery though according to Huntly, who would have preferred to temporise by waiting in the 'fort' a while to see if the English really could dislodge them, the decision was Arran's. Pitscottie claims that Angus, the other Scottish commander, was also reluctant to follow Arran's orders.¹⁰⁹

Arran got his army across the river and drew it up in line of battle just to the east of Inveresk Church. The vanguard under Angus lying

108. Diurnal of Occurrents, 44.

109. Selve, Correspondance Politique, 218; Pitscottie, Historie, ii, 96-97.

farthest inland crossed first.¹¹⁰ Arran may only have intended to prevent the English occupying the high ground at the church and the road leading from it but now he discovered that he had exposed his left flank to fire from the English fleet. The Scots moved on, veering inland away from the guns of the fleet. Patten's diagrams indicate that Angus' battle kept ahead of the other two while Ramsay's drawings show the three battles forced together into one solid mass. They are described as advancing quickly as if they were on horseback and Leslie has it that

'to hinder the intentioun of the Inglismen cum sa suiftlie, that rather thay fal out of ordour foranent the hil than cum rycht forward, and war nocht without gret stres, outhir because thay war trublet with the gret Gunis off the shipis togither with the Galay shott at thame, quhilkes lay nerrest the schore, or becaus thay takeng the hicht be the Raid, or a certane river, with sic vexatioun thay war vexit, in sik necessitie war, sorow, and greif, in sik distres in the Jornay that skairs culde thay draw thair ende oftymes'.¹¹¹

The artillery was man-handled, presumably for speed and to avoid the necessity for unyoking the horses or oxen before firing it. Possibly to try and keep his forces in order, Arran had them stop yet again for a few minutes before advancing to their final battle position.

Somerset had undoubtedly been caught on the hop by this unexpected development. There was a very real danger that the Scots would take him in flank before he could draw up proper lines of battle. After hasty consultation with his fellow commanders he decided the best plan was to launch a cavalry attack on the Scots to stay their advance while his

110. Buchan^{an}, History, ii, 367; Pitscottie, Historie, ii, 97.
111. Dalrymple, Historie, ii, 299.

footmen, in three battles, were drawn up higher up the hill side in line abreast to the Scots.¹¹² Meanwhile Sir Francis Fleming, the master of the ordnance, positioned some guns on top of the ridge to fire down on the Scots and it was here too that Somerset took his stand.

On the approach of the English horse the Scots, according to Patten, were formed up as follows:

'The Earle of Anguish next us in their forewarde, as capitayn of the same with an viii M and iiii or V peces of ordinaunce on hys right syde and a iiii C horsemen on hys left: Behind him sumwhat westwarde, the governour with a x M inlond men (as they call them) the choyssest men counted of their cuntre: And the Erle Huntley in the rerewarde, welline even with the battaile on the left syde, with viii M also. The iiii M Irish archers as a wyng to them both, last indede in order & first (as they sayd) that ran a way. These battailes & rereward wear warded also with their ordinaunce accordinge'.¹¹³

Patten's and Ramsay's drawings of the battle and Starker's manuscript make it clear that Patten has made a simple error in putting the Scottish horse on Angus' left instead of his right. Only Pitscottie gives a different line up, putting Argyll and his men on the right wing and on the left another group of Islesmen under MacLean, McLeod and MacKenzie.¹¹⁴

The Scottish/did, in fact, soon leave Angus' flank to mount the ridge to pose a threat to Somerset and the English artillery there, but were soon driven off by a few shots of the guns and the appearance of the hastily

112. Berteville, Expedition, 15.

113. Dalyell, Fragments, 60.

114. Oman, 'The Battle of Pinkie', pls I-VII, figs 1-4; Teulet, Papiers, i, 171-2; Dalyell, Fragments, 67; Pitscottie, Historie, ii, 96.

armed carters and pioneers. Angus' flank, however, was not left totally unguarded since the Scottish army was by now drawn up in a fallow field and about a 'stones cast' from the vanguard there was a ditch, deep and wide enough to cause difficulties to the English horse. The furrows of the field, running cross-wise to the advancing English also helped to break their pace.

The English horse consisted of two main bodies, 1,800 under Lord Gray on the East and 1,600 under Darcy, Vane and Fitzwaters on the West. Both made for the Scottish division which had pushed furthest ahead, Angus' vanguard, taking it in front and in flank;¹¹⁵ but Angus' men stood firm and successfully saw them off with considerable losses as they attempted to rally again and again. This was a dangerous moment for the English as many of their men seem to have panicked and forced their way back through the ranks of the footmen¹¹⁶ who were now being formed on the slopes of Fawside Hill. Some of the Highlanders in the Scottish army are said to have broken rank to plunder the English dead.¹¹⁷

Somerset next brought hagbutters up to the ditch on Angus' flank to fire into the Scottish ranks and the English archers poured arrows into Huntly's rearguard. Huntly should have had some protection from Argyll's archers but they may already have been scared off by the artillery from the ships.¹¹⁸ Meanwhile the artillery on the hill and with the main English

115. Ramsay's drawings (Oman, 'The Battle of Pinkie', pl III), however, show the English horse attacking the left flank of a massive Scottish battle, apparently the Scottish vanguard, battle and rearguard all pressed together into one. From this Oman deduced that first one attack was launched against Huntly and then another against Angus (Oman, History of the Art of War, 364-5). The writer has preferred to follow Patten's account, backed up by his drawings, and the account of Starker (Teulet, Papiers, i, 172-4), Buchanan (History, ii, 367), Pitscottie (Historie, ii, 97) and Leslie (Dalrymple, Historie, ii, 299). Did Ramsay confuse Angus' division with the whole Scottish army?

116. Selve, Correspondance Politique, 222; Dalrymple, Fragments, 63-64.

117. Pitscottie (Historie, ii, 99), says they came from Arran's battle.

118. Dalrymple, Fragments, 55, 60.

army was beginning to tell. This was the point when Arran needed his horse to come and drive off the hagbutter and archers but it seems already to have fled the field.

The main battle under Arran was the first to break. According to Buchanan the panic spread when it was seen that Angus was veering to his right to meet the challenge of the English hagbutter.¹¹⁹ Many Scots interpreted this to mean that he was turning tail to flee, but far from being the case Angus seems to have managed to hold his division together, and when the centre battle collapsed, even to manoeuvre it back down the slope to make contact with Huntly. By then confusion was so complete that Huntly's men thought they were a force of advancing English.¹²⁰

The English were not slow to take advantage of this situation. A report by Van Der Delft, whose source was the English controller Sir William Paget, has it that Huntly was taken in the rear by a surprise attack of horse under the Earl of Warwick. Berteville, on the other hand, claims that the winning move was a second cavalry charge led by Somerset in person on Arran's battle.¹²¹ Certainly as the Scots' battles broke up they were chased by the English horse. Many of the Scots threw away their pikes and shed their armour in order to run the faster, some in the direction of Edinburgh, others along the sands to Leith, but most towards Dalkeith, the English horse being unable to follow them there owing to the marshes. Many drowned in the River Esk or ran themselves to death. Where they had stood was covered with pikes 'like a wood of staves strewed on the ground as rushes in a chamber, unpassable (they lay so thik) for eyther horse or man'.¹²² English estimates put the slaughter as high as 15,000 Scots killed and 2,000 taken, but Huntly's figure of 6,000 killed is probably

119. Buchanan, History, ii, 368. Cf. Dalrymple, Historie, ii, 299.

120. Pitscottie, Historie, ii, 100.

121. Cal. State Papers Spanish, ix, 151-2; Berteville, Expedition, 16.

122. Dalrymple, Fragments, 66.

nearer the truth. Of these he claimed 4,000 were 'gentlemen'.¹²³

The English lost only a few hundred, possibly as few as 200.¹²⁴

The French ambassador, Odet de Selve, was no doubt not alone at the time in concluding that

'ladicte deffaicte avoyt este par ung malheur incroyable et qu'il croyoit qu'il n'y avoyt homme vivant qui sceust rendre bonne raison comme cela estoit advenu'.¹²⁵

One can in hindsight criticise Arran's handling of his army and the decision he made to advance his army across the Esk, but in the final analysis it was not so much an order by Arran that lost the battle but the fact that the Scots in the main battle, en masse, decided to turn and fly. In most accounts of the period there is an element of surprise that they should have been ready to do so, though undoubtedly the English guns had something to do with this. At the point of defeat the Scots, were it can be estimated, only about half a mile away¹²⁶ from the English lines and could no doubt have pressed on. Oman's excuse for them that they would have had difficulty clambering over the dead English is undoubtedly exaggerated and unbelievable.¹²⁷

The sudden panic that seized the Scots was the predictable result of trying to turn a mass of amateurs into a professional army. The English were the first to recognise that the Scots were stout warriors but the prowess of individuals could find itself ill at ease when incorporated into large battles, forced to act in unison with 1,000s of others in complicated sequences of moves on orders of bewildering complexity. Drill work which the modern army recruit finds difficult enough on the parade

123. Selve, Correspondance Politique, 206, 218. Cf. Ibid., 222.

124. Ibid., 222.

125. Ibid., 222.

126. According to Patten 'a ii flightshot asunder'; Dalyell, Fragments, 56.

127. Oman, 'The Battle of Pinkie', 15.

ground the Scot of the sixteenth century had to learn on the field of battle with disastrous results.

What of the role of guns in this battle? The early report by the French ambassador that 'les angloys et escossoys estoient sy mesles ensemble que l'artillerie ne servit de rien' seems a misunderstanding of the role it played.¹²⁸ Arran had sensibly brought guns light enough to keep up with his army while drawn by men, and these his gunners were able to load and fire even as the host was approaching its final battle position.¹²⁹ Arran recognised the danger posed by the English guns on the fleet by defending his camp on the sea side. He also anticipated the threat from the guns mounted on top of the ridge and sent his horse to put them out of action. The lack of an adequate force of horse to deal with this problem and later to chase off the English hagbutters and archers was a serious handicap to Arran. It allowed the English artillery and hand gunners to play a major part in the Scots' defeat. It must have been of particular regret to Arran that he could muster so few hand gunners himself and had to rely so heavily for his missile arm on the Highland archers, who, when it came to the battle, were found to be lacking. It was only in the years following Pinkie, as we shall show below, that the Scots fully realised the potential of hand firearms and it is not unlikely that the memory of the part played by the English hagbutters at this time acted as inspiration to many a Scot to take more interest in these weapons.

The day after the battle Somerset marched on to camp at Leith. He stayed there until 18 September when he left for England, leaving garrisons established at Broughty Craig on the Tay, on Inchcolm in the Forth, at Eyemouth on the coast of Berwickshire and at Roxburgh on the border of the East Marches. He also made a start to fortify Leith but abandoned the

128. Selve, Correspondance Politique, 206.

129. Dalryell, Fragments, 55.

project on his departure.¹³⁰

It might seem remarkable that Somerset failed to take greater advantage of his victory but the truth of the matter is that he probably lacked the time - before his supplies of food ran out - and the men to do so. No attempt was made on Edinburgh itself and it is hard to believe that this was altogether 'for considerations mooving hym to pitee'.¹³¹ Edinburgh was defended by walls and may have harboured much of the defeated Scottish army. It was also overshadowed by the castle which Somerset did not think was worth attempting, just as he had ignored Dunbar and Tantallon. Even the holding of Leith seemed to be beyond his abilities and he settled for the remoter and securer Inchcolm instead.¹³² Two other consequences of Somerset's victory in hindsight now seem to have been inevitable - firstly the removal of Queen Mary to France and her ultimate marriage to the Dauphin, and secondly the arrival of help from the French.

Despite his crushing defeat at Pinkie Arran showed his usual energy in getting together an army to try and drive the English garrisons out, starting with the one furthest north at Broughty, threatening Dundee, St. Andrews, Perth and the country around on both sides of the Firth of Tay. Arran could not rely on the host any more that year and so he had to raise money by way of a general tax to pay for wageours.¹³³ The castle was besieged in November and badly shaken, but Arran showed no more ability at taking castles now than before the English invasion. The English commander, Andrew Dudley, even made a sortie in which some of Arran's guns

130. Dalryell, Fragments, 80.

131. Ibid., 82.

132. The suggestion that the real reason why Leith was not fortified was because it was rendered useless by being burned (M.L. Bush, The Government Policy of Protector Somerset (London, 1975), 24) does not seem at all likely to the writer. It was not the houses which Leith contained which were of importance but its position and harbour. That it could be readily defended was proved soon afterwards by the French.

133. RPC, i, 79, 80; TA, ix, 12; Selve, Correspondance Politique, 244-5.

were captured and Gavin Hamilton, commander of the wageours and a cousin of Arran, was captured and beheaded.¹³⁴ A further attempt by Argyll soon after Christmas met with no better success and he withdrew when the castle received reinforcements by sea,¹³⁵ and yet more ineffectual attempts were made by Arran before the arrival of the main French force in June 1548.

In the period before the Treaty of Boulogne in 1550 the English came to establish garrisons in over twenty places, the principal being Haddington, captured by them in June 1548. Highly sophisticated earthwork fortifications were thrown up at many places, particularly Haddington, Eyemouth, Dunglass, Balgillo outside of Dundee, and Lauder (of which more later). In a recent study of Protector Somerset's policies Bush has concluded that the garrisons - both postulated and realised - were

'to interfere with river traffic, to serve as economical and effective alternatives to the normal invasion of armies royal, to protect the assured Scots, to safeguard against the arrival of the French, to extend the reach of raiding parties, to relieve the border garrisons of their burden of defence, to act as feeders for other garrisons'.¹³⁶

Somerset's policy was, however, doomed to failure, largely due to intervention by the French, but also owing to his unwillingness to invest money and men in his Scottish enterprise. From November 1548 the English were almost totally on the defensive, blindly hoping that something would turn up that would give them the upper hand. From August of the following year, with uprisings at home to contend with and a renewed French attack on Boulogne they held on only to have something to bargain with when the negotiations for peace would inevitably be forced upon them.¹³⁷ It cannot even be claimed that the garrisons fulfilled their function of defending the border

134. Selve, Correspondance Politique, 252-4; Cal. Scottish Papers, i, no 114.

135. Cal. Scottish Papers, i, nos. 141, 142, 144, 147; Dalrymple, Historie, ii, 303; Beaugué, Historie, 82.

136. Bush, The Government Policy of Somerset, 24.

137. Merriman, The Struggle for the Marriage of Mary Queen of Scots, 212.

against Scottish attacks since the Scots by themselves would and could never have posed a serious military threat to England and had no territorial ambitions in England in any case.

A large French force under the command of André de Montalembert, Seigneur d'Essé, arrived at Leith in June 1548. It was reported to be as large as 10,000 men but a more likely estimate is 6,500, which is what they are said to have mustered before Haddington in July. Most of the men were German and Swiss mercenaries, many armed with handguns, and there was some horse as well.¹³⁸ D'Essé was replaced as commander in June 1549 by Paul de la Barthe, Sieur de Termes, who came with reinforcements consisting of 1143 foot soldiers, 320 cavalry, 300 pioneers and numerous clerks, treasurers and surgeons.¹³⁹ The English fortified Haddington - a town capable of holding a large army - in anticipation of this intervention by the French and much of the ensuing struggle centred round either it or the satellite forts which were built - by the English to maintain communications with it and provide it with supplies - and the equally proficient forts built by the French to hem it in. Of interest to us here is how effective a part, militarily, the Scots played in all this.

Arran called out some of the army for eighteen or twenty days on the arrival of the French to help in the siege of Haddington. Several entries in the Treasurer's accounts indicate the lack of appetite amongst many for the war and the trouble the governor had with his men continually dribbling away back to their homes.¹⁴⁰ This was perhaps the nearest the Scottish military system came to breaking down completely. The Scots, however,

138. Cal. Scottish Papers, i, no. 247; Teulet, Inventaire, 92; Hamilton Papers, ii, no. 445.

139. TA, ix, 318. The information on the reinforcements is from Merriman, The Struggle for the Marriage of Mary Queen of Scots, quoting BN MS fr. 18, 153, fos 66v-72.

140. TA, ix, 218, etc.

never fielded more than a few thousand at a time. At the siege of Haddington Arran mustered at most 4,000 by the end of July 1548 which seems to have been one of the biggest Scottish armies of these wars.¹⁴¹ Indeed the nature of the war, and the co-operation of their ally, meant there was no real need for larger armies. Most of the English garrisons in Scotland never numbered more than a few hundred and some like Home Castle and Fast Castle, less than one hundred. Haddington was an exception with a garrison of nearer 1,000 or even more.¹⁴² When an army was sent north in August 1548 to get much needed supplies and reinforcements into the town it consisted of about 11,400 foot and at least 1,800 horse.¹⁴³ So much did Somerset believe in the efficacy of his strategy and the strength of his forts that he eschewed any ideas of trying to turn the tables on the French and drive them from their fort at Inveresk. In fact, he seems totally to have underestimated the persistence of the French in waging war for an ally who must have seemed at times to have lacked the same commitment to succeed as themselves.

If the combined French-Scottish army before Haddington was about 10,000 at most the allied forces involved in other enterprises must always have been less. When an army went to the Borders in February 1548/9 only a part of it was detached under Huntly to deal with the English garrison in Ferniehurst Castle, a few miles to the south of Jedburgh, and although Huntly had to seek further assistance from d'Essé¹⁴⁴ the numbers involved contrasts markedly to the sieges undertaken by the Scots in the days before the arrival of the French. The greatest contribution by the French to the

141. Cal. Scot Papers, i, no. 276; Teulet, Relations, i, 182-3. The report by Odet de Selve (Correspondance politique, 395) that the combined French and Scottish force numbered 20,000 seems exaggerated.

142. Bush, The Government Policy of Protector Somerset, 28, gives a table with the number of serving troops employed in each of ten English garrisons. For Haddington compare Teulet, Relations, i, 165.

143. Cal. Scot Papers, i, no. 318.

144. Mary of Lorraine Corresp., no. cxcix. Cf. Beaugue, Histoire, 101-3.

Scots at this time was not so much men and money as military expertise, particularly in the science - as it was by then widely recognised - of siege warfare, both in taking fortifications from the enemy and designing the most sophisticated artillery fortifications of the day.

Some at least of the Scots were aware of their own short-comings in this sphere, in particular Methven, who criticised Arran's handling of the siege of Broughty Castle. As at St Andrews he was too ready to believe it could be won with slender resources, and by failing to take it only encouraged the enemy all the more.¹⁴⁵

Methven reappeared as master of the artillery on the arrival of the French under d'Esse, probably thanks to the influence of Mary of Guise.¹⁴⁶ He may have had a general responsibility for moving all the guns used at the siege of Haddington, most of which were French. It is known that d'Esse had ten cannon, ten double cannon and other field guns as well.¹⁴⁷ Adam MacCulloch was also heavily involved, and the Treasurer's accounts contain several expenses in connection with horses, oxen and pioneers for the French guns.¹⁴⁸ After noting £100 spent on pioneers from Edinburgh for the siege of Haddington in June 1548 the treasurer clerk added the following:

'Memorandum. That the France men promisit to haf payit this mony again quhilt wes debursit for the pyonaris, and nevir payit ane d. thairof'.¹⁴⁹

On the news of the English army coming to relieve Haddington three single falcons were removed from Edinburgh Castle and a moyen and other guns were got from Montrose, possibly belonging to that burgh, for the siege of the fort and castle at Broughty in February 1549/50.¹⁵⁰

145. Mary of Lorraine Corresp., no. CXLIX.

146. Ibid., no. CLXXVII.

147. Teulet, Relations, i, 165.

148. E.g. TA, ix, 188, 197, 198, 203.

149. Ibid., ix, 201.

150. Ibid., ix, 270, 373.

Otherwise unambiguous evidence for the use of Scottish guns in the months until the conclusion of peace is lacking. On the other hand, the French were given the important royal castle of Dunbar in June 1548. Grey of Wilton wrote to Somerset that the Scottish garrison left it before the French took over but this cannot have been altogether true, and it seems, from a study of the payments made to the gunners in royal service that the French inherited those put there by the Scottish government. The French may have employed them in the field, just as they used the Scottish guns in the castle, including the cannon called 'Thrawynmouth' at the siege of Haddington.¹⁵¹ Normally there seems to have been six gunners in Dunbar Castle but in July and August 1548 twelve gunners disappear from the royal pay list while a payment for nine extraordinary gunners in Edinburgh Castle is recorded at the same time.¹⁵² Perhaps this was so that some of the experienced gunners could serve at the siege.

THE REGENCY OF MARY OF GUISE TO THE REIGN OF JAMES VI

At the conclusion of peace in April 1550 the only English forts or strongholds which had not either been captured or abandoned were Eyemouth, Lauder and Roxburgh. By the Treaty of Boulogne¹⁵³ Scotland was yet again fully restored to her old boundaries minus Berwick. The forts of Lauder, Dunglass, Roxburgh and Eyemouth were dismantled but French garrisons remained in Inchkeith and the castles of Dunbar, Blackness and Broughty.¹⁵⁴ Arran was finally manoeuvred into standing down as governor in 1554 and

151. Cal. Scot. Papers, i, nos. 257, 276; TA, ix, 216, 221.

152. See payments to gunners in TA from Aug. 1544 (TA, viii, 314-15); also ibid., ix, 221, 225, 227, 232, 235.

153. Foedera, xv, 214.

154. RPC, i, 90; Cal. Scot. Papers, i, no. 436 (pp. 205-7).

Mary of Guise assumed control of the country on behalf of her infant daughter Mary who was married to the dauphin in 1558. On the death of Henry II of France in July of the next year Mary and her husband Francis succeeded jointly to the throne not only of Scotland but France as well. The Scots were thus fully committed to a pro-French policy which became more and more irksome to more and more people as the years went by. An additional factor that must not be forgotten was that of religion, and with the rise of protestantism it was only natural that the protestants should shun the Catholic French and side with their co-religionists in England.

The first military enterprise of any consequence in the years after 1550 was in 1557. Henry II of France was at war with Spain and naturally expected the Scots to provide a distraction to England, united with Spain through the marriage of Philip II and Mary Tudor. In 1555, in anticipation of troubles to come, the queen dowager and her French advisers set to the building of a newer and more permanent artillery fortification on Inchkeith and started work on the old English fort at Eyemouth soon afterwards,¹⁵⁵ garrisoning both with French soldiers. Nothing was more guaranteed to provoke the English than the rebuilding of this latter fort which was an obvious threat to Berwick.

Late in the summer of 1557 Mary summoned the host for an invasion of England with the intention of besieging Wark Castle. Artillery was taken by the French from the new fort at Eyemouth, variously reported as six cannons and demy cannons or four great cannon, four grose culverins and four bastards,¹⁵⁶ but as so often before the Scots' nobles sabotaged the expedition by refusing to cross into England - 'for na caus was quhy,

155. SRO E34/21; Cal. Scot. Papers, i, no. 436; Pitscottie, Historie, ii, 117-18.

156. E. Lodge, Illustrations of British History (London, 1791), i, 256; Pitscottie, Historie, ii, 119.

a forray suld be maid til Ingland, quhen for that onlie cause the dyse appeiret castne for the hail realme'.¹⁵⁷

The real problem for Mary and her French advisers, however, was not to be war with England but increasing discontent at home and the growth and rebellion of a protestant faction. Early in 1559 along with her French troops and Arran (now Duke of Châtelherault), she moved against the protestants who had gathered at Perth, but it is unfortunate that the Treasurer's accounts which should have contained information on the movement of the royal artillery at this time have not survived.

A major problem for the protestants was that they lacked access to substantial artillery to match that of the queen's party, though they had enough, including the burgh of Dundee's, to persuade Perth to surrender in June 1559 after a show of strength.¹⁵⁸ When the main struggle focused on the French, strongly garrisoned in the newly fortified Leith, the protestants had to call in assistance from the English since all the ordnance in Scotland was in the hands of the queen, the French or others who had not joined their party.¹⁵⁹ An English army arrived in April 1560 and after a three months siege brought about the surrender of Leith, leaving the protestants victorious in Scotland and the catholic cause desolate with the untimely death of Mary of Guise and the enforced departure of the French. Important though this siege was in the history of artillery and fortifications it has no place in our discussions here

157. Dalrymple, Historie, ii, 370-2; Pitscottie, Historie, ii, 119-20. Unfortunately, only a small, much damaged, fragment of the Treasurer's accounts for 1557 survive, unpublished. They record payments to messengers in July and August to summon the host and take instructions to the French commander at Eyemouth. SRO E21/50.

158. Knox, History, i, 189.

159. CSP, i, no. 670. This of course, is an exaggeration. The protestants lost two of their large guns, one of which was a cast iron culverin, in November 1559 when the French issued from Leith to capture one and blow up the other, after they had been positioned on Calton Hill (Brosse Missions, 93, 101, 112).

since it involved the Scots as little more than spectators and their guns not at all.

While all this struggle was going on the royal artillery, (along with that of Edinburgh, as mentioned above) remained inactive and secure in Edinburgh Castle under the care of its keeper, the Earl of Mar, who despite giving shelter to Mary of Guise, endeavoured to remain neutral. The fees of the royal gunners continued to be paid¹⁶⁰ and there is no evidence of any defections to the protestant camp. Mary had the castle well provisioned with food and drink and the gunners, fourteen in all, received an 'extraordinary' payment - what we would nowadays recognise as 'subsistence' - for staying within the castle.¹⁶¹

In August 1561 Queen Mary returned to Scotland to rule it personally. She recognised Robert Hamilton of the Briggs whom Arran had preferred to Methven as master of the artillery and he was straight away put in receipt of the monies for this post although not formally appointed until 10 February 1555/6.¹⁶² More significant than Hamilton's resumption of his role as master was the appointment of John Chisholm as comptroller of the artillery on 22 October 1561.¹⁶³

John Chisholm was brother of Sir James Chisholm of Cromlix, master of the household, and nephew of William Chisholm, bishop of Dunblane. He must have been a young man at this time and since there is no evidence that he had gained any experience beforehand in handling artillery there must be the suspicion that he owed his appointment more to the influence of his relatives than anything else. Evidence of his diligence survives in the documentation of the period, not only in the making of inventories¹⁶⁴ but in his efforts to keep the artillery in working order.¹⁶⁵

160. TA, x, 332; xi, 6, 55, 67, etc.

161. Ibid., xi, 27-35.

162. RSS, iv, no. 3158; v, nos. 825, 826; TA, xi, 88.

163. Ibid., v, no. 877.

164. Wardrobe Inventories, 165-77; SRO E96/5.

165. RPC, i, 402-3.

In 1565 Chisholm organised the cutting of wood in Kincardine, Aberuthven, Aberdalgie and Moncreiffe and in the following spring had it transported with the help of the gentry and inhabitants of Strathearn and the adjacent parts of Perthshire to the mouth of the River Earn. From there it was shipped to Leith by the burgesses of Perth and Dundee and carried up to Edinburgh Castle by the inhabitants of the sheriffdom of Edinburgh.¹⁶⁶ In November 1561 a French wheelwright, Hew de Neullay, had been added to the compliment of gunners with the complete renovation of the artillery in mind.¹⁶⁷

Chisholm was given a new letter of appointment by the Regent Moray in August 1569 and although he is still described as 'secund persoun of our soverane lordis artailyerie ... to reule thairin nixt under the maister artaillierie' he is this time specifically charged with the ordering of the guns on the field of battle 'gif swa sal happin to be'.¹⁶⁸ He was, it seems, popularly known as master of the artillery as early as 1565.¹⁶⁹ Robert Hamilton of the Briggs, on the other hand, does not seem to have been in receipt of his fees after the Martinmas term, 1562, although he lived on until at least 1567.¹⁷⁰ John Reid, one of the royal messengers or macers, crops up as Chisholm's depute on the expedition leading to the battle of Langside in 1568.¹⁷¹

Queen Mary continued all fifteen gunners she found in post when she arrived in Scotland, all of them receiving a year's back pay to 1 June 1560 as follows:

John Crawford, master wright	£100
William Hill, master smith	£ 72
Michael Gardner, gunner	£ 72

166. Ibid., 446, 474-5.

167. RSS, vi, no. 2001.

168. Ibid., vi, no. 723.

169. Edinburgh Burgh Accts, i, 57; cf. Cal. Scot. Papers, iii, no. 828.

170. TA, ix, 220; RSS, v, no. 3458.

171. TA, xii, 121, 201, 284, 296.

Thomas Rotnocht (Theobald Roquino), gunner	£50.8s
Andrew Mansion, gunner	£48
Claus Heliot, gunner	£48
Thomas Pettigrew, smith	£60
Robert Moffat, wright	£60
Adam Hamilton, smith	£48
Hary Anderson, wright	£48
John Bickerton, smith	£60
Patrick Smith, wright	£60
George Haliburton, gunner	£48
David Rowan, master meltar (two terms)	£40
Charles Bordeaux, gunner (three terms)	£150. ¹⁷²

Charles Bordeaux had been appointed by Mary of Guise in October 1558 on the death of Hans Cochran, receiving the twice yearly payments of £50 previously allocated to the latter.¹⁷³ He was thus put on a level with Crawford and Rowan. He made fireworks to celebrate the baptism of Prince James in Stirling in 1566,¹⁷⁴ but it is not clear in what else his expertise lay. It does not seem to have been casting. He used the title master gunner from November 1567.¹⁷⁵ John Crawford the master wright died in 1561 and was succeeded that December by Andrew Mansion with the same salary.¹⁷⁶

Inchkeith, the most advanced artillery fortification in commission in Scotland, was garrisoned during the years of Mary's personal reign with forty hagbutters, two of whom were on double pay, under Robert Anstruther as captain and John Beaton of Balfour as lieutenant. Although it was provided with artillery - including two culverin moyens, a great 'yetling' of iron, a slang and four heidsteiks, no gunners from the royal establishment were detailed for servicing them. The two soldiers on double pay may have had the responsibility along with the captain and lieutenant for ordering them.¹⁷⁷

172. Ibid., xi, 67.

173. RSS, v, no. 489.

174. TA, xi, 440, 467; xii, 407.

175. Ibid., xi, 88.

176. RSS, v, no. 942.

177. TA, xi, 68, 75, 114-17, 469, 515-22, etc.

Dunbar Castle continued to be garrisoned with gunners:

Hary Balfour, wright and gunner	£6 per month
James Hector, gunner	£6
John Bunstoun, smith	£4
Michael Bruce, smith	£4
James Rotnocht, gunner and wright	£4
Jacques Guillaume, 'suddarte'	£3 10s. ¹⁷⁸

James Hector was probably that son of Robert Hector who was put to a craft in Flanders through the encouragement of James V. When he was made a wright and gunner in February 1547/8 it seems that great things were expected of him as his letter of appointment was conditional on him working daily 'bayth of wrycht craft, gunner, melting and casting of gunnis and all utheris laubouris he can do, and als that he salbe reddy to pas to the feildis as ane cannoner or to sege or to remane in ony part quhair he salbe commandit'.¹⁷⁹ He was made master gunner in Dunbar Castle on 31 August 1561 on the same day as Hary Balfour, also with a salary of £6 a month, was appointed 'maister of hir hienes ordinarie gunnaris, powder makaris and wrichtis within hir hienes castell of Dunbar'. Balfour's seems to have been the senior position, as was confirmed by the raising of his salary to £8 6s 8d a month in June 1563 and the adoption of the more grandiose title 'hir graces principall maister gunnar and commander of hir hienes ordinar and extraordinar gunnaris with utheris hir majesteis craftismen within hir castell of Dunbar', and it was specifically written in that all gunners and craftsmen were to obey only the said Hary. It must therefore have been the last straw for Balfour when two years later James Hector was also allowed the title principal master gunner and a fee of £8 10s a month.

Balfour thereupon got confirmation of his rights and position as principal master gunner under the Privy Seal, in the process having all other letters, grants or gifts to others that were prejudicial to them revoked and annulled. At this Hector took his case right to the Privy

178. Ibid., xi, 69, 105, etc.

179. Ibid., vii, 428; RSS, iii, no. 2640.

Council, claiming that whereas his appointment was the reward of good service by his father and himself, Balfour's was the result of deceitfully working on the Earl of Moray for a pay-rise. The lords, however, found in favour of Hary Balfour.¹⁸⁰

In February 1567/8 both Balfour and Hector were removed to Edinburgh Castle by the Regent Moray and Dunbar Castle ceased to be garrisoned for the crown. Balfour was given the additional privilege of making his residence within the castle, and he died there on 11 September 1572 as the result of a wound in the head received a number of days beforehand when hit by a flying splinter from the portcullis when it accidentally crashed to the ground.¹⁸¹ Hector in the meantime became adviser to the burgh of Edinburgh on the ordering of their guns and munition.¹⁸² Both Balfour and Hector, if the ordering of the gunners in the Treasurer's accounts in anything to go by, took precedence over Andrew Mansion when stationed in Edinburgh Castle, though all three were paid the same. Charles Bordeaux had by now disappeared from the scene.

The trouble between Hary Balfour and James Hector was no doubt symptomatic of the increasing tension and splits in government circles. The gunners and other craftsmen were civil servants and, as could be expected, until this time there is no evidence that they were ever disloyal to the government. In the early 1570s, however, a period is reached in which there was open conflict between rival political parties, the one supporting the regents, successively Moray, Lennox, Mar and Morton, governing on behalf of the infant James VI, the other wanting to restore the exiled Mary Queen of Scots. Since Edinburgh Castle was held by William Kirkcaldy of Grange for the Marians the latter party not only

180. RSS, iii, no. 2640; v. 829, 930, 1363, 2231, 2357; RPC, i, 395-6.

181. RSS, vi, nos. 159, 173; Bannatyne's Mems, 264.

182. Edinburgh Burgesses, 243.

had access to most of the royal artillery but also control of the gunnery establishment itself.

By the end of Mary's reign there were twenty-four gunners and other craftsmen, a number which dropped to eighteen in the succeeding two years. In July 1571 the regent only had seven gunners in service: Andrew Mansion, master wright; John Bickerton, master smith; Michael Gardner, gunner; Alexander Honeyman, gunner; Archibald Cuninghame, gunner; Jacques Guillaume, soldier; Robert Gardner, gunner. Twelve extraordinary gunners were also feed.¹⁸³ In March 1572/3 the Regent Mar caused 500 merks to be given and divided amongst the six gunners then with him in Leith: Michael Gardner, James Hector, Archibald Cuninghame, John Bickerton, Alexander Honeyman and Robert Gardner. None of the money was to be given to the ordinary gunners, smiths and wrights who 'hes maid defectioun fra ourre soverane lord, his obedience and service, and forsworne their faith and allegeance aucht to his hienes and adjoinit thameselfis with the tratouris and rebellis of Edinburgh Castell and toun': John Stewart, Robert Moffat, John Mylne, Claus Heliot, Hewgait Queillmaker (Hew de Neullay), David Pettigrew and Adam Hamilton.¹⁸⁴ When Edinburgh Castle was forced to surrender in May 1573 those of the gunnery establishment who were taken were Charles Bordeaux, David Balfour, Hewgait, Robert Moffat, John Stewart, John Bickerton, Adam Hamilton, David Pettigrew, David Schang, David Fairfool, James Bickerton (a boy) and three other boys.¹⁸⁵

John Chisholm, the comptroller of the artillery, had also taken the part of the Marians, and was sent by them to France in the winter of 1570/1 to get money and munitions, but when he returned that June or at

183. TA, xii, 58-60, 130, 275, 290-1.

184. RSS, vi, no. 1530.

185. PRO SP 52/25 (Cal. Scot. Papers, iv, no. 666).

the beginning of July to Queensferry he was captured by Lord Lindsay and taken off to the regent's camp at Leith. On him he had about 6000 francs and in the ship he returned in were twelve barrels of serpentine powder, 100 bullets for cannon, 300 for smaller pieces, 300 callivers, 300 morions and 200 pikes.¹⁸⁶

In June 1573 immediately after the recapture of Edinburgh Castle the office of master of the artillery was revived for Alexander Jardine of Applegarth,¹⁸⁷ a descendant of a previous master, but possibly this was a sinecure appointment by the Regent Morton to reward a follower rather than a genuine attempt to replace John Chisholm. In any case, Chisholm was eventually forgiven for taking sides with the Marians. In July 1576 he was granted a remission for his part in the late 'rebellion' and three years later he was reinstated to his post as comptroller of the artillery, 'our soverane lord and Lordis of Secreit Counsale understanding the ruynous estait, decay and misorder of his hienes artaillierie and munitioun for lak of ane expert man to attend thairupoun'. The artillery, however, was not totally neglected in the years between the surrender of Edinburgh Castle and the reappointment of Chisholm. The guns in the castle, which had all been damaged or dismounted in the siege, were put back in order in 1575 and 1576 by James Murray, wright, and two of his servants, working to the orders of the master of work, Sir William McDougal.¹⁸⁸

Of the other gunners and craftsmen taken in Edinburgh Castle only three - John Stewart, Hewgait and Adam Hamilton - turn up again in royal service, from August 1579 when the Privy Council took trial 'of the sufficiencie' of those gunners and craftsmen who presented themselves for royal service,

186. Cal. Scot. Papers, iii, nos. 627, 638, 695, 828, 831; Misc. Papers, 59, 65.

187. RSS, vi, no. 2001.

188. Ibid., vii, nos. 659, 1909; RPC, iii, 191; TA, xiii, 81, 87, 97, 101, 124, 137, 140, 174, 185.

and those who were suitable had their names and rate of pay registered in the records of the council as follows:

'Johnne Cheisholme, comptroller and secund persoun of the artailyeirie, taikand in the moneth x li iiis iiiid and in the yeir j^cxxii li.

MELTARIS

David Rowane, maister meltar, in the yeir, xl li.

Alexander Hunyman, in the moneth, vili, (in the year) lxxii li.

WRICHTIS, STOKMAKARIS, AND QUHEILL MAKARIS

James Hectour, monethlie, viii li (x)s in the yeir j^cii li.

Frances Mansioun, in place of umquhile Andro M his fader, monethlie, vi li in the yeir lxxii li.

James Murray, wrycht, in the moneth, vi li, in the yeir, lxxii li.

Robert Robersoun, wrycht, in Striviling, monethlie vili, yearlie lx li.

James Repnoche, wrycht and gunnar, monethlie, v li, yearlie, lx li.

James Scheves, quheill maker, monethlie, vi li, yearlie lxxii li.

John Steuart, wrycht, monethlie, v li, in the year lx li.

Hewgait Daneilzie, monethlie, v li, in the yeir, lx li.

SMYTHIS AND GUNNARIS

Johnne Beikartoun, smyth, monethlie, vi li, in the yeir, lxxii li.

Quintene Bikartoun, his sone, monethlie, v li, in the yeir, lx li.

Johnne McBane, in Striviling, monethlie, v li, in the yeir, lx li.

Adame Hammiltoun, smyth, monethlie, v li, in the yeir, lx li.

GUNNARIS AND PULDER MAKARIS

Archibald Cunninghame, monethlie, vi li, in the yeir, lxxii li.

Michael Gardinar, monethlie, vi li, in the yeir, lxxii li.

Robert Gardinar, gunnar, monethlie, v li, in the yeir, lx li.

Archibald Gardinar, monethlie, v li, in the yeir, lx li.

Ambros Galloway, monethlie, v li, in the yeir, lx li.

Jacques Gilyeam, monethlie, v li, in the yeir, lx li.

Archibald Steill, monethlie, iiii li, in the yeir, xlviiii li.

Cristell Gardinar, monethlie, iiii li, in the yeir, xlviiii li.¹⁸⁹

Once the French had been forced to surrender Leith in 1560 the Hamiltons took their opportunity to get revenge on Lord Sempill, a supporter of Mary of Guise, by besieging Castle Semple, in Renfrewshire, and the associated tower which stood on an island in Castle Semple Loch. The Treasurer's accounts for the period of the siege, October 1560, are missing but it is likely that the whole affair was managed without recourse to the royal guns or gunners in Edinburgh Castle. The siege was directed by the Duke of Châtelherault's son Arran, though the successful outcome of the whole enterprise seems not a little to have had to do with the presence of Kirkcaldy of Grange in an advisory role. The Earl of Argyll supplied a gun and other small pieces came from Hamilton. Arran was at the siege ten days, the first seven of which the weather was so bad that his artillery could not be planted against the castle. The gatehouse was battered and taken by the besiegers and the garrison forced to surrender on 19 October.¹⁹⁰

With the return of Queen Mary, however, the gunnery establishment had a very definite role to play again. Mary took an artillery train consisting of a saker, a moyen and a bastard under the direction of John Chisholm and eleven gunners when she went against Huntly and the

189. RPC, iii, 205-6.

190. Cal. Scot. Papers, i, nos. 905, 911, 915, 916.

Gordons in 1562.¹⁹¹ After her imprisonment in 1567 Edinburgh Castle and the gunnery establishment came under the control of the Regent Moray and he took guns - four cannon, two grose culverins and a culverin bastard¹⁹² - to besiege Dunbar Castle, held in the name of Bothwell, but it surrendered after a week or so, the garrison being allowed to part with bag and baggage.¹⁹³ Of the gunners in the castle, at least s/ Hary Balfour, who owed him¹⁹⁴ advancement in some measure to Moray, must have been reluctant to put up a struggle. Moray had the guns removed from Dunbar and also from Inchkeith at this time.¹⁹⁴

When Queen Mary escaped from imprisonment in Lochleven Castle in 1568 and gathered an army in the West Moray set out to oppose her, taking a train of artillery with him. The two armies which opposed each other at Langside are said to have been only a few thousand strong, Moray's three to four thousand, Mary's five to six thousand. She had some artillery, presumably supplied by the Hamiltons, ten brass pieces being captured by Moray. Battle seems to have commenced with the firing of the artillery. Douglas of Bonjedwart says there was 'ane provyddit battaill of artyle' and the Hamiltons' master gunner was slain, but probably the guns played little part in the battle since the regent's men drove off the queen's gunners at an early stage. There is no mention of what effect Moray's guns had if any.¹⁹⁵

Despite their decisive victory at Langside and the flight of Queen Mary to England, the cause of the protestant lords and the young King James was by no means secure. The lords defeated at Langside who had fled

191. TA, xi, 217-18.

192. Diurnal of Occurrents, 124. Cf. 'The Diary of Robert Birrel', Dalyell, Fragments, 2.

193. TA, xii, 84-85; Pitscottie, Historie, ii, 200.

194. TA, xii, 84-85.

195. Pitscottie, ii, 203-4; Buchanan, History, ii, 535-7; Melville, Memoirs (Donaldson), 77; Diurnal of Occurrents, 130; Cal. Scot. Papers, ii, nos. 654, 655.

into England soon returned and Huntly was active in the North-east.

In 1570, however, the supporters of James VI connived at the English harrying the lands and destroying the houses of many of the borderers, notably the Homes, Scots, Kers, Maxwells and Johnsons, who had admittedly been the cause of much trouble in England.¹⁹⁶ They were also supporters of Queen Mary. An English army under Sir William Drury and accompanied by Lennox, Glencairn, Sempill and Morton went on to ravage the lands of the Hamiltons, destroying Hamilton Castle (Cadzow) and Palace and Kinneil House near Linlithgow, all belonging to the Duke, and several other Hamilton houses as well.¹⁹⁷ The English help at this time was undoubtedly crucial in establishing the supporters of James VI and protestantism in Scotland.

Lennox took a grose culverin and five culverin bastards from Stirling Castle to add strength to the English artillery. He even got equipment and powder from Edinburgh Castle for them;¹⁹⁸ but already, the captain of the castle, Kirkcaldy of Grange, had come out in favour of Queen Mary,¹⁹⁹ and in future James VI's supporters were to receive no artillery or support from that quarter. Grange totally refused to give Lennox, the new regent, artillery in the following August and the latter had to take guns from Stirling Castle to besiege Brechin, defended by Huntly's men, and Doune Castle. The soldiers in Brechin Castle appear to have surrendered on the news of the approach of artillery. Doune also surrendered but whether as a result of battery is not known.²⁰⁰

196. Buchanan, History, ii, 585; Cal. Scot. Papers, iii, nos. 186, 188, 197.

197. Cal. Scot. Papers, iii, 264.

198. Ibid., iii, no. 264.

199. Ibid., iii, no. 190.

200. Pitscottie, Historie, ii, 235; TA, xii, 208, 209; Buchanan, History, ii, 590-1; Cal. Scot. Papers, iii, nos. 390, 394, 406, 410, 430, 432.

Dumbarton Castle, apart from Edinburgh the only major royal fortress being held for Mary, was captured at the beginning of April 1571 as the result of a daring escalade of the castle rock in the early hours of the morning by Thomas Crawford of Jordanhill with a small band of wageours.²⁰¹ All attention could now be focused on Edinburgh Castle. Its keeper, Kirkcaldy of Grange, was far too vigilant to allow himself to be caught in the same way as Dumbarton, though Crawford does in fact seem to have been involved in an attempt to force a way into the town in August 1571 - by then firmly in control of the Marians - by means of a stratagem which recalls the deeds of Bruce's supporters in the early fourteenth century. (Some of his men attempted to have the gate opened by pretending to be mealmen while others waited in hiding to make a rush on it).²⁰²

Kirkcaldy had gone to some trouble to prepare for the sieges to come refortifying the castle, improving the town defences with earthwork fortifications, blocking up the gates and installing a garrison in the steeple of St Giles. He had got money and supplies from France and had also laid his hands on the artillery belonging to the burgh of Edinburgh.²⁰³ There was also a large body of nobles in Edinburgh who supported him, including Huntly, Herries and Ferniehurst.

In May, only a few weeks after the taking of Dumbarton Castle, the Regent Lennox came to Edinburgh with three guns which he planted in an earthwork fortification on Calton Hill. From here he shot into the lower part of the town, especially Leith Wynd outside the walls, and occupied a house there. Kirkcaldy had a cannon brought down from the castle to the Blackfriars Yard to dislodge the regent's men from their positions

201. Diurnal of Occurrents, 202-3. Blackness Castle was also held by the Marians and, of course, there were the Hamiltons' not inconsiderable castles, especially Hamilton (Cadzow) and Draffen (Craignethan). Blackness was finally captured in February 1572/3 (Diurnal of Occurrents, 324, 326).

202. Cal. Scot. Papers, iii, no. 892.

203. Bannatyne's Memorials, 112-20; Diurnal of Occurrents, 202 ff, 209, 212; Cal. Scot Papers, iv, no. 68.

and an attempt was made to surprise the fort on Calton Hill without any success.²⁰⁴ The regent's initiative, however, had withered by the end of the month when he wrote to Queen Elizabeth of England that he was not able to sustain wageours on the money available to him and there were no battery pieces except those in the castle. He asked for eight cannons, four culverins and two bastards with sufficient powder, bullets, instruments of war and pioneers, with 1,000 footmen, 300 horsemen and money over and above to pay the wages of Scottish foot and horse.²⁰⁵

Substantial English help did not materialise and a new attempt was made in the autumn by the Regent Mar. He gathered together ten battering pieces, including two from Dumbarton, two from Stirling, one from Dundee, two from Broughty Craig and the rest from Dunbar and other places.²⁰⁶ Again guns were placed on Calton Hill and others before ^{the} West Port but with no more result than before. The latter guns were removed to fire at the wall on the south side of the town on the 17 and 18 October but as fast as the wall was knocked down it was rebuilt by those within and no assault was attempted. The guns positioned at St Giles and on the Kirk of Field 'contempnet' the regent's guns and his pavilion was even rent by a shot.²⁰⁷ After twelve days' effort Mar withdrew his men and guns to Canongate and Leith.

Thereafter no serious bid was made on Edinburgh for over a year. Greater efforts were made by the regent to stop provisions getting through to the town and castle²⁰⁸ and the war was taken out into the country with the supporters of each party destroying each others' lands. In June 1572

204. Bannatyne's Memoriales, 123-4.

205. Cal. Scot. Papers, iii, no. 767.

206. Ibid., iii, nos 911, 914, 956.

207. Bannatyne's Memoriales, 192, 194-5; Diurnal of Occurrents, 251-2.

208. Diurnal of Occurrents, 291.

Kirkcaldy was even bold enough to send a cannon and a double moyen to batter Merchiston Castle (the tower now incorporated in Napier College, Edinburgh). The guns pierced the walls of the castle before the Marians had to return in haste to Edinburgh with the arrival of some of the regent's men from their siege of Niddrie Castle in West Lothian.²⁰⁹ Eventually in July 1572 a truce was patched up largely thanks to French and English diplomacy behind the scenes. Kirkcaldy held on to Edinburgh Castle but the town itself was made free to all.

It was clear to the supporters of the young James VI that they would only finally daunt their opponents if they rooted Kirkcaldy out of Edinburgh Castle. It was equally clear that they lacked the power to do so. The only solution appeared to be once more to call in English help, and after all it was also in Elizabeth's interests to see that they succeeded in suppressing the supporters of a woman who was widely regarded as the rightful queen not only of Scotland but of England as well.

In January 1572/3 Elizabeth had a survey made of the castle of Edinburgh by Rowland Johnson and John Fleming in which they concluded that the only way to take the castle was by battery.²¹⁰ The English expeditionary force, consisting of a 1,000 soldiers and 300 pioneers arrived at the end of April along with six double cannons, fourteen whole culverins, two sakers, two mortars and two bombards.²¹¹ A few other guns were supplied by the Scots, including the Earl of Argyll's cannon and four bands of soldiers.²¹²

209. Ibid., 300.

210. Bannatyne Misc., ii, 70-71.

211. Ibid., ii, 80. For the guns compare Diurnal of Occurrents, 330, a cannon royal, 4 cannons, 9 grose culverins, 4 'pottin peices', 5 small brass pieces and 'ane Scottispeice les nor ane cannoun, quhilk wes tane be the Inglismen at the feild of Flodane; she wes callit ane of the sevin sistaris'. Six other pieces are said to have arrived on 23 May (Ibid., 332).

212. Bannatyne Misc., ii, 80; Diurnal of Occurents, 331.

For the course of the siege we are fortunate in not only having detailed contemporary Scottish and English accounts but also a bird's-eye view in Holinshed's Chronicle. The castle was first of all completely cut off from the outside by a continuous system of fortifications incorporating five mounts on which were placed the guns. They stood one on the Castlehill itself, another at Greyfriars, another by the Grassmarket, two others to the North and West and a fifth at St Cuthbert's Church. The townsfolk had already in the preceding December built two great earthworks across the High Street to protect it from the castle's guns. Meanwhile the other side had not neglected to improve the castle's defences, building a rampart across the castle from North to South to defend the built-up area (Crown Square) from battery from the West and improving the great spur defence facing the town. More earthwork was added to it and the timber and boards of its fore-part were replaced with a wall of stone and lime. Owing, however, to major defections from the nobles supporting the queen - principally the Hamiltons, Huntly and Seton - Kirkcaldy could no longer hope to control or have any influence in the town. Only Maitland of Lethington, Home and the Laird of Pittarrow remained with him to the end.²¹³

Soon after the arrival of the English their commander, Sir William Drury, set Hubbard the miner to try and undermine the spur but this venture apparently came to naught. The battery of the castle began on Sunday 17 May, attention being directed firstly on David's Tower, no doubt since the gunners stationed on top of it could command so many of the English positions. On the twenty-first all the guns from all sides opened up fire. The south quarter of David's Tower fell together with some of the fore-wall next to it on the twenty-second and the east part, and

213. Bannatyne Misc., ii, 72ff (= Holinshed's Chronicle); Diurnal of Occurrents, 322, 330-3; Cal. Scot. Papers, iv, no. 598.

some of the portcullis, two days later. By this time all the great artillery of the castle had been put out of action or dismantled. At 7 am. on 26 May two assaults were made simultaneously. A force of Scots and English caused a diversion at St. Katherine's gate at the west end of the castle while the main English attack was launched upon the spur. The former force was repulsed with the loss of 28 to 30 men killed or wounded, but the assault with ladders on the spur was successful and Drury managed to lodge a force on it. That night Kirkcaldy asked for a parley and the castle was surrendered on 28 May into the hands of the English.²¹⁴

Drury left for England straight after the siege. By prior agreement, although the castle had surrendered to him he left it intact, though substantially damaged, with all its guns. Morton set about a major rebuild including the Portcullis Gate and Half-Moon Battery which survive to this day. The guns, as mentioned above, were remounted to the orders of the master of works.

The capture of Edinburgh Castle marked the end of effective support for Mary in Scotland. Despite one or two scares no real threat of French or Spanish invasion ever materialised and successive Scottish governments saw fit to maintain and develop good relations with England. Several problems still remained to be solved internally, not least the suppression of the Hamiltons, now led by two younger brothers of the mad Earl of Arran, Lords John and Claude. In 1579 they were both forfeited for their part in the murders of the Regents Moray and Lennox and an expedition was sent in May to take their chief strongholds at Hamilton and Draffen in Clydesdale.

214. Bannatyne Misc., ii, 72ff; Diurnal of Occurrents, 330-3; Cal. Scot. Papers, iv, no. 649.

Only two cannon, a bastard and a moyen were got ready for the sieges, under the direction of Michael Gardner, gunner,²¹⁵ but to make up for the lack of fire power it was arranged to call out the host in seven groups, each serving for twenty days at a time, and, if necessary, each doing more than one tour of duty. The expedition was also accompanied by bands of wageours, two of footmen armed with hagbuts under Captains Thomas Crawford and David Home, and fifty horse under John Carmichael. The siege of Hamilton Castle commenced on 4 May but the guns did not arrive until the fifteenth, on which the garrison, said to be fifty strong, surrendered on conditions. The garrison of Draffen fled in the night and both houses were demolished.²¹⁶

The gunnery establishment was allowed to wind down from the 1580s onwards. The master of the artillery, Alexander Jardine, was involved in family feuds in the South-west and as a result fell foul of the government in 1583. It may just be a coincidence that his fees were last accounted for in the Martinmas term of 1582.²¹⁷ In any case the crown was acutely aware of its poverty at this time and needed little excuse to cut down on expenditure. Other crown officers, like the wardens of the marches saw their salaries disappearing about this time though in their case there is evidence that other forms of reward were provided, for example grants of land.²¹⁸ The only other known master of the artillery under James VI was Andrew, Lord Ochiltree, but there are no payments of fees recorded to him in the Treasurer's accounts, only expenses on one occasion in June 1598, for taking a cannon from Crichton to Edinburgh.²¹⁹ The next master of the artillery seems to have been

215. TA, xiii, 266.

216. RPC, iii, 153; Cal. Scot. Papers, iv, nos 407, 408;

217. Ibid., iii, 97, 263, 268; SRO E21/63, fo. 136v; E22/6, fo. 116r.

218. T.I. Rae, The Administration of the Scottish Frontier, 1513-1603 (Edinburgh, 1966), 30-33.

219. SRO E21/72, fo. 72v.

Sir Harry Bruce, appointed General of His Majesties Artillery and Master of His Munition of War and Arms of Scotland by Charles I in 1626.²²⁰

~~James~~^{John} Chisholm continued in office as comptroller of the artillery being made steward of his majesty's house as well in 1587.²²¹ After January 1587/8 no payment of wages to him as comptroller of the artillery can be traced in the Treasurer's accounts until 1592, when he got back-pay of £244, and November 1593 when he was paid for the whole period from 1 November 1583 to date. Regular fees are not recorded for him until 1603 after James VI had removed to England.²²²

There were twenty-six gunners, wrights and smiths (excluding Chisholm and David Rowan the master melter) whose fees were recorded as late as September 1585. They were as follows:

Alexander Honeyman	£6 monthly
James Rockno, master wright and gunner	£8 10s
Francis Mansion, wright	£6
James Murray, wright and gunner	£8 10s
Robert Robertson, wright	£5
David Selkirk, wright and gunner	£6
James Scheves, wheelwright	£8 6s 8d
John Stewart, wright	£5
Hewgait Donelyie (Hew de Neullay), wright	£5
Quentin Bickerton, smith	£5
John McBen, smith	£5
Adam Hamilton, smith	£5
Archibald Gardner, gunner	£5

220. RPC, 2nd series, i, 3 08.

221. SRO E21/65, fo. 137v.

222. SRO E21/68, fo. 140v; E21/70, fo. 179v; E21/76, fo. 314v.

John Seyton, gunner	£8 6s 8d
Archibald Cunningham, gunner	£8
Jacques Guillaume, gunner	£5
Harry Thomson, gunner	£5
Robert Hannay, gunner	£5
Alexander Gilbert, gunner	£5
James Gardner, gunner	£8
David Saunders for making and winning saltpetre	£5
John Schang, wright	£6
Thomas Rowan, gunner	£5
John Bell, smith	£6
John Robertson, wright	£5 223

One of the gunners of this period, Michael Gardner, master cannoneer and burgess of Stirling, who died 3 May 1584 has left an inventory of his goods in his will. It includes the following items pertaining to his craft:

'ane kist for keping of poulder with ballands and wechtis seis
and rangis
ane hatt spurrs knapiscull
ane belt quhynyer and suord and bag
ane horne for poulder
ane stand of harnes
ane halbert
ane lokkit bonnet cais with instruments contenit therin for
my craft
ane lunt staf garnesit with ane renet of bras

ane reull of irne with ane uther of frie with certain writtis
of parchment pertaining to his craft²²⁴

Regular records of fees to the gunners were kept until April 1588
by which time they had dropped in number to only seven: James Murray,
James Rockno, Francis Mansion, David Selkirk, James Scheves, Archibald
Gardner and Adam Hamilton. Back pay was also given to James Gardner
and Jacques Guillaume.²²⁵ Payments to them, and John Seyton, then
appear irregularly in irregular quantities through the next twelve years
with the following additions: Abraham Hamilton, master smith and gunner,
from March 1595/6, at £6 a month; David Kerss, Alexander Lowrie and
James Murray Younger by August 1598. John Robertson, along with Walter
Govan, were stationed in Dumbarton Castle, at least from early 1587, and
were joined by Archibald Gardner in May 1599. David Rowan's fee is
last listed in November 1587 although he was alive until at least
1590.²²⁶

Ten gunners, wrights and smiths were listed in December 1600,
including for the first time James Workman, gunner, presumably the
replacement for David Rowan, Ninian Lawder, wright, James Hamilton,
wright and Henry Smith, smith.²²⁷ When their fees are recorded again
regularly from 1603 they amounted to seventeen as follows:

James Murray, elder, attender and overseer of works as master gunner	£10 monthly
James Murray, younger, master wright	£8
James Hamilton, wright	£8
James Scheves, wright	£8

224. C.E. Whitelaw, Scottish Arms Makers (London, 1977), 299.

225. SRO E21/66, fos. 110v, 112v.

226. SRO E21/67, fo. 16r; E21/68, fos. 140v, 141r; E21/70, fos. 135v,
195v; E21/71, fo. 98r; E21/72, fos. 43r, 87r-88r; E21/73, fos. 128r,
138r; E21/66, fo. 89r; Edinburgh Burgh Recs., (1589-1603), 335.

227. SRO E21/74-75, fos. 91r, 91v.

Ninian Lawder, wright	£8
Abraham Hamilton, master smith	£10
David Kerss, smith	£8
Henry Smith, smith	£6
Archibald Cunningham, gunner	£8 10s
John Seyton, gunner	£8
Archibald Gardner, gunner	£8
Alexander Lowrie, gunner	£6
James Workman, gunner	£6
James Gardner, gunner	£8
William Scougall, wright	£8
William Drummond, gunner	£6
John White, wright	£8 228

Thereafter the number seems to have remained fairly constant at this level.

The reason for all the irregularities in the accounts and the contraction in the size of the gunner establishment was first and foremost financial stringency. In July 1587 an Act of Parliament forbade the treasurer to exceed £20,000 in his annual discharge²²⁹ and it is obvious that the gunners were amongst the first to suffer as a result of this. Twenty-odd gunners, dropping to seventeen, to serve the artillery in the royal castles of Edinburgh, Stirling and Dumbarton compares very unfavourably in terms of efficiency and commitment to the situation in contemporary England. In 1578 - and there is no reason to think that the situation drastically changed thereafter - there were apart from the various officers 105 effective gunners stationed at the Tower of London, a local master of the ordnance at Berwick, and six other master gunners,

228. SRO E21/76, fos. 314v, 315r.

229. APS, iii, 456.

333 gunners and sundry artificers^{ic} in various forts up and down the country, and 530 gunners kept afloat on the fleet - in total nearly 1000 trained artillerymen.²³⁰

John Chisholm remained as comptroller of the artillery until 1613, by which time he is likely to have been a very old man. He was succeeded for a short spell by Mr Robert Lindsay,²³¹ who in turn was replaced by James Murray younger at the beginning of 1616. James Murray and his father James, elder, did very well in royal service. James Murray elder was first appointed to the gunnery establishment as a wright and gunner in 1565 and his son appears in 1599 by which time his father had become master wright. The following May James elder is referred to as master gunner and in 1601 he was made overseer of his majesty's works. He then demitted his office of master wright to his son who on the death of his father in 1615 lapped up his post of master gunner to add to his other two. Three years earlier he had also been given a charter of novodamus of the lands of Kilbaberton near Edinburgh. James Murray elder's post as master overseer was inherited by Walter Murray (? another son) in December 1615 at the request of James Murray younger.²³²

The Murrays, however, owed their success as much to the powerful patronage of Sir Gideon Murray of Elibank, deputy treasurer and privy councillor, as to ability. Sir Gideon claimed the younger James Murray as a nephew²³³ and in an interesting letter of 22 August 1616 to Patrick Hamilton (brother of Thomas, successively Earl of Melros and Haddington),

230. O.F.G. Hogg, English Artillery 1326-1716 (London, 1963), 163-4.

231. Lindsay seems to have owed his advancement to this post to John Chisholm, who demitted office in his favour before he died, (Melros Papers, i, 259-60).

232. RSS, v, no. 2468; SRO E21/72, fo. 87r; E21/73, fos. 40r, 123r; E21/76, fos. 314v-315r; E21/79, fo. 57r; E21/83, fo. 64v; AMW, i, p. xxix.

233. Apparently Murray was not a nephew in the proper sense. Sir Gideon's sister Agnes had married Patrick Murray of Falahill who was Murray's uncle (?). See Scots Peerage, iii, 504, 509.

explained his role in his advancement. About two years previously one of the other gunners, James Gardiner, had obtained a precept from the king for £1400 or £1500 which he alleged was owed him in fees, and also a gift of the office of comptroller of the artillery. The precept, however, was refused on the advise of the commissioners of the rents lest it should serve as a precedent for other attempts to recover back-pay. As for the post of comptroller it was not vacant as Gardiner had claimed having being disposed by Chisholm to Master Robert Lindsay before he died. On the death of Lindsay in the previous winter Gideon Murray was able to dispose it to James Murray, making sure that Bernard Lindsay of Lochhill, one of the king's gentlemen of the bedchamber, would not intercede for it on behalf of Robert Lindsay's children. Meanwhile James Gardiner was bought off with a payment of £600 in settlement of his claim for back-pay. Gideon Murray described him as 'furious, a deboschit drunkard, and having spent his monies, goes about to get sustenance by unlawfull skafrie and malitious informationis'.²³⁴

Chisholm carried out further repairs on the guns in 1581 and powder was got from France in 1582 and iron shot from abroad in 1583.²³⁵ Possibly the work done now as in the 1570s was little more than patching up since at the time of the Armada scare in the summer of 1588 it could

234. Melros Papers, i, 259-60.

235. SRO E21/61-62, fo. 126; E21/63, fo. 40r; E22/6, fo. 129v.

be claimed that the castle was not only ruinous but also lacked powder, bullets, stocks, wheels and other equipment for the guns and that it was therefore necessary to assign the second term's payment of the tax on the lesser barons to putting it in order.²³⁶ Apart from this special subvention Chisholm was expected from March 1583-4 onwards to keep the artillery in repair and supplied with the necessary equipment out of the money paid as a duty on exported salt. He was appointed collector of the tax and was given the added incentive of 12d in the £1 collected to help supplement his salary.²³⁷ It is unlikely that this would have raised much money either for the artillery or Chisholm personally. James Murray spent time supervising the work on timber at Niddry in 1600 which was for mounting the artillery. Timber from there was transported to Edinburgh Castle in early 1602.³³⁸ Five pieces of brass ordnance, which had formerly belonged to the Earl of Caithness were bought for the royal artillery train in 1624 from William Dick and John Sinclair for 7000 merks, they having got them from the Earl in payment for certain debts.²³⁹

In 1584 guns were removed from Edinburgh Castle and taken to Stirling which was then being held against the king by Mar, Glamis, Angus and Lords John and Claude Hamilton. They fled without any resistance.²⁴⁰ Guns were put on the ships which went to Denmark on an ambassadorial mission in 1596 and a cannon and two bastards were sent with the expedition which went to Kintyre in 1598. James, however, also ordered that guns should be supplied for this by the townsfolk of Ayr.²⁴¹

236. RPC, iv, 296-7.

237. Ibid., iii, 639-40.

238. SRO E21/73, fo. 140r; E21/76, fo. 110v.

239. RPC, xiii, 394-5.

240. SRO E22/6, fo. 188r.

241. SRO E21/72, fos. 87r-88r; RPC, v, 478.

In 1614 the Earl of Caithness was given a commission to suppress the rebellion raised in Orkney by Patrick Earl of Orkney and to help him in his task he was allowed a cannon and a bastard from Edinburgh Castle together with other appropriate equipment. The list of this is instructive of the amount of organisation and fitting out necessary, even though in this case only two guns were involved. Again we must note how a cannon and a bastard was pretty meagre provision for intended siege work and sixty shot a piece needed to be no more than two days supply. In making such a provision for the guns one wonders if the Scots made any allowance for the possibility of recovering shot for reuse after it had been fired! The other equipment includes lifting gear (swesis, handspokis, weidgeis and a pair of feises), tools for clearing the road (schoillis, spaidis, mattokis, gavillokis, querrell mellis and wedgeis and crawyronis), butter for greasing the wheels, a smith's repair outfit (belleis, studie, hammerris, naillis, etc), woodwork (daillis, sparris, stingis, jestis and plankis) to build platforms or positions for the guns to be fired from, and lastly a royal flag (handchanyie).²⁴²

The Privy Council finally agreed that Caithness should have two gunners - apparently including James Gardner - two wrights and a smith to accompany his expedition, which may have consisted of little more than 100 of Caithness' own people and 100 men in the king's pay.²⁴³ Only 200 of the islanders came forward to serve under him after he landed near Kirkwall on 23 August. A force of Earl Patrick's men said to be 500 strong was sent out to encounter them on the twenty-sixth but they were driven back to their strongholds in Kirkwall - the castle, the cathedral and the Earl's Palace. A shot from the culverin bastard pierced one of the turrets of the castle.

242. RPC, x, 713-14.

243. Ibid., x, 701-3; Melros Papers, i, 180.

On the twenty-eighth Caithness planted the bastard at the back of the newly built palace and started firing at the Chapel Tower but since it was clear by noon that little headway was being made the cannon was fetched as well. It was hoped that the guns would beat down the great oriel windows and allow an assault to be made with ladders. On the thirtieth, Robert Stewart, the Earl's son and leader of the rebellion, sought to gain terms for himself without success and the following day abandoned the place for the greater safety of the castle. At this the men holding out in the cathedral sought terms which Caithness thought better to grant than to have to beat down the church.

All Caithness' attention could now be directed on the castle. Nothing survives of the castle today and we have no exact knowledge of what sort of structure it was. It stood on the opposite side of Broad Street to the cathedral, about 100 metres further to the North. From Caithness' accounts of the siege we can guess it consisted principally of a strong towerhouse with a block house (possibly a tower defending an associated barmkin or courtyard) as well. The towerhouse had vaults and turrets and had a platform on top of it mounted with at least two pieces of artillery.²⁴⁴ Caithness claimed, no doubt with considerable exaggeration, that it was one of the strongest houses in Britain and promised to show the Lords of the Privy Council 'cannone billets, both brokkin lyk goulfe bales upoune the castellet, and clovin in twa halffis'. The garrison in the castle was led by Robert Stewart and Patrick Halcro, and although their soldiers would have preferred to render without a siege Robert was determined to resist as he rightly doubted receiving any mercy from the king.

244. In all 8 pieces of brass and 6 pieces of iron ordnance were got from the castle and palace after the rebellion was suppressed. Melros Papers, i, 186.

Caithness planted his guns, defended by gabions, at the east end of the kirkyard (of the cathedral). The platform on top of the castle was commanded by sixteen men in the steeple of the cathedral and musketeers were positioned in houses round about. Since the guns could make little impression on the castle walls Caithness concentrated their fire on knocking down the battling and dismounting the guns on the platform. His gunners also sought out that part of the wall of the castle weakened by having a turnpike stair in it, and broke it down. The blockhouse was battered and also the iron yett, but after only a few days most of the powder and shot was spent, food was in short supply and there was no money to pay the wageours.

Money and provisions, including 200 bullets for the artillery were sent from Edinburgh and reached Kirkwall on the twenty-second or twenty-third. Caithness immediately sent a message to the holders of the castle that if they desired to put themselves at the king's mercy he would allow them to come out unharmed. The castle, however, only came into the earl's hands on the 29 September. Earl Patrick's other house at Birsay, the only other stronghold held by the rebels, had been captured by a detachment under the Laird of Stenhouse on 2 September. Later that year, on 23 November, the cannon and culverin bastard used by Caithness were drawn through the streets of Edinburgh in triumph with the keys of Kirkwall Castle hung round their muzzles, and there were salutes of guns from the castle with soundings of trumpets and drums.²⁴⁵

In some ways it is perhaps more appropriate to regard Caithness' 1614 Orkney expedition as an isolated, and in the circumstances

245. This account of the expedition is largely based on the letters of Caithness, the Bishop of Orkney, etc in Melros Papers, i, 143ff. See also Calderwood, History, vii, 191-2.

surprisingly successful, use of the royal artillery.²⁴⁶ Earlier in the century the Scots had learned to rely on English artillery when they did not have access to sufficient of their own and from the 1580s the changed political circumstances with a much closer alignment of interests with England only encouraged the Scots to ask for more. In late 1587 when James went against the Maxwells in the South-west and some of their castles were held against him he sent to the English asking for artillery to help since it was easier to transport guns over the border than all the way from Edinburgh. It suited Elizabeth that James should restore order in the Borders and she obliged by sending a captain, gentleman and soldiers with some cannon, without any strings attached, to aid in the siege of Lochmaben Castle. English guns were again sought from Carlisle to besiege Torthorwald Castle in Dumfriesshire in 1596/7.²⁴⁷

James' lack of preparation in 1587 in hind-sight seems astounding. No thought seems to have been given to artillery in 1594 either when he took the field against the catholic earls, Huntly and Errol. Argyll was sent ahead with an army composed of contingents from the West Highlands and Isles, said to be 6,000 fighting men strong. At Glenlivet in Banffshire he met up with the very much smaller enemy force. Huntly, however, had gone to considerable pains to bring three (at least) pieces of field artillery with him.

'To the first, Sir Andrew, now Colonell Gray, Knight, gave fyre, but did no knowen harme, only it made the van divide itself and make a lane the way as the bullet went, as if the nixt should

246. It is likely that guns were given out in ones and twos on many more occasions than we have record of. Two were delivered from Stirling Castle in 1611 for service against the Clan Gregor and a culverin from Edinburgh in 1623, along with a petard, for use against the Earl of Caithness (RPC, ix, 128; xiii, 332-3, 351).

247. Melville Memoirs (Donaldson), 141; Cal. Scot. Papers, ix, 462; Historie of James the Sext, 236; Cal. Scot. Papers, xii, 467.

have been obliged to which way they pleased. The second was fired by (blank) and killed bot a few, yet especially one Niel Mackuaren, who in a braving manner had advanced himselfe before the ranks, waving his sword about his unhappy head, now made less by the one halfe. He was one of the mose redoubted amongst the Islanders, and in whom the rest (as herds of beasts use to doe) had put such confidence, as they tooke his death as a thing ominous (for to this kynd of superstition the Hielanders generally are of all men most addicted), and were seen thereupon to stagger and reel to and fro in great disorder. The third did no notable harme, only augmented the disorder so farr, as almost the whole van for feare clapt downe upon their faces to the ground, nor could be raised till the Lieutenant advanced himselfe in persone, and beat them of with stroakes. Meanwhyle the main and rear pressed on so far after the Lieutenant, that, in spyt of all commandment to the contrary, they joyned with the van in great confusion'.²⁴⁸

Huntly and Erroll were able to take advantage of this to rout Argyll's forces.

In 1608 an expedition was mounted against Alexander Og (MacDonald) in Islay. The fencibles from the south western shires and Argyll were called out and Lord Ochiltree was chosen as lieutenant. He expected to have to lay siege to the MacDonald stronghold of Dunyveg Castle but in the event it was surrendered to him. The artillery and instruments for demolishing houses, however, were not provided by the Scots but were to come from Ireland.²⁴⁹

248. Spottiswoode Misc, i, 265-6. See also Historie of King James the Sext, 338-42, and Cal. Scot. Papers, nos. 375, 378-80.

249. The Book of Islay, ed. G.G. Smith (Edinburgh, 1895), 123-37.

Central government continued to view events in Islay, and the MacDonalds in particular, with great suspicion. The result was the launching of another military enterprise in Islay six years later, directed against Angus Og (MacDonald) and Coll Ciotach, holding Dunyveg and a fort in Loch Gorm much to the displeasure of the government. Sir John Campbell of Cawdor was given Islay in feu and empowered to go and root out the MacDonalds. After a false start late in 1614 Cawdor got his expedition together and the fort in Loch Gorm was induced to surrender on being summoned on 21 January 1615. Dunyveg Castle withstood two days' bombardment, Angus Og surrendering but Coll making a daring and successful escape by sea. The guns for the siege consisting of two cannon and a culverin, were sent from Dublin along with two hundred soldiers under the command of Sir Oliver Lambert. Cawdor contributed his own men and raised the men of Argyll, but the only contribution from the Scottish gunnery establishment seems to have been a petard which was to be employed by a certain James Anstruther, after due trial. There is no record, however, that it was used to any effect.²⁵⁰

In reviewing Scotland's military history from 1523 onwards one is left with the inescapable conclusion that successive governments, no matter what efforts they made, saw the complete and effective control of military affairs slipping away from them. The problems facing the Scots in the sixteenth century were perhaps not so different from those facing many a country today. From the later fifteenth century in Europe

250. Cal. State Papers Ireland (1611-14), no. 936. For recent accounts of the circumstances behind this expedition see D. Stevenson, Alasdair MacColla And The Highland Problem In The 17th Century (Edinburgh, 1980), 35-42; and E.J. Cowan, 'Clanship, Kinship and the Campbell acquisition of Islay', Scot. Hist. Rev., lviii (1979), 132-57. See also The Book of Islay, 161ff, and The Thaness of Cawdor, ed. C. Innes (Spalding Club, 1859), 226ff.

as a whole there was an escalation of the level at which wars were fought particularly in terms of government expenditure on expensive hardware - artillery trains of cast bronze guns - new, more efficient fortifications and paid professionals. Scotland was inevitably caught up in all this with disastrous results, for no matter how good her leaders, the training and bravery of her men, the quality of her own manufactured munitions, the one crucial element which made it all possible was money, and this was sadly lacking in a country poor and small in size compared with most other sovereign states in Europe. The Scots' inability to mount major offensives into England was recognised by themselves after 1523 and by 1547 the English clearly saw their inability to present an adequate deterrent to invasion and occupation.

Since Scotland lacked money for guns, and everything necessary from men to equipment to keep them operational, she had to rely on French and English intervention to preserve her independence from each of them in turn. What about the situation from the 1570s when the main military problem was not so much the possibility of invasion by a foreign power as uprisings and rebellions within - to what extent was it the case that Scottish governments owed their power ultimately to the backing of English guns? Certainly Lennox and Morton and James VI himself seem readily to have accepted situations where it seemed easier to ask for English guns rather than make use of the country's own resources. The English for their part did not keep a train of artillery permanently ready to be at the disposal of Scottish governments - nor, it must be said quite emphatically, is there any evidence that the Scots at any time perceived that they might - but the fact remains that it suited them that there should be a fair measure of political stability in their northern neighbour and in pursuance of this they were prepared to use their guns and men when requested to by Scottish governments - in 1570 against the Hamiltons and

other supporters of Mary, in 1573 against Edinburgh Castle and in 1587 against Lochmaben Castle.

When James VI became king of England in 1603 he left Scotland with its old system of government and the level of financing it basically unchanged. It is not surprising, therefore, to find that the Privy Council found it expedient on two occasions to arrange for guns from Ireland for the siege of Dunyveg rather than any from Edinburgh. This was not so much a case of the new co-operation possible between the different countries of the British Isles, thanks to the union of the crowns, as the Scots continuing a policy of scrounging. The gunners of Edinburgh Castle by the seventeenth century were reduced to doing little more than basic maintenance work and firing salutes with the guns, especially twice a year to commemorate the king's deliverance from the 'Gowrie conspiracy' in 1600 and the 'Gunpowder plot' five years later. They were even fired in July 1606 at the funeral of Alexander Lowrie. one of the gunners.²⁵¹

The story of the Scottish gunnery establishment and of artillery in Scotland by no means came to an end in 1625, the date chosen for the winding-up of this survey. An establishment of sorts soldiered on until 1716 when the Royal Regiment of Artillery was formed for the whole of Britain. In the process most of the posts of the 'North British' establishment were allowed to 'sink' as they became vacant. Those that went were the captain, engineer, lieutenant, commissary, corporal, ten gunners, six practitioner gunners, a petardier, two miners, the deputy storekeeper at Stirling, a gunsmith, the master smith at Fort William a wheelwright and servant and six bombardiers. Only the storekeeper at

251. SRO E21/78, fo. 58r.

Edinburgh, his clerk, the armourer and the storekeeper at Stirling were retained, all but the last at reduced salaries.²⁵²

In the civil wars of the mid-seventeenth century Scotland benefited from the continental training and experience of many of her soldiers and commanders in the field of artillery gaining Alexander Hamilton, younger brother of the Earl of Haddington, who developed light field guns of brass and James Wemyss who made others of wrought iron bound with cord and leather.²⁵³ The gunnery establishment, however, in time of peace was kept at a bare minimum and was found lacking at critical junctures, like the covenanting rebellion of 1679 and the Jacobite uprising of 1715. John Slezer, lieutenant of the artillery in Scotland, wrote in 1681 that with much ado he only found one gunner to go along with four pieces of artillery to the battle at Bothwell Bridge, apart from three pressed men from Leith who proved unsuitable. Besides, Slezer reckoned most of his guns were too large and heavy to be taken to remote parts of the country for dealing with such rebellions.²⁵⁴

It is perhaps ironical that as the gunnery establishment slipped into impotence at the end of the sixteenth century there is evidence of leading Scottish intellectuals turning their minds to military matters and the invention of guns and other engines of war. In 1596 John Napier of Merchiston, the inventor of logarithms, proposed a list of devices, profitable and necessary for defending the country from invasion from abroad, including 'burning' mirrors, artillery and a round chariot of metal (tank?).²⁵⁵

252. Hogg, English Artillery 1326-1716, 186-7, 265-9, 281. See also Maitland Misc., iii, 71-98 for lists and pay of gunnery establishment in 1684 and 1702.

253. See D. Stevenson & D.H. Caldwell, 'Leather guns and other light artillery in mid-17th-century Scotland', Proc. Soc. Antiq. Scot., cviii (1976-7), 301-17.

254. SRO E96/10.

255. M. Napier, Memoirs of John Napier of Merchiston, (Edinburgh, 1834), 247-8.

In 1627 the poet, William Drummond of Hawthornden, obtained a letter patent granting him the monopoly of manufacturing an impressive list of military engines and navigational instruments for twenty-one years, making mention of guns of various sorts.²⁵⁶

It is unlikely that any of these inventions by Napier and Drummond were put to use or indeed that most of them got beyond the drawing-board, but the fact that they were seriously thought of indicates a greater vigour in the minds of some in prosecuting military matters, particularly the development of artillery and guns, than was evident in government practice.

256. D. Mason, Drummond of Hawthornden. His Life and Writings (London, 1873), 156-61.

INTRODUCTION

With the notable exception of Mons Meg the large artillery in use in Scotland from the fourteenth to the sixteenth century has not survived.¹ Bronze and iron are valuable commodities which can be used over and over again and it therefore made sense to break up old guns once they had served their turn. Thus two broken cannon in Edinburgh Castle in 1629 were ordered to be delivered by the master of the artillery to the minister of the church in Holyroodhouse to make a peel of bells fit to be hung there during the king's visit.² Even so the old guns mounted on the Half-Moon Battery of the castle survived into the eighteenth century. It was only in 1716 that they were ordered to be removed by the government as part of a general calling in of obsolete arms resulting from the Jacobite uprisings, and they were shipped south to the Tower of London. There they were either fed to the furnaces in order to make new guns or were destroyed in the disastrous fire at the Tower in 1841. A contemporary account of the removal of the guns suggests that even then the Scots had some pride in the achievements of their forebears in the art of gun casting:

'... and the seven great bress guns as insufficient ar caryed of to be new cast at London. The taking away the 7 sisters, so were cald the 7 great bres guns, on the half moon was like to breck all the old women's hearts in town: the reasoning was that was the effects of the Union and that ther were no such cannons in England and that the castle was plundered and unless yow could supposed ther wrongside

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1. See Appendix A for an account of the surviving guns.
 2. Hist. MSS. Comm., Mar & Kellie (1904), 172.

turnd out at the Cros like a stocking for evry body's conviction ther was no persweading they were useless. But I had my hand in them and fownd they were all hunycombed within such hols as to put in a musket bullet and they were the farder in the worse. Ther ar guns fitter for the purpose mounted in ther place bress guns of 14 12 10 pounders. All the ball for the great cannon ar removd and all the useless bomb shels &c. and ther is as much of evry kind and more in ther place but this does satisfie the minds of ill tempered people and they impose upon well meaning wake folks, and this perhaps was inducement to mobing, for next to the Crown the 7 sisters were a dear thing and they had indeed been good guns in ther time. They were of 40 pownders and upward. They went away March 23. 24. 26. 27. 1716...³

The seven sisters were, of course, originally said to be the guns cast by Robert Borthwick and lost to the English at Flodden but the whole idea of them must have become so much a part of Scottish legend by the beginning of the eighteenth century that their identification with any group of guns to be found was well nigh inevitable.

Mons Meg too was shipped off to England in 1754⁴ the Board of Ordinance having issued instructions for the removal of all obsolete guns from the country. She then lay at the Tower of London for seventy years, unused and neglected, until her triumphant return to Edinburgh in 1829. This unlike the fate of the 'seven sisters' was a notable success worth detailing here. It has often in the past been largely attributed to the intervention of Sir Walter Scott, Daniel Wilson, in his Memorials of Edinburgh⁵ being responsible for influencing the views of most later writers in this respect. The fact is that Sir Walter did take an interest

3. News Letters of 1715-1716, ed. A.F. Steuart (Edinburgh 1910), 148-50.

4. Scots Magazine, xvi (April 1754), 202.

5. D. Wilson, Memorials of Edinburgh in the Olden Time (Edinburgh 1891), i, 169.

in the gun and its possible return to Scotland as early as 1822⁶ but it was through the interest and organisation of the Society of Antiquaries of Scotland and its secretary, William Drummond Hay, that this was achieved. The society still has in its possession a bound volume of correspondence, notes and minutes concerning the gun from which the following account has been extracted.⁷

At the meeting of the society on the 25 April 1828

'A correspondence between the Secretary and various members of the Society having been laid before the Meeting, shewing an earnest and very general desire that some measures should be forthwith be adopted, for the purpose of obtaining, if possible, the restoration to its Ancient Site in Edinburgh Castle of the Old piece of heavy ordnance called Mons Meg, which had been carried away to London in the year 1754; - it was resolved that the Secretary should write immediately to his grace the Duke of Gordon, Governor of Edinburgh Castle, praying his Grace to make application to the Master General of the Ordnance, or to such Authorities as his Grace may deem proper, for the purpose of Mons Meg being replaced upon the Ancient fortifications, where she is understood to have been planted from time immemorial.'

The letter was written to the Duke of Gordon that very day and he passed the request on to the Viscount Beresford, Master General of the Ordnance, who replied to the Duke on the 9 June 1828:

'I have brought before the King the application which Your Grace transmitted to me from the Society of Antiquaries of Scotland; and I have the satisfaction to inform you that His Majesty has

6. J.G. Lockhart, Life of Sir Walter Scott (Edinburgh, 1902-3), vii, 79, etc.

7. Soc. Antiq. Scot. MS 533. See also R.B.K. Stevenson, 'The Return of Mons Meg from London, 1828-1829 in Scottish Weapons and Fortifications, ed. D.H. Caldwell, (Edinburgh, forthcoming, 1981).

been graciously pleased to permit that the Gun called Mons Meg, may be removed from His Tower of London to His Castle of Edinburgh.

I will therefore give the necessary Orders for placing the gun at the disposal of the Antiquarian Society of Scotland for that purpose'.

The gun was to be put 'at the disposal of the Antiquarian Society' but the wherewithal to do this was not to be adequately provided out of government funds as the society was to discover to its cost. They were fortunate, however, through the goodwill of the directors of The London and Edinburgh Steam Packets in having the gun transported free on the City of Edinburgh. The gun was deposited in the naval yard at Leith and arrangements made by the society for her to be taken up to the castle in fitting style on Monday 9 March 1829.

'A Troop of the Third Dragoon Guards, a party of the Royal Artillery, and a strong detachment of the Seventy eighth Highlanders, all under the direction of Major Broke, Assist. Quarter - Mas. - Gen., were in attendance to escort Meg to her old quarters, which, at ten minutes past twelve, left the Naval Yard, drawn by ten horses being rode by two boys, dressed in tartan, and carrying broadswords. The line of march was that adopted on the landing of his Most Gracious Majesty, viz. by Leith Walk, York Place, and St Andrew Square, and then by the North Bridge to the Castle, where the Royal Standard was hoisted in honour of the occasion, the gates being closed, and all other ceremonies being duly observed. At half past one o'Clock the advanced guard gave notice of Meg's approach, when she was welcomed by the hearty cheers of a dense multitude of all classes the band of the Dragoons playing the "Highland Laddie" which, on her entering the gate, was changed to "God save the King". She was then drawn to the Argyll Battery, and placed on a carriage prepared for her reception in front of the Main-guard-house.

During the ceremonies of the reception, the Castle had a remarkably lively appearance, every place from whence a view could be obtained being filled by persons of the higher classes. One numerous group had taken their station on the rock a little beyond the Barrier-guard-house unconscious, probably, that they stood on the identical spot occupied by Meg in former times. The day was fine, and the bells of St Giles lent their aid to enliven the gay scene. The Celtic Society, to the number of about 100, dined together in the evening in the British Hotel, Sir Walter Scott Bart. in the Chair'.⁸

That the return of Mons Meg to Edinburgh was an event made much of by the citizens of the capital cannot be doubted from the above account and she has remained a great tourist attraction ever since.

So much for the fate of the early guns of Edinburgh Castle, but Edinburgh was not the only royal castle provided with artillery. The ancient fortresses of Dumbarton and Stirling had guns in the sixteenth century and have never lacked them since. As with Edinburgh, the fate of their guns is not hard to guess at. John Slezer, Lieutenant of Artillery in Scotland, was sent to Holland in 1681 to hire skilled gunners for the king's service, and was also to order two twelve pounders and four three pounders to be made, for the payment of which the Master of the Ordnance in the Kingdom of Scotland, John ⁷~~Dummond~~₂ of Lundin, was to send him old brass.⁹ In a set of instructions to Drummond superscribed by Charles II about the same time we learn that this old brass was to come from the old guns in the castles of Stirling and Dumbarton.¹⁰ He was to employ the brass as should be most advantageous for the king's service, notwithstanding

8. Extract from the Edinburgh Weekly Journal (11 Mar. 1829), as given in Soc. Antiq. Scot, MS 533.

9. Hist. MSS. Comm., 10th report (1885), 132-3, no. 131.

10. Ibid., 131-2, no. 129.

the instructions given by the king to Slezer; but that Drummond did in fact send the guns to Slezer to pay for the new ones cannot reasonably be doubted from correspondence between the two later that same year.¹¹ The guns seem to have arrived in Rotterdam in November 1681.

Having dealt with the destruction of the early Scottish artillery we must turn now to how and where it was made.

THE ROYAL GUNHOUSE

Guns and munitions were kept at Linlithgow Palace in the reign of James II and there was a Gunhouse (domus bumbarde) in Stirling Castle, first recorded in 1475.¹² The main royal fortresses, especially Edinburgh, Stirling, Dunbar, Dumbarton, Inchkeith and Blackness had guns and gunners at various times in the period before 1625 and munitions were often also kept in the King's Wark in Leith;¹³ but from the beginning of the sixteenth century the main stores, workshops and gunfoundry were centred on Edinburgh Castle.

It is still possible to identify some of the buildings in Edinburgh Castle - or at least their sites - associated with the artillery but before doing so we should remind ourselves of what is known about the appearance of the castle at the end of the fifteenth century. To the East the castle rock was separated from the town by a curtain wall running north-west to south-east flanked by the massive David's Tower, the stub of which is now incorporated into the Half Moon Battery, and the Constable's Tower, sited near the present Argyll Tower (Morton's Gate). The main

11. Ibid., 135, nos. 141, 143.

12. ER, vii, 275.

13. E.g. AMW, i, 233. For an account of the King's Wark see Edinburgh Inventory, no. 249.

building developments on the castle rock were concentrated on the highest part behind this wall where there was the twelfth century chapel of St Margaret and further to the south the Palace Yard or Crown Square. The rock at this point was made level by the construction of vaulted cellars to the south, east and west and the great square formed which survives today, bounded on the north by the Church of St Mary, the site of which is now occupied by the National War Memorial, on the south by the Great Hall by James IV, and on the east by the King's Lodging or Palace Block which in its original form dates from at least the fifteenth century. James I had a 'Great Chamber' built between 1433 and 1438 which the Royal Commission have suggested may have been at the south-east corner of the square.¹⁴ I am, however, indebted to Iain MacIvor, Inspector of Ancient Monuments with responsibility for the castle, for the suggestion that this great chamber was a hall, presumably that got ready for the meeting of parliament in 1458,¹⁵ which bounded the west side of the square. In 1496 there were various amounts of expenditure in preparing the workhouse for housing the artillery. A workhouse is referred to in inventories of 1566/7 and 1578, and in 1583 the great hall called the workhouse was re-roofed with slate.¹⁶ All this suggests that James I's hall was turned into an artillery workhouse when it was replaced by the new great hall of James IV. It had already disappeared when Gordon of Rothiemay's birds-eye view of Edinburgh was produced in 1647 and was replaced in the eighteenth century by the building which is now the home of the Scottish United Services Museum.

14. Edinburgh Inventory, 18.

15. ER, vi, 385.

16. TA, i, 289, 302; Wardrobe Inventories, 172, 257; amw, i, 312.

By the late sixteenth century it seems clear that some of the gun store rooms were in the capacious cellars beneath the Scottish United Services Museum - the supposed replacement of the artillery workhouse - and it would be surprising if the artillery house of 1488 was not there also. The rock cut roadway into the castle winds round the highest point of the rock to the west side of the Palace Yard where the entrance to these cellars lies. There are three large cellars, about 1,200 square metres in extent, now subdivided, commonly known as the 'French Prisons' thanks to the use they were put to during the Napoleonic Wars and they are entered by means of a passageway wide and high enough to get carriages and carts through. This is clearly a secondary arrangement but one very probably introduced at an early date. The westernmost of these cellars is well lit by windows to the west and south but its two neighbours only have windows to the south. There is another smaller cellar off the north side of the passage and two flights of steps, one apparently leading up to St Mary's Church and the other to the Museum, now all blocked off. Three sub-vaults, poorly lit by windows to the south, are reached separately by long straight flights of stairs slapped through the thickness of the wall off the main entrance passageway. The original means of access to these is not clear.

In 1539 'the chapel' was altered into a munition house for storing artillery, gunstocks and wheels. The old windows and doors were filled in and a new large pair of doors made. The rock floor was quarried smooth and cobbled and work done on the roof and lofting. When the work was completed it took eight men three days to get the munitions inside.¹⁷ This chapel was evidently not the little one of St Margaret which survives today but the much larger church of St Mary which had a floor area of about

17. TA, vii, 214-26, 489-90.

1,000 square metres. This new munition house is also called the 'over
munition hous' and the 'munition hous abone the smedy'.¹⁸

When an inventory of the castle was drawn up in March 1566/7 there
were eight different 'houses' or premises associated with the gunnery
establishment and these are again detailed in another inventory of 1578,
some with different names but presumably the same buildings:

1566/7	1578
workhous	workhous
munition hous above the smidye	munition hous above
smidday	smiddy
overhous	litle hous
midhous	midhous
laich munition hous	nedderhous
gunhous	melting hous
poulder wout	poulder hous ¹⁹

Assuming that the workhouse and the munition house above were, respectively,
James I's great chamber on the west side of the Palace Yard and the former
St Mary's on the north that leaves six houses to identify. The only clues
are provided by two English reports on the castle drawn up prior to the
great siege of 1573, an account of what needed repaired soon afterwards,
and one or two other incidental references from accounts of expenditure.

In the survey of the castle drawn up for the benefit of Elizabeth of
England and her ministers by Rowland Johnson and John Fleming the store
houses for munitions and victuals are said to be on the south side where
the hall is²⁰ and it can hardly be doubted that the cellars - the 'French
Prisons' - already referred to are intended, including the powder vault and

18. Ibid., vii, 349, 359.

19. Wardrobe Inventories, 165-77; 248-61.

20. Bannatyne Misc, ii, 70.

the vault for the keeping of small munition which is on record in 1537-8 as requiring a lock.²¹ The midhouse, where the close carts were stored, probably consisted of at least some of the cellars immediately below the Scottish United Services Museum while the laigh munition house or nether house would have been in the sub-vaults below, possibly along with the powder house.

After a visit to the castle in March 1573 in order to discuss its surrender Nicholas Errington reported that the Marian party had made a rampart to cross over from one side to the other at the melting-house called 'the smythes forge' and by that means had cut off all the backside of the castle that hung towards the north-west.²² In an account of the estimated expenses on the royal palaces drawn up in 1583 it was noted that the wall beside the smiddy on the west side of the castle was fallen down for a length of four score feet and that the smiddy house required to be re-roofed, the one side with slates, the other with new 'spowne' (dried moss),²³ this evidently being the result of the bombardment of 1573. Errington's report suggests that the smiddy and gunhouse were if not in one and the same building, at least together, but whether within the wall surrounding the highest part of the castle or immediately outside it is not clear. An English bird's eye-view of Edinburgh drawn at the time of Hertford's invasion in 1544 shows the gabled roof of a substantial building protruding from behind the rock to the west of the Constable's Tower and this could well be the building in question. A building account of 1615 makes clear that it was two stories high with two windows in the gables of the upper storey. This upper storey was probably the over or little house mentioned in 1566/7 and 1578.²⁴ The whole building might

21. AMW, i, 232.

22. Cal. Scot. Papers, iv, no. 598.

23. AMW, i, 311-12.

24. Ibid., i, 364.

indeed be the smiddy which was under construction in 1382.²⁵

The inventories of the workshops and stores of the gunnery establishment at first sight suggest complete disorder, like the 'Tua thousand and four hundreth or thair about of boulettis ... of sindry sortis quhilkis culd not be instantly nowmerit or tauld becaus they be in divers places far sindry and will tak lang tyme with menis panis to pas and try thame throw thair calibres'.²⁶ Nevertheless some order can be discerned among the prevailing chaos and where particular items seem to be misplaced, for instance carts in the smiddy, the explanation may simply be that they were there being worked upon. The inventories, which obviously only list the moveables in each house, give only one piece of equipment in the gunhouse or melting house which was specifically connected with founding and that is a great pair of bellows with brass tuyeres which was described in 1578 as old and needing to be repaired if required for use. At this time moulds and pieces of moulds were to be found in several of the other houses, including the mid-house, the nether house, the workhouse and the smiddy, but none at all in the gunhouse. The scales for weighing the pieces of metal fed into the furnace were in the nether house, there was no tackle or any cranes at hand for manoeuvring the heavy moulds and castings, and the puncheons and barrels for the clay, water, peat and coal had all gone.²⁷

The smiddy, as could be expected, was provided with various smithing tools, including studies (anvils), tools for making nails, hammers, bellows, 'ane schering vyss' and a weighing device. The workhouse was where the wrights worked and contained wood for making stocks, wheels, limbers, etc., and 'sindrie and mony sortis and ingynis of tymmer all serving to the foirsaid artailyearie quhilkis can nocht be declarit

25. ER, iii, 89-90.

26. Wardrobe Inventories, 260-1.

27. TA, x, 442.

speciallie for confusioun of the number thairof'. Neither of the two inventories records much in the munition house above the smiddy and if it was indeed the old St Mary's it must have been almost empty. The most substantial items in it in 1566/7 were five 'sea stocks' but perhaps the large guns, all in the open air and defending the castle could be put inside during the worst of the winter when campaigning normally came to an end. The mid-house, on the other hand, contained twenty-three close carts, some armour and other equipment, the over-house contained pikes and hand guns with their equipment and the laigh munition house 200 ox-yokes. The powder vault had forty-two barrels of gunpowder, fifteen of culverin powder and nine of priming powder along with 'ane mann miln for making of poulder with thre mortaris nyne pestellis wanting the kapis of brace'. By 1578 much of this equipment was depleted or in poor condition like the ox-yokes, reduced to 175, twenty-six of which were a complete write-off apart from their iron work, and most of the rest of which are described as being rotten and of no use. There was less powder and fewer handguns and although there were more close carts, thirty-five in all, mostly in the smiddy, almost all were lacking their wheels and other fitments.

Built into the entrance gateway of Edinburgh Castle are two pieces of sculpture which are a unique pictorial record of the early Scottish artillery and all this equipment. We are indebted to the pages of II
Sir Daniel Wilson for the following account of their original situation:

'Immediately within the drawbridge (of Edinburgh Castle) there formerly stood an ancient and highly ornamented gateway, near the barrier guard-room. It was adorned with pilasters, and very rich mouldings carried over the arch, and surmounted with a curious piece of sculpture, in basso relief, set in an oblong panel, containing a representation of the famous cannon, Mons Meg, with groups of

other ancient artillery and military weapons. This fine old port was only demolished in the beginning of the present century (i.e. the nineteenth), owing to its being found too narrow to give admission to modern carriages and waggons, when the present plain and inelegant gateway was erected on its site. Part of the curious carving alluded to has since been placed over the entrance to the Ordnance Office in the Castle, and the remaining portion is preserved in the Antiquarian Museum (i.e. the National Museum, Edinburgh)'.²⁸

Wilson indicates in a footnote that his source for this information was R. McKerlie, Esq., of the Ordnance Office who was an officer in the garrison in 1800. Furthermore, McKerlie was responsible for preserving the two parts of the carving and having them placed in their then homes. The piece without Mons Meg appears in the catalogue of the National Museum published in 1859 (no. G 40) but not in the catalogue of 1892, by which time the stone had been handed over for inclusion in the new (present) gatehouse of Edinburgh Castle.

Apart from Mons Meg the two carvings show in considerable detail a selection of the rest of the equipment in the royal gunhouse. Most prominent are five large cast (bronze) guns mounted on field carriages but there are also chambers for breech-loading guns, small unmounted field guns and hagbuts of croks, and a mortar or small bombard with trunnions mounted on a stand. An assortment of ladles, sponges and rammers for loading the guns, a powder horn for priming them and a linstock for firing them are clearly visible behind the guns, while in the foreground are piled up barrels of powder and gunstones. There is a bucket and perhaps either trestles or a set of scales beside the gun nearest to Mons Meg. Behind

28. D. Wilson, Memorials of Edinburgh in the Olden Times (Edinburgh, 1891 edn), i, 160-1.

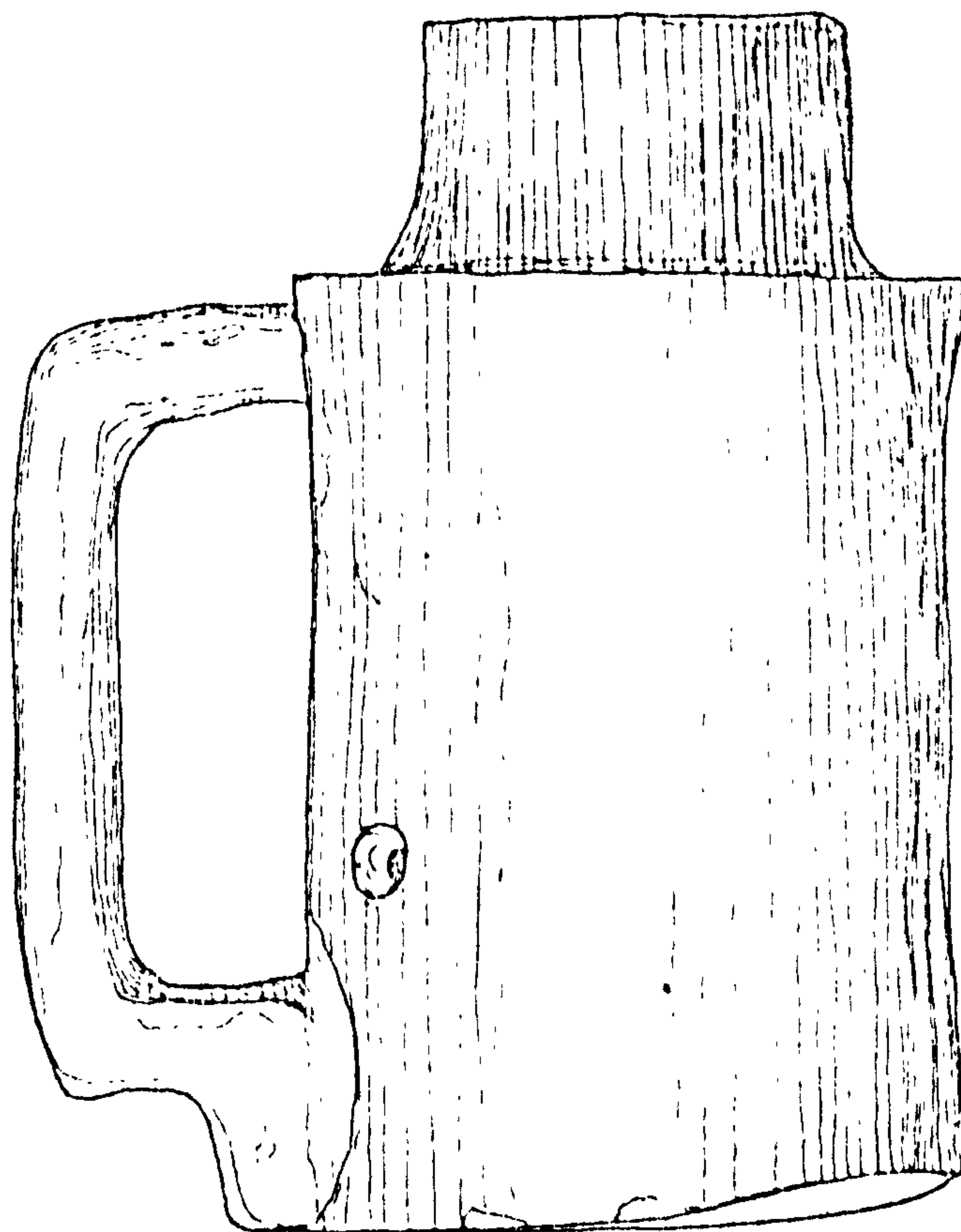
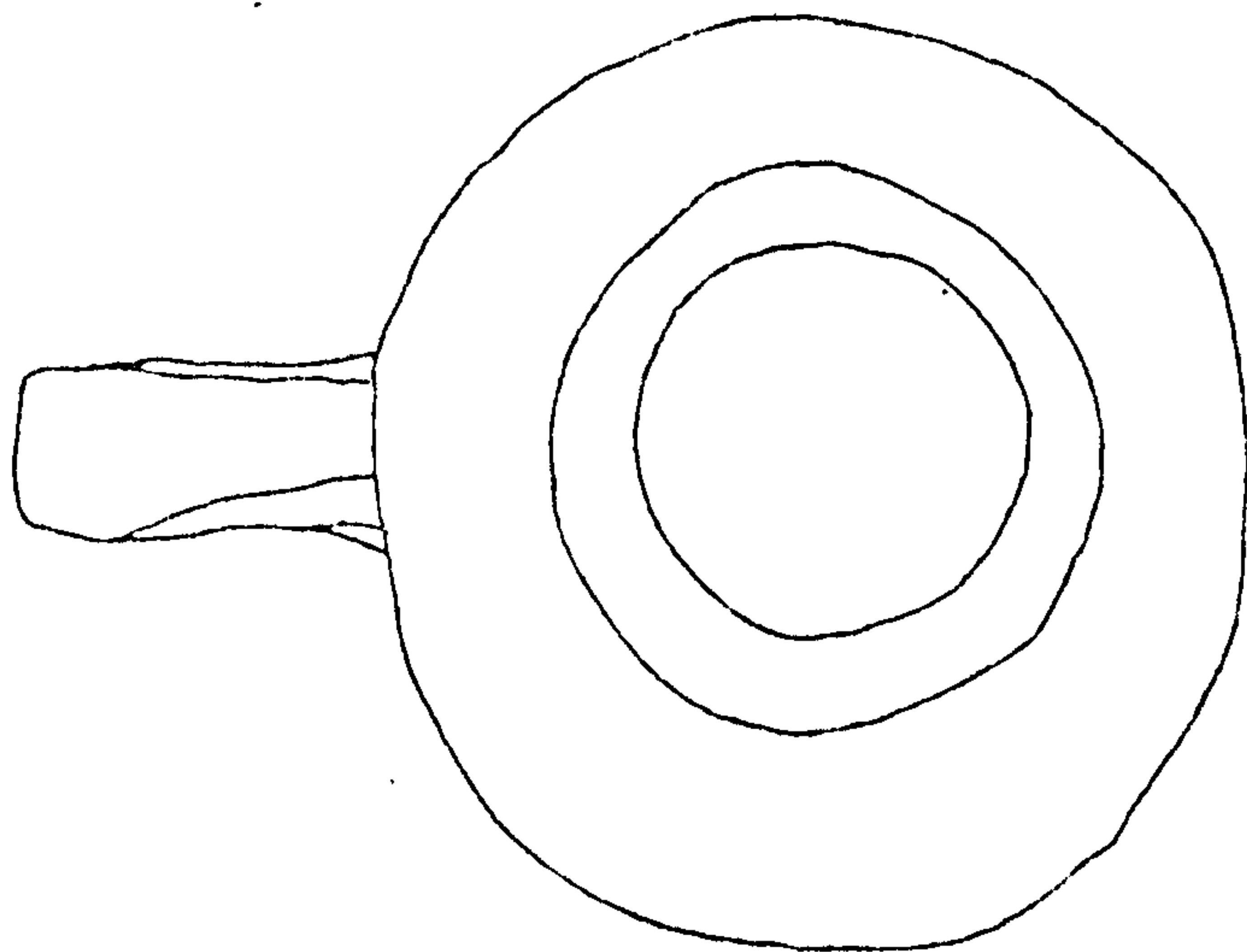
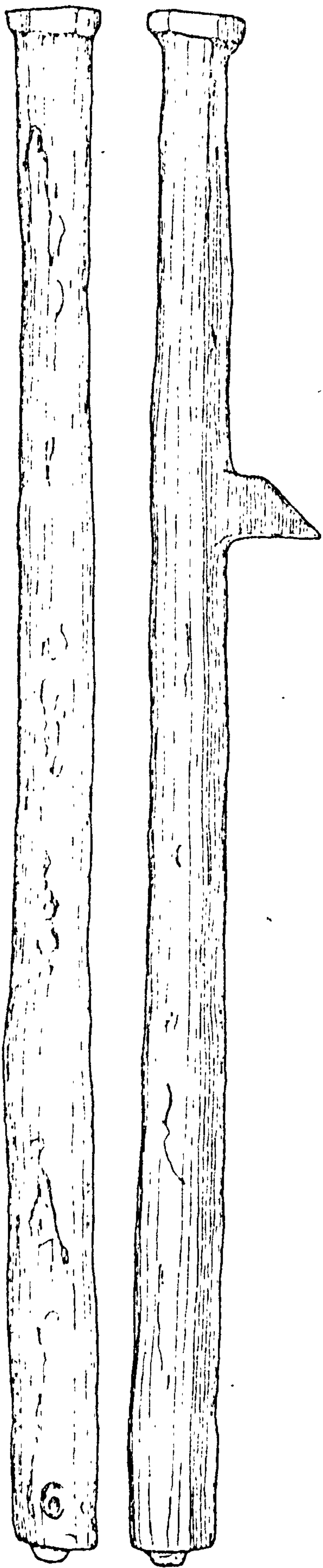
Mons is a grappling iron for throwing over walls and above the two large guns placed back to back two fire arrows and a bow (?).

The exact date of these carvings is not known. While all the guns and equipment shown could quite happily be dated to the sixteenth century or earlier the best evidence of date is provided by the clothing of the gunner shown loading one of the guns. He appears to be wearing Venetians (knee length breeches), and although they became high fashion at least in France and England during the 1570s the whole outline is much more typical of the early seventeenth century, or even later.²⁹

THE MANUFACTURE OF WROUGHT IRON GUNS

The manufacture of the smaller wrought iron guns did not require any skills beyond those commonly possessed by blacksmiths. The barrel of a gun was made up of a tube either as one piece or of several strips welded together, formed round a mandrel. Over the tube several iron rings were shrunk on to make the whole secure. With adoption of trunnions in the late fifteenth century these could be formed on one of the rings before it was positioned on the barrel. It was technically easier to make such guns breech-loading with a separate chamber which slotted into the breech end when loaded. In the more primitive guns the barrel was securely fastened to a joist of wood with a raised member at the end to stop the chamber jumping out on being fired. In some of the more sophisticated ones an iron stock was developed behind the barrel with a space for the chamber to fit into, and the chambers normally had a handle for ease in handling and a collar for fitting more securely into

29. I am grateful to Mrs H. Bennett of the National Museum for advice on the costume.



Wrought iron hagbut of crok from Boghall Castle and wrought iron chamber (unprovenanced), both National Museum, Edinburgh

the barrel. Such is the case with the corroded remains of a small wrought-iron breech-loading gun with a calibre of about 1.5 inches (38 mm) found in the sea at Aberdeen and now in the National Museum of Antiquities of Scotland in Edinburgh (LH 213). Although it has lost its muzzle and all but a stub of its iron stock it still has its trunnions and myk (a Y-shaped attachment on the trunnions designed to allow the gun to swivel in a mounting) and its chamber held in place by a wedge. It probably dates to the sixteenth century.

IV

On the other hand hagbuts of crok like one from Boghall Castle, Lanarkshire, and another from Corgarff Castle in Aberdeenshire, demonstrate that it was possible to make wrought-iron guns which were muzzle-loading even if they were only a small size. The former consists of a barrel, perhaps originally polygonal in section, 1.2 m long with the stub of an iron stock fixed into the breech end, giving a present overall length of 1.212 m and a weight of 16.2 kg. To the underside of the barrel is attached a hook, short and with its bottom edge inclined, for holding the gun in position when fired. It has a calibre of 37 to 39 mm. and the muzzle is reinforced with a raised hexagonal ring. Its touch-hole is in the top of the barrel and is countersunk, forming a basin to retain the priming powder. This position of the touch-hole is an early feature, and it is likely that this gun is the earliest to have survived in Scotland, dating from the first half of the fifteenth century. Only one other gun in Scotland, from the armoury of the Lairds of Grant, is similar to it but it has been much altered at a later date. They are possibly both of foreign manufacture and may originally have had long iron stocks with ring terminals like a gun in the Historical Museum of Luxemburg.³⁰

I

30. P. Sixl, 'Entwicklung und Gebrauch der Handfeuerwaffen', Zeitschrift für historische Waffenkunde, ii (1900-02), 316-17, Fig. 71.

Certainly of foreign manufacture is Mons Meg, pre-eminent amongst all Scottish guns and more written about than any other.³¹ She was long claimed as a piece of Scottish workmanship and an appropriate legend that she was made at the 'Three Thorns of Carlingwark' by Brawny Kim the smith was adduced in support of this, here given in the words of Daniel Wilson:

'The Earl of Douglas having seized Sir Patrick McLellan, Tutor of Bomby, the Sheriff of Galloway and chief of a powerful clan, carried him prisoner to Threave Castle, where he caused him to be hanged on 'The Gallows Knob', a granite block which still remains, projecting over the main gateway of the Castle. The act of forfeiture, passed by Parliament in 1455, at length furnished an opportunity, under the protection of government, of throwing off that iron yoke of the Douglasses under which Galloway had groaned for upwards of eighty years. When James the Second arrived with an army at Carlingwark, to besiege the Castle of Threave, the McLellans presented him with the piece of ordnance now called "Mons Meg". The first discharge of this great gun is said to have consisted of a peck powder and a granite ball nearly as heavy as a Galloway cow. This ball is believed, in its course through the Castle of Threave, to have carried away the hand of Margaret de Douglas, commonly called the Fair Maid of Galloway, as she sat at table with her lord, and was in the act of raising the wine-cup to her lips. Old people still maintain that the vengeance of God was thereby evidently

31. The most complete study of Mons to date, giving details of many other writers' views on the subject, is that by A. de Behault de Dornon, 'Le canon d'Edimbourg "Mons Meg" forgé, à Mons, au XVe siècle', Annales du Cercle Archeologique de Mons, xxiv (1894), 1-96; cf. W.H. Finlayson, 'Mons Meg'; Scot. Hist. Rev., xxvii (1948), 124-6. See also, H.L. Blackmore The Armouries of the Tower of London I Ordnance (London, 1976), 108-9.

manifested, in destroying the hand which had been given in wedlock to two brothers, and that even while the lawful spouse of the first was alive. As a recompense for the present of the gun, and of the loyalty of the McLellans, the king, before leaving Galloway, raised the town of Kirkcudbright into a Royal Burgh and granted to Brawny Kim, the smith, the lands of Mollance in the neighbourhood of Threave Castle. Hence the smith was called Mollance, and his wife's name being Meg, the cannon in honour of her, received the appellation of 'Mollance Meg'. There is no smithy now at the 'Three Thorns of the Carlinwark'; but a few years ago, when making the great military road to Portpatrick, which passes that way, the workmen had to cut through a deep bed of cinders and ashes, which plainly showed that there had been an extensive forge on that spot at some former period'.³²

While the interesting folk tale of Mons' birthplace was not taken too seriously by most recent historians the true origin and date of the gun was only guessed at until 1967 and the publication by M. Claude Gaier of some extracts from the Burgundian Chambre des Comptes left no room for doubt that it was named for Mons in Belgium,³³ then an important centre of metal working. The gun, which is referred to all along in the Burgundian documents as Mons, was commissioned by Duke Philip the Good of Burgundy from the important artillery and ammunition supplier Jehan Cambier, and was completed in June 1449. She was taken outside the city walls of Mons and successfully tested, and according to contemporary accounts

32. D. Wilson, Memorials of Edinburgh in the Olden Time (Edinburgh, 1848 edn), i, 130. Another tradition communicated to Sir Walter Scott was that it was a common belief in the South-West that Mons was made on Threave Island.

33. C. Gaier, 'The Origin of Mons Meg', Journ. Arms & Armour Soc., v (1965), 425-52.

weighed 15,366 lbs, had an overall length of 15 feet and a calibre of 18 inches. She was charged to the duke at a price of two shillings per finished pound of metal - that is including the cost of raw materials and manpower - making a total sum of £1,536 2s. Cambier was also got to supply 61 stone balls each 18 inches in diameter to be gunstones for her and they cost a further £1 12s each. The duke only took delivery of the gun in May 1453, intending to use her on the burgesses of Ghent who were then in rebellion against him. When he sent her to Scotland four years later with another smaller gun it was no doubt intended that the Scots should employ her against the English with whom Philip the Good was then at war. The duke was, of course, the uncle of James II's wife, Mary of Gueldres, and had come to Edinburgh in 1449 for her wedding.³⁴

Mons Meg has been assumed to have been made in two main pieces, the chamber and chase, and the two pieces to be screwed together. This is certainly the case with other fifteenth-century guns of a large size like the cast bronze Turkish gun of c. 1460 now at the Tower of London. It has rings of rectangular holes for taking spikes to enable the screwing and unscrewing to be done, and Mons has similar rings of holes at the rear end of both chamber and chase. In 1463, just after the siege of Norham Castle when there was some activity in Edinburgh Castle on repairing guns there is mention that John Wright had to mend le wyndspakis bumbardi.³⁵

In 1981 Mons was moved from its exposed position in Edinburgh Castle next to St Margaret's Chapel to the shelter of one of the vaults beneath the Scottish United Services Museum. The opportunity was taken of having her X-rayed, courtesy of British Steel, and the X-rays show quite

34. Finlayson, 'Mons Meg', 124.

35. ER, vii, 294-5.

conclusively that she is not screwed together as had been thought but the chamber is fixed into the breech of the barrel with a simple collar,³⁶ and the two parts were obviously never intended to be separated. The rings of holes must therefore either be a skeuomorphic survival of the rings on other two piece guns or else, more probably, simply for turning the gun around and manoeuvring it when positioned on beams or trestles on the ground.

Mons' chase can clearly be seen, especially where it is burst open, to be made of long strips of wrought iron longitudinally forged side by side round the circumference of the bore and then held in place by wrought iron rings shrunk over these strips and forged together for the whole length of the barrel. There are twenty-five bars and thirty-seven hoops over them on the chase. The chase is in three stages, getting thicker towards the breech and having a reinforced muzzle of three stepped rings. The breech steps down to the chamber whose walls are considerably thicker than those of the barrel, and which is in two stages. There is no cascabel and no trunnions. Her bore at the muzzle is 20 inches, contracting to 18 inches at the inner end of the chase next to the chamber, 9 inches in diameter, for powder alone. She thus fired 18 inch stone balls. This tapering bore is an early feature and an inefficient one since it allowed too much of the explosive gas to escape harmlessly when fired.

The close similarity of Mons in everything but size to the great gun at Ghent in Belgium called Dulle Griet (foolish or evil Meg) has long been recognised. Dulle Griet has incised on her barrel the Cross of Burgundy and the insignia of the Order of the Golden Fleece, founded in 1430. She is recorded as having been used by the people of Ghent at the siege of

36. I am grateful to Dr R. Fawcett of the Scottish Development Department (Ancient Monuments) for this information.

Oudenaarde in 1452 and may safely be assumed to have been made some time between these two dates.³⁷ The following table (after Finlayson) gives measurements of Mons Meg along with those of Dulle Griet, showing that their relative proportions are about 4:5. This suggests that they are both products of the same workshop.

Dimensions	Mons Meg		Dulle Griet	Ratio Mons Meg to Dulle Griet
	Imperial	Metric		
(a) bore, chase	20"	0.51m	0.64m	.80
(b) bore, chamber	9"	0.22m	0.26m	.79
(c) length, chase	9' 2½"	2.81m	3.39m	.82
(d) length, chamber	3' 8½"	1.13m	1.375m	.81
(e) length, overall	13' 4"	4.06m	5.025m	.81
Ratios (a) : (b)		2.2	2.3	
(c) : (d)		2.5	2.4	
(e) : (a)		8.0	7.9	

One other gun now in the Historisches Museum at Basel in Switzerland (accession number : 1874-93), may have been made in the same workshop. It is a gun of identical construction and similar overall appearance, but rather smaller in size. It was captured from the Duke of Burgundy by the Swiss at the battle of Morten in 1476 and has remained in Swiss possession ever since. It has an overall length of 2.73m and a calibre of 0.36m which makes it approximately two thirds of the size of Mons. It may be dated to the second quarter of the fifteenth century.³⁸

Other large guns of similar wrought iron construction are to be found in the Musée de l'Armée in Paris and at Mont St Michel in Normandy, but they are probably either of French or English construction and are not so similar to Mons as Mons is to Dulle Greit and the gun in Basel. They are all made in one piece. One of the guns in the Musée de l'Armée (accession number N.37), dated to the mid-fifteenth century, has a bore of almost the same

37. Finlayson, 'Mons Meg', 124.

38. F. Deuchler, Die Burgunderbeute (Bern, 1963), 306.

size as Mons, but is shorter in length, and two others in the same collection (N.38 and N.39) have bores of about fourteen inches (0.355m) and are probably of later date since they have small trunnions. The two guns at Mont St Michel are said to have been left behind there by the English in 1424. The larger of the two is 12 feet (3.66m) long, the chase being about three quarters the length of the chamber, and it has a calibre of 18 inches (0.457m). The smaller is 11 feet 9 inches (3.58m) long and has a calibre of 15 inches (0.381m).³⁹ We might also note the series of large cast bronze guns of fifteenth-century date and later made in the East, in Turkey and as far afield as Russia and India. They are made in two pieces screwed together at the join between the chase and the chamber and are provided with rings of holes for taking hand-spikes. . They are presumably derived from the wrought iron guns of the Low Countries, as also a bronze bombard of c. 1480 from Rhodes, now in the Musée de l'Armée, Paris (accession number N.66) which is cast in one piece but has the spike holes at breech and muzzle as a decorative device.⁴⁰

Mons appears by name only a few times in documents of the fifteenth and sixteenth century. The first mention is in 1489 when she was taken from Edinburgh Castle to the siege of Dumbarton Castle and she was certainly also at the siege of Norham Castle in 1497.⁴¹ On the way there she only got as far as St Leonards just outside Edinburgh when she had to have a new 'cradle' made.⁴² This cradle was probably only a cart or waggon for transporting the gun and not for firing it from. Mons would have been dismounted and fired from trestles or supports on the

39. C. ffoulkes, The Gunfounders of England (Cambridge, 1937), 8, fig 2,3.

40. Napoleon III, Etudes sur le passé et l'avenir de l'artillerie (Paris, 1846-71), iv, 100, figs 4,5.

41. TA, i, 115, 348.

42. Ibid., i, 347.

ground as other early large siege guns are shown in numerous manuscript illustrations.⁴³ By 1501 she was lying neglected in Edinburgh Castle, but in that year the earth was cleared away from her and she was turned over so that her touch-hole lay uppermost. She was then lifted and laid on trestles, painted with red lead and a shelter made for her and another two guns with forty-nine rafters.⁴⁴ It is possible that she was the great bombard taken on James V's naval expedition round Scotland in 1540, and if so, this was probably the last time she was taken from her home in the castle until her departure for London in 1754.

The representation of Mons on the early seventeenth century carving in the gateway of Edinburgh Castle has been used as the basis for constructing the carriage designed for her in 1935. It has massive wooden cheeks and rests on four spoked and studded wheels solidly bound with iron. Behind is a coign for elevating and depressing the gun and lying in the muzzle is a gunner's quadrant. This cart is obviously intended for firing the gun from - hence the coign and gunner's quadrant. Apart from its large wheels it is a suitably enlarged version of the carriages on which guns for service in fortifications and ships were mounted as recently as last century. There are no obvious means of how it might have been drawn by a team of oxen or horses and in our opinion it was not designed for that. If Mons was indeed taken with the fleet in 1540 this carving may represent the carriage for which payments are recorded in the Treasurer's accounts at that time.⁴⁵

Mons was kept on in Edinburgh Castle being used, at least occasionally for the firing of salutes, in 1558, 1660 and 1680. On this last occasion, in honour of the arrival of the Duke of Albany and

43. E.g. illustrations from the 15th century *Vigiles de Charles VII*, reproduced in H.W. Koch, *Medieval Warfare* (London, 1978), 132, 136.

44. *Ibid.*, ii, 24-25.

45. *TA*, vii, 354.



Early-17th century stone carvings in Edinburgh Castle showing guns and munititions. (photos RCAHMS)

York (later James II), Mons burst. Sir John Lauder of Fountainhall reported in his Historical Observes that she was charged by the advice of an English cannoneer and the Scots resented it greatly, thinking that the Englishman might have overloaded the gun on purpose since there was no gun in all England as big.⁴⁶ She was a gun of which the Scots were immensely proud, almost a national symbol, and neither her absence in England from 1754 to 1829 nor the discovery of her origin have detracted from this honoured position but if anything have enhanced it.

The manufacture of a large gun like Mons required not only a great deal of technological know-how but also a large workshop employing several skilled metalworkers capable of all working together on such large projects. In Scotland the normal metalworking business seems to have consisted of a single master craftsman with no more than a handful of servants and the craft system in general discouraged the formation of larger businesses. There is no evidence that any of the merchant community in the Scottish burghs were attracted by the possibility of playing an entrepreneurial role in the making of guns. Only successive governments took up this challenge but practically all their money was invested in the manufacture of bronze guns, not wrought iron. Large iron guns like Mons were thus never made in Scotland, only much smaller guns.

It is likely that the instrumentorum bellicorum made by John Dunbar for James II in 1457 were wrought iron guns. Others referred to as serpentines and guns, appear to have been made in Edinburgh Castle about 1483, perhaps by Master Mathew.⁴⁷ In 1496 and the following year

46. Lauder of Fountainhall's Historical Observes of Memorabill Occurrents in Church and State 1680-1686, ed. A. Urquhart and D. Laing (Bannatyne Club, 1840).

47. ER, vi, 293; ix, 218n., 286, 435.

John Lamb of Leith was paid for doing smith work on the royal guns and for making three serpentines for Dunbar Castle each with two chambers, its myk and its slots (wedges).⁴⁸ The only known royal encouragement of a craftsmen who specialised in the manufacture of wrought iron guns was in 1541 when a Dutchman, William Van Dyck, maker of iron guns, was set to work in Edinburgh Castle and supplied with materials. He died after four months.⁴⁹ Dunbar, Lamb and Van Dyck may have been exceptional in specialising in work on wrought iron guns but no doubt there were other smiths in Scotland who did similar work to supply the nobles and lairds and the ships of the merchants with guns.

THE MANUFACTURE OF BRONZE GUNS

The making of guns of cast bronze is as old as guns themselves but the early bronze pieces differed little in proportions and capabilities from their wrought iron sisters. It was only in the second half of the fifteenth century that a tremendous stride forward was made with the development of cast guns with trunnions, well-mounted and firing metal shot. The credit for this has often been allocated to the French and they were certainly the first to make full use of the new guns in Charles VIII's Italian expedition of 1494. There are two dated French guns in the Musée de l'Armée in Paris both of cast bronze and with trunnions which indicate that the new guns were in use a number of years before this event. The larger, which has a calibre over nine and half inches (245mm), bears an inscription to the effect that it was made in Chartres in 1478 by Jehan Chollet, master of the artillery to Louis XI, at that king's command. The second piece is inscribed as a gift from

48. TA, i, 281, 292, 334.

49. Ibid., vii, 501-2; viii, 118, 134-5.

Charles VIII to Bartemi, seigneur de Pins, captain of the bands of artillery, 1490.⁵⁰ Unfortunately, the French records of the time concerning artillery are almost entirely lost but a contemporary chronicle, Les Chroniques de Louis de Valois, describe how in 1477 Louis XI ordered twelve great bombards of cast metal to be made, three each in Paris, Orléans, Tours and Amiens, along with great quantities of cast iron shot and other equipment. Two years later several great bombards of cast metal were tested by the river Seine.⁵¹ It is possible that these were guns with trunnions.

The earliest surviving dated gun with proper trunnions, however, is Belgian. It has a calibre of nine inches (230mm) and is inscribed 'Jehan de Malines m'a fayt l'an MCCCCLXXIIII'. It is preserved in the museum in Basel in Switzerland, being one of the pieces of booty taken from Charles the Bold of Burgundy at the battle of Granson in 1476.⁵² Several wrought iron guns captured by the Swiss from the Burgundians at Granson, Murten and Nancy still survive in Swiss collections and at least six of these have trunnions formed on a ring shrunk on to the barrel.⁵³ This suggests that by the 1470s the advantages of trunnions were well understood by the gunmakers of the Low Countries. Towns like Malines, Bruges, Tournai and Mons were important centres of gun manufacturing in the fifteenth century⁵⁴ and it is possible that the

50. Napoleon III & I. Favé, Etudes sur le passé et l'avenir de l'artillerie (Paris, 1846-71), iv, pl. 100, figs 1, 2, 3; iii, pl. 33, figs 1, 2.

51. Ibid., ii, 110-11; iii, 202-3.

52. F. Deuchler, Die Burgunderbeute (Bern, 1963), 307-9; C. Gaier, L'Industrie et le Commerce des Armes dans les Anciennes Principautés belges du XIII^{me} à la fin du XV^{me} siècle (Paris, 1973), fig. 3.

53. Deuchler, Die Burgunderbeute, 302-32; nos 234, 236, 238, 242, 245, 256. There are earlier representations of guns with trunnions in manuscripts, the earliest of c. 1400. See A.V.B. Norman, 'Notes on Some Early Representations of Guns and on Ribaudekins', Journ. Arms & Armour Soc., viii (1975), 235, no. 3, pl. LXXXIX.

54. Gaier, L'Industrie et le Commerce des Armes, 115-56.

early gunmaking activities of other parts of Europe, and even the Middle East, owed much to the technological expertise of the craftsmen of this region.

The new cast bronze guns with trunnions were promptly copied or taken up by other countries. There is a brass bombard (possibly French?) of c. 1480 in the Musée de l'Armée, Paris, with the arms of Pierre d'Aubusson, Grand Master of the Hospitallers, and a large Venetian gun of 1497. A 1552 manuscript with drawings of the Emperor Charles V's artillery shows a piece dated 1494 and others of the beginning of the sixteenth century.⁵⁵ There are several fine large French guns of the late fifteenth, and early sixteenth century, especially in the Musée de l'Armée. All bronze guns from c. 1500 onwards were cast with trunnions except the very smallest which often had hooks on the underside of their barrels instead.

Thanks largely to her close relations with France, Scotland early became acquainted with the new cast bronze guns. According to the Spanish ambassador Don Pedro de Ayala (1498) James III was given modern French guns of metal by King Louis (XI?) of France.⁵⁶ Of much more significance is the fact that the one surviving Treasurer's account for James III's reign, covering the period from 3 August 1473 to 1 December 1474 contains numerous expenses connected with guns and gunfounding. The expenditure of no less than £780 6s 5d on the artillery and workmen, a vast sum of money, is recorded.⁵⁷ The evidence is extremely scanty but it does seem that gunfounding was being done in a house in the grounds of the Blackfriars Priory in Edinburgh, not altogether successfully, as a payment had to be made for mending and roofing it after the casting of a gun, possibly because the mould had exploded.⁵⁸

55. Napoleon III & Favé, L'Artillerie, iv, pl. 100, figs 4, 5, 6; iii, 208, pl. 33, fig 3; iii, 222-4, pl. 35-38.

56. P. Home-Brown, Early Travellers in Scotland (Edinburgh, 1891), 48.

57. TA, i, 74.

58. Ibid., i, 65.

William the Goldsmith, an Edinburgh burgess, was already making a gun for James in the April of 1473, but it was a Frenchman called Ranald the Gunner who was rewarded for making the same or another in the following February.⁵⁹ Metal for it had to be got from Haddington and Dunkeld and clay as well as metal from Perth. 'Certane thingis ... according to artilyery, powder, schot and sic thing' were even ordered from as far afield as Denmark.⁶⁰ One account for charcoal mentions gunmaking in Stirling as well as Edinburgh but this was not necessarily of bronze guns.

It is significant that at least one Frenchman was concerned in this gun casting experiment and, as we shall show, the royal foundry continued to rely heavily on foreigners for their expertise.⁶¹ Evidence, however, is not altogether lacking for an ability to cast large objects in bronze in Scotland before the 1470s. Goldsmith was no doubt involved in the project owing to his knowledge of metal working, for he had been one of the moneyers responsible for the infamous 'black' (copper) money of the 1460s.⁶² Copper alloys were extensively used in the medieval period for a variety of purposes. Scotland was lacking in deposits of copper ore and tin and not surprisingly many objects of bronze and brass were imported from the continent : cooking pots, ewers, bells, candlesticks, brass dishes as well as guns. The National Museum in Edinburgh houses such objects manifestly of continental origin as an originally enamelled candlestick

59. TA, i, 68. A French gunner called David was also employed at this time.

60. Ibid., i, 54, 69.

61. ER, viii, 234. It is perhaps worth recording that by March 1478 there was a Scottish gunner employed by the French - given as Guillaume de Serimijon, a cannoneer in the fourth artillery band for the reconquest of Burgundy and the Franche-Comté. See E. Perroy, 'L'Artillerie de Louis XI dans la campagne d'Artois, 1477', Revue du Nord (1943), 196n.

62. See R.W. Cochran-Patrick, 'Records of the Coinage of Scotland', (Edinburgh, 1876), i, 44.

from Kinnoull Churchyard and a three legged cooking pot from Kilsyth and there are several bells in Scottish churches with Dutch inscriptions.⁶³ Many other bronze and brass relics cannot so definitely be claimed as foreign and may be of Scottish make.

Those who cast in bronze were generally known as potters from the objects which formed the staple part of their business, but other craftsmen such as lorimers and armourers sometimes practised this art, if only on a small scale. Potters were generally established in burghs or at least at their edges for fear of industrial accidents whereas the makers of earthenware pots or 'pigs' were generally based in the countryside at the source of their clay and not being burgesses were probably normally considered of interior status. There is thus every likelihood that when a man's trade is described as potting, metalworking is meant. The first individual known to have used the name potter is a certain Simon Potter of Dumbarton, apparently a burghess of some substance as he was in 1357 one of the town's representatives at a meeting of the burghs, convened to discuss the release of David II.⁶⁴ Other Potters occur in fourteenth century documents but in no case is there any evidence if the 'Potter' denotes their trade or is solely being used as a surname. A so far unidentified founder was working in Scotland in the late fifteenth and early sixteenth century and has left a series of competent bells, all with the mark 'Xt',⁶⁵ and a large cooking pot, the 'Soulis Pot', preserved at Drumlanrig Castle in Dumfriesshire. By the sixteenth century the services of several potters could be obtained.

63. The candlestick is illustrated in Proc. Soc. Antiq. Scot., iii (1857-60), 399. For the pot, cf. H. Drescher, 'Mittelalterliche Dreigeintöpfe aus Bronze', Rotterdam Papers (Rotterdam, 1968), bild 5 no. 6. For the bells see various papers by F.C. Eeles and R. Clouston in Proc. Soc. Antiq. Scot., but especially vol. xlvii (1912-13), 68-71.

64. Edinburgh City Chrs., 20.

65. F.C. Eeles, 'The Church Bells of Linlithgow', Proc. Soc. Antiq. Scot., xlvii (1912-13), 66-71.

The technology involved in making pots and bells was little different from that in making guns and some bells were as large as small pieces of artillery.

On the other hand it is clear that in the sixteenth century the royal gunfoundry was operating on a much larger scale than any metal-working concern hitherto in Scotland. Not only were the guns larger than the castings normally achieved by other workers in bronze and brass but the founders worked as part of a much larger organisation, the gunnery establishment, with other craftsmen who provided expertise in woodworking, carving, wheel-making and smithwork. The active co-operation of all these people must have made for an organisation of greater complexity than had been usual in Scottish manufacturing and the royal gun-foundry must therefore be regarded as an important step forward, albeit a small one, in the path of industrialisation. There is no reason to think that the actual output of guns in the sixteenth century was ever very high and certainly not by contemporary European standards. The Treasurer's Accounts contain references to payments connected with gun founding in the years 1508, 1511-1513, 1515-1516, 1532/3, 1538-1541/2, 1547, 1552-1552/3 and 1558. Often the guns are mentioned by name but other times only unspecified guns and quantities are referred to. Taking into account the cost of maintaining the establishment, paying the craftsmens' wages and even importing the raw materials from abroad, those guns that were produced were not done cheaply. It can be argued that it was necessary not to have to rely totally on the provision of guns from the Continent as this supply was ever in danger of being cut off by the depredations of the English at sea but a factor possibly of greater importance to the Scottish crown in maintaining a foundry was the prestige involved. No self-respecting monarch would have wished to have been without his own gun-foundry which

could produce large guns with his own coat-of-arms upon them.⁶⁶ It is thought that James IV took a great personal interest in the casting in his foundry as an English report of February 1512/3 describes how he visited the workmen in Edinburgh Castle daily. He narrowly missed the fate of his grandfather when a newly cast gun burst while being fired in his presence.⁶⁷

The Treasurer's accounts are almost complete for the reign of James IV and it is evident that a new start had to be made to the gun founding in 1508. There is little evidence of gun casting in the years intervening between then and 1474. Only an account of 1486 for charcoal for gunmaking might suggest further gun casting activity under James III and in 1496 the expenses of 'the man that castis the brassin chameris to the gun' are recorded by James IV's Treasurer.⁶⁸ It is also interesting to record in passing the presence of four Scottish gunfounders in Denmark who were sent by the Danish king, Johann, to Moscow in 1507.⁶⁹ In 1508 the gun casting was being done in Stirling,⁷⁰ and although the actual casting may have been done in the castle itself much of the associated work was done in other premises. Thus a gun was taken from the castle to the potter(s)' and 'the form of the gwn' (mould) was taken from the potter(s)' house to the castle. Payments to the boatmen of Cambuskenneth would indicate that the smith work connected with the mould making was done by the smith of Cambuskenneth

66. Cf. J.R. Hale, 'Gunpowder and the Renaissance : An Essay in the History of Ideas', in From the Renaissance to the Counter Reformation, ed. C.H. Carter (New York, 1965), 130: 'The cannon, in terms of national and civic politics, was one of the foremost status symbols of the Renaissance'.

67. James IV Letters, no. 527.

68. ER, ix, 434; TA, i, 289, 296.

69. N.A. Kazakova, 'Ranee izvestie o sviazakh Rosii i Shotlandii', Voprosy istorii, vii (1970), 197-8. Attempts by the writer to discover if the names of these gunners are given in Danish sources have so far met with no success.

70. TA, iv, 110-39.

the other side of the river from the town and the abbey where the man was making the gun mould may also refer to Cambuskenneth rather than Holyrood.

A furnace had to be specially built, presumably in the castle, for the gun casting and the tiles for it were made by a man from Bothwell in Lanarkshire, where it is known there was a pottery operating in 1501-4.⁷¹ Sheep tauch (tallow), wax, rosin and other necessities for the gun moulds could seemingly be purchased readily enough in the burgh but other commodities were harder to find. A man had to be paid to go to Dunblane in search of flokkis (wool clippings) for binding the clay, another had to go to Edinburgh to fetch tin, and brass had to be bought in Dundee.

The list of experts who were involved with the work is by no means unimpressive, and like the materials, many of these had to be brought to Stirling. It includes the following: the potter of Stirling; Alexander Bow, potter of Edinburgh; the smith of Cambuskenneth; sir James Petegrew (priest); the Frenchman 'that suld mak the gunnis' and other French gunners; Lumsden the potter (who was paid for removing to Stirling); George the 'Almayne' (German) gunner; the potter of Dumfries; Allan Cochran, armourer in Edinburgh; Hans (? alias John Fassan, the Danish) gunner; and the Abbot of Tongland (John Damian). The potters were of use owing to their experience of casting in bronze and to the potter of Dumfries went the special task of making a taist (? crucible) for melting metal in for the guns. The man in charge of the whole operation, however, may have been one of the French gunners, possibly the John Veilnaif (Villeneuve?) mentioned as early as 1505 as the Frenchman 'quhilk said he coud mak gunnis'.⁷² The smith of

71. Ibid., ii, 140, 361, 367, 434, 444, 448.

72. TA, iii, 139.

67 Cambuskenneth would have supplied the iron bindings for the moulds while the Abbot of Tongland acted as paymaster. He was besides famous if not as a scientist as a charlatan, and his attempt to fly from the battlements of Stirling Castle was satirised by William Dunbar.⁷³

Sir James Pettigrew, who had his own workmen, may only have been involved on a project of his own at this time for making hand guns and his activities in this field will be described later on.

Unfortunately the documents are singularly reticent about what was produced by this hive of busy workers (there is a gap in the Treasurer's Accounts at this point), and there is therefore no means of gauging the success of the operation; but when the work was settled in Edinburgh three years later it was organised on a more permanent basis with less recourse to experts from outside. There was a permanent hard core of 'gunners and melters' under the master melter, the first of whom was Robert Borthwick, and the necessary carpentry and smith work was provided by other sections of the gunnery establishment.

It is not known where Robert Borthwick learned his skills in bronze casting but it is not impossible it was in Scotland. Nothing, unfortunately, is known of his background but when he was given the Half-Mains of Ballincrieff in feu-farm in March 1510/11 he was already described as a gun-founder (magnolium fundatori) and the gift was said to be in recognition of his work in making and repairing the royal guns.⁷⁴ He was probably already recognised as master melter or 'yhettare' of the king's guns, a title first recorded in a respite granted to him in

73. The fenyeit Freir of Tunland in K. Wittig, The Scottish Tradition in Literature (Edinburgh, 1958), 68.

74. RMS, ii, no. 3546. A certain 'Robyn of Borthyk' appears in 1493 acting on behalf of the Laird of Dundas and may be the same person (Dunfermline Burgh Recs., 43). I am grateful to Mrs Pat Torrie for this reference.

February 1511/12 when he was about to set off for France on royal business,⁷⁵ possibly being sent to recruit more gunners or buy more materials for the artillery. Borthwick went to Dieppe and it was from that port that a group of French gunners had set out for Scotland late in 1510 or early 1511.

These gunners were under the leadership of a certain Gerwez and included three melters, John Garnere, Steven Davenneis (d'Avesnes?) and Jacat; another Jacat called of Towris (Tours), a wright called Evon, and a smith called Anthony with his servant. They were brought to Edinburgh Castle and set to work on gun founding and on the 6 August 1511 a great cannon called the Necar was cast.⁷⁶ Edinburgh Castle was a hive of activity at this time with not only these French gunners but also Dutch smiths, Scottish smiths, masons, wrights, gunners, gun powder makers and other workmen, along with 'pure bodeis at helpit to melt'. The potter of Stirling was again employed to look for metal for the guns and 5,500 lbs of copper was bought in Flanders and shipped to Leith.⁷⁷ More guns were actually cast some time about March 1512/13.⁷⁸

Although the foundry was under the command of Robert Borthwick, himself a gunfounder, it is probable that its establishment owed not a little to the French expertise of Gerwez and his companions. Borthwick did not return from his trip to France until the beginning of October 1512⁷⁹ so that the Necar must have been cast by the Frenchman in his absence. He was, however, in charge of the gunfounding later in that year by which time Gerwez and his companions have disappeared

75. RSS, i, no. 2374.

76. TA, iv, 2789.

77. Ibid., iv, 302, 329, 348.

78. Ibid., iv, 508.

79. Ibid., iv, 378.

from the records. It is tempting to think that having established the procedures for casting the first guns they then returned home, and certainly at least one French gunner is known to have left with the French ambassador, his wages being paid up fully until the middle of February 1512/13. On the other hand, with the return of Borthwick from France his name may quite simply have superceded Gerwez's on the bills presented to the Treasurer and hence the lack of mention of him and his companions by name.

Again details are lacking as to what exactly Borthwick and the other melters were casting in the few years before Flodden. Pitscottie has it that Borthwick cast seven cannons known as the seven sisters which were lost at Flodden and certainly by this number could have been meant the five cannons and two gros culverins described in the accounts. When the English forces came to besiege Edinburgh Castle in 1573 they brought 'ane Scottis peice les nor ane cannoun, quhilk wes tane be the Inglismen at the feild of Flodane; sho wes callit ane of the sevin sistaris'.⁸⁰ This was possibly the demy cannon listed amongst the Scottish brass guns in the Tower of London in 1547 and the gun seen by Lauder of Fountainhall in Dumbarton Castle in 1668, 'a peice casten in King James the 4^t his tyme, carried with him to Floudoun and taken then and kept ay to Charles the I, his tyme'.⁸¹ According to Leslie Borthwick cast cannons and other great pieces and in his day several could still be seen inscribed

'Machina sum Scoto Borthuik fabricata Roberto

(Jacobo quarto rege jubento pio)'⁸²

80. Diurnal of Occurrents, 330.

81. H.A. Dillon, 'Arms and Armour at Westminster, the Tower, and Greenwich, 1547', Archaeologia, LI, i (1888), 263; Lauder of Fountainhall's Journal (Scot. Hist. Soc., 1900), 181.

82. Dalrymple, Historie, ii, 133.

Tradition is not enough, however, for us to happily assign all these guns to Borthwick prior to the battle of Flodden for it is evident that the Scots of former centuries were as ready to identify guns as the 'seven sisters' as many nowadays are inclined to recognise them as Armada pieces. Whatever Borthwick's contribution to the war effort it was most needed.

The gunfounding did not start work again until after Albany came to Scotland in 1515 to assume the government. A new furnace was built that summer with tiles from Tranent in East Lothian supplied by Auld Julian the Italian⁸³ and there is the first mention of Borthwick's French 'servitour', Peris, whose surname is usually given as Rowan - that is, he hailed from Rouen in Normandy. It is likely that Peris had come to Scotland with Albany. No other Melters are mentioned by name at this time, there only being a reference to the fact that Borthwick had to hire workmen, and there is no indication of what was founded. In fact there are no other accounts surviving for expenses on gunfounding during the rest of Borthwick's life and only two bells dated 1528 in Kirkwall Cathedral (described in Appendix C) bear witness to his skill and further activity.

Peris Rowan succeeded to the post of master melter on the death of Borthwick, his letter of appointment being dated 30 April 1532. He was to be paid £5 a month when he worked and £3 a month when he was not working.⁸⁴ He received a payment of £10 in 1538 for making small pieces of artillery at the king's command⁸⁵ and from then until the death of James V in 1542 there is much activity recorded at the gun foundry, not all of it, it seems, being directly supervised by Rowan. In January

83. TA, v, 18-19.

84. RSS, ii, no. 1213.

85. TA, vii, 123.

1538/9 a certain Master Hans Cochran was appointed a master gunner (unum ex principalibus magistris tormentorum domini regis) and was responsible soon afterwards for casting two double culverin moyens and other breech loading guns and pulleys for the royal ships. There was a culverin moyen still in the castle in 1578 'thrawin mowit without armes maid be Hanis Cochrane'.⁸⁶ Cochran was presumably a Scot but his unusual first name and the fact that he was taken on as a master gunner straight away suggests he may have had previous experience abroad - Nicholas Heliot the German, was apparently one of his servants.⁸⁷ A small bronze weight by him dated 1555 survives and is described in Appendix C.

A potter, John Laing, was taken on in 1534 as a gunner and potter with a yearly fee of £36. He died in 1547.⁸⁸ Robert Hector was paid in June 1537 for three guns of found and the following year for a great piece of artillery. Another was paid for in February 1540/1 and at the same time he was given £12 for his expenses in Flanders putting his son (? James) to a craft.⁸⁹ He was not, however, taken on as a gunner until September 1547⁹⁰ and may therefore have been in business privately before then as a founder. John de Lyoun (that is from Lyons in France) was appointed a gunner in June 1541 in place of a Dutchman called Cornelius from Campvere. He was sent to collect a culverin moyen from St Andrews Castle and a broken bell from Kilwinning Abbey, possibly both scrap for the gunfounding and was involved in the melting himself. In 1541 a double culverin was being made under the direction of Peris Rowan but the

86. RSS, ii, no. 2840; TA, vii, 217, 223, 348-51; Wardrobe Inventories, 249. This moyen is not to be confused with the cannon called Thrawinmouth marked with the porcupine badge of Louis XII of France (RPC, x, 709).

87. RSS, ii, no. 4300.

88. ER, xvii, 48-49; xviii, 119.

89. TA, vi, 438, 466; vii, 195, 428.

90. RSS, iii, no. 2380.

first two attempts at casting it were unsuccessful. On the third try, apparently under the direction of John de Lyoun, it was successful.⁹¹ He left the royal service, probably on the death of James V, and later turns up in the service of the Archbishop of St Andrews.⁹²

Another gunner working on founding guns about this time was Master Wolf, who was the Governor Albany's chief gunner at Dunbar Castle at least from 1518.⁹³ He may be that Wollof Urnebrig (that is of Nürnberg) who was working in Edinburgh Castle in the last three years of James IV's reign and who was one of the gunners of the Scottish fleet in 1513.⁹⁴ Master Wolf remained at Dunbar Castle until November 1543, thereafter taking up service under Cardinal Beaton at St Andrews Castle. Whilst at Dunbar he was paid for making a single falcon in 1541 and he made at least two culverin moyens in St Andrews Castle three years later.⁹⁵

Specialist craftsmen were utilised at this time to aid with the decoration of the guns. Andrew Mastertoun, carver, was employed in 1539 to make six wooden gun-patterns decorated with lions' heads and fleur-de-lices⁹⁶ and a French carver or wright, Andrew Mansioun and his servant, were also employed in the gunhouse on similar business, at least from 1540. In 1543 Mansioun was appointed a gunner and eventually in 1561 made master wright and gunner ordinary in succession to John Craufurd.⁹⁷

Peris Rowan died in August 1545 and was succeeded as master melter by his son David. David and his brother Thomas had been sent to France in 1538 at the command of James V to serve their apprenticeship. Their

91. TA, vii, 456-7, 498; viii, 31, 124-7.

92. St Andrews Rentale, 224.

93. TA, v, 161.

94. Ibid., iv, 261, 272, 375, 379, 440, 507.

95. Ibid., vii, 501; St Andrews Rentale, 202.

96. TA, vii, 344.

97. Ibid., vii, 189, 489; viii, 127; RSS, iii, no. 428; v, no. 942.

father who apparently accompanied them had obviously kept up contacts with his native land and in 1534 James had written him a letter of introduction, addressed to Francis I's officers of the ordinance, when he was about to return to France to recover some debts.⁹⁸ David was made a gunner in October 1542 but Thomas was not appointed until December 1561.⁹⁹ In Peris' letter of admission as master melter in 1532 it is stated that he is to receive £5 monthly when he works but only £3 when he does not, and it may be of significance that all the payments of fees to him recorded in the Exchequer Rolls show that he was paid at the higher rate. But if the father devoted most of his time to the royal service it is evident that David had a successful foundry in the burgh with his own 'werkhows' where he made and repaired bells, weights and measures and other things. In March 1549/50 he was granted by the government the right to buy and sell wine, wax silk and all other merchandise both at home and abroad 'siclike and als frelie in all thingis and effaris, as he wer creat and maid fre burges of the said burgh (Edinburgh) be the provest and baillies thairof' and furthermore he was to be allowed to do this free of all payment of customs. Rowan was thus awarded special merchant privileges while remaining a practising craftsman. In the following November Edinburgh admitted him as a burges free of charge 'for his labours done and to be done for the town' and his right to handle merchandise was re-granted in February 1553/4 thus confirming his privileged status.¹⁰⁰

David Rowan was helped in the task of gunmaking by other gunners and melters including his brother Thomas, Gilbert Balnaves, Claus (Nicholas) Heliot, James Borthwick, Martin Paterson and Alexander Honeyman. Thomas

98. Ibid., vi, 402; vii, 150; James V Letters, 270.

99. RSS, ii, no. 4964; v, no. 950.

100. Edinburgh Burgh Accts., ii, 70, etc; RSS, iv, nos. 596, 2428; Edinburgh Burgesses (sub voce).

Rowan, described as a merchant in 1550 and 1571/2 was admitted a burghess of Edinburgh on the same day as David but was only appointed as a gunner ordinary in December 1561. He received his fees as a gunner and melter until 1567 and may have been dropped by the new administration of the young James VI owing to his political sympathies. He was certainly one of those burghesses of Edinburgh cited to compear at Leith in January 1571/2 to underlie the law for his part in supporting the Marian party in Edinburgh Castle.¹⁰¹ Although there is no evidence that any guns were cast between 1561 and 1567 his appointment was not altogether a sinecure as he received expenses in May 1560 and November 1562 for his services.¹⁰² A John Rowan who sold gunpowder to the burgh of Edinburgh in 1565 may also have been of the same family or even, indeed, Thomas' son, described as a 'brasener' when admitted a burghess in 1604 as eldest son of the late Thomas.¹⁰³

James Borthwick, appointed a gunner and melter in 1561, was probably related to Robert Borthwick. Claus Heliot, formerly Hans Cochran's servant, and Gilbert Balnaves, if not Borthwick and Paterson as well, seem to have worked in David Rowan's Edinburgh foundry business since they received money from the burgh in 1554/5 as his servants for their part in mending the curfew bell.¹⁰⁴ David Rowan is also recorded as having had at least one apprentice, David Williamson, who was ordered by the hammermen craft to produce his ticket of burghess-ship with his essay in 1586. The latter was 'the heid of ane womenis sadill, ane garneist flask, ane cassin naill ane hagbut mesour ane buckill and othir sortis of warkies as he will use in tyme cuming'.¹⁰⁵ This essay is a good indication of the normal day to day work of Rowan's shop.

101. Edinburgh Burghesses (sub voce); RSS, v, no. 950; Bannatyne's Memorials, 217-21.

102. TA, xi, 34, 217.

103. Edinburgh Burgh Accts, i, 51; C.E. Whitelaw, Scottish Arms Makers (London, 1977), 294.

104. Edinburgh Burgh Accts, ii, 39, 40.

105. Whitelaw, Scottish Arms Makers, 135.

Alexander Honeyman was an Edinburgh brass worker, responsible for making a cock (weather vane) for the steeple of the Tolbooth in 1567,¹⁰⁶ and he was appointed one of the king's ordinary melters and gunners in June 1568, probably as a replacement for Claus Heliot who had 'defected' to the Marian party in Edinburgh Castle.¹⁰⁷

There is no evidence that any guns were cast in the royal foundry after 1558, the last year in which the Treasurer's Accounts contain detailed references to payments connected with founding. David Rowan continued to receive his fees as master melter and Borthwick, Heliot and Honeyman were also paid. It is of some significance in this respect that in 1568 the Regent Moray was to ask Cecil, Elizabeth I's Secretary, for permission to have 20,000 weight of metal cast with the English ordinance since there was no good 'meltary' in Scotland.¹⁰⁸

THE ROYAL FOUNDRY

The foundry producing guns in the 1470s was at or near the Blackfriars in Edinburgh. The gun casting in 1508 was done somewhere within Stirling Castle. In an inventory of 1585 mention is made of the munition house in the end of the great hall (built by James IV c. 1500) and the munition house in the laigh trance which was divided into an inner and an outer house.¹⁰⁹ It is possible that the gun casting could have been carried out in or near the hall's undercroft.

For most of their existence, however, the royal gunfoundry and workshops were in Edinburgh Castle, and the royal guns were kept there too, apart from pieces on active service or employed to defend other royal fortresses.

106. Edinburgh Burgh Accts., ii, 239.

107. RSS, vi, nos. 329, 1530.

108. Cal. Scot. Papers, ii, 636.

109. SRO E96/4.

The choice of the castle as the home of the gunfounding and associated workshops was primarily on military grounds. It was the most important fortress of the realm and there was a long tradition of weapons makers being installed there, at least as early as the 1340s when war engines were being made,¹¹⁰ and spears and arrows were also manufactured in the fifteenth century.¹¹¹ In 1512 an English spy managed to get two arrow-heads which were manufactured in the castle and they were sent to Henry VIII.¹¹² By the beginning of the sixteenth century the castle was no longer required as the principal royal residence in Edinburgh as, with the marriage of James IV to Margaret Tudor it was superseded in this role by the palace of Holyroodhouse. Thence forward the castle increasingly shared its important military role with its functions as a munitions works, storehouse and also prison.

The castle's inaccessible position, however, meant considerable effort was involved in lugging heavy equipment and supplies up into it and there was no running water which could be used as a source of energy for working bellows, hammers and the machinery for boring out guns. Wind seems to have been little considered in Scotland at this time as a source of power, the main alternatives to water being horse- or manpower.¹¹³ Although horses were used in the 1530s to drive the grinding and polishing wheels of the armour workshops at Holyrood Palace¹¹⁴ there is no evidence of such mechanisation being employed in the castle where the mill for making gunpowder was specifically described as a man operated mill. It would have been impossible to produce cast iron without a blast furnace with water-driven bellows and the impracticability of setting up such a

110. ER, i, 494, 508.

111. Ibid., vi, 498, 582.

112. James IV Letters, no. 527.

113. Three burgesses offered to build a windmill for Stirling in 1540 but this appears to be an exceptional case (Stirling Burgh Recs., 52).

114. AMW, i, 101-2.

furnace in the castle may even be considered as a contributory factor in limiting Scottish technological development in metalworking at this time.

The technology of founding bronze guns changed little in most respects from the sixteenth to the eighteenth century and from the evidence of the materials used and methods of work contained principally in the Treasurer's accounts it is possible to recognise much of the method described in the sixteenth century treatises by Biringuccio and Cellini, and also later expositions like the eighteenth century account and illustrations by Diderot and the paintings of Verbruggen.¹¹⁵

The furnace for melting the guns was rebuilt in 1515, being made of tiles from Tranent in East Lothian, supplied by Auld Julian the Italian.¹¹⁶ It, like its predecessors, was probably not a reverberatory one - a type already well developed by the mid-sixteenth century and well described by Biringuccio¹¹⁷ - but is most likely to have been a cupola furnace in which the metal and fuel were melted down together, sufficient heat being provided by hand operated bellows. The molten metal collected in a receiver below the level of the tuyeres and was drained off by a tap-hole at the bottom. This is essentially the system outlined by Biringuccio in the second chapter of the seventh book of Pirotechnia, concerning methods and procedures used for melting metals, in which he describes melting in a hearth or bowl shaped like a wash-basin with a

115. V. Biringuccio; The Pirotechnia (1st edition published 1540), ed. C.S. Smith & M.T. Gnudi (New York, 1959), 234-48; B. Cellini, The Treatises of Benvenuto Cellini on Goldsmithing and Sculpture (1st edition published 1568), ed. C.R. Ashbee (New York, 1967), 111-34; Diderot, Encyclopédie ou Dictionnaire Raisonné Des Sciences, Des Arts et Des Metiers (Paris, 1751-72). Recueil De Planches, tome v (1767). 'Fonderie des Canons', pls XI-XIX; H.M. Jackson & C. de Beer, Eighteenth Century Gunfounding (Newton Abbot, 1973).

116. TA, v, 18, 19.

117. Biringuccio, Pirotechnia, 281-8.

plug in the bottom. Charcoal was first set to burn in it, then the metal added and gently brought to its liquid state by the working of one or two pairs of bellows. The metal could then be drained off by the removal of the plug into a mould. Biringuccio claims he had seen a master cast of a bell of about a thousand pounds in a furnace of this sort which was like a clay lined basket, but other furnaces were of brick in the shape of a little tower.¹¹⁸

Such were the twin furnaces used by Mehmet II's gunfounder when casting large bombards for the siege of Constantinople in 1453. The account given in a manuscript of 1467 by a Greek writer Kritoboulos is worth giving here in full since the process - on a much larger scale - was probably similar to that employed in Edinburgh Castle:

'I will now explain the mode of fabrication and the form and use of it. They take a quantity of very fat clay, the purest and lightest possible, which they make plastic by kneading it for several days. The mass is knit together and prevented from breaking by the intermixture of linen, hemp and other shreds and the whole worked up and well mixed in such a manner as to make one tough and compact mass. Then they make a round cylinder en forme de flute, very long, to be the mandrel or core of the shape. It was forty palms in length, the front portion of the gun proper was twelve palms in circumference. The rear portion, that is to say the chamber intended for the reception of the powder, was four palms or a little over, in circumference, according to the rule of proportion to the rest of the gun, that is to say one third. Another exterior to

118. Ibid., 289-90.

receive the first was next made, hollow and as if intended for a sheath to the first; but be it observed larger, and not alone to receive the other but such as to leave a void space between the two. This space or this interval all round between the surfaces, which is uniform, is a palm or a little more. It is the space intended to receive the bronze pouring into it from the furnace to take the form of a cannon. The exterior is made of the same description of clay, but entirely surrounded and fortified with iron, timber, earth and stones built up round it to prevent the immense weight of bronze from fracturing it and spoiling the cannon. Then they erect two furnaces one on either side and close by for the foundry. These towers were made very strong and fortified internally with bricks and a very fat well worked clay, and on the outside surrounded by large cut stones and cement and everything suitable for adding to their strength. And they cast into the foundry a mass of bronze (copper) and tin about 1500 talents (about 37 ton). Thereupon they threw in charcoal and wood and so disposed it that the metal was covered below, above and on all sides, and the furnaces hidden except their outlets. Round about this were the bellows which worked without rest or intermission when the mass was once lighted, and this for three days and three nights, until the whole of the bronze melted down and liquid, became as water. Then the outlets having been opened the bronze poured through earthen pipes into the mould until it was filled and the interior cylinder covered and the metal one pic (27.9 ins) above it. The cannon was then cast.

When the bronze contracted and cooled down the exterior and interior moulds were taken away and the metal, which was

scraped and polished, glittered on all sides. So much for the form and fabrication of the cannon'.¹¹⁹

There are no descriptions of the furnace built in 1515 or its predecessors, nor is there much useful information on how any of them were worked. Our assumption that they were cupola furnaces rests on the following grounds. The 1578 inventory of Edinburgh Castle lists 'ane pair of greit belleis with pyppis of bras for the melting of the pecis auld and must be preparit of new to serve'. These were then in the melting house and since we argue below that the later furnace was of the reverberatory type must have been for use with the 1515 furnace. They may have been those bellows which had to be mended in 1542 after the first unsuccessful attempt at casting a double culverin.¹²⁰ The Treasurer's accounts make it abundantly clear that coal and charcoal were the materials normally used to fire the furnace,¹²¹ but it is known that the reverberatory furnaces used in guncasting were fired with wood.¹²² The Potter of Dumfries was got to make a 'taist' (French tasse = crucible?) for melting the metal in Stirling in 1508¹²³ and this may refer to the basin in the furnace in which the molten metal collected - or else the crucible containing the metal to be melted placed in the furnace.

A great cannon called the Nekar was cast in 1511 and theoretically could have had a weight of as much as 5400 lbs. Otherwise the Treasurer's accounts suggest that no more than one double or gros culverin, or two double moyens or several double hagbuts of found were melted at one time. This would have meant a furnace with a capacity to produce, at

119. ffoulkes, The Gunfounders of England, 13-14.

120. TA, viii, 126.

121. Ibid., iv, 508; ix, 127, 199, 348; x, 101, 115, 151; etc.

122. Biringuccio, Pirotechnia, 281; Jackson & de Beer, Eighteenth Century Gunfounding, 151; R.F. Tylecote, A History of Metallurgy (London, 1976), 96.

123. TA, iv, 134.

most, 3,000 lbs (1,364 kg.) of metal. This may be compared with the reverberatory furnace erected at Woolwich by the Vergruggens in the early 1770s which could melt about 38,000 lbs (17,273 kg.) of metal at one time (a volume of almost 2m^3).¹²⁴

The furnace of 1515 remained in service until 1558 when it was decided that a new one had to be built. This was undoubtedly because the old furnace had proved incapable of being brought to the right temperature and worked to melt the bronze thoroughly. It can be deduced that an attempt at founding had gone disastrously wrong at this time since there is a payment in the Treasurer's accounts for ten loads of coals for breaking up the metal taken from the furnace.¹²⁵ David and Thomas Rowan along with Claus Heliot went to Tranent in the autumn of 1558 to contract with John Crawford, indweller there, for 4000 tiles 'to be ane pend and ane sole to ane furnes', and Tranent gray clay, mixed with hair, was also used. The old furnace was knocked down and the work of building the new at least partially accomplished by the melters themselves.¹²⁶

A furnace with a pend (vault) was probably a very different thing from the furnace built in 1515, in fact a reverberatory furnace which did not require the forced draught provided by bellows. In reverberatory furnaces the fuel is burnt in a separate chamber or fire-box and the hot products of combustion pass into the hearth in which the material to be melted is placed, and thence out through a chimney. The vaulting of the whole furnace tends to deflect or reverberate the heat downwards to the metal and the chimney is necessary to create a draught and lead the smoke into the open. This type of furnace was that normally in use for

124. Jackson & de Beer, Eighteenth Century Gunfounding, 151.

125. Ibid., x, 441.

126. Ibid., x, 440-2.

casting bronze ordnance into the eighteenth and nineteenth centuries, and the furnaces in the Royal Brass Foundry at Woolwich in England illustrated in Verbruggen's drawings of about the 1770s may have differed little except in scale from that in Edinburgh Castle.¹²⁷ All accounts relating to the actual manufacture of guns cease after the last item of expense on the new furnace and so nothing is known of its capacity or capabilities.

Coal, wood and charcoal for firing the furnace could always be got fairly readily in Scotland but metal for the guns was rather more difficult to come by. Copper and tin were the two main deliberate constituents of the alloy used at the time and Scotland is richly endowed with neither. The chronicler Froissart could write of Scotland in the fourteenth century that iron for shoeing horses and bronze for making harness, saddles and bridles could only be got with great difficulty; everything had to be imported from Flanders or there was nothing at all.¹²⁸ Three hundred years later in 1683 the Privy Council noted in considering the application of Joachin Gouel, a German, to work a copper mine in the parish of Currie near Edinburgh that 'The many attempts for finding out and working of copper mines within this kingdom (have) hitherto proved altogether uneffectuall'.¹²⁹ Apart from the deposits at Currie an awareness is shown in seventeenth century documents of a copper mine at Airthrey, Stirlingshire, and of deposits at Elphin in Sutherland, Largo Law in Fife, and at Borthwick Hill in Roxburghshire.¹³⁰ There are no workable sources of tin in Scotland.

127. Jackson & de Beer, Eighteenth Century Gunfounding, nos. 30, 33, 36, 37, 39, etc.

128. Chron. Froissart, ii, 315.

129. RPC, viii, 241-2.

130. R.W. Cochran-Patrick, Early Records Relating to Mining in Scotland (Edinburgh, 1878), p. xxv-xxviii.

Much of the metal used in the gunfounding was therefore imported from the Continent, especially the Low Countries,¹³¹ the source for most of it ultimately being the mines of Hungary and the Tyrol.¹³² Scrap metal was assiduously re-used, old bells being collected from the abbeys of Kilwinning and Kelso in 1541 and a broken falcon from Denmark in 1542.¹³³ Scrap and ingots were weighed and mixed together in the furnace and some tin was added separately "to dulce the mettell", as well as brass in small quantities.¹³⁴ The molten metal was poured from the furnace into clay moulds which were positioned upright in the fosse or sink (pit) immediately in front of it. This must have been of great depth in order to take the moulds of the double culverins being made in 1540, 1541 and 1558 which might be as long as sixteen feet (4.877 m),¹³⁵ and was probably stone lined since a load of lime was needed to mend it in 1542.¹³⁶ The moulds were held upright in the pit by being tightly packed with slightly moist earth.

Gun moulds were made up complete with cores at this time, the making of solid castings being first developed by Maritz in Switzerland in 1715 and not being introduced to Britain until 1770.¹³⁷ Drawings of guns were apparently made on Lombard paper and thereafter the first step was to make a model of the outer surface of the gun, this being done entirely in wood for the smaller guns. In the larger, rope was wound round a well greased wooden spindle and coated in clay beaten into a smooth paste and mixed

131. E.g. TA, iv, 278, 302; vi, 151, 158.

132. R.F. Tylecote, A History of Metallurgy (London, 1976), 75.

133. TA, vii, 498-9; viii, 152-3.

134. Ibid., iv, 133; x, 438.

135. Ibid., vii, 360; viii, 124-7; x, 437-42.

136. Ibid., viii, 126. Cf the late 16th century wood lined gun casting pit at Maynard's Gate, Sussex, described by O. Bedwin, 'The Excavation of a late Sixteenth/Early Seventeenth Century Gun-Casting Furnace at Maynard's Gate, Crowborough, East Sussex, 1975-76'; Sussex Archaeol Coll., cxvi (1978), 163-78.

137. C. ffoulkes, The Gun-Founders of England (Cambridge, 1937), 65.

with wool clippings and hair. In 1558 the source of the clay is given as Pilrig between Edinburgh and Leith. Ships' masts made convenient spindles, or where a big enough piece of wood of suitable quality could not be got 'spilis' were glued together. The projecting mouldings at muzzle and breech may have been carved in wood and slipped on to the wooden spindle in the case of the smaller guns. Otherwise they were modelled in clay. Where the chase was cylindrical a wooden strickle-board could be held against the clay of the model while the latter was being slowly revolved, in order to achieve a regular finish. The mould of timber for a double culverin listed in the 1578 inventory may have been such a strickle-board since the model for a gun of this size would almost certainly not have been made entirely of wood.¹³⁸ At the muzzle end the model was made with a large 'gunhead'. In the casting process the space occupied by this was filled with bronze and by its weight ensured that the metal in the rest of the gun was well distributed and free from air bubbles. The clay of the model was carefully dried out meantime by making fires fuelled by peat or turf under it as it was slowly turned. Finally it was thoroughly greased with wax or tallow and the wooden models of the trunnions or hook nailed on.

Decoration was either applied in wax to the model or was engraved on the finished gun. In 1539 Andrew Masterton, carver, was paid 'for making and carving of vj patronis to the gunnis, witht lyoun heidis and flour de lices of tre'¹³⁹ which can be interpreted as meaning wooden moulds for wax lion's heads and fleur-de-lis to be applied to the gun models. In 1541/2, on the other hand, Andrew Mansion, carver, was paid for engraving the royal arms with unicorns, thistles and fleur-de lis on a double culverin, and the date on its muzzle, and James Cokke, goldsmith, was paid

138. Wardrobe Inventories, 258.

139. TA, vii, 344.

in 1558 for sinking and engraving the queen's arms and an inscription on a double falcon.¹⁴⁰

Over the completed model the clay mould was built up, hair and wool clippings being added to bind the clay, and hemp and wire for strength in the outer layers. The mould was carefully dried as work progressed, at first only by exposure to the air but in the later stages by the action of fire. It was finished off by being bound with strips of wrought iron which enabled it to stand up to the strains of being moved and filled with molten metal. The six gun moulds being worked on in 1539 each required eight 'gaddis of irne'.¹⁴¹

Once the gun mould was complete the inner spindle of the model was knocked out and its clay and rope elements removed. The interior of the mould could then be thoroughly dried out too and the model of the gun's bore carefully lined up inside it. For this an iron spindle was used, coated with clay - and possibly reinforced with wire as described by Biringuccio.¹⁴² The mould for the cascabel had to be made separately and the gun mould fitted on to it carefully in the pit prior to casting.

The melting of the metal and casting of the gun(s) was the culmination of several weeks' work. In 1541 five men under Peris Rowan were paid for working on a double culverin from 19 September to 30 October which was the day the gun was cast.¹⁴³ The melting itself could take several hours owing to the sheer quantity of the metal and, if necessary, the furnace was attended over night, as in March 1512/13.¹⁴⁴ The work was fraught with great hazards and difficulties. The double culverin cast by Peris Rowan in 1541 failed since the mould of the gun was not

140. Ibid., viii, 127; x, 438.

141. Ibid., vii, 223.

142. Biringuccio, Pirotechnia, 241.

143. TA, viii, 125.

144. Ibid., iv, 508.

properly secured to that of the cascabel. A second attempt after much more laborious work was equally disastrous when the spindle (i.e. for the gun's bore) rose out of place as the metal was being poured. It was only at the third attempt that the casting was successful.¹⁴⁵

The gun having been cast was by no means finished. It had to have its gun-head sawn off and the bore reamed to the correct diameter. The boring was done horizontally, the bit being turned by a wheel and probably worked by manpower. Six men under the command of Hans Cochran were paid four weeks wages for boring newly cast guns in 1540,¹⁴⁶ this work probably being done in the workhouse. The exterior surfaces of the gun also had to be hand tooled to an attractive finish, mounted and proofed before they were deemed fit for service. The proofing was carried out on the Cragheid of the castle rock.¹⁴⁷

From the Treasurer's accounts and the inventories of the castle it can be established that the foundry produced the following types of guns in descending order of size: cannons, double/gros culverins, moyens, battards, double falcons, quarter falcons, great/double hagbuts of found. We unfortunately cannot tell how complete a record of types this is or guess at the quantity being produced, but in terms relative to the country's overall requirements it must have been a modest output. The small size of the furnace, the lack of horse- or water-operated machinery and the part-time nature of much of the work indicate that the gunfounding was never really conceived/as a big operation.

We have suggested above that the motivation behind the setting up of the royal gun-foundry may have been a desire to gain prestige in keeping

145. Ibid., viii, 124-7.

146. Ibid., vii, 350-1.

147. For an account of proofing in the Low Countries at this time see P. Henrard, 'Documents Pour Servir à l'Histoire de l'Artillerie en Belgique', Annales de l'Academie d'Archéologie de Belgique, xlv (1889), 256-7.

with national pride rather than solely to provide a much needed commodity. On a purely economic level production costs might have been so great as to minimise the attractiveness of investment in home-produced guns. The fact is, however, that the royal foundry remained in operation until 1558, a period of over eighty years. Why founding ceased at that point in time rather than any other is a mystery to which there is no ready answer, but several reasons suggest themselves and will be mentioned here.

The employment of several craftsmen of foreign origin indicates the difficulty in obtaining native expertise and some of the accounts and inventories hint at technical difficulties, like the double culverin cast twice unsuccessfully in 1541. Some of the guns proofed obviously left something to be desired, like the 'throwin mowit' moyen made by Hans Cochran,¹⁴⁸ and it is perhaps noteworthy that there is no evidence of the new furnace, built in 1558 after a disastrous attempt at casting with the old one, being put into operation. Possibly it had technical faults.

The casting of guns in Scotland may not only have been as expensive as buying guns from abroad but the expense of guns at all was more than the royal finances could readily stand. It is difficult from the information to hand to produce definitive accounts of the expense, but great amounts of money were involved. The metal itself was very expensive - in 1542 a large load of copper was bought in Denmark consisting of 27 'ship pounds' (each 300 or 400 lbs) and 8 'lesche pounds' (a unit of weight used in the Baltic trade) at a cost of £390 exclusive of handling, customs, freight and carriage costs.¹⁴⁹ Other costs included fuel, materials for making the moulds, iron and wood for stocks and carriages, and the workers' fees. The one surviving treasury account for the reign of James III, covering

148. Wardrobe Inventories, 219.

149. TA, viii, 152.

the period from 3 August 1473 to 1 December 1474 records the expenditure of no less than £780 6s 5d on the artillery and workmen. The sheer cost of gun founding must at the very least have discouraged greater production and was probably one of the main reasons why the making of guns ceased. It is evident that the Scots' financial inability to make or buy guns in any quantity had for long been made good to some extent by gifts of ordnance from her ally France. What is more, in the struggle to evict the English from Scotland in the years from 1547 to 1550 a large part was played by the French with their own artillery. With the regency of Mary of Guise from 1554 the government's reliance on French military power became almost total, and when D'Oysel fortified Leith in 1559 it was defended with French guns, the bulk of the Scottish guns remaining securely in Edinburgh Castle, unavailable to the Congregation as well as the French. The apparatus for gunfounding evidently remained in the castle, and of course, the personnel were still available for succeeding governments to make use of. The long reign of James VI, however, brought the end of hostilities with England and even less reason to revive the royal foundry.

Although the royal gunfoundry ceased production David Rowan continued in business in the town. There are frequent references to him in the burgh accounts and payments made to him for work on bells, weights and measures, etc.¹⁵⁰ Two measures by him are described in Appendix C. There were other founders in Edinburgh in the late sixteenth century like Alexander Honeyman, one of the gunners, and John Hlog, potter, and at least one or two seem to have been operating at any one time from then

150. Edinburgh Burgh Accts, i, 154, 204, 256, 285, 461; ii, 39, 40, 70; Edinburgh Burgh Recs. (1589-1603) App II, 332-3, 335.

on through the seventeenth and eighteenth century.¹⁵¹ Most were probably only engaged in making small objects like candlesticks, buckles and drawer handles, but James Monteith, who described himself as a pewterer, certainly made guns in the mid-seventeenth century since one dated 1642 survives.¹⁵² An essay piece consisting of a brass cannon, a bell and a plain round casten candlestick was presented by Robert Maxwell in 1701 and his two apprentices James Cunningham and Thomas Henderson in 1724.¹⁵³ It is more than likely that more detailed work would show a direct chain of workmanship and experience from Robert Borthwick, the Rowans and the other royal gunfounders, through the Edinburgh founders of the seventeenth century to the bell-founders and others of the eighteenth and nineteenth century. Royal attempts in the sixteenth century to encourage home production of artillery and improve standards of workmanship may, at least partially, lie behind these later achievements.

It must be said by way of a postscript that there is practically no evidence of the casting of guns elsewhere than in the royal gunfoundry in the sixteenth century, the notable exception being the work of Master Wolf on behalf of Cardinal Beaton, mentioned above. It should not be doubted, however, that there were craftsmen able and willing to make at least small pieces of artillery elsewhere in Scotland, including, probably, the four small guns dated 1588 from Tolquhon Castle, Aberdeenshire, described below. Several brassworkers worked in Dundee throughout the sixteenth century.¹⁵⁴

151. C.E. Whitelaw, Scottish Arms Makers (London, 1977), 127-37, to which add Charles Hog, Patrick Kilgour, William Mane, James Menteith, James Sibbet, Thomas Weir, et al (for which see Edinburgh Burgh Accts., (1604-26) onwards).

152. D. Stevenson & D.H. Caldwell, 'Leather guns and other light artillery in mid-17th century Scotland', Proc Soc Antiq Scot., cviii (1976-7), 314-16.

153. Whitelaw, Scottish Arms Makers, 129, 131, 133.

154. NMAS Whitelaw MSS, extracts from Dundee Burgess Roll.

Over twenty sixteenth-century bronze guns are known to have survived in Scotland until recent times. These are detailed more fully in Appendix A. Here we are interested solely in those which can be attributed to the royal foundry or other Scottish workshops. At least eight can be attributed to the royal foundry on the evidence of heraldic devices and some of the others are so similar that a Scottish origin must be considered a possibility. One has the royal arms and initials of James V and there are records of payments to craftsmen to ornament newly cast guns or moulds in Edinburgh Castle with the royal arms.¹⁵⁵ In a dispute between the Regent Morton and the English Government in the early 1570s over the ownership of artillery removed from Home Castle by the latter the presence of the Scottish arms on guns was the test applied by the English to identify Scottish guns while the regent claimed that this was no guide to Scottish ownership at all since so many of the royal guns were made abroad.¹⁵⁶ Five of the guns have the arms and initials of James Hamilton, earl of Arran and duke of Châtelherault, four of them with the date 1553 at which time he was governor of the realm. It is known from the inventories of Edinburgh Castle that there were various guns in the royal collection with regents' arms - Albany, Mary of Guise, Châtelherault¹⁵⁷ - and it seems reasonable to suppose that these were put on the products of the royal foundry during their periods of government.

The largest gun has a bore of 54 mm (1.8 ins) and is 1.78 m in overall length (1.688 m excluding the cascabel). It is octagonally faceted with flaring muzzle like the capital of a column. It is provided with trunnions and terminates in a squat cylindrical cascabel. On top of the chase near the breech is a heater-shaped shield bearing the royal arms of Scotland

155. TA, vii, 344; viii, 127; x, 438.

156. Cal. Scot. Papers, iv, 625.

157. Wardrobe Inventories, 249, 251, 252.

surmounted by an imperial crown and with the characters 'IR5' below - the usual initials of James V (1513-42). The '5' has in the past¹⁵⁸ been interpreted as an 'S' for 'Scotorum' but a comparison of the figure with the fives on guns to be described below and with James V's initials on coins, the facade of Stirling Castle Palace and the royal crown, leaves no doubt that a 5 is intended. The arms and lettering are entirely different in character from those on Borthwick's bells. The arms have been enhanced by having the bonnet of the crown punched all over with little rings after the casting. There are a few blow holes visible, but these appear to be only surface deep and would not have weakened the casting.

This gun is now preserved in Glasgow Art Gallery and Museum, having been found c. 1850 in Castle Semple Loch, Renfrewshire, beside a little tower called the Peel. In 1560 Castle Semple was besieged by the Earl of Arran and in a detailed account in a letter of the English ambassador Randolph to Maitland of Lethington mention is made of the taking of the peel - or 'house in the lough' - as well as Castle Semple itself,¹⁵⁹ and it may have been at this time that the gun was lost, along with two smaller ones whose whereabouts are now unknown. In type it is a falconet - or small falcon as more usually described in Scottish documents. Four very similar guns were captured from the Scots by the English at Solway Moss in 1542, being described as 'four fawconets with letter of J.R.S. (5?) and the arms of Scotland with ane imperial crown upon every one of them.'¹⁶⁰ Four small falcons were cast by Robert Borthwick in 1526¹⁶¹ and there are other less specific references to small guns being made, for example in 1538.¹⁶²

158. E.g. in Archaeol & Hist. Colls of Co. Renfrew, i (1885), pl. VII; ii (1890), 207.

159. Cal. Scot. Papers, i, 489.

160. Henry VIII Letters & Papers, xvii, 626.

161. TA, v, 266-7.

162. Ibid., vii, 123.

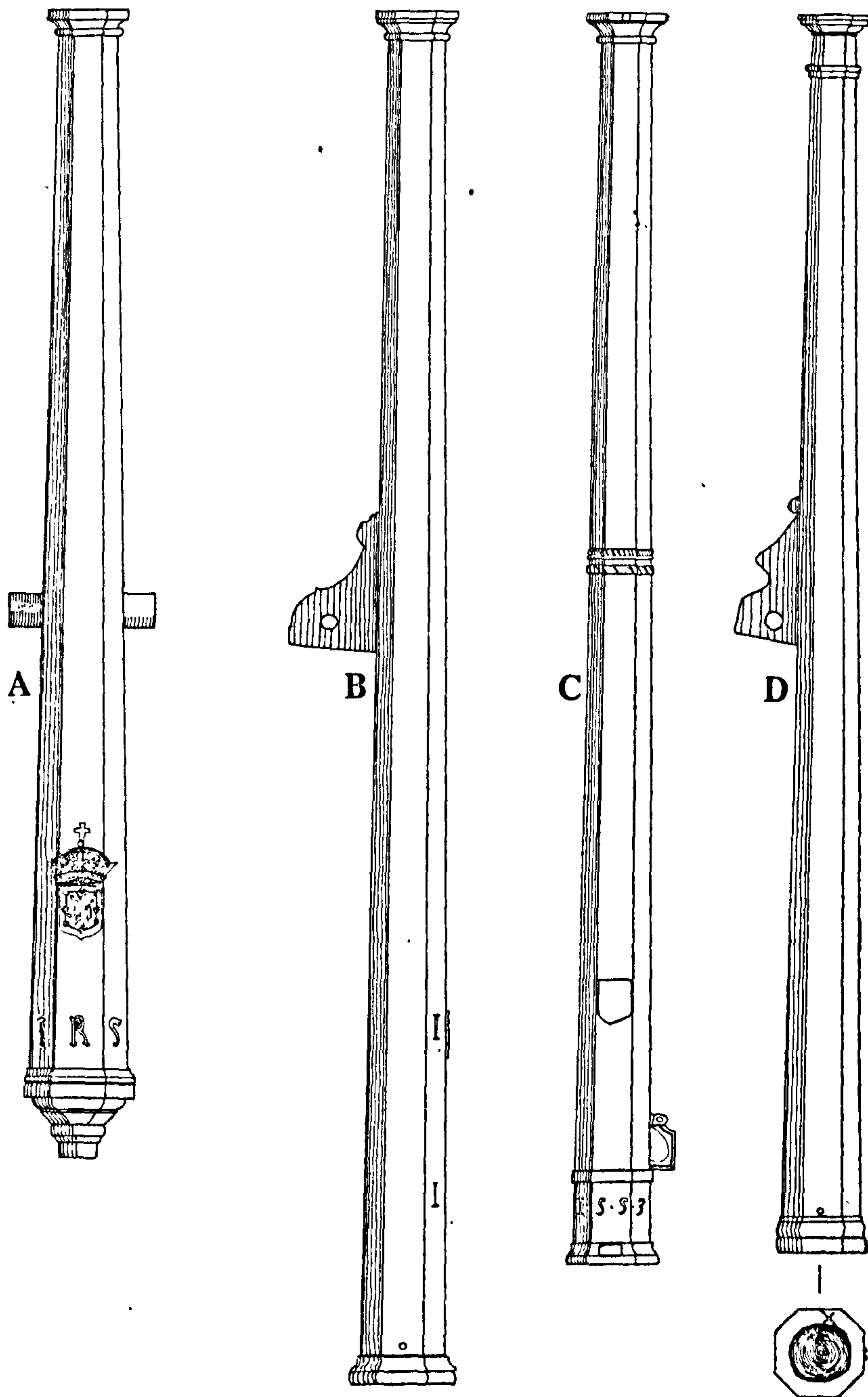
The other seven guns to be considered here are a remarkable group of hagbuts of crok or hagbuts of found (i.e. cast). They fall into two types. First of all there are five larger ones which may be double hagbuts, each with a calibre of 28 mm (1.1 ins).¹⁶³ Four of them have an overall length of 1.20 m and are octagonal in section, tapering gracefully from breech end to muzzle. The touch-holes are to the right hand side of the breech and each powder pan has originally been fitted with a lid which swivelled into position on an iron pin. The hooks on the undersides of the barrels have cavetto moulded fore-edges and are pierced with holes for taking mykis - the iron swivel attachments for mounting them. One of these is still to be seen on a French hagbut in the National Museum.¹⁶⁴ Their muzzles are prominently flared and moulded, and at the breech end are sockets over 70 mm deep for wooden stocks, secured by nails through the holes on either side. On the tops of the barrels, near the breech end, are raised heater-shaped shields charged with three cinquefoils, flanked by the initials 'IH', and below, the date 1553 - all for James Hamilton, duke of Châtelherault. III B

Two of these guns are presently in the possession of Admiral Sir Angus Cunninghame Graham of Gartmore and a third belongs to the Duke of Hamilton. The whereabouts of the fourth, discovered under a stair at Castle Menzies in Perthshire in 1893, has not been ascertained by the writer, but it is illustrated and described elsewhere.¹⁶⁵ It curiously has the Duke's initials inadvertently reversed. The first three at least appear to be good castings. That in the possession of the Duke of Hamilton has in recent times suffered various vicissitudes of fortune, IV

163. One not seen by the writer, from Castle Menzies, is said to have a calibre of 1 $\frac{1}{8}$ ".

164. D.H. Caldwell, 'A hagbut of crok from Corr, County Armagh', Ulster Journ. Archaeol., xxxix (1976), 53-55.

165. D.P. Menzies, The 'Red & White' Book of Menzies (Glasgow, 1894), 172; 'Wall-piece of Bronze, preserved at Castle Menzies, Weem, Perthshire', Proc. Soc. Antiq. Scot., xxx (1895-6), 314-16.



Cast bronze guns. A with arms and initials of James V; B with arms and initials of the Earl of Arran, 1553; C dated 1553; D unmarked, from the collection of the Duke of Hamilton. Scale A, 1:12; B-D, 1:6

not least being caught in a fire. Through the interest of the Duke and his brother Lord Hugh Douglas-Hamilton, the gun has been very carefully cleaned in the National Museum's Conservation Laboratory with the result that details of its finish have been revealed that are normally obscured by surface dirt or oxydisation.

IV

The surfaces of the chase were finished extremely smoothly by filing neatly across the faces, leaving tightly spaced striations as evidence. The edges of the faces are sharp and regular and it is probable that a wooden model was used as described by Biringuccio.¹⁶⁶ The arms and other figures have been chiselled on after casting.

The fifth of the larger hagbuts also has the date 1553 cut in it but the shield on its chase is blank. It compares in quality of finish with III c the others and in general type, but is 1.075 m in length and is more elaborately finished with two rope mouldings round the barrel. At a later date its hook has been removed and replaced by an iron trunnion attachment, and an iron stock has been fitted to it. It was preserved in the Castle Grant armoury and is now in the National Museum.

In 1552 and 1552/3 David Rowan was casting 'certane grete hakbuttis of found' and/or 'doubill hagbutis of funde',¹⁶⁷ and it is probable that these guns are some of the results of his efforts.

In the collection of the Duke of Hamilton there are two smaller guns of similar sort to those described above, and both of the same form, one III D with the Hamilton arms and the initials 'I H'. Their hooks are more squat in outline and there is an extra fillet round the chase near the muzzle. Both have a calibre of 25.5 mm (1 in) and an overall length of 1.06 m. These two guns are poorer in finish than the five larger ones dated 1553. One of them has burst in firing causing a large bite to be torn from the

166. Biringuccio, The Pirotechnia, 234ff.

167. TA, x, 101, 115, 151.



Breech-loading gun from the sea at Aberdeen; bronze hagbut of
 crok, 1553, with the arms and initials of the Earl of Arran;
 and the Glead Gun, Inverary

barrel about a third of the length from the muzzle and careful cleaning has helped to reveal major casting defects in the form of considerable pitting in the fore end of the bore such as could have been the cause of it exploding. Other flaws may have been disguised by plugs of metal, as has obviously been done on the underside immediately behind the hook. The decoration of the shield has also been done in a different method. A stamp has been used to impress the three cinquefoils in the model before casting.

There are four other bronze guns which are likely to be of Scottish manufacture. Firstly a hagbut of crok and a larger gun with trunnions and a calibre of 41 mm (1.6 in). The latter has had its breech blown off. Secondly a hagbut of crok and a gun with trunnions and a calibre of 27 mm (1.05 in) both of which belonged to the Bannatynes of Kaimes in Bute. All four have the simple faceted outlines characteristic of the guns previously described. The larger of the two Bannatyne guns is probably earlier than all the others since it lacks thickness. It also has a cross potent scratched on it, which is used on some of the coins (testoons) issued during the regency of Mary of Guise.

Finally there are four bronze guns which are dated 1588 and have the motto, arms and initials of William Forbes of Tolquhoun. They appear to have been made by a Scottish founder for the castle of Tolquhoun, newly completed at that time. They differ from all the previously described guns in having circular sectioned barrels. They are long and slender with heavily reinforced muzzle rings and chases. Two of them are 1.28 m long with a bore of 34 mm (1.33 in) the other two are only 1.09 m long and have a bore of 29.5 mm (1.16 in). All have trunnions, the two larger ones with raised lips suggesting that they were for mounting on myks rather than on carriages. The vents have had hinged protective covers, one of which remains. The arms and inscriptions have been cast in.

Since the numbers and letters are different from those used on the other guns and two measures by David Rowan, this might suggest they are the product of another workshop.

THE MANUFACTURE OF CAST IRON GUNS

The manufacture of cast iron guns cheaply and reliably was developed in England in the sixteenth century and some of these guns found their way into Scottish hands, like 'ane demy culvering of yetline yron marked with the rois' in Edinburgh Castle.¹⁶⁸ The manufacture of cast iron in Scotland seems only to date from the beginning of the seventeenth century when a furnace was set up at Letterewe in Wester Ross by Sir George Hay, later Earl of Kinnoull. In 1598 he had obtained rights from the crown to colonise Lewis with folk from the Lowlands and it was probably in pursuance of this unsuccessful venture that he first became aware of the potential offered by the area round Loch Maree for developing iron working. There may already have been considerable ironworking based on local deposits of bog iron and wood or peat charcoal, but here as elsewhere in Scotland, these were only 'bloomeries' which produced ingots of iron for wrought work by dint of much hammering of the spongy mass of iron reduced from the ore. Insufficient temperatures were reached for the iron to be run off in a liquid form and formed in moulds. Hay's achievement was to set up the first 'iron mills' in Scotland which produced cast iron objects.

The works at Letterewe appear to have been in production by 1608 but perhaps then only by a matter of months. They seem to have prospered for a number of years since in 1621 Hay obtained a licence to sell his iron in any royal burgh and to any person, notwithstanding any privileges or liberties previously granted to the said royal burgh.¹⁶⁹ It is not

168. Wardrobe Inventories, 253.

169. APS, iv, 686.

clear if, or for how long, they continued after Hay's death in 1634.

Hay appears to have relied on English expertise for this venture. Already by the late sixteenth century several English iron workers were experiencing difficulties owing to the increasing shortage of wood and it may not have been difficult to entice some away to the rich resources of Wester Ross. Not only the workmen were introduced but also the ore, which, analysis has suggested, may have come from the Ulverston region of Lancashire. Limestone was also imported from further south to act as a flux. We have to rely on later accounts for the information that the works at Letterewe produced cannon.¹⁷⁰ None have been recognised and the site at Letterewe itself awaits excavation. The breech of a cannon, spoiled in the casting, is said to have been found on the site of another early iron works nearby at Cheardach Ruadh - the Red Smiddy - but the date when it was operating is not known.¹⁷¹ Also yet to be discovered is where James Galloway intended to make the iron (presumably cast ?) ordnance for which he was awarded a patent in 1623 on condition that none of the guns should be exported out the country.¹⁷²

THE MANUFACTURE OF GUN CARRIAGES, POWDER AND SHOT

An immense amount of equipment was needed to make guns operational. There were the gun carriages, the horses and oxen to pull them, tows,

170. In particular a Genealogical Account of the MacRaes, by Rev John Macrae, who died 1704, abstracted in Appendix A of J.H. Dixon, Gairloch (Edinburgh, 1886).

171. The above account is essentially a summary of part of the important paper by W.I. MacAdam, 'Notes on the Ancient Iron Industry of Scotland', Proc. Soc. Antiq. Scot., xxi (1886-7), 89-131. It is to be hoped that excavation of these iron working sites in Wester Ross will throw considerably more light on this crucial phase of Scotland's industrial development. See also Dixon, Gairloch, which relies heavily on MacAdam's work.

172. RPC, xiii, 374.

harness and yokes; cranes to mount and dismount the guns, wooden platforms and gabions (protective baskets filled with earth); powder and shot and containers for them - barrels, pokes, baskets or paniers for horses and carts; and equipment for firing the guns including ladles to put in the powder, rammers to shove home the shot, linstocks to fire the guns and sponges to clean them out. All of this had to be made, purchased or hired and maintained, and specialists were feed to deal with this. The earliest makers of artillery and other military engines had of course been wrights and smiths and these craftsmen were naturally in royal employment from early times as their usefulness extended away beyond the field of weaponry. With the development of a gunnery establishment wrights, smiths and other craftsmen who specialised in gun-work became part of it, based in Edinburgh Castle like the melters.

The first wright known to have been feed on a permanent basis to do specialist work on the guns seems to have been John Drummond, taken on by James IV in 1507. He eventually became master gunner in 1532 on the death of Robert Borthwick.¹⁷³ Drummond was joined by other wrights,

at least two by 1543, and the number of wrights in employment at one time rose to six by 1561.¹⁷⁴ The first specialist wheelwright to be appointed seems to have been Hew de Neullay in 1561.¹⁷⁵ He was superseded as wheelwright by James Scheves in 1579 who received £6 to Hew's £5 a month.¹⁷⁶

All these wrights are normally described as 'wrights and gunners' and their names appear monthly in the Treasurer's accounts in a list, along with the other gunners, recording their pay. The editor of the Masters' of Works accounts, Henry Paton, was of the opinion that

'This association of "carpenter" and "gunner" seems to infer a two-sided application of his craft, on the one hand the usual

173. RSS, i, no. 1574; ii, no. 1304.

174. TA, xi, 104-5.

175. RSS, v, no. 898.

176. TA, xiii, 283-4.

joinery about the house, and on the other the making and keeping in repair of the wooden and other mountings of cannon, etc. in the king's castles. "Gunner" in the modern sense is not implied; and during the century quite a number of "gunners ordinary" were recorded, including Robert Hector, appointed in 1547 one of the Queen's "principal gunners".¹⁷⁷

Certainly both John Drummond and John Crawford worked on the building of Holyroodhouse in 1535-6 and Falkland Palace in 1537-8. Drummond was also involved in the construction of the new register house in Edinburgh Castle in 1542,¹⁷⁸ but by and large the major part of their work seems to have been with the guns and it is certainly not true, as Paton suggests, that they were not gunners in the modern sense. Drummond, Crawford and other wrights and gunners normally accompanied the artillery in the field as will be clear from the account of the gunnery establishment given above, and the numbers of specialists involved was so few that all hands must have been required to operate the guns. For example, nine guns were taken on the Raid of Langholm in 1547. Only nine gunners are listed in the accounts for the raid: John Drummond; John Crawford; William Hill (master smith and gunner); Thomas Dewpe, gunner extraordinary; William Colmes and William Lowresoun, wrights and gunners extraordinary; Edward Hill and Pettigrew, gunners extraordinary and smiths; and Hary Anderson, wright and gunner extraordinary.¹⁷⁹ The implication must be that each of these specialists was assigned to one of the guns and the crews were made up from the pioneers who accompanied the artillery trains. Paton seems to have misunderstood the meaning of the word ordinary. A 'gunner ordinary' was not 'only a gunner' but any wright, smith or cannoneer in the gunnery

177. AMW, i, pp. xxxv-xxxvi.

178. Ibid., i, 29-92, 170-5, 214; TA, viii, 133.

179. TA, ix, 87-94.

establishment who had been given a letter of appointment and was paid regular monthly or twice yearly wages. A 'gunner extraordinary' was a craftsman who was only employed temporarily on special occasions.

At the same time, it is likely that the appointment of a wright, smith, or even a jackmaker in the case of John Clerk,¹⁸⁰ as a gunner was often seen as a fitting reward for a deserving craftsman, and many wrights combined their function as wrights and gunners in royal service with a private business. Andrew Mansion is a notable example of this. He was French in origin and was obviously skilled as a carver, being called upon to make the king's and queen's chambers and do the carved work on the 'litill new bark' in 1539. The next year he made the cradle for the little prince and it was no doubt as a result of this work and the carving of the decoration for the guns on the gunhouse that he was appointed a gunner in 1543. He continued to do private commissions, however, most notably making the choir stalls on the south side of St Giles in 1552 for which he was awarded an annual pension of ten merks for ten years.¹⁸¹ It is of interest that he carried out this work although he was lame in one hand as a result of the 'schot of ane gun' at the siege of Edinburgh Castle in 1544.¹⁸²

Smiths there certainly were in royal service in the reign of James IV like Robert Scott working in Edinburgh Castle in the year or so before Flodden and a smith called Anthony was one of those who accompanied Gerwez the Gunner from France in 1511.¹⁸³ Others like Tom Barker who went on the Raid of Norham in 1497 and to Flodden sixteen years later (where he probably met his death) may only have been employed irregularly

180. RSS, ii, no. 4691.

181. TA, vii, 189, 307, 488, 489; viii, 127; RSS, iii, no. 428; Edinburgh Burgh Accts., ii, 10-15, 22, etc.

182. TA, viii, 484.

183. TA, iv, 276, 508.

and he seems to have worked from a smithy somewhere in the town rather than in the castle itself.¹⁸⁴

That smiths had a definite role to play in the gunnery establishment and it was better to have smiths specialising in this work seems to have been recognised by the employment, at least temporarily, of Anthony Pareyne and William Sprang as smiths and gunners in 1515,¹⁸⁵ but over thirty years were to pass after this before there was a master smith. He was William Hill, feed as a smith in 1530, but how far he, or indeed the smiddy in the castle, specialised in gun work at this time is not clear. The Master of Works accounts for 1537/8 record that he was only one of three smiths, each working at two hearths with four servants, on ironwork for the royal expedition to France in 1536.¹⁸⁶ He was, however, listed with the gunners as smith and gunner from 1543, being the only gunner with that title and is called our sovereign lady's master smith and gunner when he was given a new increased salary of £6 a month in February 1550/1. Like the master founder and master wright he was awarded the right to trade and deal in merchandise in February 1553/4 and remained as master smith until his death in 1565.¹⁸⁷

In August 1543 Hill was joined by John Bickerton, usually described as a smith and gunner, although he seems to have been a specialist in making handguns (of which more later). Three years later Adam Hamilton was appointed a smith and gunner as a replacement for John Laing, one of the melters, and in October 1547 a third smith, Thomas Petigrew, was recruited.¹⁸⁸ Bickerton had a business in Leith where he did work for the Town Council of Edinburgh, making dogs in 1558, and Petigrew also did work for the burgh,

184. Ibid., i, 347, 289, 292; iv, 519.

185. Ibid., v, 33, 38.

186. ER, xvi, 375n.; AMW, i, 230.

187. TA, viii, 225; RSS, iv, no. 2428; v. no. 2375.

188. TA, viii, 225, 447; RSS, iii, no. 2494.

providing iron work for doors and windows and also locks in the 1550s.¹⁸⁹

John Bickerton became master smith and gunner in October 1565 on the death of William Hill and he was succeeded in this post by his son Quentin in September 1580, Quentin having been appointed a smith and gunner three years previously.¹⁹⁰ Thomas Petigrew was on his death in 1568 replaced likewise by his son David.¹⁹¹ By 1551 there were normally four smiths in the gunnery establishment, a number which dropped to and remained at three in 1565 on the death of William Hill.¹⁹²

Amongst other craftsmen who appear in the gunnery establishment were quarriers, particularly William Theker from 1548, and a plumber, Robert Murray, from 1543.¹⁹³ Both would have been engaged on making shot, the former of stone the latter of lead. There were gunners who worked on the making of gunpowder like Wolf Urnebrig in the closing years of the reign of James IV and John Cunynghame in the 1540s, but only David Ramsay, appointed in August 1558 but apparently never paid, is actually designated as a powdermaker.¹⁹⁴ David Sanders, maker and searcher of saltpetre, was paid from May 1583.¹⁹⁵

Gun Carriages: Wood for making gun-carriages and other equipment was mostly home grown. In 1474-5 it was got from Alloa and Torwood, in 1496 it came from Melrose, Irnside, Clydesdale, Borthwick and Salton, in 1532 from Lochaber, in 1537-8 from the parks at Cranston and Newbattle as well as from Ross-shire, in 1540 from Newbattle again, and in 1566 from

190. RSS, v, no. 2375; vii, nos. 1250, 2529.

191. Ibid., vi, nos. 330.

192. TA, xi, 345.

193. Ibid., viii, 225-6; ix, 256-9.

194. Ibid., iv, 440; vii, 491-3, 497; RSS, v, no. 70. A William Ramsay was, however paid for a few months from October 1558 (TA, x, 346, etc).

195. SRO E22/6 p. 98v.

Strathearn.¹⁹⁶ It is probable that much of it was cut to shape on the spot before being taken out, the work being done by wrights and sawers.

It was probably always picked in the first place by one of the wrights and gunners from the gunnery establishment.¹⁹⁷ The iron, on the other hand, for making the iron work of the gun carriages, the tyres for the wheels and other equipment was mostly imported. Large quantities of French and Spanish iron were bought from various local merchants for work on the royal artillery, ships and lists in 1537-8 and iron from Gdansk (Danzig) in the Baltic is also mentioned.¹⁹⁸

Two early seventeenth-century pieces of sculpture built into the entrance gateway of Edinburgh Castle show what gun carriages for the larger guns looked like - and they did not change appreciably from the late II fifteenth century to this point. They consist basically of two hefty pieces of wood or cheeks forming the stock, on the fore end of which the trunnions of the gun are secured. The front end rests on the wheel axle and the rear end trails on the ground. Sometimes the trail had a small wheel incorporated in it for ease of manoeuvring. This seems to have been the case with four French cannons mounted on the forewall of Edinburgh Castle in 1566 and a grose culverin and a bastard in Stirling Castle in 1585.¹⁹⁹ The carriages were bound and strapped with iron and the wheels had cast bronze bushes to make them revolve easier on their axles. In the 1566 inventory of the munitions in Edinburgh Castle mention is made of 'fillies and spakis to be uther quheillis swep hand'²⁰⁰ and it is likely that all the wheels of the larger pieces of artillery were 'swept hand' or dished. Such an arrangement gave greater strength, especially when the

196. ER, viii, 281; TA, i, 292, 319, 320, 321; vi, 155-7; AMW, i, 230-1, 233-4; TA, vii, 354; RPC, i, 446, 475.

197. TA, i, 319; vi, 157; AMW, i, 230-1.

198. AMW, i, 229-30; TA, ix, 260; xi, 247.

199. Wardrobe Inventories, 166; SRO E96/4.

200. Wardrobe Inventories, 172.

gun had to be transported across uneven ground.

When on the move the guns were harnessed to horses or oxen arranged two abreast. The beasts were fitted with stout collars which helped to bear the weight of the traces (of rope?) and the 'hamys',²⁰¹ - wooden bars taking the weight from the gun trail through the traces to the beasts. If the gun and its carriage were well designed and the gun was wedged with its muzzle pointing down, the downward thrust would be minimal. Guns harnessed in this way can be seen in bass-reliefs of artillery at the church of Genouillac in France, built by Gailliot de Genouillac (died 1546).²⁰² Wheeled limbers were not in use at this time but contemporary English illustrations show that larger guns were sometimes transported on four-wheeled carriages.²⁰³

The carriages described above were essentially for the field, but where guns were mounted in confined spaces in ships or in fortifications it was more convenient to have smaller more compact carriages running on trucks - small solid wooden wheels. 'Sea stocks' are referred to as early as 1537 and may have been in use a lot earlier. In an inventory of Dumbarton Castle drawn up in 1571 the larger guns are described as being mounted for the fields and not for the walls,²⁰⁴ and these carriages were no doubt similar to the sea service ones of 1537. The reconstructed gun carriage of Mons Meg, based on the representation of her on the stone carving in Edinburgh Castle, is essentially such a carriage, though owing to the immense size and weight of the gun spoked, iron-shod wheels have been provided rather than trucks.

201. There is an account for the making of these in 1496 (TA, i, 292).

202. Illustrated by Napoleon III, Le passé et l'avenir de l'artillerie, iii, pl. 34, fig. 4.

203. Pope, The Gun, 54-65; H. Lumpkin, 'The Pictures of Henry VIII's Army in Cotton Manuscript Augustus 111', Journ. Arms & Armour Soc., iii (1960), pl. XLVIII.

204. AMW, i, 233. Bannatyne's Memoriales, 107.

For information on how guns were mounted before the development of the new cast bronze artillery with trunnions in the late fifteenth century we have to rely on contemporary illustrations from other countries and some surviving guns, especially a remarkable group of wrought iron breech-loading field guns belonging to Charles the Bold, Duke of Burgundy, and captured from him by the Swiss in the 1470s. The barrels are fitted into massive hollowed out pieces of wood forming the stocks, the more advanced ones with trunnions, the more old-fashioned ones held on with iron straps and bands. Some have boxes attached to their stocks behind the breech of the gun for carrying the gunner's equipment, and some have an arrangement whereby the breech end of the gun can be supported at different elevations on pins between two pierced wooden arcs.²⁰⁵ At an even earlier date guns might simply be strapped in a hollow carved out of a large straight beam of wood, and were so arranged late on on shipboard, as shown by some of the guns recovered from the wreck of the English ship the Mary Rose, sunk in 1545.²⁰⁶

The smaller guns, especially hagbuts of crok, could be mounted on trestles. Simple three-legged affairs are shown in the Emperor Maximilian's armoury book of the beginning of the sixteenth century, and the 'trestis of tymmer serving to mount hagbuittis of crok' which were kept in Edinburgh Castle were most likely like this.²⁰⁷ There were also the carts of war which mounted one or more small guns and while in many cases ordinary carts could be diverted to this purpose sometimes they were constructed specially. James IV had gun carts built in 1494 and 1496, said to amount to thirty in all.²⁰⁸ Like the later cutthroat

205. Deuchler, Die Burgunderbeute, 309-27.

206. Pope, The Gun, 58.

207. D. Pope, The Gun (London, 1965), 46; Wardrobe Inventories, 171.

208. Original Letters, 1st series, 31; TA, i, 255, 291, 295.

carts these may have been mounted with 'pavises', perhaps looking like the little gun carts with pointed protective hoods depicted in the wall-painting formerly at Cowdray House of the English siege of Boulogne in 1544.²⁰⁹

Other carts were needed for transporting supplies and while these could be hired from the carters of Edinburgh and Leith there was a particular need for close carts which were also produced in the royal workshops. Four dozen 'estland bordis' and thirty 'sparris' were imported for this work in 1496 and there are various payments recorded in the Treasurer's accounts for the making of them, eighteen in all. They were probably four-wheeled vehicles with fenced sides, like haywains. Such carts are also shown in the Cowdray paintings loaded with cannon-balls and pikes.²¹⁰

Gunpowder: Gunpowder is made from three main ingredients: charcoal, sulphur and saltpetre, and of these only the first was readily available in Scotland. It required time and skill to make good powder successfully and it is thus not surprising that a large proportion of the powder used in Scotland was imported from France, the Low Countries and Denmark.²¹¹ The Scottish government was still, however, prone to be short of it at critical times. It was produced in the royal workshops though probably only ever in small quantities. Since two of the main ingredients normally had to be imported for it this home based industry was presumably concerned with making gunpowder cheaper rather than with doing away with the reliance on foreign supplies.

209. Pope, The Gun, 44, 64-65.

210. TA, i, 280, 287, 293; Pope, The Gun, 64-65. Only 16 close carts are mentioned in an English spy report (Original Letters, 1st series, 31).

211. E.g. ER, vi, 120; TA, i, 69; James IV Letters, no. 497.

Saltpetre and sulphur were bought for the defence of the royal castles in 1384²¹² and in this context must have been intended for making gunpowder presumably of the crudest type - a simple mixture of powdered saltpetre, sulphur and carbon consisting of almost half saltpetre and equal quantities of the other two elements. With the shift of John Dunbar from the Douglasses to the royal service in 1456 a flurry of activity on the royal munitions is recorded in the exchequer rolls, including work on the manufacture of gunpowder.²¹³ John Bonar was also paid for making gunpowder in 1469.²¹⁴

In 1506 the Treasurer recorded payments to Hans the Gunner for drying the gun powder in Edinburgh Castle, for mending the powder cloths, for a rake for the powder and a gallon of aqua vitae.²¹⁵ These items taken together are the first evidence for the manufacture of corned powder in Scotland.

When gunpowder was composed simply of its powdered ingredients, if it was packed too tightly into a gun not enough space was left between its grains to aid its ignition and it either failed to burn or did so so slowly that there was no real explosion. If, on the other hand, such powder was packed too loosely most of the gases of combustion were likely to escape through the vent and along the sides of the gun-bore without contributing to thrusting the shot out. Corning, turning the mixture into small irregular pellets, was the answer to these problems since it prevented the powder being packed too tightly. It was also made it considerably stronger. The increased size of the grains and consequent greater surface and air spacing meant that it burned much quicker than the older 'serpentine' powder and there was less time for the gases of combustion to escape past the shot

212. ER, iii, 672.

213. Ibid., vi, 120, 308, 309, 310, 495; vii, 33.

214. ER, vii, 660.

215. TA, iii, 332.

and through the vent. It was probably unsuitable for use in all guns owing to its strength and may have been largely restricted to the new brass ordnance which fired metal shot. Other advantages of corned powder were that it was less susceptible to damp, left less of a residue on being fired and the ingredients did not separate out on transport.

It was produced by moistening the mixture while it was being pounded - in Scotland aqua vitae was used - and turning it into a cake. This was then broken up and sieved which was presumably where the rake came into use. The cloths were for laying the powder out to dry.²¹⁶

No mention is made in 1506 of how the ingredients of the gunpowder were pulverised, but in 1511 a 'Dutchman' was paid for bringing a powder mill to the king, possibly Wolf of Nürnberg who was making gunpowder in Edinburgh Castle in 1512 and 1513. Another powder mill was got in 1512 from Dundee to increase production.²¹⁷ After Flodden the manufacture of gunpowder in Edinburgh Castle may have come to a halt until there was a new initiative with the appointment of John or Hans Cunningham and his servants in February 1540/1 to work in the powder mill. Cunningham had been paid as a gunner since 1531 and disappears from the royal pay list after April 1553. It is possible, however, that he is the John Cunningham, wright or gunner, who worked for the Town Council of Edinburgh in the succeeding years.²¹⁸ At the powder making he had at first two and then four servants helping him. New equipment had to be got for the work including an hour glass, tubs to put the sulphur charcoal, saltpetre and powder in, and a set of scales (made by Peris Rowan) for weighing the

216. For early accounts on how to make gunpowder see in particular Biringuccio, The Pirotechnia, 409-16.

217. TA, iv, 292, 311, 440.

218. TA, vi, 47, etc; Edinburgh Burgh Accts, i, 128, 146, 279, 284, 422.

powder.²¹⁹ Cunningham actually went off in person to make charcoal for the powder in the wood at 'Caldour' (Cawdor, Nairnshire) and Newbattle in Midlothian.²²⁰ An English intelligence report of June 1541 notes that there was a powder mill set up in Edinburgh Castle and that it had made six barrels of powder within three weeks since Easter.²²¹

This powder mill operated by John Cunningham was probably the one described in the 1566/7 inventory of Edinburgh Castle as 'ane mann miln for making of poulder with thre mortaris nyne pestellis wanting the kapis of brace'.²²² This may have been a more sophisticated version of the mill illustrated in a manuscript of the Feuerwerkbuch dating to before 1450 which shows a row of mortars with the pestles suspended over them from springy poles.²²³ The Scottish machine probably had some simple gearing device to operate the pestles.

The disastrous Solway Moss campaign and the death of James V shortly afterwards may have meant the end of the powder making or at least the running down of the work until renewed interest was taken in home production with the arrival of a Frenchman at Dumbarton in 1546/7 with a ship load of powder from the French king. A horse was hired for him to go to Stirling to 'invente salpetar' and then to pass to the West Country to look for more of the raw materials to make it from.²²⁴ It is not known what became of his endeavours but it is certain that they need not have been a failure. Saltpetre occurs naturally in Europe only in Spain but it was realised that deposits containing saltpetre formed as incrustations on the walls of cellars, dovecots and stables, and since this was due to the decomposition of organic material that saltpetre could be

219. TA, vii, 491, 492.

220. Ibid., vii, 493, 497.

221. Hamilton Papers, i, 76.

222. Wardrobe Inventories, 173.

223. Reproduced in A History of Technology vol. 2, ed. C. Singer, E.J. Holmyard, A.R. Hall & T.I. Williams (Oxford, 1956), fig. 345.

224. TA, ix, 63, 143.

made in 'nitre beds' consisting of layers of decaying animal and vegetable substances mixed with mortar, earth, sand, etc. In France 300 salpetriers ordinaires du roi had been created in 1543, empowered with the right of entry to cellars and other places to search for saltpetre, and in England a similar organisation was set up.²²⁵

In 1574 another powder mill was bought, this time in Aberdeen, for Edinburgh Castle. It is presumably the one which appears in the 1578 inventory described as 'ane man mylne with hir stanys and hir haill tymmer werk'.²²⁶ If the 'stanys' are to be interpreted as for grinding - mill-stones - this machine would have been of an entirely different nature to that previously in use.

In 1584 Archibald Cunningham, gunner in Stirling Castle bought another powder mill which was put into operation there.²²⁷ He is referred to as master powder maker in 1600, then being stationed in Dumbarton Castle.²²⁸ A patent for making gunpowder and saltpetre was awarded to the Earl of Linlithgow in 1628 but parliament was concerned more than once with his delay in acting upon it and it was in any case rescinded in 1641 along with other monopolies.²²⁹

Shot: The production of stone shot presented no unsurmountable technical difficulties for the Scots and all were manufactured in this country, with the notable exception of sixty-one eighteen inch balls supplied by the Duke of Burgundy as a gift with Mons Meg.²³⁰ Gunstones were made by quarriers who were probably normally not part of the gunnery establishment

225. Napoleon III, Etudes sur le passé et l'avenir de l'artillerie, iii, 232; O.F.G. Hogg, English Artillery 1326-1716 (London, 1963), 46. See Biringuccio, The Pirotechnia, 404-9 for an early account on the making of saltpetre.

226. TA, xiii, 32; Wardrobe Inventories, 260.

227. SRO E22/6 p. 199v; E21/70 p. 199v.

228. SRO E21/73 p. 128r.

229. RMS (1620-1633), no. 1267; APS, v, 219, 224, 225, 411, 609.

230. Gaier, 'The Origin of Mons Meg', 426-7.

like the quarrier of Leith in the reign of James IV.²³¹ John the Quarrier, however, is listed as a gunner on the Raid of Norham in 1497 but his main function may have been to 'correct' or make new gunstones when there was a need for them.²³² He also made gunstones for Talbert and the Gun of Threave in 1512, while in the 1550s they were presumably made by William Theker, quarrier and gunner.²³³

In the recent excavations at Threave Castle twelve pieces of stone were discovered which are considered to be unfinished pieces of shot. They are of considerable interest in demonstrating how gunstones were made. It seems the stone was cut into rough cubes at the quarry and brought back to the castle to be worked. The cubes were then shaped by picking them into a cylinder and rounding top and bottom or by cutting away at the four corners, picks, presumably of a small size, being used for this.²³⁴ The polishing of the roughly hewn balls could readily have also been achieved by rubbing them on a stone. Many of the balls/from Threave are remarkable for their regularity of shape, though some of the smaller ones are more ovoid or flattened owing to the difficulty of holding and working them. Many supposed gunstones from elsewhere in Scotland are also far from being perfect spheres.

A unique early account about the manufacture of stone shot is contained in Le Livre du Secret de l'Art de L'Artillerie et Canonerie published in Paris in 1561, but apparently composed at a much earlier date. The only useful detail of working method it supplies is the essential point that the measurement of the gun's bore has first to be taken with compasses which are then used to describe the size of the shot.²³⁵

231. TA, iv, 460.

232. Ibid., i, 347.

233. Ibid., iv, 460; x, 27, etc.

234. Cf. TA, v, 25.

235. Quoted by Napoleon III, Etudes sur le passé et l'avenir de l'artillerie, iii, 149.

Evidence is lacking as to whether any particular stone was favoured for making gunstones, other than easily workable ones like sand and limestone. Most of the thirty or so balls from Threave Castle and the unfinished pieces are of local sandstone.

A load of flint stones for making bullets was bought by Edinburgh Town Council in 1558.²³⁶ Probably it was intended to use the roughly fractured stone as a form of 'murdering shot'.

The making of lead shot for the smaller brass guns presented no difficulties other than the procurement of the lead and the comes - that is moulds - for making them in. These need only have been of stone like, presumably, the 'muldis to cast the plumbis in' purchased for only eight shillings in 1496 and the camis of stone for casting shot for double falcons in Stirling Castle in 1585.²³⁷ Most, however, seem to have been of brass, or even iron,²³⁸ and some at least of the former were no doubt home produced, like the six pair of comes supplied to the town of Edinburgh by David Rowan in 1558.²³⁹

The Scots found an ingenious way round their inability to make cast iron shot. To supplement supplies of the real thing from abroad they made dice or diamonds of wrought iron, as early as 1496, which were then coated in lead to make shot of the desired rotundity. The neatest solution would have been to cast the lead round the iron as seems to have been done in 1496, but other descriptions imply that sometimes lead sheeting was merely folded round about.²⁴⁰ There are two gunstones made of irregular stones wrapped with lead in this way at Tantallon Castle in East Lothian. Pieces of iron shot may also have been made laboriously by hammering dice into

236. Edinburgh Burgh Accts., i, 251.

237. TA, i, 295; SRO E96/4.

238. SRO E96/1; Wardrobe Inventories, 169, 254, 255, 260.

239. Edinburgh Burgh Accts., i, 256.

240. TA, i, 293, 295, 299, 384; Bannatyne's Memoriales, 123.

shape or small dice may have been loaded in quantity as murdering shot.²⁴¹

Other types of shot which appear rarely are chained shot, examples of which were in Edinburgh Castle in 1578 and Stirling Castle in 1581; iron missiles, six of which were in Edinburgh in 1566/7; and 'fedderit' bullets, four of which were in Edinburgh Castle in 1578.²⁴² It is not known for sure what the last of these were. Chained shot as the name suggests had lengths of chain attached and had a devastating effect when fired at close range into large groups of people. The missiles may have been left over from the 'vi dosane fyr sparris, twa dosane fyr gannis (arrows), xv fyre ballis, and viij fyre perkis (?), witht utheris fyrewerk schot devisit be the Kingis grace' made by Master Wolf and Christopher the French gunner in 1540, presumably for the ships.²⁴³

241. TA, i, 349; iii, 142; v, 223.

242. Wardrobe Inventories, 171, 254, 255; Hist. MSS. Comm., Mar & Kellie (1904), 35.

243. TA, vii, 357.